REFINITIV

DELTA REPORT

10-K

SDGR - SCHRODINGER, INC.

10-K - DECEMBER 31, 2023 COMPARED TO 10-K - DECEMBER 31, 2022

The following comparison report has been automatically generated

TOTAL DELTAS	6838
CHANGES	493
DELETIONS	1956
ADDITIONS	4389

REFINITIV

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)

x ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2022 December 31, 2023

OR

¨ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 FOR THE TRANSITION PERIOD FROM TO

Commission File Number: 001-39206

Schrodinger, Inc.

(Exact name of Registrant as specified in its Charter)

Delaware	**95-4284541**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
1540 Broadway, 24th Floor New York, NY	**10036**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (212) 295-5800

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common stock, par value $0.01 per share	SDGR	The Nasdaq Stock Market LLC

Securities registered pursuant to Section 12(g) of the Act: **None**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes x No ¨

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes ¨ No x

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes x No ¨

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes x No ¨

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	x	Accelerated filer	¨
Non-accelerated filer	¨	Smaller reporting company	¨
Emerging growth company	o		

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ¨

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. x

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No x

As of June 30, 2022 June 30, 2023, the last business day of the registrant's most recently completed second fiscal quarter, the aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant was $1,287,853,411 $1,758,532,189 based upon the closing sale price of the registrant's common stock on that date.

As of February 21, 2023 February 21, 2024, the registrant had 62,321,454 63,146,419 shares of common stock and 9,164,193 shares of limited common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

The registrant intends to file a definitive proxy statement pursuant to Regulation 14A relating to the 2023 2024 Annual Meeting of Stockholders within 120 days of the end of the registrant's fiscal year ended December 31, 2022 December 31, 2023. Portions of such definitive proxy statement are incorporated by reference into Part III of this Annual Report on Form 10-K to the extent stated herein.

Auditor Firm Id:	185	Auditor Name:	KPMG LLP	Auditor Location:	Portland, OR

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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS AND INDUSTRY DATA

This Annual Report on Form 10-K, or this Annual Report, contains forward-looking statements within the meaning of the U.S. Private Securities Litigation Reform Act and Section 21E of the Securities Exchange Act of 1934, as amended, that involve substantial risks and uncertainties. All statements, other than statements of historical fact, contained in this Annual Report, including statements regarding our strategy, future operations, future financial position, future revenue, projected costs, prospects, plans and objectives of management, are forward-looking statements. The words "aim," "aim," "anticipate," "believe," "contemplate," "continue," "could," "estimate," "expect," "goal," "goal," "intend," "may," "might," "plan," "potential," "predict," "project," "should," "target," "will," "would" or the negative of these words or other similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

The forward-looking statements in this Annual Report include, among other things, statements about:

- the potential advantages of our physics-based computational platform;
- our strategic plans to accelerate the growth of our software business; business and acquire new customers;
- our research and development efforts for our proprietary drug discovery programs and our computational platform;
- our drug discovery collaborations, including the initiation, timing, progress and results of such collaborations;
- our estimates or expectations regarding any milestone or other payments we may receive from drug discovery collaborations, including pursuant to our collaboration agreement with Bristol-Myers Squibb Company;
- our proprietary drug discovery programs, including the initiation, timing, progress, and results of our preclinical studies and clinical trials of ours and those of our collaborators; trials;
- our plans to submit investigational new drug applications to the U.S. Food and Drug Administration for our proprietary drug discovery programs;
- our plans to discover and develop product candidates and to maximize their commercial potential by advancing such product candidates ourselves or in collaboration with others;
- our plans to leverage the synergies between our businesses;
- the timing of, the ability to submit applications for and the ability to obtain and maintain regulatory approvals for any product candidates we or one of our collaborators may develop;
- the potential advantages of our drug discovery collaborations and our estimates or expectations regarding any milestone or other payments we may receive from such collaborations, including pursuant to our collaboration with Bristol-Myers Squibb Company;
- our expectations regarding our ability to fund our operating expenses and capital expenditure requirements with our cash, cash equivalents, and marketable securities;
- the potential advantages of our proprietary drug discovery programs;
- the rate and degree of market acceptance of our software solutions;
- the potential impact of the COVID-19 pandemic and of economic developments, including rising inflation and interest rates, on our business, operations, liquidity and prospects;
- the rate and degree of market acceptance and clinical utility of any product we or any of our products; collaborators may develop;
- our estimates regarding the potential market opportunity for our software solutions and any product candidate we or any of our collaborators may develop;
- our sales and marketing capabilities and strategy;
- our intellectual property position;
- our ability to identify technologies with significant commercial potential that are consistent with our commercial objectives;
- our expectations regarding our ability to fund our operating expenses and capital expenditure requirements with our cash, cash equivalents, and marketable securities;
- our expectations related to the use of our cash, cash equivalents, and marketable securities;
- our expectations related to the key drivers of our performance;
- the impact of government laws and regulations;

- our competitive position and expectations regarding developments and projections relating to our competitors and any competing products, technologies, or therapies that are or become available;

- our ability to maintain and establish collaborations or obtain additional funding; and
- our reliance on key personnel and our ability to identify, recruit, and retain skilled personnel. personnel;
- the potential impact of public health epidemics or pandemics, including the COVID-19 pandemic; and
- the potential impact of geopolitical and global economic developments.

We may not actually achieve the plans, intentions, or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions, and expectations disclosed in the forward-looking statements we make. We have included important factors in the cautionary statements included in this Annual Report, particularly in "Risk Factor Summary" and "Risk Factors" below, that we believe could cause actual results or events to differ materially from the forward-looking statements that we make. Moreover, we operate in a competitive and rapidly changing environment. New risks and uncertainties emerge from time to time, and it is not possible for us to predict all risks and uncertainties that could have an impact on the forward-looking statements contained in this Annual Report. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, collaborations, in-licensing arrangements, joint ventures, or investments we may make or enter into.

You should read this Annual Report and the documents that we file with the Securities and Exchange Commission, or the SEC, with the understanding that our actual future results may be materially different from what we expect. The forward-looking statements contained in this Annual Report are made as of the date of this Annual Report, and we do not assume any obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by applicable law.

In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this Annual Report, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete. Our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

This Annual Report includes statistical and other industry and market data that we obtained from industry publications and research, surveys, and studies conducted by third parties as well as our own estimates of potential market opportunities. All of the market data used in this Annual Report involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such data. Industry publications and third-party research, surveys, and studies generally indicate that their information has been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. Our estimates of the potential market opportunities for our product candidates include several key assumptions based on our industry knowledge, industry publications, third-party research, surveys and studies, which may be based on a small sample size and may fail to accurately reflect market opportunities. While we believe that our internal assumptions are reasonable, no independent source has verified such assumptions.

Unless the context otherwise requires, we use the terms "company," "we," "us," and "our" in this Annual Report to refer to Schrödinger, Inc. and its consolidated subsidiaries.

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RISK FACTOR SUMMARY

Our business is subject to a number of risks of which you should be aware before making an investment decision. Below we summarize what we believe are the principal risk factors but these risks are not the only ones we face, and you should carefully review and consider the full discussion of our risk factors in the section titled "Risk Factors", together with the other information in this Annual Report.

- We have a history of significant operating losses, and we expect to incur losses over the next several years.
- If we are unable to increase sales of our software, increase revenue from our drug discovery collaborations, or if we and our current and future collaborators are unable to successfully develop and commercialize drug products, our revenues may be insufficient for us to achieve or maintain profitability.
- Our quarterly and annual results may fluctuate significantly, which could adversely impact the value of our common stock.
- If our existing customers do not renew their licenses, do not buy additional solutions from us, or renew at lower prices, our business and operating results will suffer.
- A significant portion of our revenues are generated by sales to life sciences industry customers, and factors that adversely affect this industry could adversely affect our software sales.
- The markets in which we participate are highly competitive, and if we do not compete effectively, our business and operating results could be adversely affected.
- We may never realize a return on our investment of resources and cash in our drug discovery collaborations.
- Although we believe that our computational platform has the potential to identify more promising molecules than traditional methods and to accelerate drug discovery, our focus on using our platform technology to discover and design molecules with therapeutic potential may not result in the discovery and development of commercially viable products for us or our collaborators.

- We may not be successful in our efforts to identify, discover or develop product candidates and may fail to capitalize on programs, collaborations, or product candidates that may present a greater commercial opportunity or for which there is a greater likelihood of success.
- As a company, we have very limited experience in clinical development, which may adversely impact the likelihood that we will be successful in advancing our programs.
- We will likely require additional capital to fund our operations. If we are unable to raise additional capital on terms acceptable to us or at all or generate cash flows necessary to maintain or expand our operations, we may not be able to compete successfully, which would harm our business, operations, and have not yet demonstrated our ability to complete any clinical trials. financial condition.
- Conducting successful clinical trials requires the enrollment of a sufficient number of patients, and suitable patients may be difficult to identify and recruit.
- We rely on, and plan to continue to rely on, third parties to conduct our clinical trials, and those third parties may not perform satisfactorily, including failing to meet deadlines for the completion of such trials, which may prevent or delay our ability to seek or obtain marketing approval for or commercialize our product candidates or otherwise harm our business.
- The outcome of preclinical studies and early clinical trials may not be predictive of the success of later clinical trials, and the results of our clinical trials may not satisfy the requirements of the FDA or other comparable foreign regulatory authorities.
- A widespread outbreak of an illness or other health issue, such as the COVID-19 pandemic, could negatively affect various aspects of our business and make it more difficult to meet our obligations to our customers, and could result in reduced demand from our customers as well as delays in our drug discovery and development programs.
- If we fail to comply with our obligations under our existing license agreements with Columbia University, under any of our other intellectual property licenses, or under any future intellectual property licenses, or otherwise experience disruptions to our business relationships with our current or any future licensors, we could lose intellectual property rights that are important to our business.
- If we are unable to obtain, maintain, enforce, and protect patent protection for our technology and product candidates or if the scope of the patent protection obtained is not sufficiently broad, our competitors could develop and commercialize technology and products similar or identical to ours, and our ability to successfully develop and commercialize our technology and product candidates may be adversely affected.

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- Our internal information technology systems, or those of our third-party vendors, contractors, or consultants, may fail or suffer security breaches, loss or leakage of data, and other disruptions, which could result in a material disruption of our services, compromise sensitive information related to our business, or prevent us from accessing critical information, potentially exposing us to liability or otherwise adversely affecting our business.
- Our future success depends on our ability to retain key executives and to attract, retain, and motivate qualified personnel.
- We are pursuing multiple business strategies and expect to expand our development and regulatory capabilities, and as a result, we may encounter difficulties in managing our multiple business units and our growth, which could disrupt our operations.
- Our executive officers, directors, and principal stockholders, if they choose to act together, have the ability to influence all matters submitted to stockholders for approval.
- Our actual operating results may differ significantly from our guidance.
- We identified a material weakness in our internal control over our financial reporting. If we are unable to remediate this material weakness, we may not be able to accurately or timely report our financial condition or results of operations, and we may conclude that our internal control over financial reporting is not effective, which could adversely impact our investors' confidence and our stock price.

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PART I

Item 1. Business.

Overview

We are transforming the way therapeutics and materials are discovered.

Our differentiated, physics-based computational platform enables discovery of high-quality, novel molecules for drug development and materials applications more rapidly and at a lower cost, compared to traditional methods. Our software platform is licensed by biopharmaceutical and industrial companies, academic institutions, and government laboratories around the world. We are applying our computational platform to discover and advance a broad pipeline of development drug discovery programs in collaboration with leading biopharmaceutical companies. In addition, we use our computational platform to advance a discover novel molecules for our pipeline of partnered and wholly-owned proprietary drug discovery programs, which we refer to collectively as our proprietary drug discovery programs. are advancing through preclinical and clinical development.

Traditional drug discovery and development efforts have become increasingly are complex, lengthy and capital-intensive, and are prone to high failure rates. Traditional drug discovery relies upon many iterations of costly and time-consuming manual molecule design, chemical synthesis, and experimental testing. One of the primary reasons for long

timelines, high costs, and high failure rates in drug discovery is that predicting properties of molecules in advance of chemical synthesis is extremely complex and not amenable to traditional approaches.

Over the past several decades and with the concerted efforts of our scientists and software engineers, we have developed a physics-based computational platform that is capable of predicting critical properties of molecules with a high degree of accuracy. This key capability enables drug discovery teams to design and selectively synthesize molecules with more optimal properties, reducing the average time and costs required to identify a development candidate and increasing the probability that a drug discovery program will enter clinical development. Furthermore, we believe that development candidates with more optimized property profiles will have a higher probability of success in clinical development. Additionally, since the physics underlying the properties of drug molecules and materials is the same, we have been able to extend our computational platform to materials science applications in fields such as aerospace, energy, semiconductors, and electronic displays.

We offer our customers a variety of software solutions that accelerate all stages of molecule discovery, design, and optimization. In 2022, 2023, all of the top 20 pharmaceutical companies, measured by 2021 2022 revenue, licensed our solutions, accounting for $43.2 million $71.8 million, or 32% 45%, of our software revenue in 2022. 2023. We had 222, 227, and 190 customers with an annual contract value, or ACV, of at least $100,000, which represented 83%, 82%, and 80% of our total ACV, for the years ended December 31, 2023, 2022, and 2021, respectively. The widespread adoption of our software, supported by our global team of sales, technical, and scientific personnel, has driven steady growth in our software revenue. Biopharmaceutical companies are increasingly adopting our software at a larger scale, and we anticipate this scaling-up will drive future revenue growth. Our ability to expand within our customer base is demonstrated by the increasing number of our customers with an annual contract value, ACV at higher thresholds, including customers with an ACV of at least $500,000 or $1.0 million. For the year ended December 31, 2023, we had 54 customers with an ACV in excess of $100,000. We had 227, 190, and 153 such customers, which represented 82%, 80%, and 79% of our total ACV, at least $500,000 compared to 52 for the years year ended December 31, 2022, 2021, and 2020, respectively. . Furthermore, the number of customers with an ACV in excess of at least $1.0 million increased to 18 27 for the year ended December 31, 2022 December 31, 2023 compared to 15 18 and 16 15 for the years ended December 31, 2021 December 31, 2022 and 2020, 2021, respectively. We also had four customers with an ACV in excess of at least $5.0 million for the year ended December 31, 2022 December 31, 2023, compared to four and two such customers for the year years ended December 31, 2021. December 31, 2022 and 2021, respectively. In addition, our customer retention rate for our customers with an ACV over of at least $100,000 for the year ended December 31, 2022 December 31, 2023 was 96% 92% and was 96% or higher for each of the previous nine fiscal years. Our customer retention rate for our customers with an ACV of at least $500,000 was 98% for the year ended December 31, 2023 and 100% for the year ended December 31, 2022. We believe the growth in the number of our larger customers demonstrates that companies are increasingly recognizing the power and appreciating the scientific and financial benefits of using our platform at scale while the retention in this group our customer base is indicative of the continued value of our platform. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Key Factors Affecting Our Performance” for additional information regarding ACV and customer retention rate.

We also leverage our platform and capabilities across a portfolio of collaborative and proprietary drug discovery programs spanning a wide range of disease targets and indications. Our drug discovery group, which we refer to as the Schrödinger Therapeutics Group, therapeutics group, is comprised of a multidisciplinary team of approximately 150 180 experts in protein science, biochemistry, biophysics, medicinal and computational chemistry, and discovery scientists with expertise in preclinical and

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early clinical development. We have entered into drug discovery collaborations with biopharmaceutical companies under which our collaborators are pursuing research in a number of therapeutic areas, including programs in oncology, antifungal diseases, fibrosis, inflammatory bowel disease, metabolic disease, autoimmune disease, immuno-oncology, cardiopulmonary disease and tuberculosis. When we engage in drug discovery with these collaborators, we typically provide access to our platform and platform experts who assist the drug discovery collaborator in identifying molecules that have activity against one or more specified protein targets. Our collaborative and partnered programs generate drug discovery revenue, including upfront payments, research funding payments, and discovery and development milestones, and have the potential to produce additional commercial milestone payments, option fees, and future royalties. We also rely on collaborators for the development and potential commercialization of product candidates we discover internally when we believe it will help maximize clinical and commercial opportunities for the product candidate.

In 2018, we began to develop a pipeline of wholly-owned drug discovery programs with the goal of using our platform to produce a portfolio of novel, high value therapeutics. Our initial programs were focused on discovering and developing inhibitors for targets For example, in DNA damage response pathways and genetically defined cancers. Since then, we have expanded into other therapeutic areas, including in the areas of immunology and neurology. We submitted an investigational new drug application, or IND, for our MALT1 inhibitor, which we refer to as SGR-1505, and the U.S. Food and Drug Administration, or FDA, cleared the IND in June 2022. We recently initiated a Phase 1 clinical trial of SGR-1505 in patients with relapsed or refractory B-cell lymphomas and currently have clinical trial sites open for screening and enrollment, but we have not yet dosed any patients with SGR-1505. In addition, we continue to advance other wholly-owned programs through IND-enabling studies. We expect to submit an IND application to the FDA for our CDC7 inhibitor, which we refer to as SGR-2921, in the first half of 2023 and for our WEE1 inhibitor, which we refer to as SGR-3515, in 2024, subject to favorable data from IND-enabling studies. In addition, we plan to initiate a Phase 1 clinical trial of SGR-2921 in the second half of 2023, subject to receipt of regulatory clearance.

In November 2020, we entered into an exclusive, worldwide collaboration and license agreement with Bristol-Myers Squibb Company, or BMS, pursuant to which we and BMS agreed to collaborate in the discovery, research and development of small molecule compounds for biological targets in the oncology, neurology and immunology therapeutic areas. The initial collaboration targets included HIF-2 alpha After mutual agreement on the targets(s) of interest, the Schrödinger therapeutics group is responsible for the discovery of development candidates. Once a development candidate meeting specified criteria for a target has been identified, BMS will be solely responsible for the development, manufacturing and SOS1/KRAS, which were two commercialization of our wholly-owned pipeline programs. In November 2021, we and BMS mutually agreed to replace the HIF-2 alpha target with another precision oncology target. Following the replacement election, all rights to the HIF-2 alpha target program reverted to us. In September 2022, BMS elected not to proceed with further such development of another target and all rights to this program reverted to us. In December 2022, we and BMS entered into an amendment to our collaboration and license agreement to include an additional target in neurology on terms similar to the original agreement. Under the terms of the agreement, as amended, we received a $55.0 million upfront payment from BMS in November 2020 and an additional upfront payment in December 2022 related to the additional target, and we candidate. We are eligible to receive up to $2.7 billion $1.5 billion in total milestones from BMS milestone payments across all the potential targets currently subject to the collaboration, of which we

have received $25.0 million as of December 31, 2023, as well as a tiered percentage royalty on net sales of each product commercialized by BMS ranging from mid-single digits to low-double digits, subject to certain specified reductions. See "—Collaboration Agreement with Bristol-Myers Squibb Company" for additional information relating to this agreement.

In 2018, we began to develop a pipeline of proprietary drug discovery programs with the goal of using our platform to produce a portfolio of novel, high value therapeutics. In June 2022, the U.S. Food and Drug Administration, or FDA, cleared our first investigational new drug application, or IND, for our MALT1 inhibitor, which we refer to as SGR-1505. We have initiated dosing in a Phase 1 clinical trial of SGR-1505 in patients with relapsed or refractory B-cell lymphomas and we anticipate reporting initial data from the trial in late 2024 or 2025. We also completed a Phase 1 clinical trial of SGR-1505 in 73 healthy volunteers to gather additional data, including data relating to the safety, tolerability and pharmacokinetics of SGR-1505, as well as the effect of food and drug-drug interactions. In the healthy volunteer trial, SGR-1505 was generally well tolerated with no drug-related serious adverse events or dose limiting toxicities observed. In the trial, we observed that SGR-1505 achieved greater than 90 percent inhibition of IL-2 secretion in an activated T cell whole blood assay at 100 mg twice a day (n=4), confirming target engagement and meeting the pharmacodynamic goals for the trial. Inhibition of IL-2 secretion is a marker for target engagement and pathway modulation as it is tightly linked to MALT1 and the downstream NF-κB signaling. The data supported continued evaluation of SGR-1505 in the ongoing Phase 1 clinical trial in patients with relapsed or refractory B-cell lymphomas. In addition, the FDA recently granted orphan drug designation to SGR-1505 for the potential treatment of mantle cell lymphoma.

In July 2023, the FDA cleared our IND for our CDC7 inhibitor, which we refer to as SGR-2921. We have initiated dosing in a Phase 1 clinical trial of SGR-2921 in patients with relapsed or refractory acute myeloid leukemia or high-risk myelodysplastic syndrome, and we anticipate reporting initial data from the trial in late 2024 or 2025. We are also advancing SGR-3515, our novel WEE1/MYT1 inhibitor for the treatment of solid tumors. We expect to submit an IND to the FDA for SGR-3515 in the first half of 2024, subject to favorable data from ongoing IND-enabling studies, and we plan to initiate a Phase 1 clinical trial of SGR-3515 by the end of 2024, subject to receipt of regulatory clearance.

We generated total revenue of $181.0 million $216.7 million, $137.9 million $181.0 million, and $108.1 million $137.9 million in 2023, 2022, 2021, and 2020, 2021, respectively, representing year-over-year growth of 31% 20% and 28% 31%, respectively. Our net loss income for the year ended December 31, 2023 was $149.2 million, $101.2 million, $40.7 million and $26.6 million our net losses for the years ended December 31, 2022, and 2021 were $149.2 million and 2020, $101.2 million, respectively.

Strategy

Our mission is to improve human health and quality of life by transforming the way therapeutics and materials are discovered. We aim to do this by:

- ***Advancing the science that underlies our computational platform:*** We are the leader in the field of physics-based computational drug discovery, and we believe our computational platform is far ahead of that of our nearest competitors. We intend to maintain our industry-leading position by introducing new

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capabilities and refining our software to further strengthen our technology and advance the science underlying our platform.

- ***Growing and expanding our software business:*** We have experienced steady growth in our software revenues, achieving $135.6 million $159.1 million in revenue in 2022, 2023, an increase of 20% 17% compared to 2021, 2022, primarily driven by broad adoption of our software solutions by the biopharmaceutical industry and the expansion of our materials science business. Biopharmaceutical companies are increasingly adopting our software at a larger scale, and we anticipate that this scaling-up will drive future revenue growth.

- ***Advancing our collaborative programs:***We aim intend to continue to grow work with our software sales collaborators on advancing our collaborative programs through discovery research stages. Our collaborative programs generate revenues through upfront payments, research funding, preclinical and clinical milestones as well as potentially through option fees, commercial milestones, and future royalties. We achieved drug discovery revenue of $57.5 million in 2023, an increase of 27% compared to 2022, largely driven by increasing the adoption achievement of milestones from our software by our existing customers and identifying and adding new customers. Further, we believe there remains a large opportunity for growth as there are thousands of biopharmaceutical companies that could collaborative programs. We also benefit from our software solutions. equity positions in certain of our collaborators. For example, during the fiscal year ended December 31, 2023, we received a total of $147.2 million in cash distributions on account of our equity stake in Nimbus Therapeutics, LLC, or Nimbus, following the closing of the acquisition by Takeda Pharmaceuticals Company Limited, or Takeda, of Nimbus Lakshmi, Inc., a wholly-owned subsidiary of Nimbus, and its tyrosine kinase 2, or TYK2, program, which included the TYK2 inhibitor, NDI-034858.

- ***Progressing our wholly-owned and partnered proprietary drug discovery programs***: We plan to progress the development of our wholly-owned proprietary drug discovery programs, including SGR-1505, SGR-2921 and SGR-3515, and continue to add advance new programs that where we can leverage our computational platform. platform to identify novel molecules. As we progress these programs, we will plan to strategically evaluate on a program-by-program basis advancing them into preclinical and clinical development ourselves, entering into collaborations to co-develop them with leading industry partners, or out-licensing them to maximize clinical and commercial opportunity. As part of this strategy, we entered into an exclusive, worldwide collaboration and license agreement with BMS in November 2020, as well as collaboration agreements with Zai Lab Limited, or Zai Lab, in August 2021, with Eli Lilly and Company, or Lilly, in September 2022, and with Otsuka Pharmaceutical Co. Ltd., or Otsuka, in December 2022.

- ***Advancing our collaborative programs:*** We intend to continue to work with our collaborators on advancing our collaborative programs, which generate revenues through upfront payments, research funding, preclinical and clinical milestones as well as potentially through option fees, commercial milestones, and future royalties. We achieved drug discovery revenue of $45.4 million in 2022, an increase of 84% compared to 2021, largely driven by the achievement of milestones from our collaborative and partnered programs. We also benefit from equity positions in certain of our collaborators.

- ***Leveraging the synergies between our businesses:*** We believe that there are significant synergies within our business. We leverage the feedback that we receive from our software customers, collaborators, and internal drug discovery experts to improve the functionality of our platform, which we believe supports increased customer adoption of our solutions and more rapid advancement of our collaborative and proprietary drug discovery programs. In addition, the success of our collaborators in advancing drug discovery programs provides significant validation of our platform and approach, which we believe increases the attractiveness of our platform to customers, helps us establish new collaborations, and validates the potential of our own proprietary drug discovery programs. Central to our ability to pursue these distinct lines of business is a firewall policy consisting of a set of well-established protocols and technology measures designed to ensure that the intellectual property of our software customers and drug discovery collaborators remains confidential and segregated.

Industry Overview

Traditional drug discovery and development efforts have become increasingly are complex, lengthy and capital-intensive, and are prone to high failure rates. Traditional drug discovery involves experimental screening of existing libraries of molecules to find molecules with detectable activity, or "hit molecules," followed by many iterations of chemical synthesis to attempt to optimize those hit molecules to a development candidate that can be advanced into human clinical trials. Efforts to optimize initial hit molecules for a drug discovery project involve costly and iterative synthesis and testing of molecules seeking to identify a molecule with the required property profile. The optimal profile has the acceptable balance of properties such as potency, selectivity, solubility, bioavailability, half-life, permeability, drug-drug interaction profile, synthesizability, and toxicity. These properties are often inversely correlated, meaning that optimizing one property often de-optimizes others. The challenge of optimizing hit molecules is amplified by the limited number of molecules that can be feasibly tested across these properties with traditional methods. As a result, this optimization process often fails to yield a molecule with a satisfactory property profile to be a development candidate, which is why many drug discovery programs fail to advance into clinical development.

Being able to predict molecular properties before initiating costly and time-consuming experimental synthesis would accelerate drug discovery, reduce costs, and increase the probability of success. If it were possible to accurately predict critical properties of molecules, fewer molecules would have to be experimentally synthesized and tested. As a result, larger pools of molecules could be analyzed allowing for more selective synthesis of molecules, leading to higher-quality molecules. In addition, with predictive computational methods, better selections of molecules would be synthesized

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through exploration of larger portions of chemical space, leading to higher-quality molecules that would in turn have a higher probability of progressing through clinical development and obtaining regulatory approval for commercial sale.

There have been many attempts to improve the efficiency of the drug discovery process by using computational methods to predict properties of molecules. One of the primary computational methods that many companies have attempted to deploy is machine learning, often referred to as artificial intelligence, or AI. One of the main benefits of machine learning is its ability to rapidly process data at scale. However, machine learning on its own has significant limitations and has therefore had a limited impact on improving the efficiency of the drug discovery process. Machine learning requires input data, referred to as a training set, to build a predictive model. This model is expected to accurately predict properties of molecules similar to the training set, but cannot extrapolate to molecules that are not similar to the training set. Accordingly, since the number of possible molecules that could be synthesized is effectively infinite, machine learning can only cover a minuscule fraction of the total number of molecules that could potentially be synthesized.

The other primary computational method that has been explored to improve drug discovery involves using fundamental, "first-principles" physics-based methods, which require a deep and thorough understanding of the specific property to be computed. However, physics-based methods are difficult to develop and can be slow compared to machine learning. Further, to apply such methods to design molecules that will bind with high affinity to a particular protein target, the three-dimensional structure of that protein must be generated with sufficient atomic detail to enable application of these physics-based approaches, which is referred to as being "structurally enabled," and such structures have been historically difficult to obtain and are only available today for a relatively small subset of the universe of human proteins. Another

factor preventing computational chemistry from realizing its promise has been limited compute speed. However, despite all of these challenges, physics-based methods have a significant advantage over machine learning in that they do not require a training set and can, in principle, compute properties of molecules that are well beyond existing industry experience and data.

Our Platform

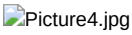
Over the past several decades and with the concerted effort of hundreds of our scientists and software engineers, we have developed a computational platform that is capable of predicting critical properties of molecules with a high degree of accuracy. We have built our platform on a foundation of rigorous, physics-based methods, combined with the rapid data processing and scaling advantages of machine learning, that together provide a significant advantage over traditional methods. We believe that physics-based simulation is at has reached an inflection point as a result of the increased availability of massive computing power, combined with a more sophisticated understanding of models and algorithms and the growing availability of high-resolution protein structures.

We have demonstrated that our software platform can have a transformative impact on the drug discovery process by:

- reducing the average time and cost required to identify a development candidate; and
- increasing the probability of drug discovery programs entering clinical development.

Based on our drug discovery efforts to date, including in our collaborative programs, we believe that the development candidates discovered using our platform have a higher probability of successfully progressing through clinical development than the industry average.

As shown below, we achieve these outcomes by tightly integrating our predictive physics-based methods, which have a high degree of accuracy, with machine learning, which is highly scalable. In addition, our platform enables real-time collaboration on drug discovery projects to inform decision-making and maximize the impact of the predictive capabilities of our computational platform.

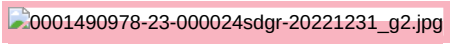


Our computational platform provides the following significant technological advantages over traditional approaches to drug discovery, all of which we believe enable shortening shorter timelines, decreasing lower costs, and increasing the higher probability of success of drug discovery efforts:

- **Speed.** Our platform is able to evaluate molecules in hours rather than the weeks that it typically takes to screen, synthesize and assay test molecules in the laboratory.

- **Scale.** Our platform can explicitly evaluate billions of molecules per day, whereas traditionally operated traditional drug discovery projects only synthesize and evaluate approximately one thousand molecules per year, thereby increasing the probability that we find a novel molecule with the desired property profile.
- **Quality.** In a peer-reviewed study, our platform was tested against traditional methods for selecting tight-binding molecules and resulted in an eight-fold increase in the number of molecules with the desired affinity.

The figure below compares the optimization process of drug discovery using traditional methods and our approach.



Our computational platform includes a broad array of proprietary capabilities:

- **Faster Lead Discovery**: the ability to rapidly identify potent molecules suitable to initiate for hit-to-lead and lead optimization efforts via solutions for virtual by virtually screening of extremely large libraries of molecules, as well as physics-based replacement of the central core of a molecule, known as scaffold hopping, to identify novel, highly potent molecules unavailable in library collections;
- **Accurate Property Prediction**: the ability to assess key properties of drug-like molecules using physics-based calculations with accuracy comparable to that of experimental laboratory assays, to facilitate optimization of drug properties, including drug potency, selectivity, and bioavailability;
- **Optimizing Protein Structures**: the ability to refine and optimize protein structure models to increase the number of targets amenable to structure-based drug design;
- **Large-Scale Molecule Exploration**: the ability to computationally ideate and explore novel, high-quality drug-like molecules for consideration by discovery project teams utilizing computational enumeration and generative machine learning techniques that are trained and constructed to yield molecules that are synthetically feasible;

- **Large-Scale Molecule Evaluation**: the ability to scale our calculations of key drug properties to ultra-large idea sets of billions of molecules to enable more rapid and successful identification of high-quality drug candidate molecules; and

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- **Integrated Data Management and Visualization**: the ability to generate, access, and analyze the data derived from complex calculations integrated with assay data through a powerful and user-friendly graphical interface.

Recognition of our scientific advances has come through customer adoption, in citations of publications in peer reviewed journals and in the progress of our collaborative and proprietary drug discovery programs. For example, the initial paper describing our ligand-protein docking program, Glide, published in 2004 is one of the most cited papers in the history of the *Journal of Medicinal Chemistry*, a premier journal in its field. Glide continues to be broadly used as a hit-finding technology throughout the biopharmaceutical industry by our customers. We have made many similar scientific advances in fields including druggability assessment, affinity calculation, protein structure refinement, and molecule ideation and design. These advances were achieved by our team of hundreds of Ph.D.-level scientists and software engineers with extensive input from our Scientific Advisory Board, which includes thought leaders in computational chemistry, physics-based simulations, statistical mechanics, and machine learning.

Our computational platform is also applicable to new problems of interest and new fields of study. Since the underlying physics that drives a biologic to bind to its target is no different than the physics that drives a small drug molecule to bind to a protein, we have been able to successfully apply these our technologies to the discovery of biologics and we continually work to increase our platform's capabilities in biologics. Similarly, the physics underlying the properties of materials is no different than the physics underlying the properties of drug molecules. Therefore, we have successfully applied our computational platform to materials science applications, including in the fields of aerospace, energy, semiconductors, and electronic displays.

Software Business

Overview

We are the leading provider of computational software solutions for drug discovery to the biopharmaceutical industry. In 2022, 2023, all of the top 20 pharmaceutical companies, measured by 2021 2022 revenue, licensed our solutions, accounting for $43.2 million $71.8 million, or 32% 45%, of our software revenue in 2022. 2023. Additionally, in 2022, 2023, our software was used by researchers around the world at more than 1,720 1,760 academic institutions. The widespread adoption of our software is supported by an approximately 230-person 240-person global team of sales, technical, and scientific personnel. Our direct sales operations span across the United States, Europe, the European Union, United Kingdom, Japan, India, and South Korea, and we have sales distributors in other important markets, including China.

We have a diverse and large existing customer base, ranging from startup biotechnology companies to the largest global pharmaceutical companies as well as an increasing number of materials science customers. Our ten largest software customers represented approximately 32% 42% of our software revenue in 2022, 2023, including one customer that makes up 16% 14% of total software revenue. We continue to expand our customer base as we provide education and information to increase the awareness of the potential of our computational platform across different industries. As of December 31, 2022 December 31, 2023, we had 1,748 1,785 active customers, which we define as the number of customers who had an ACV of at least $1,000 in a given fiscal year.

We had 222, 227, and 190 customers with an ACV of at least $100,000 for the years ended December 31, 2023, 2022, and 2021, respectively. We believe there is a significant opportunity to expand the adoption of our platform within our growing customer base. For example, in November 2023, we entered into an expanded, three-year, software agreement with Eli Lilly and Company, or Lilly. The three-year agreement builds on the collaboration established in 2022, which is more fully described in "*—Collaboration Agreements*." The agreement provides Lilly with large-scale access to our full suite of technologies to enable and accelerate all stages of drug discovery, from target enablement and assessment of target druggability to hit discovery and lead optimization activities through development candidate identification. We provide advanced support to ensure full integration and optimization of the platform across Lilly's research sites.

Biopharmaceutical companies are increasingly adopting our software at a larger scale, and we anticipate that this scaling-up will drive future revenue growth. Our ability to expand within our customer base is demonstrated by the increasing number of our customers with an ACV over $100,000. We at higher thresholds, including customers with an ACV of at least $500,000 or $1.0 million. For the year ended December 31, 2023, we had 227, 190, 54 customers with an ACV of at least $500,000 compared to 52 for the year ended December 31, 2022. In addition, we had 27, 18, and 153 such 15 customers for the years ended December 31, 2022 December 31, 2023, 2021, 2022, and 2020, respectively. In addition, we had 18, 15, and 16 customers for the years ended December 31, 2022, 2021, and 2020, respectively, with an ACV of over at least $1.0 million. Furthermore, we also had four customers with an ACV in excess of at least $5.0 million for the year ended December 31, 2022 December 31, 2023, compared to four and two such customers for the year years ended December 31, 2021. December 31, 2022 and 2021, respectively. For the year ended December 31, 2022 December 31, 2023, our top

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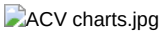
10 customers, measured by ACV, accounted for $46.5 million $51.0 million of our total ACV compared to $34.1 million $46.5 million for the year ended December 31, 2021 December 31, 2022. We believe biopharmaceutical companies are increasingly recognizing and appreciating the scientific and financial benefits of using our platform at scale.

Furthermore, we believe our sales and marketing approach and the quality of our software solutions help us cultivate long-standing result in long-term relationships and reoccurring sales. high retention with our largest customers. This is demonstrated by the length of our key relationships, with the average tenure of our 10 largest software customers in 2022 2023 being nearly 19 years. Furthermore, our ability to expand our customer relationships over time is exemplified by our ability to retain our customers with an ACV over of at least $100,000. For the year ended December 31, 2022 December 31, 2023, our year-over-year customer retention rate for our customers with an ACV over of at least $100,000 was 96% 92% and was 96% or higher for each of the previous nine fiscal years. Our customer retention rate for our customers with an ACV of at least $500,000 was 98% for the year ended December 31, 2023 and 100% for the year ended December 31, 2022. We believe the continued expansion of our high retention rate for our customer base coupled with our ability to expand our customers' use of our software will continue to drive revenue growth. The figure figures below shows show the different ways in which we are accelerating our growth.



See "Management's Discussion and Analysis of Financial Condition and Results of Operations—Key Factors Affecting Our Performance" for additional information regarding ACV and customer retention rate.

Our Software Solutions for Drug Discovery

We offer our customers a variety of software solutions that accelerate all stages of molecule discovery, design, and optimization pursuant to agreements with terms typically for one year. Our licenses give our customers the ability to execute a certain number of calculations across specified software solutions. Certain of our key software solutions are highlighted below, along with the particular stage of drug discovery in which they are employed.

- **Target Identification and Validation:** the identification and evaluation of a protein target that might be worthwhile to pursue as the subject of a drug discovery campaign.
  - **WaterMap** characterizes the locations and energetics of water molecules occupying the binding site of, or solvating, a target protein. From this analysis, one can infer the druggability of a protein,

as well as uncover opportunities to significantly increase binding affinity by exploiting the water structure in the binding site.

- **SiteMap** allows binding site identification and evaluation to help locate potential protein binding sites, including allosteric sites, and predict the approximate druggability of those sites.
- **GlideEM, PrimeX and Phenix/OPLS4** enable optimization of intermediate quality experimental protein structures to a quality sufficient to drive structure-based drug discovery.

- **Hit Discovery**: the identification of hit molecules.
  - **FEP+** is our free energy calculation software. In hit discovery, this software can be used to replace the central core of earlier known tight binding molecules to identify novel, highly potent molecules unavailable in library collections. Often these molecules have much higher binding affinity and have a better property profile than typical hit molecules. FEP+ can also be used to calculate absolute binding affinities, which enables the software to evaluate and triage diverse molecules sharing no common peripheral features in a hit discovery context.
  - **Glide** is our virtual screening program that is used to screen libraries of molecules to find hit molecules likely to bind a particular protein target in a specific conformation.
  - **WScore** is our next-generation virtual screening program that utilizes a more accurate and robust description of protein-ligand interaction solvation effects. This and other novel features enable WScore to more reliably find hit molecules for challenging protein targets when screening libraries of molecules.
  - **Shape** uses the three-dimensional structure and shape of earlier known hit molecules to find new hits when screening libraries of molecules.
  - **AutoQSAR/DeepChem DeepAutoQSAR** uses modern machine-learning methods trained to earlier known hit molecules to find novel hits when screening libraries of molecules.
  - **Induced Fit Docking IFD-MD** can computationally predict the binding mode of molecules to a binding site of a protein, including predicting how the conformation of the protein binding site may reorganize upon binding the molecule.
- **Hit to Lead and Lead Optimization:** Hit to lead is the stage at which small molecule hits are evaluated and undergo limited optimization to identify promising lead molecules. Lead optimization improves on the property profile of lead molecules by designing new analogs with improved potency, reduced off-target activities, and favorable physicochemical/metabolic properties.
  - **FEP+** is our free energy calculation software. In the hit to lead and lead optimization phases of drug discovery, FEP+ is used to predict the binding affinity of ligands to proteins with accuracy approaching that of physical experiments. It allows precise rank-ordering of large libraries of virtual molecules so that only the most potent molecules are synthesized in a program, which can save time and reduce cost. FEP+ can also be used to calculate the binding selectivity, solubility, and mutational resistance profiles of molecules, which are key properties for the optimization of bioavailability, toxicology, and efficacy.
  - **AutoQSAR/DeepChem DeepAutoQSAR** uses modern machine-learning methods to produce predictive quantitative structure-activity relationship, or QSAR, models. This allows more accurate methods, such as FEP+, to be applied at a much greater scale but with less accuracy to much larger sets of molecules than would otherwise be possible and enables predictive QSAR models of other properties to be developed and deployed on drug discovery projects.
  - **PathFinder AutoDesigner** is an enumeration tool that enables the rapid exploration of synthetically tractable ligands. When PathFinder AutoDesigner is deployed in conjunction with multiparameter optimization, machine learning, and FEP+ simulations, it provides a streamlined approach to create and evaluate large sets of synthetically tractable, lead-like, potent ligands.
- **Software Solutions Used Throughout the Drug Discovery Process:**
  - **LiveDesign** is our user-friendly enterprise informatics solution that enables interactive and collaborative molecule design, aggregation and sharing of data, and end-to-end discovery project coordination between chemists, modelers, and biologists.
  - **Maestro** is our user-friendly modeling environment, which allows expert modelers to utilize our advanced modeling solutions.

Our Software Solutions for Materials Science

We also sell software licenses to customers engaged in molecule design for industrial purposes. The software solutions for our materials science customers leverage much of the same technology as our software for biopharmaceutical

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companies. In addition, similar to traditional drug discovery efforts, traditional approaches to discovering new molecules in these fields also suffer from long timelines, and it can take as long as 10 to 20 years to bring new materials to the market. We are focused on leveraging our technology to transform the way new materials are discovered, and we believe that materials science industries are only beginning to recognize the potential of computational methods. We are continuing to build a team of subject matter experts to further drive adoption of our computational platform in each of the following areas in which we currently operate:

- **mobile electronics and displays**—organic electronics (OLED);
- **aerospace and defense**—polymers, composites;
- **microelectronics**—semiconductors, thin film processing;
- **oil and gas**—catalysis, reactivity;

- **energy**—alternative energy, batteries; and
- **consumer packaged goods**—soft matter, formulations.

As part of our ongoing efforts to further advance our software solutions for materials science applications, in June 2020, we entered into a three-year agreement with Gates Ventures, LLC, or Gates Ventures, to develop and apply atomistic simulations methods to improve battery performance. In August 2023, we extended the agreement with Gates Ventures for an additional three-year term at an increased scale. Furthermore, in March 2022, we entered into a three-year collaboration with Eonix LLC, or Eonix, to accelerate the discovery and design of materials for safer, energy dense lithium ion batteries. Under the terms of this collaboration, we received an equity stake in Eonix, and will be eligible to receive additional equity upon the successful completion of certain technical milestones.

Drug Discovery Business

Overview

We are using our computational platform in both our collaborative and proprietary drug discovery programs. The figure below illustrates the advantages in time, cost, and molecule quality of our computational drug design approach over traditional drug discovery approaches.

 Flow graphic.jpg

The figures below show the number of Our collaborative and partnered programs we have worked on in each given year, as well as the amount of generate drug discovery revenue, we have generated for the years presented. Collaborative programs on which our including upfront payments, research funding payments, and discovery work is completed, but for which we remain eligible for future and development milestones, and royalties are not included in have the figures below.

potential to produce additional milestone payments, option fees, and future royalties. As of December 31, 2022 December 31, 2023, we also had 19 active collaborative drug discovery programs. We define an aggregate active collaborative drug discovery program as a program that we are actively progressing for, or together with, a collaborator of 15 collaborative ours, or a program that our collaborator is progressing and partnered programs for which we are eligible to receive milestone payments, option fees, and/or future royalties. Furthermore, as of December 31, 2023, we had an aggregate of 12 collaborative programs for which we were eligible to receive future royalties on commercial sales, if any, of collaborative programs that receive marketing approval compared to 13 15 programs as of December 31, 2021 December 31, 2022.

 0001490978-23-000024sdgr-20221231_g5.jpg We track the aggregate number of collaborators which we have collaborated with, or partnered with, for drug discovery and development since 2018, and as of December 31, 2023, we have had 17 collaborators. The number of

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collaborators is a cumulative number and we only include those collaborations from which we have derived revenue since the fiscal year ended December 31, 2018.

While our drug discovery revenue-generating collaborations are an important component of our business, our strategy is also to invest in wholly-owned our proprietary drug discovery programs. programs including SGR-1505, SGR-2921 and SGR-3515, which we describe in more detail below under "—Our Proprietary Drug Discovery Business." We evaluate these our proprietary drug discovery programs individually to determine the advisability of entering into preclinical and clinical development ourselves to co-develop them with leading industry partners, entering into collaboration, collaborations, or out-licensing programs to optimize their development and clinical and commercial potential. As part of this strategy, we have entered into collaboration agreements with BMS, Zai Lab Limited, and Lilly, which are more fully described in "—Our Proprietary Drug Discovery Programs."

Our drug discovery revenue consists of revenue generated from collaborations through the combination of upfront payments, research funding payments, discovery and development milestones, and other fees, as well as any revenue generated from our pipeline of We intend to pursue additional proprietary drug discovery programs.

programs as existing programs advance through discovery and into development stages, internally or with partners, and we will continue evaluating new collaborative programs that fit our selection criteria and where the collaborator's particular expertise, resources or intellectual property has the potential to create substantial value.

Our Drug Discovery Collaborations

Over the last decade, leveraging our platform and expertise, we have steadily grown our developed a portfolio of collaborative programs. These We have entered into a number of collaborations with leading biopharmaceutical companies under which our collaborators are pursuing research in a number of therapeutics areas, including without limitation, various programs have provided us with significant income in oncology, antifungal diseases, fibrosis, inflammatory bowel disease, metabolic disease, autoimmune disease, immuno-oncology, cardiopulmonary disease and have the potential to produce additional milestone payments, option fees, and royalties in the future. These programs pursue the discovery and development of clinical candidates across a wide range of therapeutic target protein classes and indications. tuberculosis. Many of these programs are pursuing novel molecules for targets where a low-dose small molecule inhibitor or activator with optimal drug-like properties has been difficult to achieve or where selectivity for the target of interest has been difficult to achieve relative to other proteins. We have steadily grown developed our pipeline of collaborative programs by selectively entering into drug discovery collaborations with leading drug development and commercialization biopharmaceutical companies. Among the factors that we use to embark on collaborations are whether the targets are well-validated, have high therapeutic potential, and are amenable to the strengths of our computational platform, and whether or not the collaborator brings

complementary capabilities, all of which we believe contribute to an increased probability of success. Certain of these programs have provided us with significant income and have the potential to produce additional milestone payments, option fees, and royalties in the future.

Through access to the maximum potential scale of our computational platform and our drug discovery and software development teams, our collaborators receive the following key benefits:

- **Immediate utilization of our platform:** Ability to immediately and efficiently leverage the full benefits of our computational platform, without the need for training or ramp-up time, thereby enabling accelerated drug discovery.
- **Access to massive compute power**: Ability to run our computational software at scale, thereby avoiding the time and cost needed to build such computational infrastructure on their own.
- **Early access to cutting-edge functionality**: Real-time access to emerging solutions as they are being developed.
- **Target exclusivity**: Under our collaboration agreements, we agree to design drugs for a particular protein target or targets using our computational platform and know-how exclusively for the collaborator.

Collaboration Agreements

We have entered into a number of collaborations with biopharmaceutical companies under which our collaborators are pursuing research in a number of therapeutics areas, including without limitation, various programs in oncology, antifungal diseases, fibrosis, inflammatory bowel disease, metabolic disease, autoimmune disease, immuno-oncology, cardiopulmonary disease and tuberculosis. Our current collaborators include, but are not limited to, Ajax Therapeutics, Inc., BMS, Bright Angel Therapeutics Inc., Eli Lilly and Company, or Lilly, Morphic Holding, Inc., or Morphic, Nimbus Therapeutics, LLC, or Nimbus, Otsuka Pharmaceutical Co., Ltd., or Otsuka, Petra Pharma Corporation, Sanofi S.A., and Structure Therapeutics Inc. (formerly ShouTi, Inc.). All of the programs being pursued under these collaborations are fully owned, and controlled by each respective collaborator. Takeda. Our opportunity to receive potential revenues from any of the programs under these programs collaborations is generally limited to research funding payments, development, regulatory, and commercial milestones, and royalties on commercial sales, if any.

With the exception of our collaboration agreements with Takeda, BMS, Otsuka, and Lilly, which are described below, our collaborative agreements typically have the following characteristics:

Control/Ownership. All of the programs being pursued under these collaborations are fully owned and controlled by each respective collaborator. We are not responsible for advancing their preclinical or clinical development or their commercialization, if approved.

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Equity Stakes. We have received equity consideration in certain of our collaborators, and from time to time, we have also made additional equity investments in certain of these collaborators. As Unless otherwise noted, above, all of these programs are fully owned and controlled by each respective collaborator, with the exception of Faxian Therapeutics, LLC, which is a

50/50 joint venture. The following table presents our equity stakes on an issued and outstanding basis (unless otherwise noted) as of December 31, 2022 December 31, 2023:

Company	Ownership %
Ajax Therapeutics, Inc.	6.3%
Apollo, LLC(1)	7.9%
Bright Angel Therapeutics Inc.	33.3% 31.5%
Faxian Therapeutics, LLC (JV)(2)	50.0%
Lakshmi, LLC (3)	5.3%
Morphic Holding, Inc. (2) (4)	2.1% 1.7%
Nimbus Therapeutics, LLC (3) (5)	3.8% 1.5%
Structure Therapeutics Inc.(4) (6)	3.7% 2.9%

(1) Represents our equity in the entity, which entity holds the rights to any future payments received in connection with Gilead Sciences, Inc.'s acquisition of Nimbus' ACC inhibitor program. program, on a fully diluted basis.

(2) Represents a 50/50 joint venture.

(3) Represents our equity in the entity, which entity holds the rights to any future payments received in connection with Takeda's acquisition of Nimbus' TYK-2 inhibitor program, on a fully diluted basis.

(4) Based on the number of shares of common stock outstanding as of February 21, 2023 February 20, 2024, as reported on Morphic's Annual Report on Form 10-K for the annual period year ended December 31, 2022 December 31, 2023, as filed with the SEC on February 23, 2023 February 22, 2024.

(3) (5) On a fully diluted basis

(4) (6) Based on the number of ordinary shares outstanding as of December 31, 2022 October 31, 2023, as reported on Structure Therapeutics Inc.'s prospectus, Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2023, as filed with the SEC on February 6, 2023 November 17, 2023.

From time to time, we may also receive distributions on account of our equity stakes in our collaborators. For example, in February 2023, Nimbus announced the closing of the acquisition by Takeda Pharmaceuticals Company Limited, or Takeda, of Nimbus Lakshmi, Inc., a wholly-owned subsidiary of Nimbus, and its tyrosine kinase 2, or TYK2 program, which includes the TYK2 inhibitor, NDI-034858, which is being evaluated for the treatment of multiple immune-mediated diseases following positive results from the Phase 2b clinical trial in psoriasis. Following the closing of the acquisition, in February 2023, On February 13, 2023, April 6, 2023, and November 9, 2023, we received a cash distribution in the amount distributions of $111.3 million from Nimbus, , $35.8 million, and we expect $0.1 million, respectively, related to receive a second cash distribution in the amount of $36.0 million from Nimbus in the second quarter of 2023, for a total cash distribution of $147.3 million. Takeda acquisition.

Financial Rights. In addition to our equity stakes in certain of our collaborators, we also have rights to various payments on a collaborator-by-collaborator agreement basis including research funding payments, discovery, development, and commercial milestones, and potential royalties in the single-digit range. Under certain of our collaboration agreements, we are also eligible to receive a percentage of our collaborators' sublicense revenue.

Many of our collaborative programs are currently still in the discovery and preclinical development stages. Generally, the size of the payments we are eligible to receive from a collaborative program increases as the program advances. As a result of the broader validation of our platform, we intend to pursue an increasing number of wholly-owned drug discovery programs, and we will continue evaluating new collaborative programs that fit our selection criteria and where the collaborator's particular expertise, resources or intellectual property has the potential to create substantial value.

Importantly, our current collaboration agreements typically also contemplate additional program targets being added, allowing our collaborators to potentially increase the number of programs under our current collaboration agreements, subject to our pre-existing exclusivity obligations and interests.

However, because these collaborations are not under our control, we cannot predict whether or when we might achieve any event-based increases in research funding payments, milestone payments, royalty or other payments under these collaborations or estimate the full amount of such payments, and we may never receive any such payments. For a further discussion of the risks we face with respect to receipt of any of these payments, please refer to "Risk Factors—Risks Related to Drug Discovery—We may never realize a return on our investment of resources and cash in our drug discovery collaborations".

How We Work with Our Collaborators. Generally, our existing collaboration agreements provide that we agree to design drugs for a particular target or targets using our computational platform and know-how exclusively for the collaborator. The collaborator retains the intellectual property related to any molecules developed under the collaboration. Generally, our collaborators are not contractually required to provide us with, nor do we expect generally to receive, access to nonpublic information regarding key developments related to the advancement of these collaboration programs, such as clinical trial results, including safety and efficacy data, regulatory communications, or commercialization plans and

strategies. To the extent we do receive such information, our collaboration agreements generally require us to maintain the confidentiality of information we receive under the collaboration.

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In addition to the collaborations described above, we also have collaboration agreements with Takeda, BMS, Otsuka, and Lilly which are described below:

Takeda. We are advancing a program in collaboration with Takeda focusing on an oncology target. Under this collaboration, we conducted certain drug discovery research and pharmacology activities through the lead optimization stage, at which point Takeda exercised its option to obtain exclusive rights to such program, subject to continued collaboration towards a development candidate.

BMS. In November 2020, we entered into an exclusive, worldwide collaboration and license agreement with BMS pursuant to which we and BMS agreed to collaborate in the discovery, research and development of small molecule compounds for biological targets in the oncology, neurology and immunology therapeutic areas. After mutual agreement on the targets(s) of interest, the Schrödinger therapeutics group is responsible for the discovery of development candidates. Once a development candidate meeting specified criteria for a target has been identified, BMS will be solely responsible for the development, manufacturing and commercialization of such development candidate. The initial collaboration targets under our agreement with BMS included HIF-2 alpha and SOS1/KRAS, which were two of our proprietary programs. In November 2021, we and BMS mutually agreed to replace the HIF-2 alpha target with another precision oncology target. Following the replacement election, all rights to the HIF-2 alpha target program reverted to us. In September 2022, BMS elected not to proceed with further development of another target and all rights to this program reverted to us. In December 2022, we and BMS entered into an amendment to the agreement to include an additional target in neurology on terms similar to the original agreement. In September 2023, BMS elected not to proceed with further development of two related oncology programs and all rights to these programs reverted to us, which increased revenue recognition due to the accelerated completion of our obligations related to those programs. Under the terms of the agreement, as amended, we received a $55.0 million upfront payment from BMS in November 2020 and an additional upfront payment in December 2022. We are eligible to receive up to $1.5 billion in total milestones from BMS across the targets currently subject to the collaboration, of which we have received $25.0 million as of December 31, 2023, upon selection of a development candidate for the SOS1 program for the treatment of KRAS mutant tumors. BMS is now solely responsible for the further preclinical and clinical development, manufacturing and commercialization of such candidate at its own expense. We are also eligible to receive a tiered royalty on net sales of each product commercialized by BMS under the agreement ranging from mid-single digits to low-double digits, subject to certain specified reductions. See "—Collaboration Agreement with Bristol-Myers Squibb Company" for additional information relating to this agreement.

Under our collaboration with BMS, BMS is advancing a SOS1 protein-protein interaction inhibitor for the treatment of KRAS-driven cancers that we discovered. SOS1, or Son of sevenless-1, is involved in the activation and regulation of KRAS. Oncogenic mutant KRAS stimulates the growth of some of the most intractable tumors, such as lung, pancreatic, and colon cancer. Inhibition of SOS1 is considered a potential therapeutic strategy for the treatment of KRAS-driven cancers.

Lilly. In September 2022, we entered into a collaboration with Lilly, under which we are responsible for the discovery and optimization of small molecule compounds addressing an immunology target. Lilly will be responsible for the completion of preclinical development, clinical development and commercialization. Under the terms of the agreement, we received an upfront payment, and we are eligible to receive up to $425.0 million in discovery, development and commercial milestone payments. We are also eligible to receive low single- to low double-digit royalties on net sales of any products emerging from the collaboration in all markets.

Otsuka. In December 2022, we entered into a multi-part agreement with Otsuka, together with Otsuka's subsidiary Astex Pharmaceuticals, which includes a collaboration for the discovery and development of a program focused on an emerging central nervous system, or CNS, disease target. Under the collaboration, we are responsible for drug design through lead optimization and Otsuka will be responsible for all other drug discovery and clinical development activities. We received an upfront payment and will be eligible to receive discovery, development and regulatory milestones, as well as tiered royalties on net sales of any products emerging from the drug discovery collaboration in all markets.

Our Proprietary Drug Discovery Programs

In 2018, we began to develop a pipeline of wholly-owned proprietary drug discovery programs with the goal of using our platform to produce a portfolio of novel, high value therapeutics. Our initial programs were focused on discovering and developing inhibitors for targets in DNA damage response pathways and genetically defined cancers. Since then, we have expanded into other therapeutic areas, including in the areas of immunology and neurology. The FDA cleared our IND for SGR-1505 in June 2022. We recently initiated a Phase 1 clinical trial of SGR-1505 in patients with relapsed or refractory B-cell lymphomas and currently have clinical trial sites open for screening and enrollment, but we have not yet dosed any patients with SGR-1505. In addition, we continue to advance other wholly-owned programs through IND-enabling studies. We expect to submit an IND application to the FDA for SGR-2921 in the first half of 2023 and for SGR-3515 in 2024, subject to favorable data from IND-enabling studies. In addition, we plan to initiate a Phase 1 clinical trial of SGR-2921 in the second half of 2023, subject to receipt of regulatory clearance. Our strategy is to pursue an increasing a number of wholly-owned proprietary programs and strategically evaluate on a program-by-program basis advancing them into preclinical and clinical

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development ourselves, entering into collaborations to co-develop them with leading industry partners, or out-licensing them to maximize their clinical and commercial opportunities.

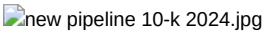
As part of this strategy, in November 2020, we entered into an exclusive, worldwide collaboration and license agreement with BMS pursuant to which we and BMS agreed to collaborate in the discovery, research and development of small molecule compounds for biological targets in the oncology, neurology and immunology therapeutic areas. The initial collaboration targets included HIF-2 alpha and SOS1/KRAS, which were two of our wholly-owned programs. In November 2021, we and BMS mutually agreed to replace the HIF-2 alpha target with another precision oncology target. Following the replacement election, all rights to the HIF-2 alpha target program reverted to us. In September 2022, BMS elected not to proceed with further development of another target and all rights to this program reverted to us. In December 2022, we and BMS entered into an amendment to the agreement to include an additional target in neurology on terms similar to the original agreement. Under the terms of the agreement, as amended, we received a $55.0 million upfront payment from BMS in November 2020 and an additional upfront payment in December 2022, and we are eligible to receive up to $2.7 billion in total milestones from BMS across all potential targets, as well as a tiered percentage royalty on net sales of each product commercialized by BMS ranging from mid-single digits to low-double digits, subject to certain specified reductions. We recently announced we are expecting the first program from this collaboration to advance to development candidate status. Following finalization of this advancement, we expect to recognize a drug discovery milestone associated with advancement of the program, which is projected in the first quarter of 2023. See "—Collaboration Agreement with Bristol-Myers Squibb Company" for additional information relating to this agreement.

In August 2021, we entered into a global discovery, development and commercialization collaboration with Zai Lab Limited focused on a novel program in oncology targeting DNA damage response. Under the terms of the agreement, we received an upfront payment, and if we elect to co-fund clinical development of a product candidate under the collaboration, we will be entitled to receive 50% of any profits from the commercialization of an approved therapeutic in the United States. We are also eligible to receive up to approximately $338.0 million in preclinical, clinical, regulatory and sales-based milestone payments from Zai Lab Limited for any product candidate developed under the collaboration, and we are entitled to receive tiered royalties on net sales outside the United States.

In September 2022, we entered into a collaboration with Lilly, under which we are responsible for the discovery and optimization of small molecule compounds addressing a specific target. Lilly will be responsible for the completion of preclinical development, clinical development and commercialization. Under the terms of the agreement, we received an upfront payment, and we are eligible to receive up to $425.0 million in discovery, development and commercial milestone payments. We are also eligible to receive low single- to low double-digit royalties on net sales of any products emerging from the collaboration in all markets.

In addition to the above, we are also advancing a program in collaboration with Takeda focusing on an oncology target. Under this collaboration, we conduct all drug discovery research and pharmacology activities through the development candidate stage, and Takeda has the option to acquire the program at either the lead optimization stage or development candidate stage and to develop and commercialize such product candidate from the program. We control the drug discovery process and retain all intellectual property rights to any product candidate that is discovered under the program until Takeda exercises its option to acquire the program.

The following is a summary of our proprietary drug discovery programs:



Our Approach to Target Selection

Our selection of targets is based on an extensive analysis of human targets and drug discovery programs. We analyze targets using automated methods at scale. The key steps we take in prioritizing programs involve:

- **Structural and modeling enablement**. We use our computational platform to analyze protein structure quality as well as druggability of binding sites across thousands of target proteins in parallel. For a subset of high-quality structures of interest, we confirm amenability to our computational platform.
- **Evaluation of therapeutic potential**. Our selection of targets is strongly influenced by the level of validation of the target, including analysis of human genetics and prior clinical data.
- **Identification of unsolved design challenges**. We determine whether there are property profile challenges that could be solved by the application of our computational platform and provide a clinically meaningful differentiated, novel, high value product opportunity.
- **Assessment of potential value of pathways and mechanisms.** We evaluate industry and commercial interest as well as the clinical utility with the aim of prioritizing programs with high commercial and therapeutic potential.

Using this comprehensive analysis, we have identified a large number of protein targets that we believe are amenable to our technology. We continue to evaluate a number of additional targets using this analysis methodology. analysis.

SGR-1505: Our MALT1 Inhibitor

We are advancing SGR-1505, our novel MALT1 inhibitor, for the treatment of patients with relapsed or refractory B-cell lymphomas. Constant activation of nuclear factor-kappa B, or NF-κB, a key signaling molecule in B cells, is a hallmark of several subtypes of lymphoma. MALT1 is a key mediator of the NF-κB signaling pathway, the main driver of a subset of B-cell lymphomas, and functions by forming a complex with CARMA1 (Caspase recruitment domain-containing protein 11 also known as CARD-containing MAGUK protein 1) and BCL10 (B-cell lymphoma/leukemia 10) to mediate antigen receptor-induced lymphocyte activation. MALT1 is considered a potential therapeutic target for several subtypes of non-Hodgkin's lymphomas.

lymphomas and leukemias.

Activated B-cell, or ABC, a subtype of diffuse large B-cell lymphoma, or ABC-DLBCL, is the most common type of aggressive non-Hodgkin's B-cell lymphoma. ABC-DLBCL is associated with a number of mutations that trigger a constitutively active NF-κB signaling pathway, which often is mediated by increased MALT1 protease activity. Among

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these mutations is a gain of function mutation or amplification of MALT1, which has also been identified in ABC-DLBCL patients.

Our program We utilized our physics-based software computational platform to enable the identification and advancement of multiple novel series of MALT1 inhibitors from hit finding to lead optimization. Combining multi-parameter optimization, FEP+, and machine learning, we were able to prioritize tight-binding compounds with drug-like properties, and identified multiple novel and distinct chemical series which showed strong anti-tumor activity, ultimately enabling us to select SGR-1505 as our development candidate in under two years.

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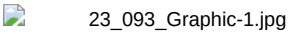
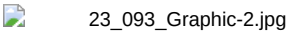
Preclinical Development of SGR-1505

As shown in the figures below, in preclinical studies, SGR-1505 showed anti-tumor activity in a MALT1 enzymatic assay and strong anti-proliferative effect in on cell viability in a Bruton's tyrosine kinase, or BTK, inhibitor resistant OCI-LY3 B-cell non-Hodgkin's lymphoma cell line, when compared to ibrutinib, a covalent BTK inhibitor.


23_093_Graphic-1.jpg

As shown in the figures below, in preclinical studies, SGR-1505 also demonstrated strong anti-tumor activities as a single agent in BTK inhibitor resistant OCI-LY3 cells and in BTK sensitive OCI-LY10 B-cell non-Hodgkin's lymphoma *in vivo* cell-line derived xenograft (CDX) models.


23_093_Graphic-2.jpg

TPGS = D-alpha-tocopheryl polyethylene glycol succinate, a solvent used in co-administration for drug dosing in animals; TID = three times a day dosing; SDD = spray dried dispersion; SEM = scanning electron microscopy, a method used to measure cell volume

In addition, as shown in the figures below, SGR-1505 demonstrated strong anti-tumor activities activity in combination with ibrutinib in the BTK inhibitor sensitive *in vivo* models, such as the ABC-DLBCL patient-derived xenograft (PDX) model LY2298 and the OCI-LY10 CDX model. Beyond ABC-DLBCL disease models, as shown in the figures below, SGR-1505 also demonstrated single agent anti-tumor activity in an *in vivo* mantle cell lymphoma REC-1 CDX model. SGR-1505 also

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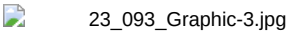
SGR-1505 also showed strong combination effects with venetoclax (an inhibitor of the anti-apoptotic protein B-cell lymphoma 2 (BCL2)) on inhibition of cancer cell viability in the OCI-LY10 CDX model.



QD = once per day dosing; BID = twice a day dosing

These data suggest that targeting MALT1 with SGR-1505 may expand therapeutic options for patients with selected B-cell lymphomas, such as ABC-DLBCL, with the possibility of expanding into other B-cell lymphomas such as mantle cell lymphoma. Furthermore, In addition, SGR-1505 demonstrated potential in combination with BTK inhibitors to overcome drug-induced resistance to BTK inhibitors in samples derived from patients with relapsed/refractory B-cell lymphomas.

In addition, in a series of biochemical and cell-based assays, we compared the potency of SGR-1505 against JNJ-6633, a MALT1 inhibitor advanced into Phase 1 clinical development by Johnson & Johnson, as measured by IC_{50} and IC_{90} values, which are measures of the potency of a compound in inhibiting specific biological functions. As shown in the graphic below, SGR-1505 demonstrated better potency in all assays tested.

All competitor data is internally generated by contract research organizations, using commercially available tools or synthesized by third-party research chemists using publicly available structure information.

Clinical Development of SGR-1505

Phase 1 Clinical Trial of SGR-1505 in Patients with Relapsed or Refractory B-cell Lymphomas

The FDA cleared the our IND for SGR-1505 in June 2022. Our We have initiated dosing in a Phase 1 clinical trial of SGR-1505, which is designed as an open-label, multi-center dose escalation clinical trial in patients with relapsed or refractory B-cell lymphomas. We anticipate enrolling up to 52 patients in the United States and Europe with confirmed mature B-cell malignancies lymphomas who are 18 years or older and have a life expectancy of equal to or greater than 12 weeks. SGR-1505 will be administered orally. The trial is designed to evaluate the safety, pharmacokinetics, pharmacodynamics, maximum tolerated dose and/or recommended dose of SGR-1505. Exploratory cohorts will evaluate additional pharmacokinetics, pharmacodynamics, preliminary anti-tumor activity and safety to establish the recommended dose, and a sub-study will also evaluate the effect of food and drug-drug interactions. As of February 14, 2024, all patients dosed in our Phase 1 clinical trial of SGR-1505 remained on study drug, and based on the adverse events reported to date, the safety and

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tolerability profile of SGR-1505 in patients appears to be consistent with the safety and tolerability profile observed in our Phase 1 clinical trial of SGR-1505 in healthy volunteers. We anticipate reporting initial data from the trial in late 2024 or 2025. The FDA recently granted orphan drug designation to SGR-1505 for the potential treatment of mantle cell lymphoma.

Phase 1 Clinical Trial of SGR-1505 in Healthy Volunteers

We also have recently initiated completed a Phase 1 clinical trial of SGR-1505 in 73 healthy volunteers to gather additional data, including data relating to the safety, tolerability, pharmacokinetics of SGR-1505, as well as the effect of food and drug-drug interactions. SGR-1505 was generally well tolerated with no drug-related serious adverse events or dose limiting toxicities observed. Adverse events were primarily Grade 1 and not treatment related. Bilirubin elevations occurred in 27% of healthy volunteers but were not deemed to be clinically relevant. These elevations were primarily Grade 1 and none were Grade 3 or 4. All bilirubin elevations reversed upon discontinuation of SGR-1505.

As shown in the figure below, we currently have observed greater than 90 percent inhibition of IL-2 secretion in an activated T cell whole blood assay in the cohort of healthy volunteers who received doses of SGR-1505 at 100 mg twice a day for 10 days (n=4), confirming target engagement and meeting the pharmacodynamic goals for the study. Inhibition of IL-2 secretion is a marker for target engagement and pathway modulation as it is tightly linked to MALT1 and the downstream NF-κB signaling.

QD = once a day dosing, Q12H = twice a day dosing

The data from the healthy volunteer trial support continued evaluation of SGR-1505 in our ongoing Phase 1 clinical trial sites open for screening and enrollment, but we have not yet dosed any in patients with SGR-1505. relapsed or refractory B-cell lymphomas.

SGR-2921: Our CDC7 Inhibitor

We are advancing SGR-2921, our novel CDC7 inhibitor, for the treatment of advanced solid and liquid tumors. relapsed or refractory acute myeloid leukemia or high risk myelodysplastic syndrome. CDC7 is a serine/threonine protein kinase that has been shown to play important roles in DNA replication initiation and in response to replication stress and DNA damage. CDC7 levels are high in certain tumors, including acute myeloid leukemia, or AML, and are thought to be linked to these cancer cells' proliferative capacity and ability to bypass normal DNA damage responses.

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CDC7 phosphorylates and activates the enzymes responsible for DNA replication initiation and proteins involved in replication stress response. Disruption of CDC7 activity in cancer cells leads to delayed DNA replication, increased replication stress, cell cycle abnormalities, and cell death.

The antiproliferative potential of CDC7 inhibition was validated by a third party in Phase 1 clinical trials of a CDC7 inhibitor in which responses were observed in patients, including those with duodenal, esophageal and cervical cancer. Prior to this positive result, existing CDC7 inhibitors were not sufficiently tight-binding (as measured by their affinity for the target), lacked selectivity, and demonstrated poor pharmacokinetic properties.

In order to maximize the anti-cancer activities of CDC7 inhibitors, very tight-binding inhibitors are required to achieve durable clinical impact as monotherapy or in the context of clinical combinations. Using our computational platform, we identified multiple tight-binding, selective, and novel CDC7 inhibitor series, and selected SGR-2921 as our development candidate.

Preclinical Development of SGR-2921

As shown in Tables 1 and 2 below, SGR-2921 demonstrated inhibition of recombinant human CDC7 in a biochemical kinase assay and in a biophysical assay, as measured by the average IC_{50} value, which is a measure of the

potency of a compound in inhibiting specific biological functions. Table 1 also shows that SGR-2921 demonstrated strong binding affinity to CDC7 with an average equilibrium dissociation constant, or KD, which is a measure of binding affinity between a protein and a binding partner, in the picomolar range. Further, SGR-2921 showed inhibition of the phosphorylation of the serine in position 53, or S53, of the protein MCM2, or pMCM2, a downstream substrate of CDC7, in COLO205, a colorectal cancer cell line, and in two acute myeloid leukemia cell lines, MV-4-11 and MOLM-16.

Table 1 Average IC_{50} of CDC7 Kinase Activity and Binding Affinity to CDC7 for SGR-2921

Compound	Average IC_{50} [nM]	KD [pM]
SGR-2921	0.0277±0.0054	10

Table 2 *In Vitro* Cell Based IC_{50} Values of pMCM2 (S53) by SGR-2921

Cell line	COLO205 [IC_{50} (nM)]	MV-4-11 [IC_{50} (nM)]	MOLM-16 [IC_{50} (nM)]
pMCM2 (S53)	1.19±0.41	0.92±0.40	1.62±0.52

SGR-2921 also showed anti proliferative activity *in vitro* in COLO205, MV-4-11 and MOLM-16 cell lines. Table 3 summarizes the average IC_{50} value from the individual assays.

Table 3 *In Vitro* Cell Based Viability IC_{50} Values of SGR-2921

Cell line	COLO205 [IC_{50} (nM)]	MV-4-11 [IC_{50} (nM)]	MOLM-16 [IC_{50} (nM)]
Cell viability	9.90±3.72	107.55±12.42	20.81±7.29

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Furthermore, as As shown in the figures below, SGR-2921 showed tumor growth inhibition resulting in tumor regression in the COLO205 colorectal cancer CDX model, which is a colorectal cancer cell line derived xenograft model, at doses that did not result in significant body weight loss. SGR-2921 also showed a dose-dependent increase in plasma drug concentration and a dose-dependent decrease in intratumoral pMCM2 in the COLO205 CDX model. In mouse models of acute myeloid leukemia, AML, SGR-2921 also showed strong anti-tumor activity at doses that were tolerated.

Business - STG - SGR-2921 Our CDC7 Inhibitor (under table 3).jpg

SGR-2921 also showed strong anti-proliferative activity in leukemia cell samples derived from AML patients that varied with respect to mutational status of driver mutations in key genes that are hallmarks of clinical AML, including TP53, FLT3, IDH, or NPM, as well as whether the patient samples were derived from a patient naive to treatment or were relapsed or refractory following previous AML treatments. We expect observed that the cell samples were generally sensitive to submit an SGR-2921, as measured by their IC_{50} values, and we observed that patient samples which contained TP53, or p53, mutations demonstrated particular sensitivity to SGR-2921.

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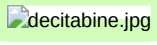
SGR-2921 showed potent anti-proliferative activity in AML patient-derived samples ex vivo independently of driver mutations, including in p53 mutated AML

Furthermore, as shown in the figures below, in preclinical models SGR-2921 showed single-agent activity and activity in combination with decitabine, which is a type of chemotherapy medication used for the treatment of myelodysplastic syndromes, in standard-of-care resistant models representing difficult-to-treat disease.

SGR-2921 combination treatment with decitabine in patient derived AML samples resulted in synergistic activity ex vivo, particularly in p53 mutant models



ZIP, or zero interaction potency, synergy score is a model used to capture the drug interaction relationships by comparing the change in the potency of the dose-response curves between individual drugs and their combinations

Clinical Development of SGR-2921

The FDA cleared our IND application to the FDA for SGR-2921 in July 2023. We have initiated dosing in our Phase 1 clinical trial of SGR-2921, which is designed as an open-label, multi-center dose escalation clinical trial in patients with relapsed or refractory acute myeloid leukemia or high-risk myelodysplastic syndrome. We anticipate enrolling up to 144 patients in the United States and Europe with a confirmed diagnosis of refractory acute myeloid leukemia or high-risk myelodysplastic syndrome who are 18 years or older and have a life expectancy equal to or greater than 8 weeks. SGR-2921 will be administered orally. To evaluate the effect of CYP3A4 inhibition on SGR-2921 exposure, patients will be enrolled into one of two staggered, parallel study treatment arms. Treatment Arm A will evaluate increasing dose levels of SGR-2921. Treatment Arm B will evaluate increasing dose levels of SGR-2921 with the concomitant administration of azole antifungals that are strong CYP3A4 inhibitors. Safety and tolerability must be demonstrated in treatment Arm A, at the first half two dose levels before initiating treatment Arm B.

Patients will be treated at increasing doses of 2023 SGR-2921 until all dose levels have been investigated or any dose level is found to exceed the maximum tolerated dose. A recommended phase 2 dose will be selected from one of the tolerable dose levels which will not exceed the maximum tolerated dose. The trial is designed to evaluate the safety and plan tolerability of SGR-2921 as a monotherapy and to initiate a identify the recommended phase 2 dose, including the maximum

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tolerated dose. Secondary and exploratory objectives of the trial include evaluating the pharmacokinetics and pharmacodynamics of SGR-2921 and investigating preliminary anti-tumor activity. We anticipate reporting initial data from the Phase 1 clinical trial of SGR-2921 in the second half of 2023, subject to receipt of regulatory clearance. late 2024 or 2025.

SGR-3515: Our WEE1 WEE1/MYT1 Inhibitor

We are advancing SGR-3515, our novel WEE1 WEE1/MYT1 inhibitor for the treatment of gynecological cancers and other solid tumors. WEE1 is a gatekeeper checkpoint kinase that prevents cellular progression through the cell cycle allowing time for DNA repair before cell division takes place. Inhibition of WEE1 allows for accumulation of DNA damage, triggering DNA breakage and apoptosis in tumor cells. Third party WEE1 inhibitors have shown clinically meaningful tumor regression with partial responses and stable disease in ovarian and uterine cancer in clinical trials. A third party WEE1 inhibitor is currently being studied in combinations with chemotherapy, PARP inhibitors, and immunotherapy. MYT1 inhibition is a potential cancer therapy as inhibition of MYT1 forces cells into premature unchecked mitosis resulting in cell death.

The biological functions of WEE1 and MYT1 are independent, yet partially overlapping. Emerging data suggests that MYT1 has a synthetic lethal relationship with WEE1 and high MYT1 protein levels are associated with resistance to WEE1 inhibitors. Concurrent loss of function of WEE1 and MYT1 confers selective vulnerability in cancer cells and could offer increased anti-tumor activity.

We identified a number of tight-binding, selective WEE1 WEE1/MYT1 inhibitor series using our computational platform and we have recently ultimately selected SGR-3515 as our development candidate. We believe SGR-3515's physicochemical properties make it well suited for combinations with DNA damage response inhibitors such as PARP and ATR inhibitors and other targeted therapies for the treatment of ovarian, colorectal, breast, and other solid tumors.

Prior Existing third party WEE1 inhibitors may have off-target effects resulting from inhibition of other kinases and proteins, some of which are liver enzymes responsible for elimination of drug and drug metabolites from the body,

potentially making dosing and combinations more challenging. As shown in the figure table below, we have benchmarked SGR-3515 against AZD1775, a WEE1 inhibitor from AstraZeneca, and Zn-C3, ZN-c3, a WEE1 inhibitor being advanced by Zentalis Pharmaceuticals, Inc., or Zentalis, and SGR-3515 demonstrated an improved kinase selectivity profile and we profile. We believe SGR-3515 has lower potential for drug-drug interaction, or DDI, liabilities associated with liver enzyme inactivation.

As shown in the figure below, SGR-3515 also showed better potency against WEE1 in cells measured by target engagement marker pCDC2 Y15. The selectivity of SGR-3515 was evaluated by profiling it at 1 uM across a panel of over 400 kinases. SGR-3515 demonstrated a more desirable selectivity profile compared to Zn-C3 and AZD1775.

SGR-3515 has also shown comparable or better effects on the viability of various tumor cells including in the A427 non-small cell lung cancer cell line and the OVCAR3 high grade serous ovarian cancer cell line compared to Zn-C3 AZD1775 and ADZ1775. ZN-c3 in our preclinical studies. SGR-3515 also demonstrated robust and sustainable anti-tumor activity *in vivo* in A427 and OVCAR3 tumor models. These effects and anti-tumor activity are As shown in the figure table below, with SGR-3515 demonstrating also showed better potency against WEE1 and MYT1 in cells measured by binding affinity and SGR-3515 demonstrated lower IC_{50} values in these models the A427 non-small cell lung cancer model as compared to Zn-C3 AZD1775 and AZD1775. ZN-c3.


Chart 2.jpg

All competitor data is internally generated by contract research organizations, using commercially available tools or synthesized by third-party research chemists using publicly available structure information.

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As shown in the figure below, in the A427 non-small cell lung cancer model, SGR-3515 maintained anti-tumor activity in an intermittent 3 days of dosing in a 2-week cycle (3 days on/11 days off) as compared to the anti-tumor activity observed with continuous daily dosing. Furthermore, when SGR-3515 was dosed intermittently, we observed recovery of red blood cell counts.


Chart 3.jpg

n=6 per group

We plan to submit an IND application to the FDA for SGR-3515 in the first half of 2024, subject to favorable data from IND-enabling studies. studies, and we plan to initiate a Phase 1 clinical trial of SGR-3515 by the end of 2024, subject to receipt of regulatory clearance.

SOS1/KRAS Inhibitor Program

In collaboration with BMS, we are developing a SOS1/KRAS protein-protein interaction inhibitor for the treatment of KRAS-driven cancers. SOS1, or Son of sevenless-1, is involved in the activation and regulation of KRAS. Oncogenic mutant KRAS stimulates the growth of some of the most intractable tumors, such as lung, pancreatic, and colon cancer. Strategies to disrupt the persistently active Ras pathway have focused on targeting Cys12 of the oncogenic mutant KRAS G12C with covalent inhibitors. Disruption of the SOS1/KRAS interaction has emerged as an alternative approach based on third party preclinical data.

Pursuant to our collaboration and license agreement with BMS, once we have discovered or identified a SOS1/KRAS protein-protein interaction inhibitor that meets specified, mutually agreed criteria (or upon BMS's selection), BMS will be solely responsible for the further preclinical and clinical development, manufacturing and commercialization of such candidate at its own expense. See "—Collaboration Agreement with Bristol-Myers Squibb Company" for additional information relating to this agreement.

LRRK2 Inhibitor Program *Discovery Programs*

We are developing also progressing a LRRK2 inhibitor number of other programs in the areas of oncology, immunology, and neurology and a number of undisclosed programs in multiple therapeutic areas. All of these programs are currently in the discovery stage, and we have not yet identified a development candidate for any of these programs. Our goal is to continue to advance these discovery-stage programs to enable at least one IND submission to the FDA in 2025. Our most advanced discovery-stage programs are identified below.

PRMT5-MTA. PRMT5-MTA inhibition has demonstrated clinical responses in both hematologic and solid tumors with improved safety versus PRMT5 inhibitors due to a synthetic lethal targeting of cancer cells with MTAP-deletions. We have identified selective, potent PRMT5-MTA inhibitors with potential applications in solid tumors, brain metastases and primary CNS tumors.

EGFR$_{C797S}$. EGFR inhibitors are first-line standard of care agents for advanced non-small cell lung cancer patients with activating EGFR mutations. We have identified multiple EGFR$_{C797S}$ inhibitors with potential to treat patients whose disease progressed following first-line treatment, potentially achieving deeper, more durable responses through new combination regimens.

NLRP3. NLRP3 is a validated target, and mutations in the NLRP3 gene are associated with a broad spectrum of Parkinson's disease. inflammatory and auto-immune diseases. We have identified structurally distinct, selective, NLRP3 inhibitors with anti-inflammatory activity in preclinical models, and we are continuing to optimize peripheral and brain-penetrant lead molecules.

LRRK2. LRRK2, a genetically validated target, is a large multifunctional kinase enzyme and mutations in the LRRK2 gene have been shown to be associated with the development of Parkinson's disease. In 2022, we generated cryo-electron microscopy structures of LRRK2, which have helped us to accelerate the identification of novel LRRK2 inhibitors. We expect to select a development candidate for this program in 2024.

Other and Future Programs

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We have identified a large number of protein targets that we believe are amenable to our computational platform, and now have a significant inventory of targets that we can potentially advance into discovery programs. The Schrödinger Therapeutics Group therapeutics group also intends to pursue targets with strong biological validation and therapeutic potential that currently lack protein structures of sufficient quality to permit the use of our computational platform for drug discovery. We are actively pursuing strategic alliances with collaborators, as well as progressing internal initiatives, that enable us to generate high-quality protein structures for these targets, which will enable us to initiate additional discovery efforts. For example, as part of these efforts, in 2020 we entered into strategic partnerships with Viva Biotech to access new x-ray crystal structures as well as with Thermo Fisher Scientific to obtain structures of protein complexes leveraging cryo-EM technology. Furthermore, in January 2022, we acquired XTAL BioStructures, Inc., a company

that provides structural biology services, including biophysical methods, protein production and purification, and X-ray crystallography, which we believe will augment have augmented our ability to produce high quality target structures for our proprietary drug discovery programs.

Our initial programs are were focused on discovering and developing inhibitors for targets in DNA damage response pathways and genetically defined cancers. Genomic instability of malignant cells leads to genetic mutations that can drive resistance to kinase inhibitors, creating the need for second and third generation drugs targeting the same disease. Our computational platform has been shown to be capable of predicting the impact that mutations in the kinase domain have on drug binding, potency, and drug sensitivity. Use of our platform to assess and evaluate the impact of clinical mutations on drug potency can be a powerful tool for drug discovery. We believe that deploying our platform at scale with access to genomic profiling data for patients puts us in a strong position to predict the impact of active-site resistance mutations with clinically relevant accuracy to optimize the design of molecules that are robust against common resistant mutations.

In addition to our programs highlighted above, we are also progressing a number of undisclosed programs in the areas of oncology, immunology, and neurology. We are pursuing certain of these programs on our own and certain of these programs are partnered with others pursuant to our collaboration agreements described above. All of these programs are currently in the discovery stage, and we have not yet identified a development candidate for any of these programs.

Technical Details of Our Key Technologies

Calculation of key drug properties using physics-based methods

Over the past several decades and with the concerted effort of hundreds of our scientists and software engineers, we have developed a physics-based computational platform that is capable of predicting the binding affinity of a drug molecule with a high degree of accuracy. The binding affinity of a drug molecule to a target protein is the key driving force of its in vivo efficacy. Specifically, when a drug binds to a target protein, the affinity with which it binds directly affects the extent to which it will modulate the function of the protein. Therefore, the ability to predict the binding affinity of a drug molecule to a target protein with a high degree of accuracy can significantly accelerate discovery of new efficacious medicines.

Accurately calculating the binding affinity of a drug molecule to a protein is enormously complex and requires a full characterization of all the physical contributions to the binding. These contributions include the deformation and/or rigidification of the small molecule into the bound conformation (ΔG(1) in the figure below) and the rigidification of the protein in the bound conformation (ΔG(2)), the removal of waters surrounding the molecule (ΔG(3)) and the removal of

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waters within the protein binding site (ΔG(4)), and finally the interactions achieved between the molecule and protein when binding to form the protein-molecule complex (ΔG(5)).

We have developed a solution to consistently assess all of these contributions to binding with a high degree of accuracy, building on a method called “free energy perturbation.” Free energy perturbation perturbs, or transforms, an initial molecule into another molecule of interest and evaluates how that transformation changes binding affinity to a particular protein target. Our solution for conducting these calculations is called FEP+. FEP+ is enabled by the following differentiated constituent technologies:

- classical molecular mechanics force field with broad coverage of drug-like molecules with a high degree of accuracy;
- an automated workflow allowing for force field coverage to be extended on the fly utilizing our accurate quantum mechanics software;
- computationally efficient molecular dynamics engine that runs on graphic processing units;
- efficient, enhanced sampling methods that allow the calculation to be converged with reduced simulation times;
- automated atom-mapping and interaction-mapping assignment; and
- ability to scale these calculations to leverage large cloud computing environments.

All of these constituent technologies are necessary to achieve the accuracy, scalability and applicability of our free energy perturbation implementation.

In a notable peer-reviewed study including approximately 3,000 molecules across approximately 90 distinct projects, FEP+ exhibited an error profile that indicates its affinity predictions approach the accuracy of running a laboratory experiment. FEP+ is also able to perform these computations more rapidly than experimental assays. Computational assessment of a molecule utilizing FEP+ requires only a few hours. In comparison, it often takes weeks to synthesize a drug-like molecule and assay its binding affinity for the target of interest in a laboratory. As a result, our FEP+ solution can be used to explore very large numbers of molecules to identify drug candidates much more rapidly than would be possible solely using experimental approaches.

In a peer-reviewed article published in collaboration with a large biopharmaceutical company, the ability of FEP+ to prioritize molecules for synthesis expected to bind more tightly than an initial hit was compared with several other industry-standard approaches. We found that FEP+ succeeded in prioritizing the synthesis of molecules with improved

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binding affinity with eight times greater success than any other technique tested. This evidence supports the essential role that FEP+ can play in advancing drug discovery programs.

Enumeration of extremely large libraries of molecules

We have developed methods to enumerate extremely large libraries of molecules of interest with our PathFinder AutoDesigner software solution, thereby allowing our software customers, our drug discovery collaborators, and the Schrödinger Therapeutics Group therapeutics group to explore a much larger portion of project-relevant chemical space than is possible through manual design. The chemical enumeration technology we have developed incorporates the most commonly used chemical reactions and can, in a fully automated fashion, computationally explore billions of alterations variations of a molecule of interest.

Scaling accurate physics-based calculations to extremely large libraries of molecules

Although FEP+ calculations have been shown to be accurate, it is not possible to apply these calculations to billions of molecules given the current availability of computing resources. To address this problem, we developed an approach that leverages the accuracy of FEP+, but allows for exploration of billions of molecules rapidly by leveraging machine learning. We have succeeded in integrating our physics-based molecule scoring with highly computationally efficient modern machine-learning methods. This combined approach allows us to apply our physics-based calculations to much larger sets of molecules than would otherwise be computationally tractable. This allows us to both increase the speed and likelihood of identifying clinically viable molecules.

Advances in deep learning, a type of machine learning, in the past several years have required very large data sets as input to train the model. In a drug discovery program, the experimental data is typically sparse and expensive to procure, which is particularly problematic given that relevant drug-like chemical space is effectively infinitely large, estimated to be 10^60 molecules. For this reason, we believe that it would be extremely difficult to realize competitive advantage in a drug discovery program by using a platform exclusively based on machine learning or deep learning. Instead, we have developed an approach to integrate physics-based and machine-learning based scoring methodologies that allows the machine learning model to interactively prioritize additional molecules for physics-based analyses, known as active learning. Active learning retains the computational efficiency of machine learning while also taking advantage of the accuracy of the physics-based method. One can evaluate the utility of any particular prediction method with regard to both its accuracy and its computational efficiency. Modern machine learning methods, such as deep learning, do provide a small improvement over conventional machine learning methods. However, for much of its history, conventional molecular simulations were much less computationally efficient than machine learning but not that much more accurate.

In developing FEP+, we were able to resolve deficiencies in early attempts to develop physics-based methods. FEP+ calculations are much more accurate than either conventional machine learning or modern machine learning when scoring molecules structurally distinct from the training set data. In addition, by integrating FEP+ with our machine learning implementation, which we refer to as AutoQSAR/DeepChem, DeepAutoQSAR, we developed a solution that we refer to as Active Learning FEP+. Active Learning FEP+ combines the accuracy of free energy calculations with the speed of machine learning calculations and can be used to explore up to billions of molecules within a day. By further combining this functionality with our ability to enumerate large sets of molecules provided by PathFinder and our ability to build and manage complex workflows utilizing cloud resources, we are able to deploy these capabilities at scale to advance projects.

Active Learning FEP+ is depicted in the figure below.

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FEP+ is used to build a local model for a large library of molecules instead of relying on experimental data to provide the training set for the machine learning model. That machine learning model is then used to filter the large library of molecules down to a number that is small enough to be able to prioritize with FEP+. The result is that we can prioritize one billion molecules in as little as a day, rather than one million days.

Rapid identification of novel active hit molecules suitable to initiate hit-to-lead and lead optimization efforts

Several hit-finding technologies we have developed are routinely used to identify active hit molecules to initiate small molecule drug discovery programs. In our hit-finding campaigns, we and our software customers typically utilize:

- modern machine learning models trained to the two-dimensional structures of known active molecules using our software solution, AutoQSAR/DeepChem; DeepAutoQSAR;
- shape-based methods trained to the known or computationally deduced three-dimensional bioactive conformations of known active molecules using our software solution, Shape;
- structure-based docking methods that evaluate the number and kind of interactions possible utilizing a static atomistic representation of the experimentally determined three-dimensional structure of the target protein receptor using our software solutions, Glide and WScore; and
- free energy calculations using our software solution FEP+, which provides a fully dynamic atomistic representation of the target protein receptor.

These four approaches are complementary to each other, and their integrated use has led to successful hit-finding campaigns for dozens of protein targets in our collaborative and proprietary drug discovery programs. There are also numerous reports in the literature and in patents of our software customers utilizing some combination of these approaches to identify hit molecules.

AutoQSAR/DeepChem is trained to find known active molecules in a search through a molecule library and operates solely on the two-dimensional structure of the molecule. From this training process, AutoQSAR/DeepChem learns to identify substructures in the molecules that may lead to activity. Then when applied to large libraries of molecules, these methods can identify molecules with measurable activity against the target protein. These methods are highly efficient and can be used to screen billions of molecules in less than one day. However, one significant limitation is that machine learning methods cannot extrapolate into chemical space that differs from the training set and therefore, this method tends to identify molecules similar to already known molecules.

Shape is used to identify molecules with a similar shape to known active molecules. It has been shown that molecules with similar three-dimensional shapes can have similar activities. While the hit rates and computational efficiencies of Shape and AutoQSAR/DeepChem are generally comparable, the hit molecules returned by these techniques

tend to be distinct and complementary rather than redundant. This allows results from Shape to augment the AutoQSAR/DeepChem results while still being efficient for screening a large library.

Glide and WScore use knowledge of three-dimensional structure of the binding site of the protein of interest, rather than the structure of active molecules, to evaluate the likelihood that a small molecule will bind to a protein target. Glide and WScore evaluate molecules based on the number and kind of contacts made between the molecule and protein. These methods are much more computationally expensive than AutoQSAR/DeepChem or Shape. However, they can be more readily applied to targets for which there is little or no earlier reported active molecules.

The fourth computational method we routinely use to identify hit molecules to initiate drug discovery programs is the FEP+ solution described above. When used in this context, FEP+ can be used to completely replace the core moiety of an earlier known molecule to yield a novel molecule with similar binding potency. This approach is much more computationally intensive than previous methods, but is also much more accurate. Utilizing this approach on multiple programs, we have been able to identify novel nanomolar or picomolar inhibitors in the first few months of project chemistry that have property profiles typical of molecules only observed in the later hit-to-lead phases of drug discovery. Our FEP+ solution also supports the calculation of absolute binding affinities, which enables the software to evaluate and triage diverse molecules sharing no common peripheral features in a hit discovery context.

Computational analysis of the energetic properties of water molecules occupying molecule binding sites in proteins

Subtle structural variations in molecules can have a profound impact on binding affinity to the protein target. The effects of these structural variations can be explained by a detailed examination of the thermodynamics of binding, including the free energy changes resulting from displacing water molecules in the binding site. Our computational software solution WaterMap maps the locations and energetic properties of water molecules that occupy protein binding sites, provides insight into the properties of the binding site, and quantitatively describes the water-mediated forces driving the binding of small molecules. Further, such an analysis can be used to assess the propensity of drug-like molecules to bind to the protein target with high affinity. WaterMap presents the computed results graphically for easy visualization of the water molecules occupying a binding site and their energetic properties. This makes interpretation of binding affinity data more intuitive and provides insights to possible design routes to improve potency and selectivity.

Competition

Software Business

The overall market for molecular discovery and design software is global, rapidly evolving, competitive, and subject to changing technology and shifting customer interests and priorities. The solutions and applications offered by our competitors vary in size, breadth, and scope.

We believe the principal competitive factors in our market include, among other things, accuracy of computations, level of customer satisfaction and functionality, ease of use, breadth and depth of solution and application functionality, brand awareness and reputation, modern and adaptive technology platform, integration, security, scalability and reliability of applications, total cost, ability to innovate and respond to customer needs rapidly, and ability to integrate with legacy enterprise infrastructures and third-party applications.

We believe that we compete favorably on the basis of these factors and that the effort and investment required to develop a computational, physics-based platform similar to ours will hinder new entrants that are unable to invest the necessary capital and time, and lack the breadth and depth of technical expertise required to develop competing technology. Our ability to remain competitive will largely depend on our ability to continue to improve our computational platform and demonstrate success in our drug discovery efforts.

Our software solutions face competition from competitors in the business of selling or providing simulation and modeling software to biopharmaceutical companies. These competitors include BIOVIA, a brand of Dassault Systèmes SE, or BIOVIA, Chemical Computing Group (US) Inc., Cresset Biomolecular Discovery Limited, Cadence Design Systems, Inc., Optibrium Limited, Cyrus Biotechnology, Inc., Molsoft LLC, Insilico Medicine, Inc., Iktos, XtalPi Inc., Inductive Bio, Inc., Chemaxon, PerkinElmer, Inc., and Simulations Plus, Inc.

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We also have competitors in materials science, such as BIOVIA and Materials Design, Inc., and in enterprise software for the life sciences, such as BIOVIA, Certara USA, Inc., ChemAxon, PerkinElmer, Chemaxon, Revvity, Inc., and Dotmatics, Inc. In some cases, these competitors are well-established providers of these solutions and have long-standing relationships with many of our current and potential customers, including large biopharmaceutical companies. In addition, there are academic consortia that develop physics-based simulation programs for life sciences and materials applications. In the life sciences industry, the most prominent academic simulation packages include AMBER, CHARMm, GROMACS, GROMOS, OpenMM, and OpenFF. These packages are primarily maintained and developed by graduate students and post-doctoral researchers, often without the intent of commercialization.

We also face competition from solutions that biopharmaceutical companies develop internally, smaller companies that offer products and services directed at more specific markets than we target, enabling these competitors to focus a greater proportion of their efforts and resources on these markets, as well as a large number markets. In addition, we are facing increasing competition from companies utilizing AI and other computational approaches for drug discovery. Some of companies that have been founded these competitors are involved in drug discovery themselves and/or with the goal of applying machine learning technologies to partners, and others develop software or other tools utilizing AI which can be used, directly or indirectly, in drug discovery.

Drug Discovery Business

The biopharmaceutical industry is characterized by rapidly advancing technologies, intense competition, and strong emphasis on proprietary and novel products and product candidates. While we believe that our computational platform, technology, knowledge, experience, and scientific resources provide us with competitive advantages, our drug discovery business faces potential competition from many sources, including major pharmaceutical companies, specialty biopharmaceutical companies, technology companies, academic institutions and government agencies, and public and private research institutions. Any product candidates that we or one of our collaborators successfully develop and commercialize will compete with existing therapies and new therapies that may become available in the future.

The key competitive factors affecting the success of the product candidates we develop, if approved, are likely to be their efficacy, safety, tolerability, convenience and price, the level of branded and generic competition and the availability of adequate reimbursement from third-party payors. If any of our product candidates are approved and successfully commercialized, it is likely that we will face increased competition as a result of other companies pursuing development of similar products or products that address similar diseases.

In particular, there is intense competition in the field of oncology, which is a focus of our drug discovery efforts. We have competitors both in the United States and internationally, including major multinational pharmaceutical companies, established biotechnology companies, specialty pharmaceutical companies, emerging and start-up companies, universities and other research institutions. We also compete with these organizations to recruit management, scientists and clinical development personnel, which could negatively affect our level of expertise and our ability to execute our business plan. We also face competition in finding and establishing clinical trial sites, enrolling subjects for clinical trials, accessing combination studies and recruiting credible principal investigators and advisors from key clinical disciplines and academic centers.

For example, with respect to our MALT1 inhibitor, SGR-1505, which we are advancing for the treatment of patients with relapsed or refractory B-cell lymphomas, we are aware of several MALT1 inhibitors in clinical development, including by Janssen Research and Development, LLC, a Johnson & Johnson company, AbbVie Inc., Ono Pharmaceutical Co., Ltd., HotSpot Therapeutics, and Zentalis Pharmaceuticals. Exelixis, Inc. In addition, we are also aware of other therapeutics, such as bi-specifics and CAR-Ts, both approved and in clinical development, for the treatment of B-cell lymphomas.

With respect to our CDC7 inhibitor, SGR-2921, which we are advancing for the treatment of relapsed or refractory acute myeloid leukemia or high-risk myelodysplastic syndrome, we are aware of several CDC7 inhibitors in Phase 1 clinical development, including by Chia Tai Tianqing Pharmaceutical Group Co., Ltd., Lin BioScience, Inc., and Cancer Research UK.

With respect to our WEE1/MYT1 inhibitor, SGR-3515, which we are advancing for the treatment of solid tumors, we are aware of several WEE1 inhibitors in clinical development, including by Zentalis, Debiopharm International SA, IMPACT Therapeutics, Inc., Shouyao Holdings Co. Ltd., BioCity Biopharma, and Aprea Therapeutics, Inc., as well as a MYT1 inhibitor in clinical development being advanced by Repare Therapeutics Inc.. Furthermore, we are also aware of a WEE1/MYT1 inhibitor in preclinical development being advanced by Acrivon Therapeutics, Inc.

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Large pharmaceutical and biotechnology companies, in particular, have extensive experience in building and accessing networks of expert investigators, designing and conducting clinical trials, obtaining regulatory approvals, and manufacturing and commercializing biotechnology products. These companies also have significantly greater research and development and marketing capabilities than we do and may also have products that have been approved or are in late stages of development, and collaborative arrangements in our target markets with leading companies and research institutions. Established pharmaceutical and biotechnology companies may also invest heavily to accelerate discovery and development of novel compounds or to in-license novel compounds that could make the product candidates that we develop obsolete. Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than our products. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies, as well as in acquiring technologies complementary to, or necessary for, our programs. As a result of all of these factors, our competitors may succeed in obtaining approval from the FDA or other comparable foreign regulatory authorities or in discovering, developing and commercializing products in our field before we do.

Collaboration Agreement with Bristol-Myers Squibb Company

In November 2020, we entered into an exclusive, worldwide collaboration and license agreement with BMS, pursuant to which we and BMS agreed to collaborate in the discovery, research and preclinical development of small molecule compounds (other than protein-degrader compounds) for biological targets in the oncology, neurology and immunology therapeutic areas.

Under the agreement, during a limited research term, we will be were initially responsible, at our own cost and expense, for the discovery of small molecule compounds (other than protein-degrader compounds) directed to five specified biological targets pursuant to a mutually agreed research plan for each such target. The initial collaboration targets included HIF-2 alpha and SOS1/KRAS, which were two of our early-stage programs. In November 2021, we and BMS mutually agreed to replace the HIF-2 alpha target with another precision oncology target. Following the replacement election, all rights to the HIF-2 alpha target program reverted to us. In September 2022, BMS elected not to proceed with further development of another target and all rights to this program reverted to us. In December 2022, we and BMS entered into an amendment to the agreement to include an additional target in neurology on terms similar to the original agreement. In September 2023, BMS elected not to proceed with further development of two related oncology programs and all rights to these programs reverted to us, which increased revenue recognition due to the accelerated completion of our obligations related to those programs.

Once we have discovered or identified a compound for a target that meets specified, mutually-agreed criteria or upon BMS selection of a compound as a development candidate, BMS will be solely responsible for the further preclinical and clinical development, manufacturing and commercialization of such candidate at its own cost and expense. The

research term will end on the earlier of four years or until we have delivered a candidate for each specified target. We may elect to extend the research term for a limited period of time to deliver a candidate for a given target. In addition, the parties may mutually agree to extend the initial research term for an additional year. Under the agreement, BMS has agreed to use commercially reasonable efforts to develop, seek and obtain regulatory approval for, and commercialize at least one product that contains a licensed compound for

each target in each of the United States, Japan and the European Union. The research component of the collaboration will be overseen by a joint steering committee comprised of an equal number of representatives from each of us and BMS. In addition to the initial specified targets, the parties have also agreed on a list of four reserved targets. BMS may replace one of the initial specified targets with a reserved target during a limited substitution period in the research term.

Pursuant to the agreement, for a given target, we have granted to BMS an exclusive license, with the right to grant sublicenses, under certain patent rights, know-how and materials controlled by us to clinically develop, manufacture, use, sell, offer for sale, export and import and otherwise exploit, and have others do the same, any compound, molecule or product for such target throughout the world.

Under the terms of the agreement, BMS paid us an initial upfront fee payment of $55.0 million, and we received an additional upfront fee payment in connection with the amendment in December 2022. We are also entitled to receive up to $2.7 billion $1.5 billion in total milestones milestone payments across all the potential targets. targets currently subject to the collaboration. Such milestones consist of up to $585.0 million in total milestones per oncology target, including $360.0 million in the aggregate for certain specified research, development and regulatory milestones and $225.0 million in the aggregate for certain specified commercial milestones, as well as up to $489.0 million in total milestones per neurology and immunology target,

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including $264.0 million in the aggregate for certain specified research, development and regulatory milestones and $225.0 million in the aggregate for certain specified commercial milestones. With respect to the additional neurology target we and BMS added pursuant to the December 2022 amendment, we are entitled to similar research, development, and regulatory milestones and commercial milestones for such target as under the original agreement. agreement, which are included in the totals above.

As of December 31, 2023, we received a milestone payment of $25.0 million from BMS upon selection of a development candidate for the SOS1 program for the treatment of KRAS mutant tumors. BMS is now solely responsible for the further preclinical and clinical development, manufacturing and commercialization of such candidate at its own expense.

We are also entitled to a tiered percentage royalty on annual global net sales of licensed products ranging from mid-single digits to low-double digits, subject to certain specified reductions. Royalties are payable by BMS on a licensed product-by-licensed product and country-by-country basis until the later of the expiration of the last valid claim of certain specified patent rights covering the licensed product in such country, expiration of all applicable regulatory exclusivities in such country for such licensed product and the tenth anniversary of the first commercial sale of such licensed product in such country.

The agreement excludes any activities relating to protein-degrader compounds. However, under the terms of the agreement, for a limited period of time after the execution of the agreement, we and BMS agreed to negotiate a separate definitive agreement pursuant to which we will agree to license to BMS the right to conduct research, development and commercialization activities with respect to degrader compounds for the targets under the agreement. In August 2021, we and BMS entered into a definitive agreement to discover, develop and commercialize bifunctional protein degraders consistent with the terms and conditions described in the initial collaboration agreement.

On a target-by-target basis, during the term of the agreement for a given target, we are prohibited from clinically developing or commercializing, ourselves or with a third party, any nucleic acid, antibody, biologic, compound, small molecule or other molecule, or any product that contains the foregoing, that specifically modulates as its primary mechanism of action such target, or is designed to specifically modulate such target. Such prohibition encompasses both the initial specified targets listed as of the effective date of the agreement and those targets on the reserved target list for the limited substitution period.

Unless earlier terminated, the agreement will expire on a licensed product-by-licensed product and country-by-country basis on the expiration of the applicable royalty term for such licensed product in such country and in its entirety upon expiration of the last royalty term for the last licensed product. Either party may terminate the agreement earlier upon an uncured material breach of the agreement by the other party on a target-by-target basis, or upon the occurrence of certain events of insolvency of the other party.

Additionally, BMS may terminate the agreement for any or no reason, in its entirety or on a target-by-target basis, upon specified written notice to us. BMS may also terminate the agreement on a target-by-target basis for safety reasons. We may terminate the agreement on a target-by-target basis to the extent BMS commences or participates in challenging certain patents licensed by us to BMS under the agreement.

In the event that BMS terminates the agreement at will, or if we terminate for a breach, insolvency or patent challenge by BMS, we are entitled to certain reversionary rights with respect to certain compounds and products for the applicable terminated target(s).

In the event that BMS has the right to terminate the agreement, in whole or with respect to a particular target, upon our uncured material breach or an event of insolvency with respect to us, then in lieu of so terminating, BMS has the right to elect to the have the agreement continue in full force and effect; provided that all royalties and milestones thereafter payable by BMS to us with respect to such applicable target(s) shall be reduced by 50%.

License Agreements with Columbia University

We have entered into several license agreements with Columbia University, or the Columbia License Agreements. The Columbia License Agreements establish our rights and obligations with respect to certain patents, software code, technology, and improvements thereto that we license from Columbia University and that are used in, and integrated into, our software solutions, and our physics-based computational platform. Our rights and obligations under, and the terms and

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conditions of, the Columbia License Agreements that we consider material to the operation of our business are described more fully below.

On November 1, 2008, we entered into an amendment, or the Royalty Amendment, to certain Columbia License Agreements, including each of the agreements described below. The Royalty Amendment simplified the royalties payable under each agreement on gross revenues generated from the use of any product which contains any code or software, or is covered by any patent, that we license from Columbia University, or a Licensed Product, in connection with a services agreement. We also pay royalties under the Columbia License Agreements on gross revenues generated from the sale, licensing or renting of our Licensed Products, which we calculate on a product-by-product basis. In the event that one or more Licensed Products are sold together with other products for a single aggregate license fee, we have agreed to pay to Columbia University the applicable royalty on the gross revenues attributable to each Licensed Product based on the relative list prices of each product covered by such license fee.

For a description of the royalties payable by us to Columbia University in connection with our services agreements, see "—Services Royalty Amendment" below.

PS-GVB License Agreement

On May 5, 1994, we entered into a license agreement, or the 1994 Columbia Agreement, with Columbia University, which was amended on September 9, 2004 and November 1, 2008. The technology licensed under the 1994 Columbia Agreement is incorporated into our Jaguar quantum mechanical program, which we market and distribute as part of our physics-based computational platform. The 1994 Columbia Agreement grants us a worldwide, exclusive, license to the software code developed by Columbia University and incorporated into the electronic structure software program PS-GVB v1.0, or the PS-GVB Code, and all improvement to the PS-GVB v1.0 software program and PS-GVB Code developed by Columbia University, or the PS-GVB Improvements, including all PS-GVB Code and PS-GVB Improvements that are incorporated into any new products, new releases, and new versions related to the software, or the New PS-GVB Module Code, in each case, to reproduce, use, execute, copy, operate, sublicense, and distribute in connection with the marketing and sale of our products and services, to develop improvements thereto, and to conduct research and backup disaster recovery. We may only sublicense the PS-GVB Code, the PS-GVB Improvements, and the New PS-GVB Module Code, or the Licensed PS-GVB Software, to the extent they are incorporated into a product that is sold directly by us or that is distributed on our behalf. Under the 1994 Columbia Agreement, Columbia University retains the right to conduct, and to permit other academic and non-profit research institutions to conduct, research using the Licensed PS-GVB Software.

As consideration for entering into the 1994 Columbia Agreement, we have agreed to pay royalties to Columbia University in the low-single digit to low-double digit percentages based upon the contribution of Columbia University generated code to the applicable PS-GVB v1.0 software program on our, and our affiliates', gross revenues from the sale, licensing, or renting of the PS-GVB v1.0 software program, including any improvements and modifications thereto, regardless of whether such improvement or modification is marketed as a new version, new release, or new product, excluding any sales to Columbia University and any revenue generated under services agreements.

The 1994 Columbia Agreement and the licenses granted thereunder may be terminated by us or Columbia University only upon the other party's material breach of the agreement and such party's failure to cure such breach. Upon

termination, any third party that has licensed the Licensed PS-GVB Software from us will retain the right to use such software, and we will have the perpetual right to continue to provide support to any such third parties in connection with their use of such software.

Fast Multipole RESPA License Agreement

On July 15, 1998, we entered into a license agreement, or the 1998 Columbia Agreement, with Columbia University, which was amended on September 4, 2004, and November 1, 2008. The 1998 Columbia Agreement grants us a worldwide, non-exclusive, license to the Fast Multipole RESPA code developed at Columbia University, or the RESPA Code, which was incorporated into the IMPACT software program used in our Glide ligand-protein docking program, PrimeX protein modelling program, QSite QM/MM program, and Combglide automated library generation program, and all improvements to the IMPACT software program, including any new versions and new releases thereof, that are developed by Columbia University, or the IMPACT Improvements, in each case, to reproduce, use, execute, copy, compile, operate, sublicense, and distribute in connection with the marketing and sale of our products and services, to develop improvements thereto, and to conduct research and backup disaster recovery. We may sublicense the RESPA Code

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and the IMPACT Improvements, or the Licensed IMPACT Software, to the extent it is incorporated into a product that is sold directly by us or that is distributed on our behalf. Under the 1998 Columbia Agreement, Columbia University retains the right to conduct, and to permit other academic and non-profit research institutions to conduct, research using the Licensed IMPACT Software.

As consideration for entering into the 1998 Columbia Agreement, we have agreed to pay royalties to Columbia University in the low-single digit to low-double digit percentages based upon the contribution of Columbia University generated code to the applicable IMPACT software program on our, and our affiliates', gross revenues from the sale, licensing, or renting of the IMPACT software program, including any improvements and modifications thereto and any new versions and new releases thereof, excluding any sales to Columbia University and revenue generated under services agreements.

The 1998 Columbia Agreement and the licenses granted thereunder may be terminated by us or Columbia University only upon the other party's material breach of the agreement and such party's failure to cure such breach. Upon termination, any third party that has licensed software from us subject to the 1998 Columbia Agreement will retain the right to use such software, and we will have the perpetual right to continue to provide support to any such third parties in connection with their use of such software.

Protein Folding License Agreement

In September 2001, we entered into a license agreement, or the 2001 Columbia Agreement, with Columbia University, which was amended on September 9, 2004 and November 1, 2008. The technology licensed under the 2001 Columbia Agreement is incorporated into our Prime protein modelling program, which we market and distribute as part

of our physics-based computational platform. The 2001 Columbia Agreement grants us a worldwide, exclusive license to the protein folding code developed by Columbia University, or the Folding Code; all improvements to the Folding Code and to any of our products, software, or code that incorporates any part of the Folding Code, including any improvements thereto and new versions or new releases thereof, that are developed by Columbia University, or the Folding Code Improvements; and the issued patent covering the Folding Code, or the Folding Code Patent, in each case, to reproduce, use, execute, copy, compile, operate, sublicense, and distribute in connection with the marketing and sale of our products and services, to develop improvements thereto, and to conduct research and backup disaster recovery. We may sublicense the Folding Code, the Folding Code Improvements and the Folding Code Patent, or the Licensed Folding Code Software, to the extent it is incorporated into a product that is sold directly by us or that is distributed on our behalf. Under the 2001 Columbia Agreement, Columbia University retains the right to conduct, and to permit other academic and non-profit research institutions to conduct, research using the Licensed Folding Code Software.

As consideration for entering into the 2001 Columbia Agreement, we paid Columbia University a one-time, nominal license fee. In addition, we have paid royalties to Columbia University in low-single digit to low-double digit percentages based upon the contribution of Columbia University generated code to the applicable product, software program, or code on our, and our affiliates', gross revenues from the sale, licensing, or renting of any commercial product, software program, or code incorporating the Licensed Folding Code Software, excluding any sales to Columbia University and revenues generated under services agreements. Our obligation to pay any royalty under the 2001 Columbia Agreement, including any royalty paid pursuant to the Royalty Amendment, terminated with the expiration of the last to expire patent licensed under the 2001 Columbia Agreement in January 2014.

The 2001 Columbia Agreement and the licenses granted thereunder may be terminated by Columbia University only upon our material breach of the agreement and our failure to cure such breach. Upon termination, any third party that has licensed software from us subject to the 2001 Columbia Agreement will retain the right to use such software, and we will have the perpetual right to continue to provide support to any such third parties in connection with their use of such software.

PLOP License Agreement

On June 19, 2003, we entered into a license agreement, or the 2003 Columbia Agreement, with Columbia University, which was amended on November 1, 2008. The technology licensed under the 2003 Columbia Agreement is incorporated into our Prime and PrimeX protein modelling programs and our Membrane Permeability model, which we market and distribute as part of our physics-based computational platform. The 2003 Columbia Agreement grants us a worldwide, exclusive license to the protein local optimization program software code, or the PLOP Code, developed at Columbia University and the University of California and all software code comprising improvements to the PLOP Code

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that are developed by Columbia University or the University of California, or the PLOP Improvements, in each case, to reproduce, use, execute, copy, compile, operate, sublicense, and distribute in connection with the marketing and sale of our products and services, to develop improvements thereto, and to conduct research and backup disaster recovery. Pursuant to an interinstitutional agreement between Columbia University and the University of California, the University of California granted Columbia University the sole right to license the PLOP Code and PLOP Improvements and has agreed not to license the PLOP Code or PLOP Improvements to any third party for as long as the interinstitutional agreement remains in effect. We may sublicense the PLOP Code and PLOP Improvements to the extent they are incorporated into a product that is sold directly by us or that is distributed on our behalf. We are restricted from distributing the PLOP Code and PLOP Improvements source code without the prior written consent of Columbia University.

Columbia University and the University of California retain the right to use, and to permit other academic and non-profit research institutions to use, the PLOP Code and PLOP Improvements for teaching and academic research purposes.

As consideration for entering into the 2003 Columbia Agreement, we paid Columbia University a one-time, nominal license fee. In addition, we have agreed to pay royalties to Columbia University in low-single digit to low-double digit percentages based upon the contribution of Columbia University generated code to the applicable product, software program, or code on our, and our affiliates', gross revenues from the sale, licensing, leasing, or renting any commercial product, software program, or code incorporating the PLOP Code or any PLOP Improvements, excluding any sales to Columbia University or the University of California and revenues generated under services agreements. Our obligation to pay any royalty under the 2003 Columbia Agreement, including any royalty paid pursuant to the Royalty Amendment, will terminate expired pursuant to its terms on June 19, 2023.

Columbia University is responsible for the copyright registration of the PLOP Code and PLOP Improvements. We are responsible for paying all reasonable copyright registration and attorney fees in connection with such copyright registrations.

The 2003 Columbia Agreement and the licenses granted thereunder may be terminated by us or Columbia University only upon the other party's material breach of the agreement and such party's failure to cure such breach. Upon termination, any third party that has licensed software from us subject to the 2003 Columbia Agreement will retain the right to use such software, and we will have the perpetual right to continue to provide support to any such third parties in connection with their use of such software.

Water Site Analysis License

On May 27, 2008, we entered into a software and patent license agreement, or the 2008 Columbia Agreement, with Columbia University, which was amended on November 1, 2008. The 2008 Columbia Agreement grants us a worldwide license, exclusive in the field of computational chemistry software and related services, to (a) certain software that implements the water site analysis method, or the Water Site Software; (b) all patent rights covering the Water Site Software, or the Water Site Patents; and (c) any products that incorporate or include the Water Site Software, or that is covered by the Water Site Patents, or the Water Site Products, in each case, to reproduce, modify, distribute, and perform and display in connection with the development, marketing, and sale of our products and services, to conduct research using the Water Site Software, and to conduct backup disaster recovery. Our Water Site Products include our WaterMap Core program, which we market and distribute as part of our physics-based computational platform. We are restricted from distributing the Water Site Software source code without the prior written consent of Columbia University. Under the 2008 Columbia Agreement, Columbia University retains the right to use, and to permit other entities and individuals to use, the Water Site Software and Water Site Patents for academic and non-commercial educational purposes in the field of computational chemistry software and related services.

As consideration for entering into the 2008 Columbia Agreement, we paid Columbia University a one-time, nominal license fee. In addition, we have agreed to pay royalties to Columbia University in low-double digit percentages on our, and our affiliates', gross revenues from the sale, licensing, leasing, or renting of any Water Site Product, excluding any sales to Columbia University and revenues generated under services agreement. The royalties under the 2008 Columbia Agreement are paid on a product-by-product basis and vary based on whether or not the gross revenues are generated in countries of manufacture or sale in which the Water Site Product is covered by a Water Site Patent. In the event that there are multiple royalties payable on a single product, we are required to (i) pay the higher of the two royalties, if there are no more than two royalties payable on the particular Water Site Product or (ii) negotiate in good faith with Columbia University on a single royalty, if there are more than two royalties payable on the particular Water Site Product.

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In the event that we take action against Columbia University with respect to the validity or enforceability of any Water Site Patents, excluding any defensive actions or claims, the royalties paid under the 2008 Columbia Agreement will increase by a specified amount. Our obligation to pay any royalty under the 2008 Columbia Agreement, including any royalty paid pursuant to the Royalty Amendment, will terminate on May 27, 2028.

Columbia University is responsible for the prosecution and maintenance of the Water Site Patents in the jurisdictions that we specify. If we decide to discontinue the prosecution or maintenance of any Water Site Patent in any jurisdiction, but Columbia University objects to such discontinuation, our license to use such Water Site Patent will terminate in that jurisdiction; provided that, if we are using the Water Site Patent or Water Site Software in the jurisdiction at issue, Columbia University is obligated to discuss in good faith whether the licenses should instead be non-exclusive. Columbia University is also responsible for the enforcement of the Water Site Patent at its own expense and in its sole judgment; provided that, if we provide Columbia University with evidence of infringement of a Water Site Patent by a third party, and Columbia University fails to take appropriate enforcement action, we may initiate legal proceedings against the alleged infringer. We are responsible for reimbursing Columbia University for their reasonable expenses in connection with prosecuting and maintaining the Water Site Patents.

Unless terminated earlier, the 2008 Columbia Agreement will expire on a product by product and country by country basis upon the later of (i) the expiration of the last issued Water Site Patent, (ii) fifteen years from the date of the first commercial sale of a Water Site Product in a given country, and (iii) the expiration of the Water Site Software copyright. Columbia University may terminate the 2008 Columbia Agreement if we fail to cure a material breach, become subject to a voluntary or involuntary petition for bankruptcy or any other proceeding relating to insolvency, receivership or liquidation, or initiate any proceeding or assert any claim challenging the validity or enforceability of the Water Site Patents. Upon termination, any third party that has licensed a Water Site Product from us will retain the right to use such product, subject to the terms of their existing license agreement with us, and we will have the right to continue to provide support to any such third parties for the duration of their license agreement.

Services Royalty Amendment

On November 1, 2008, we entered into the Royalty Amendment with Columbia University, which amended and simplified our royalty obligations under each of the Columbia License Agreements described in each of the foregoing sections. Pursuant to the Royalty Amendment, we have agreed to pay royalties to Columbia University in mid-single digit percentages on the service fees generated from services (excluding certain gross revenue, including revenue generated under agreements with Columbia University) that we, or our affiliates, perform using one or more Licensed Products under an agreement with a third party. Upon termination of any of the Columbia License Agreements for any reason other than our material breach, we will have the right to continue to use the Licensed Products to provide services under existing third-party service agreements, until the expiration or termination of such agreements.

Intellectual Property

We strive to protect and enhance the proprietary technology, inventions, and improvements that are commercially important to the development of our business, including by seeking, maintaining, and defending patent rights, whether developed internally or jointly, or licensed from third parties. We also rely on trade secrets, know-how, continuing technological innovation, collaboration opportunities, and in-licensing opportunities to develop, strengthen, and maintain our proprietary position in our field.

It is important to our future commercial success to obtain and maintain patent and other proprietary protection for commercially important technology, inventions, and know-how related to our business; defend and enforce our intellectual property rights, in particular our patent, trademark, and copyright rights; preserve the confidentiality of our trade secrets; and operate without infringing, misappropriating, or violating the valid and enforceable patents and proprietary rights of third parties. Our ability to stop third parties from making, using, selling, offering to sell, or importing any products we develop may depend on the extent to which we have rights under valid and enforceable patents or trade secrets that cover these activities.

The patent positions of companies like ours are generally uncertain and can involve complex legal, scientific, and factual issues. We cannot predict whether the patent applications we are currently pursuing will issue as patents in any particular jurisdiction or whether the claims of any issued patents will provide sufficient proprietary protection from competitors. We also cannot ensure that patents will issue with respect to any patent applications that we or our licensors may file in the future, nor can we ensure that any of our owned or licensed patents or future patents will be commercially

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useful in protecting our software, technology, computational platform, and any product candidates we develop. In addition, the coverage claimed in a patent application may be significantly reduced before a patent is issued, and its scope can be reinterpreted and even challenged after issuance. As a result, we cannot guarantee that any products we develop will be protected or remain protectable by enforceable patents. Moreover, any patents that we hold or may hold may be challenged, circumvented or invalidated by third parties. See “Risk Factors—Risks Related to Our Intellectual Property” for a more comprehensive description of risks related to our intellectual property.

Our strategy is to file patent applications directed to our key software and our key programs in an effort to secure our intellectual property positions vis-a-vis this software and these programs. The patent portfolio for our software business includes at least 12 published patent families. As of February 6, 2023 January 31, 2024, we owned or held exclusive license rights to approximately 37 40 patents and patent applications, including at least 12 14 issued or allowed U.S. cases, five pending U.S. non-provisional patent applications, 11 15 issued or allowed non-U.S. cases, including six seven granted European patents which have been validated among multiple individual European Patent Convention nations and five eight non-European patents, and nine six pending foreign patent applications relating to our computational platform. While we believe that the specific and generic claims contained in our wholly-owned and licensed pending U.S. and non-U.S. applications provide protection for various aspects of our computational platform, third parties may nevertheless challenge such claims. Any patents that are issued or that may issue from these families are expected to expire between 2026 and 2038, absent any adjustments or extensions.

As of February 6, 2023 January 31, 2024, there were seven approximately 10 published patent families related to our proprietary drug discovery business, and several of our drug discovery collaborators have filed patent applications related to our collaborations that include employees of ours as inventors, including over 100 compound patents and patent applications since 2010. We do not own any intellectual property rights related to these inventions. As of February 6, 2023 January 31, 2024, there are seven we wholly-owned approximately 12 pending wholly-owned provisional applications, six pending international U.S. patent applications, three pending including U.S. provisional and U.S. non-provisional patent applications, and 27 approximately 75 pending non-U.S. patent applications, including international patent applications filed under the Patent Cooperation Treaty, related to our proprietary drug discovery business.

Prosecution Patent prosecution is a lengthy process, during which the scope of the claims initially submitted for examination by the U.S. Patent and Trademark Office may be significantly narrowed before issuance, if issued at all. We expect this may be the case with respect to some of our pending patent applications.

The term of individual patents depends upon the legal term of the patents in the countries in which they are obtained. In most countries in which we file, the patent term is 20 years from the earliest date of filing a non-provisional patent application, absent any adjustments or extensions.

In addition, in the United States, the term of a patent covering an FDA-approved drug may, in certain cases, be eligible for a patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984 as compensation for the loss of patent term during the FDA regulatory review process. The period of extension may be up to five years, but cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval. Only one patent among those eligible for an extension and only those claims covering the approved drug, a method for using it, or a method for manufacturing it may be extended. Similar provisions are available in Europe and in certain other jurisdictions to extend the term of a patent that covers an approved drug. It is possible that issued U.S. patents we may obtain in the future may be entitled to patent term extensions. If our use of product candidates or the product candidate itself receive FDA approval, we intend to apply for patent term extensions, if available, to extend the term of patents that cover the approved use or product candidate. We also intend to seek patent term extensions in any jurisdictions where available, however, there is no guarantee that the applicable authorities, including the FDA, will agree with our assessment of whether such extensions should be granted, and even if granted, the length of such extensions.

In addition to patent protection, as of February 6, 2023 January 31, 2024, we had approximately 53 64 copyright registrations covering our proprietary software code, and we rely upon unpatented trade secrets and confidential know-how and continuing technological innovation to develop and maintain our competitive position. However, trade secrets and confidential know-how are difficult to protect. We seek to protect our proprietary information, in part, using confidentiality agreements with any collaborators, scientific advisors, service providers, employees, and consultants and invention assignment agreements with our employees. We also have agreements requiring assignment of inventions with selected consultants, scientific advisors, and collaborators. These agreements may not provide meaningful protection. These agreements may also be breached, and we may not have an adequate remedy for any such breach. In addition, our trade secrets and/or confidential know-how may become known or be independently developed by a third party, or misused by any collaborator to whom we disclose such information. Despite any measures taken to protect our intellectual property, unauthorized parties may attempt to copy aspects of our products or to obtain or use information that we regard as proprietary. Although we take

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steps to protect our proprietary information, third parties may independently develop the same or similar proprietary information or may otherwise gain access to our proprietary information. As a result, we may be unable to meaningfully protect our trade secrets and proprietary information. See “Risk Factors—Risks Related to Our Intellectual Property” for a more comprehensive description of risks related to our intellectual property.

We also own numerous trademarks registered in the United States and foreign jurisdictions, including “Schrödinger” and “LiveDesign”. We pursue additional trademark registrations to the extent we believe doing so would be beneficial to our competitive position.

Sales and Marketing

Software Business

We commercialize our software solutions in various jurisdictions around the world through our software sales organization. We have sales operations in the United States, Europe, Japan, India, and South Korea and we also have established distribution channels in other important markets, including China. These efforts are led by our approximately 230 240 person global team of sales, technical, and scientific personnel. Our marketing strategy leverages our strong base of scientific publications to support the continued growth of our computational platform into computational chemistry markets across industries and academia worldwide.

Drug Discovery Business

We have not established a commercial organization or developed distribution capabilities given the current stage of development of our wholly-owned proprietary drug discovery programs. We plan to enter into agreements with biopharmaceutical companies that contribute to our ability to efficiently advance development candidates that we

discover internally using our computational platform through to commercialization. We expect to utilize a variety of types of collaboration, distribution, and other arrangements with one or more of these third parties to develop and ultimately commercialize our development candidates. Over time, we may also create a commercial organization for drug product sales if and as we advance the development of any product candidates that we determine to commercialize ourselves.

Manufacturing

We do not own or operate manufacturing facilities for the production of any product candidates, nor do we have plans to develop our own manufacturing operations. We rely and expect to continue to rely on third-party contract manufacturers for all of our required raw materials, drug substance, and finished drug product for the preclinical and clinical development of any development candidates we develop ourselves.

Government Regulation and Product Approvals

Government authorities in the United States at the federal, state and local level, and in other countries and jurisdictions, including the European Union, extensively regulate, among other things, the research, development, testing, manufacture, pricing, reimbursement, quality control, approval, packaging, storage, recordkeeping, labeling, advertising, promotion, distribution, marketing, post-approval monitoring and reporting, and import and export of biopharmaceutical products. The processes for obtaining marketing approvals in the United States and in foreign countries and jurisdictions, along with compliance with applicable statutes and regulations and other regulatory authorities, require the expenditure of substantial time and financial resources.

Approval and Regulation of Drugs in the United States

In the United States, drug products are approved and regulated under the Federal Food, Drug and Cosmetic Act, or FDCA, and applicable implementing regulations and guidance. A company, institution, or organization which takes responsibility for the initiation and management of a clinical development program for such products, and for their regulatory approval, is typically referred to as a sponsor. The failure of a sponsor to comply with the applicable regulatory requirements at any time during the product development process, including non-clinical testing, clinical testing, the approval process or post-approval process, may result in delays to the conduct of a study, regulatory review and approval, and/or administrative or judicial sanctions.

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A sponsor seeking approval to market and distribute a new drug in the United States generally must satisfactorily complete each of the following steps before the product candidate will be approved by the FDA:

- preclinical testing including laboratory tests, animal studies, and formulation studies, which must be performed in accordance with the FDA's good laboratory practice, or GLP, regulations and standards;
- design of a clinical protocol and submission to the FDA of an IND for human clinical testing, which must become effective before human clinical trials may begin;
- approval by an independent institutional review board, or IRB, representing each clinical site before each clinical trial may be initiated;
- performance of adequate and well-controlled human clinical trials to establish the safety and efficacy of the product candidate for each proposed indication, in accordance with current good clinical practices, or GCP;
- preparation and submission to the FDA of a new drug application, or NDA, for a drug product which includes not only the results of the clinical trials, but also detailed information on the chemistry, manufacture and quality controls for the product candidate and proposed labeling for one or more proposed indication(s);
- review of the product candidate by an FDA advisory committee, where appropriate or if applicable;
- satisfactory completion of an FDA inspection of the manufacturing facility or facilities, including those of third parties, at which the product candidate or components thereof are manufactured to assess compliance with current good manufacturing practices, or cGMP, requirements and to assure that the facilities, methods, and controls are adequate to preserve the product's identity, strength, quality, and purity;
- satisfactory completion of any FDA audits of the non-clinical and clinical trial sites to assure compliance with GCP and the integrity of clinical data in support of the NDA;
- payment of user fees and securing FDA approval of the NDA to allow marketing of the new drug product; and
- compliance with any post-approval requirements, including the potential requirement to implement a Risk Evaluation and Mitigation Strategy, or REMS, and the potential requirement to conduct any post- approval studies required by the FDA.

Preclinical Studies

Before a sponsor begins testing a product candidate with potential therapeutic value in humans, the product candidate enters the preclinical testing stage, including *in vitro* and animal studies to assess the safety and activity of the drug for initial testing in humans and to establish a rationale for therapeutic use. Preclinical tests include laboratory evaluations of product chemistry, formulation, and stability, as well as other studies to evaluate, among other things, the toxicity of the product candidate. These studies are generally referred to as IND-enabling studies.

The conduct of the preclinical tests and formulation of the compounds for testing must comply with federal regulations and requirements, including GLP regulations and standards and the United States Department of Agriculture's Animal Welfare Act, if applicable. The results of the preclinical tests, together with manufacturing information, analytical data, any available clinical data or literature and plans for clinical trials, among other things, are submitted to the FDA as part of an IND. Some long-term preclinical testing, such as animal tests of reproductive adverse events and carcinogenicity and long-term toxicity studies may continue after the IND is submitted.

The IND and IRB Processes

Clinical trials involve the administration of the investigational product to human subjects under the supervision of qualified investigators in accordance with GCP requirements, which include, among other things, the requirement that all research subjects provide their voluntary informed consent in writing before their participation in any clinical trial. Clinical trials are conducted under written study protocols detailing, among other things, the inclusion and exclusion criteria, the objectives of the study, the parameters to be used in monitoring safety and the effectiveness criteria to be evaluated. A protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of the IND.

An IND is an exemption from the FDCA that allows an unapproved product candidate to be shipped in interstate commerce for use in an investigational clinical trial and a request for FDA authorization to administer such investigational

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product to humans. Such authorization must be secured prior to interstate shipment and administration of any product candidate that is not the subject of an approved NDA. In addition to reviewing an IND to assure the safety and rights of patients, the FDA also focuses on the quality of the investigation and whether it will be adequate to permit an evaluation of the drug's safety and efficacy. In support of a request for an IND, sponsors must submit a protocol for each clinical trial, and any subsequent protocol amendments must be submitted to the FDA as part of the IND. The FDA requires a 30-day waiting period after the filing of each IND before clinical trials may begin. This waiting period is designed to allow the FDA to review the IND to determine whether human research subjects will be exposed to unreasonable health risks. At any time during this 30-day period, the FDA may raise concerns or questions about the conduct of the trials as outlined in the IND and impose a clinical hold or partial clinical hold. In these cases, the IND sponsor and the FDA must resolve any outstanding concerns before clinical trials, or parts of the trial, can begin.

Following commencement of a clinical trial under an IND, the FDA may also place a clinical hold or partial clinical hold on that trial. Clinical holds are imposed by the FDA whenever there is concern for patient safety and may be a result of new data, findings, or developments in clinical, nonclinical, and/or chemistry, manufacturing, and controls, or CMC. controls. A clinical hold is an order issued by the FDA to the sponsor to delay a proposed clinical investigation or to suspend an ongoing investigation. A partial clinical hold is a delay or suspension of only part of the clinical work requested under the IND. For example, a specific protocol or part of a protocol may not be allowed to proceed, while other protocols may be allowed. No more than 30 days after imposition of a clinical hold or partial clinical hold, the FDA will provide the sponsor a written explanation of the basis for the hold.

Following issuance of a clinical hold or partial clinical hold, a clinical trial may only resume after the FDA has so notified the sponsor. sponsor of its decision to lift the hold. The FDA will base that determination on information provided by the sponsor correcting the deficiencies previously cited or otherwise satisfying the FDA that the clinical trial can proceed.

A sponsor may choose, but is not required, to conduct a foreign clinical study under an IND. When a foreign clinical study is conducted under an IND, all FDA IND requirements must be met unless waived. When a foreign clinical study is not conducted under an IND, the sponsor must ensure that such studies are conducted in accordance with GCP, including review and approval by an independent ethics committee, or IEC, and informed consent from subjects, if the data from such a foreign study is to be used in support of a marketing application.

In addition to the foregoing IND requirements, an IRB representing each institution participating in the clinical trial must review and approve the plan for any clinical trial before it commences at that institution, and the IRB must conduct continuing review and reapprove the study at least annually. The IRB must review and approve, among other things, the study protocol and informed consent information to be provided to study subjects. An IRB must operate in compliance with FDA regulations. An IRB can suspend or terminate approval of a clinical trial at its institution, or an institution it represents, if the clinical trial is not being conducted in accordance with the IRB's requirements or if the product candidate has been associated with unexpected serious harm to patients.

Additionally, some trials are overseen by an independent group of qualified experts organized by the trial sponsor, known as a data safety monitoring board or committee. This group provides authorization as to whether or not a trial may move forward at designated check points based on access that only the group maintains to available data from the study. Suspension or termination of development during any phase of clinical trials can occur if it is determined that the participants or patients are being exposed to an unacceptable health risk. Other reasons for suspension or termination may be made by us based on evolving business objectives and/or the competitive environment.

Expanded Access

Expanded access, sometimes called "compassionate use," is the use of investigational new products outside of clinical trials to treat patients with serious or immediately life-threatening diseases or conditions when there are no comparable or satisfactory alternative treatment options. The rules and regulations related to expanded access are intended to improve access to investigational products for patients who may benefit from investigational therapies. FDA regulations allow access to investigational products under an IND by the company or the treating physician for treatment purposes on a case-by-case basis for: individual patients (single-patient IND applications INDs for treatment in emergency settings and non-emergency settings); intermediate-size patient populations; and larger populations for use of the investigational product under a treatment protocol or Treatment IND Application.

When considering an IND application for expanded access to an investigational product with the purpose of treating a patient or a group of patients, the sponsor and treating physicians or investigators will determine suitability when all of the following criteria apply: patient(s) have a serious or immediately life-threatening disease or condition, and there is no comparable or satisfactory alternative therapy to diagnose, monitor, or treat the disease or condition; the potential patient benefit justifies the potential risks of the treatment and the potential risks are not unreasonable in the context or condition to be treated; and the expanded use of the investigational product for the requested treatment will not interfere with the initiation, conduct or completion of clinical investigations that could support marketing approval of the product or otherwise compromise the potential development of the product.

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There is no obligation for a sponsor to make its investigational products available for expanded access; however, as required by amendments to the FDCA included in the 21st Century Cures Act passed in 2016, if a sponsor has a policy regarding how it responds to expanded access requests with respect to product candidates in development to treat serious diseases or conditions, it must make that policy publicly available. Sponsors are required to make such policies publicly available upon the earlier of initiation of a Phase 2 or Phase 3 trial for a covered investigational product; or 15 days after the investigational product receives designation from the FDA as a breakthrough therapy, fast track product, or regenerative medicine advanced therapy.

In addition, on May 30, 2018, the Right to Try Act was signed into law. The law, among other things, provides a federal framework for certain patients to access certain investigational products that have completed a Phase 1 clinical trial and that are undergoing investigation for FDA approval. Under certain circumstances, eligible patients can seek treatment without enrolling in clinical trials and without obtaining FDA permission under the FDA expanded access program. There is no obligation for a manufacturer to make its investigational products available to eligible patients as a result of the Right to Try Act.

Human Clinical Trials in Support of an NDA

Clinical trials involve the administration of the investigational product candidate to human subjects under the supervision of a qualified investigator in accordance with GCP requirements, which include, among other things, the requirement that all research subjects provide their informed consent in writing before their participation in any clinical trial. Clinical trials are conducted under written clinical trial protocols detailing, among other things, the objectives of the study, trial, inclusion and exclusion criteria, the parameters to be used in monitoring safety, and the effectiveness criteria to be evaluated. A protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of the IND.

Human clinical trials are typically conducted in three sequential phases, but the phases may overlap or be combined. Additional studies may also be required after approval.

Phase 1 clinical trials are initially conducted in a limited population to test the product candidate for safety, including adverse effects, dose tolerance, absorption, metabolism, distribution, excretion, and pharmacodynamics in healthy humans or in patients. During Phase 1 clinical trials, information about the investigational drug product's pharmacokinetics and pharmacological effects may be obtained to permit the design of well-controlled and scientifically valid Phase 2 clinical trials.

Phase 2 clinical trials are generally conducted in a limited patient population to identify possible adverse effects and safety risks, evaluate the efficacy of the product candidate for specific targeted indications and determine dose tolerance and optimal dosage. Multiple Phase 2 clinical trials may be conducted by the sponsor to obtain information prior to beginning larger and more costly Phase 3 clinical trials. Phase 2 clinical trials are well controlled, closely monitored and conducted in a limited patient population. A Phase 2 trial may be further subdivided to Phase 2a and Phase 2b trials. A Phase 2a trial is typically an exploratory (non-pivotal) study that has clinical efficacy, pharmacodynamics, or biological activity as the primary endpoint. A Phase 2b trial is a definite dose range finding study with efficacy as the primary endpoint.

Phase 3 clinical trials proceed if the Phase 2 clinical trials demonstrate that a dose range of the product candidate is potentially effective and has an acceptable safety profile. Phase 3 clinical trials are undertaken within an expanded patient population to further evaluate dosage, provide substantial evidence of clinical efficacy, and further test for safety in an expanded and diverse patient population at multiple, geographically dispersed clinical trial sites. A well-controlled, statistically robust Phase 3 clinical trial may be designed to deliver the data that regulatory authorities will use to decide whether or not to approve, and, if approved, how to appropriately label a drug. Such Phase 3 studies are referred to as "pivotal."

A clinical trial may combine the elements of more than one phase and the FDA often requires more than one Phase 3 trial to support marketing approval of a product candidate. A company's designation of a clinical trial as being of a particular phase is not necessarily indicative that the study will be sufficient to satisfy the FDA requirements of that phase because this determination cannot be made until the protocol and data have been submitted to and reviewed by the FDA. Generally, pivotal trials are Phase 3 trials, but they may be Phase 2 trials if the design provides a well-controlled and reliable assessment of clinical benefit, particularly in an area of unmet medical need.

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In December 2022, with the passage of Food and Drug Omnibus Reform Act, or FDORA, Congress required sponsors to develop and submit a diversity action plan for each phase 3 clinical trial or any other "pivotal study" of a new drug or biological product. These plans are meant to encourage the enrollment of more diverse patient populations in late-stage clinical trials of FDA-regulated products. Specifically, action plans must include the sponsor's goals for enrollment, the underlying rationale for those goals, and an explanation of how the sponsor intends to meet them. In addition to these requirements, the legislation directs the FDA to issue new guidance on diversity action plans. In January 2024, the FDA issued draft guidance setting out its policies for the collection of race and ethnicity data in clinical trials.

In June 2023, the FDA issued draft guidance with updated recommendations for GCPs aimed at modernizing the design and conduct of clinical trials. The updates are intended to help pave the way for more efficient clinical trials to facilitate the development of medical products. The draft guidance is adopted from the International Council for Harmonisation's recently updated E6(R3) draft guideline that was developed to enable the incorporation of rapidly developing technological and methodological innovations into the clinical trial enterprise. In addition, the FDA issued draft guidance outlining recommendations for the implementation of decentralized clinical trials.

In some cases, the FDA may approve an NDA for a product candidate but require the sponsor to conduct additional clinical trials to further assess the product candidate's safety and effectiveness after approval. Such post-approval trials are typically referred to as Phase 4 post-marketing clinical trials. These studies are used to gain additional experience from the treatment of a larger number of patients in the intended treatment group and to further document a clinical benefit in the case of drugs approved under Accelerated Approval accelerated approval regulations. If the FDA approves a product while a company has ongoing clinical trials that were not necessary for approval, a company may be able to use the data from these clinical trials to meet all or part of any post-marketing clinical trial requirement or to request a change in the product labeling. Failure to exhibit due diligence with regard to conducting Phase 4 post-marketing clinical trials could result in withdrawal of approval for products.

In March 2022, the FDA released a final guidance entitled "Expansion Cohorts: Use in First-In-Human Clinical Trials to Expedite Development of Oncology Drugs and Biologics," which outlines how sponsors can utilize an adaptive trial design in the early stages of oncology product development (*i.e.*, the first-in-human clinical trial) to compress the traditional three phases of trials into one continuous trial called an expansion cohort trial. Information to support the design of individual expansion cohorts are included in INDs and assessed by FDA. Expansion cohort trials can potentially bring efficiency to product development and reduce developmental costs and time.

Clinical Studies Outside the United States in Support of FDA Approval

In connection with our clinical development program, we are and may in the future conduct trials at sites outside the United States. When a foreign clinical study is conducted under an IND, all IND requirements must be met unless waived. When a foreign clinical study is not conducted under an IND, the sponsor must ensure that the study complies with certain regulatory requirements of the FDA in order to use the study as support for an IND or application for marketing approval. Specifically, the studies must be conducted in accordance with GCP, including undergoing review and receiving approval by an independent ethics committee, and seeking and receiving informed consent from subjects. GCP requirements encompass both ethical and data integrity standards for clinical studies. The FDA's regulations are intended to help ensure the protection of human subjects enrolled in non-IND foreign clinical studies, as well as the quality and integrity of the resulting data. They further help ensure that non-IND foreign studies are conducted in a manner comparable to that required for IND studies.

The acceptance by the FDA of study data from clinical trials conducted outside the United States in support of US approval may be subject to certain conditions or may not be accepted at all. In cases where data from foreign clinical trials are intended to serve as the sole basis for marketing approval in the U.S., the FDA will generally not approve the application on the basis of foreign data alone unless (i) the data are applicable to the U.S. population and U.S. medical practice; (ii) the trials were performed by clinical investigators of recognized competence and pursuant to cGCP regulations; and (iii) the data may be considered valid without the need for an on-site inspection by the FDA, or if the FDA considers such inspection to be necessary, the FDA is able to validate the data through an on-site inspection or other appropriate means.

In addition, even where the foreign study data are not intended to serve as the sole basis for approval, the FDA will not accept the data as support for an application for marketing approval unless the study is well-designed and well-conducted in accordance with GCP requirements and the FDA is able to validate the data from the study through an onsite

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inspection if deemed necessary. Many foreign regulatory authorities have similar approval requirements. In addition, such foreign trials are subject to the applicable local laws of the foreign jurisdictions where the trials are conducted.

Interactions with FDA during the Clinical Development Program

Following the clearance of an IND and the commencement of clinical trials, the sponsor will continue to have interactions with the FDA. Progress reports detailing the results of the clinical trials must be submitted at least annually to the FDA and more frequently if serious adverse events occur. In addition, IND safety reports must be submitted to the FDA for any of the following: serious and unexpected suspected adverse reactions; findings from other studies or animal or *in vitro* testing that suggest a significant risk in humans exposed to the product; and any clinically important increase in the case of a serious suspected adverse reaction over that listed in the protocol or investigator brochure. Phase 1, Phase 2 and Phase 3 clinical trials may not be completed successfully within any specified period, or at all. The FDA will typically inspect one or more clinical sites to assure compliance with GCP and the integrity of the clinical data submitted.

In March 2022, addition, sponsors are given opportunities to meet with the FDA released at certain points in the clinical development program. Specifically, sponsors may meet with the FDA prior to the submission of an IND, or pre-IND application meeting, at the end of a final guidance entitled "Expansion Cohorts: Use in First-In-Human Clinical Trials Phase 2 clinical trial, or EOP2 meeting, and before an NDA is submitted, or pre-NDA meeting. Meetings at other times may also be requested. There are five types of meetings that occur between sponsors and the FDA. Type A meetings are those that are necessary for an otherwise stalled product development program to Expedite Development proceed or to address an important safety issue. Type B meetings include pre-IND application and pre-NDA meetings, as well as Type B end of Oncology Drugs phase meetings, such as EOP2 meetings. A Type C meeting is any meeting other than a Type A or Type B meeting regarding the development and Biologics," which outlines how sponsors can utilize an adaptive trial design review of a product. Finally, a type D meeting is focused on a narrow set of issues (should be limited to no more than two focused topics) and should not require input from more than three disciplines or divisions. Finally, INTERACT meetings are intended for novel products and development programs that present unique challenges in the early stages development of oncology product development (i.e., an investigational product.

These meetings provide an opportunity for the first-in-human sponsor to share information about the data gathered to date with the FDA and for the FDA to provide advice on the next phase of development. For example, at an EOP2 meeting, a sponsor may discuss its Phase 2 clinical trial) to compress results and present its plans for the traditional three phases of trials into one continuous trial called an expansion cohort trial. Information to pivotal Phase 3 clinical trial(s) that it believes will support the approval of the new product. Such meetings may be conducted in person, via teleconference/videoconference or written response only with minutes reflecting the questions that the sponsor posed to the FDA and the FDA's responses. The FDA has indicated that its responses, as conveyed in meeting minutes and advice letters, only constitute mere recommendations and/or

advice made to a sponsor and, as such, sponsors are not bound by such recommendations and/or advice. Nonetheless, from a practical perspective, a sponsor's failure to follow the FDA's recommendations for design of individual expansion cohorts are included a clinical program may put the program at significant risk of failure.In September 2023, the FDA issued draft guidance outlining the terms of such meetings in IND applications and assessed by FDA. Expansion cohort trials can potentially bring efficiency to product development and reduce developmental costs and time. more detail.

Reporting Clinical Trial Results

Sponsors of clinical trials are required to register and disclose certain clinical trial information on a public registry (clinicaltrials.gov) maintained by the U.S. National Institutes of Health. Health, or NIH. In particular, information related to the product, patient population, phase of investigation, study sites and investigators and other aspects of the clinical trial is made public as part of the registration of the clinical trial. The Although the FDA has historically not enforced these reporting requirements due to HHS's long delay in issuing final implementing regulations, the FDA has issued several pre-notices for voluntary corrective action and several notices of noncompliance to manufacturers during the past two years. While these notices of non-compliance did not result in civil monetary penalties, the failure to submit clinical trial information to clinicaltrials.gov, as required, is a prohibited act under the FDCA with violations subject to potential civil monetary penalties of up to $10,000 for each day the violation continues. Although the FDA has historically not enforced these reporting requirements due In addition to HHS's long delay civil monetary penalties, violations may also result in issuing final implementing regulations, those regulations have now been issued other regulatory action, such as injunction and/or criminal prosecution or disqualification from federal grants.

Manufacturing and the FDA has issued several Notices of Noncompliance to manufacturers since April 2021. Compliance with cGMP Requirements

Concurrent with clinical trials, companies often complete additional animal preclinical studies. They must also develop additional information about the chemistry and physical characteristics of the drug as well as finalize a process for manufacturing the product in commercial quantities in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the drug candidate and, among other things, must develop methods for testing the identity, strength, quality, purity, and potency of the final drug. Additionally, appropriate packaging

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must be selected and tested and stability studies must be conducted to demonstrate that the drug candidate does not undergo unacceptable deterioration over its shelf life.

The FDA's regulations require that pharmaceutical products be manufactured in approved facilities and in accordance with cGMPs. The cGMP regulations include requirements relating to organization of personnel, buildings and facilities, equipment, control of components and product containers and closures, production and process controls, packaging and labeling controls, holding and distribution, laboratory controls, records and reports and returned or salvaged products. Manufacturers and other entities involved in the manufacture and distribution of approved pharmaceuticals are subject to periodic unannounced inspections by the FDA for compliance with cGMPs and other requirements. The PREVENT Pandemics Act, which was enacted in December 2022, clarifies that foreign drug manufacturing establishments are subject to registration and listing requirements even if a drug or biologic undergoes further manufacture, preparation, propagation, compounding, or processing at a separate establishment outside the United States prior to being imported or offered for import into the United States.

Manufacturers and others involved in the manufacture and distribution of products must also register their establishments with the FDA and certain state agencies. Both domestic and foreign manufacturing establishments must register and provide additional information to the FDA upon their initial participation in the manufacturing process. Any product manufactured by or imported from a facility that has not registered, whether foreign or domestic, is deemed misbranded under the FDCA. Changes to the manufacturing process, specifications or container closure system for an approved product are strictly regulated and often require prior FDA approval before being implemented. The FDA's regulations also require, among other things, the investigation and correction of any deviations from cGMP and the imposition of reporting and documentation requirements upon the sponsor and any third-party manufacturers involved in producing the approved product.

Pediatric Studies

Under the Pediatric Research Equity Act, or PREA, applications and certain types of supplements to applications must contain data that are adequate to assess the safety and effectiveness of the product for the claimed indications in all relevant pediatric subpopulations, and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The sponsor must submit an initial Pediatric Study Plan pediatric study plan within 60 days of an end-of-phase 2 EOP2 meeting or as may be agreed between the sponsor and the FDA. Sponsors must also submit pediatric study plans prior to the assessment data. Those plans must contain an outline of the proposed pediatric study or studies the sponsor plans to conduct, including study objectives and design, age groups, relevant endpoints and statistical approach, or a justification for not including such detailed information, and any request for a deferral of pediatric assessments or a full or partial waiver of the requirement to provide data from pediatric studies along with supporting information. The sponsor, the FDA, and the FDA's internal review committee must then review the information submitted, consult with each other, and agree upon a final plan. The FDA or the sponsor may request an amendment to the plan at any time.

For investigational products intended to treat a serious or life-threatening disease or condition, the FDA must, upon the request of a sponsor, meet to discuss preparation of the initial pediatric study plan or to discuss deferral or waiver of pediatric assessments. In addition, the FDA will meet early in the development process to discuss pediatric study plans with sponsors and the FDA must meet with sponsors by no later than the end-of-phase 1 meeting for serious or life-threatening diseases and by no later than 90 days after the FDA's receipt of the study plan.

The FDA may, on its own initiative or at the request of the sponsor, grant deferrals for submission of some or all pediatric data until after approval of the product for use in adults, or full or partial waivers from the pediatric data requirements. A deferral may be granted for several reasons, including a finding that the product or therapeutic candidate is ready for approval for use in adults before pediatric trials are complete or that additional safety or effectiveness data needs to be collected before the pediatric trials begin. Pursuant to the Food and Drug Administration Safety and Innovation Act of 2012, or FDASIA, the FDA must send a PREA Non-Compliance letter to sponsors who have failed to submit their pediatric assessments required under PREA, have failed to seek or obtain a deferral or deferral extension or have failed to request approval for a required pediatric formulation. FDASIA further requires the FDA to publicly post the PREA Non-Compliance letter and sponsor's response.

Unless otherwise required by regulation, the pediatric data requirements do not apply to products with orphan designation, although the FDA has recently taken steps to limit what it considers abuse of this statutory exemption in the PREA by announcing that it does not intend to grant any additional orphan drug designations for rare pediatric subpopulations of what is otherwise a common disease. The FDA also maintains a list of diseases that are exempt from

PREA requirements due to low prevalence of disease in the pediatric population. In May 2023, the FDA issued new draft guidance that further describes the pediatric study requirements under the PREA.

Expedited Review Programs

The FDA is authorized to expedite the review of applications in several ways. None of these expedited programs changes the standards for approval but they may help expedite the development or approval process of product candidates.

- *Fast Track designation.* The sponsor of a product candidate may request the FDA to designate the product for a specific indication as a Fast Track product concurrent with or after the filing of the IND. Candidate products are eligible for Fast Track designation if they are intended to treat a serious or life-threatening condition and demonstrate the potential to address unmet medical needs for the condition. Fast Track designation applies to the combination of the product candidate and the specific indication for which it is being studied. In addition to other benefits, such as the ability to have greater interactions with the FDA, the FDA may initiate review of sections of a Fast Track application before the application is complete, a process known as rolling review.
- *Breakthrough therapy designation.* To qualify for the breakthrough therapy program, product candidates must be intended to treat a serious or life-threatening disease or condition and preliminary clinical evidence must indicate that such product candidates may demonstrate substantial improvement on one or more clinically significant endpoints over existing therapies. The FDA will seek to ensure the sponsor of a breakthrough therapy product candidate receives intensive guidance on an efficient development program, intensive involvement of senior managers and experienced staff on a proactive, collaborative and cross-disciplinary review and rolling review.
- *Priority review.* A product candidate is eligible for priority review if it treats a serious condition and, if approved, it would be a significant improvement in the safety or effectiveness of the treatment, diagnosis or prevention compared to marketed products. FDA aims to complete its review of priority review applications within six months as opposed to 10 months for standard review.
- *Accelerated approval.* Drug products studied for their safety and effectiveness in treating serious or life-threatening illnesses and that provide meaningful therapeutic benefit over existing treatments may receive accelerated approval. Accelerated approval means that a product candidate may be approved on the basis of adequate and well controlled clinical trials establishing that the product candidate has an effect on a surrogate endpoint that is reasonably likely to predict a clinical benefit, or on the basis of an effect on a clinical endpoint other than survival or irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity and prevalence of the condition and the availability or lack of alternative treatments. As a condition of approval, the FDA may require that a sponsor of a drug product candidate receiving accelerated approval perform adequate and well controlled post-marketing clinical trials. In addition, the FDA currently requires as a condition for accelerated approval pre-approval of promotional materials.

  With passage of FDORA in December 2022, Congress modified certain provisions governing accelerated approval of drug and biologic products. Specifically, the new legislation authorized the FDA to: require a sponsor to have its confirmatory clinical trial underway before accelerated approval is awarded, require a sponsor of a product granted accelerated approval to submit progress reports on its post-approval studies to FDA every six months (until until the study is completed; and use expedited procedures to withdraw accelerated approval of an NDA or BLA after the confirmatory trial fails to verify the product's clinical benefit.

  Further, FDORA requires the agency FDA to publish on its website "the rationale for why a post-approval study is not appropriate or necessary" whenever it decides not to require such a study upon granting accelerated approval. In March 2023, the FDA issued draft guidance that outlines its current thinking and approach to accelerated approval. The FDA indicated that the accelerated approval pathway is commonly used for approval of oncology drugs due to the serious and life-threatening nature of cancer. Although single-arm trials have been commonly used to support accelerated approval, a randomized controlled trial is the preferred approach as it provides a more robust efficacy and safety assessment and allows for direct comparisons to an available therapy. To that end, the FDA outlined considerations for designing, conducting, and analyzing data for trials intended to support accelerated approvals of oncology therapeutics. While this guidance is currently only in draft form and will ultimately not be legally binding even when finalized, sponsors typically observe the FDA's guidance closely to ensure that their investigational products qualify for accelerated approval.

- *Regenerative advanced therapy.* With passage of the 21st Century Cures Act, or the Cures Act, in December 2016, Congress authorized the FDA to accelerate review and approval of products designated as regenerative advanced therapies. A product is eligible for this designation if it is a regenerative medicine therapy that is intended to treat, modify, reverse or cure a serious or life-threatening disease or condition and preliminary clinical evidence indicates that the product candidate has the potential to address unmet medical needs for such disease or condition. The benefits of a regenerative advanced therapy designation include early interactions with the FDA to expedite development and review, benefits available to breakthrough therapies, potential eligibility for priority review and accelerated approval based on surrogate or intermediate endpoints.

Filing and Review of an NDA

In order to obtain approval to market a drug product in the United States, a NDA must be submitted to the FDA that provides sufficient data establishing the safety and efficacy of the proposed drug product for its intended indication. The application includes all relevant data available from pertinent preclinical and clinical trials, including negative or ambiguous results as well as positive findings, together with detailed information relating to the product's chemistry, manufacturing, controls, and proposed labeling, among other things. Data can come from company-sponsored clinical trials intended to test the safety and effectiveness of a use of a product, or from a number of alternative sources, including studies initiated by independent investigators. To support marketing approval, the data submitted must be sufficient in quality and quantity to establish the safety and efficacy of the drug product to the satisfaction of the FDA.

The NDA is a vehicle through which sponsors formally propose that the FDA approve a new product for marketing and sale in the United States for one or more indications. Every new drug product candidate must be the subject of an approved NDA before it may be commercialized in the United States. Biologic License Applications, or BLAs, are submitted for licensure of biologic products under the Public Health Service Act. Under federal law, the submission of most NDAs is subject to an application user fee. The sponsor of an approved NDA is also subject to an annual program fee. Certain exceptions and waivers are available for some of these fees, such as an exception from the application fee for products with orphan designation, an exception from the program fee when the program does not engage in manufacturing the drug during a particular fiscal year and a waiver for certain small businesses.

The FDA conducts a preliminary review of the application within 60 calendar days of its receipt, and must inform the sponsor within that period of time whether the application is sufficiently complete to permit substantive review. In the event that FDA determines that an application does not satisfy this standard, it will issue a Refuse to File, or RTF, determination to the sponsor. The FDA may request additional information rather than accept the application for filing and, the application may be resubmitted with the additional information. The resubmitted application is also subject to review before the FDA accepts it for filing.

Once the submission is accepted for filing, the FDA begins an in-depth substantive review. The FDA has agreed to specified performance goals in the review process of NDAs. Under that agreement, 90% of applications seeking approval of New Molecular Entities, or NMEs, are meant to be reviewed within ten months from the date on which the FDA accepts the application for filing, and 90% of applications for NMEs that have been designated for Priority Review priority review are meant to be reviewed within six months of the filing date. For applications seeking approval of products that are not NMEs, the ten-month and six-month review periods run from the date that the FDA receives the application. The review process and the Prescription Drug User Fee Act, or PDUFA, goal date may be extended by the FDA for three additional months to consider new information or clarification provided by the sponsor to address an outstanding deficiency identified by the FDA following the original submission. Despite these review goals, it is not uncommon for FDA review of an application to extend beyond the PDUFA goal date.

In connection with its review of an application, the FDA typically will inspect the facility or facilities where the product is being or will be manufactured. These pre-approval inspections may cover all facilities associated with an NDA submission, including component manufacturing, finished product manufacturing, and control testing laboratories. The PREVENT Pandemics Act, which was enacted in December 2022, clarifies that foreign drug manufacturing establishments are subject to registration and listing requirements even if a drug or biologic undergoes further manufacture, preparation, propagation, compounding, or processing at a separate establishment outside the United States prior to being imported or offered for import into the United States. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications.

Additionally, before approving an NDA, the FDA will typically inspect one or more clinical sites to assure compliance with GCP and the integrity of the data in the application. With passage of FDORA, Congress clarified FDA's authority to conduct inspections by expressly permitting inspection of facilities involved in the preparation, conduct, or analysis of clinical and non-clinical studies submitted to FDA as well as other persons holding study records or involved in

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the study process. To ensure cGMP and GCP compliance by its employees and third-party contractors, a sponsor may incur significant expenditure of time, money and effort in the areas of training, record keeping, production and quality control.

In addition, as a condition of approval, the FDA may require a sponsor to develop a REMS. A REMS uses risk-minimization strategies beyond the professional labeling to ensure that the benefits of the product outweigh the potential risks. To determine whether a REMS is needed, the FDA will consider the size of the population likely to use the product, the seriousness of the disease, the expected benefit of the product, the expected duration of treatment, the seriousness of known or potential adverse events, and whether the product is a new molecular entity. NME. The FDA determines the requirement for a REMS, as well as the specific REMS provisions, on a case-by-case basis. If the FDA concludes a REMS is needed, the sponsor of the application must submit a proposed REMS and the FDA will not approve the application without a REMS.

The FDA may also refer an application for a novel product to an advisory committee or explain why such referral was not made. Typically, an advisory committee is a panel of independent experts, including clinicians and other scientific experts, that review, evaluate and provide a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but the FDA considers such recommendations carefully when making decisions.

The FDA's Decision on an NDA

The FDA reviews an application to determine, among other things, whether the product is safe and whether it is effective for its intended use(s), with the latter determination being made on the basis of substantial evidence. The FDA has interpreted this evidentiary standard to require at least two adequate and well-controlled clinical investigations to establish effectiveness of a new product. Under certain circumstances, however, the FDA has indicated that a single trial with certain characteristics and additional information may satisfy this standard. Ultimately, the FDA will determine whether the expected benefits of the drug product outweigh its potential risks to patients, and the agency will issue either a complete response letter, or CRL, or an approval letter.

A CRL indicates that the review cycle of the application is complete, and the application will not be approved in its present form. A CRL generally outlines the deficiencies in the submission and may require substantial additional testing or information in order for the FDA to reconsider the application. The CRL may require additional clinical or other data, additional pivotal Phase 3 clinical trials and/or other significant and time-consuming requirements related to clinical trials, preclinical studies or manufacturing. If a CRL is issued, the sponsor will have one year to respond to the deficiencies identified by the FDA, at which time the FDA can deem the application withdrawn or, in its discretion, grant the sponsor an additional six-month extension to respond. For those seeking to challenge FDA's CRL decision, the FDA has indicated that sponsors may request a formal hearing on the CRL or they may file a request for reconsideration or a request for a formal dispute resolution.

If the FDA approves a new product, it may limit the approved indications for use of the product, require that contraindications, warnings, or precautions be included in the product labeling, or require that post-approval studies, including Phase 4 post-marketing clinical trials, be conducted to further assess the drug's safety after approval. The agency may also require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution restrictions or other risk management mechanisms, including a REMS, to help ensure that the benefits of the product outweigh the potential risks. REMS programs can include medication guides, communication plans for health care professionals, and elements to assure safe use, or ETASU. ETASU can include, but are not limited to, special training or certification for prescribing or dispensing, dispensing only under certain circumstances, special monitoring, and the use of patent registries. The FDA may prevent or limit further marketing of a product based on the results of post-market studies or surveillance programs. The FDA may require a REMS before or after approval if it becomes aware of a serious risk associated with use of the product. The requirement for a REMS can materially affect the potential market and profitability of a product. After approval, many types of changes to the approved product, such as adding new indications, changing manufacturing processes, and adding labeling claims, are subject to further testing requirements and FDA review and approval.

Post-Approval Requirements

Following approval of a new prescription product, the manufacturer, the approved product and the product's manufacturing locations are subject to pervasive and continuing regulation by the FDA, governing, among other things, monitoring and record-keeping activities, reporting of adverse experiences with the product and product problems to the FDA, product sampling and distribution, manufacturing and promotion and advertising. Although physicians may prescribe

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legally available products for unapproved uses or patient populations (i.e., "off-label uses"), manufacturers may not market or promote such uses. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant liability. In September 2021, the FDA published final regulations which describe the types of evidence that the agency FDA will consider in determining the intended use of a drug product. In the United States, health care professionals are generally permitted to prescribe products for such uses not described in the labeling, known as off-label uses, because the FDA does not regulate the practice of medicine. However, in October 2023, the FDA published draft guidance outlining the FDA's non-binding policies governing the distribution of scientific information on unapproved uses to healthcare providers. This draft guidance calls for such communications to be truthful, non-misleading, factual and unbiased and include all information necessary for healthcare providers to interpret the strengths and weaknesses and validity and utility of the information about the unapproved use.

It may be permissible, under very specific, narrow conditions, for a manufacturer to engage in nonpromotional, non-misleading communication regarding off-label information, such as distributing scientific or medical journal information. Moreover, with passage of the Pre-Approval Information Exchange Act, or PIE Act, in December 2022, sponsors of products that have not been approved may proactively communicate to payors certain information about products in development to help expedite patient access upon product approval. Previously, such communications were permitted under FDA guidance but the new legislation explicitly provides protection to sponsors who convey certain information about products in development to payors, including unapproved uses of approved products.

If a company is found to have promoted off-label uses, it may become subject to administrative and judicial enforcement by the FDA, the Department of Justice, or the Office of the Inspector General of the Department of Health and Human Services, as well as state authorities. This could subject a company to a range of penalties that could have a significant commercial impact, including civil and criminal fines and agreements that materially restrict the manner in which a company promotes or distributes products, as well as adverse public relations and reputational harm. The federal government has levied large civil and criminal fines against companies for alleged improper promotion, and has also requested that companies enter into consent decrees or permanent injunctions under which specified promotional conduct is changed or curtailed.

Orphan Drug Designation and Exclusivity

Orphan drug designation in the United States is designed to encourage sponsors to develop products intended for treatment of rare diseases or conditions. In the United States, a rare disease or condition is statutorily defined as a condition that affects fewer than 200,000 individuals in the United States or that affects more than 200,000 individuals in the United States and for which there is no reasonable expectation that the cost of developing and making available the biologic for the disease or condition will be recovered from sales of the product in the United States.

Orphan drug designation qualifies a company for tax credits and market exclusivity for seven years following the date of the product's marketing approval if granted by the FDA. An application for designation as an orphan product can be made any time prior to the filing of an application for approval to market the product. A product becomes an orphan when it receives orphan drug designation from the Office of Orphan Products Development at the FDA based on acceptable confidential requests made under the regulatory provisions. The product must then go through the review and approval process like any other product.

A sponsor may request orphan drug designation of a previously unapproved product or new orphan indication for an already marketed product. In addition, a sponsor of a product that is otherwise the same product as an already approved orphan drug may seek and obtain orphan drug designation for the subsequent product for the same rare disease or condition if it can present a plausible hypothesis that its product may be clinically superior to the first drug. More than one sponsor may receive orphan drug designation for the same product for the same rare disease or condition, but each sponsor seeking orphan drug designation must file a complete request for designation.

If a product with orphan designation receives the first FDA approval for the disease or condition for which it has such designation or for a select indication or use within the rare disease or condition for which it was designated, the product generally will receive orphan drug exclusivity. Orphan drug exclusivity means that the FDA may not approve another sponsor's marketing application for the same product for the same indication for seven years, except in certain limited circumstances. If a product designated as an orphan drug ultimately receives marketing approval for an indication broader than what was designated in its orphan drug application, it may not be entitled to exclusivity.

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The period of exclusivity begins on the date that the marketing application is approved by the FDA and applies only to the indication for which the product has been designated. The FDA may approve a second application for the same product for a different use or a second application for a clinically superior version of the product for the same use. Orphan drug exclusivity will not bar approval of another product under certain circumstances, including if the company with orphan drug exclusivity is not able to meet market demand or the subsequent product with the same drug for the same condition is shown to be clinically superior to the approved product on the basis of greater efficacy or safety, or providing a major contribution to patient care. This is the case despite an earlier court opinion holding that the Orphan Drug Act unambiguously required the FDA to recognize orphan drug exclusivity regardless of a showing of clinical superiority. Under Omnibus legislation signed by President Trump on December 27, 2020, the requirement for a product to show clinical superiority applies to drugs and biologics that received orphan drug designation before enactment of the FDA Reauthorization Act of 2017, but have not yet been approved or licensed by the FDA.

In September 2021, the Court of Appeals for the 11th Circuit held that, for the purpose of determining the scope of exclusivity, the term "same disease or condition" in the statute means the designated "rare disease or condition" and could not be interpreted by the FDA to mean the "indication or use." Thus, the court concluded, orphan drug exclusivity applies to the entire designated disease or condition rather than the "indication or use." Although there have been legislative proposals to overrule this decision, they have not been enacted into law. In January 2023, the FDA announced that, in matters beyond the scope of that court order, the FDA will continue to apply its existing regulations tying orphan-drug exclusivity to the uses or indications for which the orphan drug was approved.

Patent Term Restoration and Extension

A patent claiming a new drug product may be eligible for a limited patent term extension under the Hatch- Waxman Act, which permits a patent restoration of up to five years for patent term lost during the FDA regulatory review. The restoration period granted on a patent covering a product is typically one-half the time between the effective date of the IND and the submission date of an application, plus the time between the submission date of an application and the ultimate approval date. Patent term restoration cannot be used to extend the remaining term of a patent past a total of 14 years from the product's approval date. Only one patent applicable to an approved product is eligible for the extension, and only those claims covering the approved product, a method for using it, or a method for manufacturing it, may be extended. Additionally, the application for the extension must be submitted prior to the expiration of the patent in question. A patent that covers multiple products for which approval is sought can only be extended in connection with one of the approvals. The United States Patent and Trademark Office reviews and approves the application for any patent term extension or restoration in consultation with the FDA.

Healthcare Compliance

In the United States, biopharmaceutical manufacturers and their products are subject to extensive regulation at the federal and state level, such as laws intended to prevent fraud and abuse in the healthcare industry. Healthcare providers and third-party payors play a primary role in the recommendation and prescription of pharmaceutical products that are granted marketing approval. Arrangements with providers, consultants, third-party payors, and customers are subject to broadly applicable fraud and abuse, anti-kickback, false claims laws, reporting of payments to healthcare providers and patient privacy laws and regulations and other healthcare laws and regulations that may constrain our business and/or financial arrangements. Restrictions under applicable federal and state healthcare laws and regulations, including certain laws and regulations applicable only if we have marketed products, include the following:

- federal false claims, false statements and civil monetary penalties laws prohibiting, among other things, any person from knowingly presenting, or causing to be presented, a false claim for payment of government funds or knowingly making, or causing to be made, a false statement to get a false claim paid;

- federal healthcare program anti-kickback law, which prohibits, among other things, persons from offering, soliciting, receiving or providing remuneration, directly or indirectly, to induce either the referral of an individual for, or the purchasing or ordering of, a good or service for which payment may be made under federal healthcare programs such as Medicare and Medicaid;
- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which, in addition to privacy protections applicable to healthcare providers and other entities, prohibits executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;

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- federal laws that require pharmaceutical manufacturers to report certain calculated product prices to the government or provide certain discounts or rebates to government authorities or private entities, often as a condition of reimbursement under government healthcare programs;
- federal Open Payments (or federal "sunshine" law), which requires pharmaceutical and medical device companies to monitor and report certain financial interactions with certain healthcare providers to the Center for Medicare & Medicaid Services, or CMS, within the U.S. Department of Health and Human Services for re-disclosure to the public, as well as ownership and investment interests held by certain healthcare providers and their immediate family members;
- federal consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers;
- analogous state laws and regulations, including: state anti-kickback and false claims laws; state laws requiring pharmaceutical companies to comply with specific compliance standards, restrict financial interactions between pharmaceutical companies and healthcare providers or require pharmaceutical companies to report information related to payments to health care providers or marketing expenditures; and state laws governing privacy, security and breaches of health information in certain circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts; and

- laws and regulations prohibiting bribery and corruption such as the FCPA, U.S. Foreign Corrupt Practices Act, which, among other things, prohibits U.S. companies and their employees and agents from authorizing, promising, offering, or providing, directly or indirectly, corrupt or improper payments or anything else of value to foreign government officials, employees of public international organizations or foreign government-owned or affiliated entities, candidates for foreign public office, and foreign political parties or officials thereof.

Violations of these laws are punishable by criminal and/or civil sanctions, including, in some instances, exclusion from participation in federal and state health care programs, such as Medicare and Medicaid. Ensuring compliance is time consuming and costly. Similar healthcare laws and regulations exist in the EU and other jurisdictions, including reporting requirements detailing interactions with and payments to healthcare providers and laws governing the privacy and security of personal information.

Privacy Requirements

Privacy and data security requirements are either in place or underway in the United States. There are a broad variety of data protection laws that may be applicable to our activities, and a range of enforcement agencies at both the state and federal levels that can review companies for privacy and data security concerns based on general consumer protection laws. The Federal Trade Commission and state Attorneys General all are aggressive in reviewing privacy and data security protections for consumers. New laws also are being considered at both the state and federal levels. For example, the California Consumer Privacy Act of 2018, or the CCPA, which became effective on January 1, 2020, requires companies that process information on California residents to make new disclosures to consumers about their data collection, use and sharing practices, allow consumers to opt out of certain data sharing with third parties and provide a new cause of action for data breaches. Many Additionally, effective as of January 1, 2023, the California Privacy Rights Act, or CPRA, will significantly modify the CCPA, including by expanding consumers' rights with respect to certain sensitive personal information. The CPRA also creates a new state agency that will be vested with authority to implement and enforce the CCPA and the CPRA. The CCPA and CPRA could impact our business activities depending on how it is interpreted and exemplifies the vulnerability of our business to not only cyber threats but also the evolving regulatory environment related to personal data and individually identifiable health information. These provisions may apply to some of our business activities. In addition to California, a number of other states have passed comprehensive privacy laws similar to the CCPA and CPRA. These laws are either in effect or will go into effect sometime before the end of 2026. Like the CCPA and CPRA, these laws create obligations related to the processing of personal information, as well as special obligations for the processing of "sensitive" data (which includes health data in some cases). Some of the provisions of these laws may apply to our business activities. There are also states that are strongly considering similar legislation, privacy laws that will go into effect in 2025 and a broad range of legislative measures beyond. Other states will be considering these laws in the future, and Congress has also have been introduced at the federal level.

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debating passing a federal privacy law. There are also states that are specifically regulating health information that may affect our business. These laws may impact our business activities, including our identification of research subjects, relationships with business partners and ultimately the marketing and distribution of our product candidates, if approved.

Pharmaceutical Insurance Coverage and Health Care Reform

In the United States and markets in other countries, patients who are prescribed treatments for their conditions and providers performing the prescribed services generally rely on third-party payers to reimburse all or part of the associated health care costs. Significant uncertainty exists as to the coverage and reimbursement status of products approved by the FDA and other government authorities. Thus, even if a product candidate of ours or one of our collaborators is approved, sales of the product will depend, in part, on the extent to which third-party payers, including government health programs in the United States such as Medicare and Medicaid, commercial health insurers and managed care organizations provide coverage and establish adequate reimbursement levels for the product. The process for determining whether a payer will provide coverage for a product may be separate from the process for setting the price or reimbursement rate that the payer will pay for the product once coverage is approved. Third-party payers are increasingly challenging the prices charged, examining the medical necessity and reviewing the cost-effectiveness of medical products and services and imposing controls to manage costs.

Third-party payers may limit coverage to specific products on an approved list, also known as a formulary, which might not include all of the approved products for a particular indication.

In order to secure coverage and reimbursement for any product that might be approved for sale, a company may need to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost-effectiveness of the product, in addition to the costs required to obtain FDA or other comparable marketing approvals. Nonetheless, product candidates may not be considered medically necessary or cost effective. A decision by a third-party payer not to cover a product could reduce market acceptance once the product is approved and have a material adverse effect on sales, results of operations and financial condition. Additionally, a payer's decision to provide coverage for a product does not imply that an adequate reimbursement rate will be approved. Further, one payer's determination to provide coverage for a product does not assure that other payers will also provide coverage and reimbursement for the product, and the level of coverage and reimbursement can differ significantly from payer to payer.

In international markets, reimbursement and health care payment systems vary significantly by country, and many countries have instituted price ceilings on specific products and therapies. In some countries, the pricing of prescription pharmaceuticals is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after the receipt of marketing approval for a product. To obtain coverage and adequate reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of our product to other available therapies.

The containment of health care costs also has become a priority of federal, state, and foreign governments and the prices of products have been a focus in this effort. Governments have shown significant interest in implementing cost-containment programs, including price controls, restrictions on coverage, reimbursement and requirements for substitution of generic products. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit a company's revenue generated from the sale of any approved products including those that we are or our collaborators may develop. Coverage policies and third-party reimbursement rates may change at any time. Even if favorable coverage and reimbursement status is attained for one or more products for which a company or its collaborators receive marketing approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

If we obtain approval in the future to market in the United States any product candidates we may develop, we may be required to provide discounts or rebates under government healthcare programs or to certain government and private purchasers in order to obtain coverage under federal healthcare programs such as Medicaid. Participation in such programs may require us to track and report certain drug prices. We may be subject to fines and other penalties if we fail to report such prices accurately.

Outside the United States, ensuring adequate coverage and payment for any product candidates we may develop will face challenges. Pricing of prescription pharmaceuticals is subject to governmental control in many countries. Pricing negotiations with governmental authorities can extend well beyond the receipt of regulatory marketing approval for a product and may require us to conduct a clinical trial that compares the cost effectiveness of any product candidates we

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may develop to other available therapies. The conduct of such a clinical trial could be expensive and result in delays in our commercialization efforts.

Healthcare Reform

In March 2010, Congress enacted the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or the PPACA, which, among other things, includes changes to the coverage and payment for drug products under government health care programs. Other legislative changes have been proposed and adopted since the PPACA was enacted. In August 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. These changes included aggregate reductions to Medicare payments to providers of up to two percent per fiscal year, which went into effect in April 2013. Under current legislation, the actual reductions in Medicare payments may vary up to four percent. The Consolidated Appropriations Act, which was signed into law by President Biden in December 2022, made several changes to sequestration of the Medicare program. Section 1001 of the Consolidated Appropriations Act delays the four percent Statutory Pay-As-You-Go Act of 2010, or PAYGO, sequester for two years, through the end of 2024. Triggered by enactment of the American Rescue Plan Act of 2021, the four percent cut to the Medicare program would have taken effect in January 2023. The Consolidated Appropriations Act's health care offset title includes Section 4163, which extends the two percent Budget Control Act of 2011 Medicare sequester for six months into 2032 and lowers the payment reduction percentages in years 2030 and 2031.

The American Taxpayer Relief Act of 2012, among other things, reduced Medicare payments to several providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. These laws may result in additional reductions in Medicare and other healthcare funding and otherwise affect the prices we may obtain for any of our product candidates for which we may obtain regulatory approval or the frequency with which any such product candidate is prescribed or used.

Since enactment of the PPACA, there have been, and continue to be, numerous legal challenges and Congressional actions to repeal and replace provisions of the law. For example, the Tax Act repealed the "individual mandate." The repeal of this provision, which requires most Americans to carry a minimal level of health insurance, became effective in 2019. Further, on December 14, 2018, a U.S. District Court judge in the Northern District of Texas ruled that the individual mandate portion of the PPACA is an essential and inseverable feature of the PPACA, and therefore because the mandate was repealed as part of the Tax Act, the remaining provisions of the PPACA are invalid as well. The U.S. Supreme Court heard this case on November 10, 2020 and, on June 17, 2021, dismissed this action after finding that the plaintiffs do not have standing to challenge the constitutionality of the PPACA. Litigation and legislation over the PPACA are likely to continue, with unpredictable and uncertain results.

The Trump administration also took executive actions to undermine or delay implementation of the PPACA, including directing federal agencies with authorities and responsibilities under the PPACA to waive, defer, grant exemptions from, or delay the implementation of any provision of the PPACA that would impose a fiscal or regulatory burden on states, individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices. On January 28, 2021, however, President Biden revoked those orders and issued a new Executive Order which directs federal agencies to reconsider rules and other policies that limit Americans' access to health care, and consider actions that will protect and strengthen that access. Under this Order, federal agencies are directed to re-examine: policies that undermine protections for people with pre-existing conditions, including complications related to COVID-19; demonstrations and waivers under Medicaid and the PPACA that may reduce coverage or undermine the programs, including work requirements; policies that undermine the Health Insurance Marketplace or other markets for health insurance; policies that make it more difficult to enroll in Medicaid and the PPACA; and policies that reduce affordability of coverage or financial assistance, including for dependents.

Pharmaceutical Prices

The prices of prescription pharmaceuticals have also been the subject of considerable discussion in the United States. There have been several recent U.S. congressional inquiries, as well as proposed and enacted state and federal legislation designed to, among other things, bring more transparency to pharmaceutical pricing, review the relationship between pricing and manufacturer patient programs, and reduce the costs of pharmaceuticals under Medicare and Medicaid. In 2020, the prior Trump administration issued several executive orders intended to lower the costs of prescription

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products and certain provisions in these orders have been incorporated into regulations. These regulations include an interim final rule implementing a most favored nation model for prices that would tie Medicare Part B payments for certain physician-administered pharmaceuticals to the lowest price paid in other economically advanced countries, effective January 1, 2021. That rule, however, has been subject to a nationwide preliminary injunction and, on December 29, 2021, CMS issued a final rule to rescind it. With issuance of this rule, CMS stated that it will explore all options to incorporate value into payments for Medicare Part B pharmaceuticals and improve beneficiaries' access to evidence-based care.

In addition, in October 2020, HHS and the FDA published a final rule allowing states and other entities to develop a Section 804 Importation Program or SIP, to import certain prescription drugs from Canada into the United States. The final rule is currently That regulation was challenged in a lawsuit by the subject Pharmaceutical Research and Manufacturers of ongoing litigation, America, or PhRMA, but at least six the case was dismissed by a federal district court in February 2023 after the court found that PhRMA did not

have standing to sue HHS. A number of states (Vermont, Colorado, Florida, Maine, New Mexico, and New Hampshire) have passed laws allowing for the importation of drugs from Canada with Canada. Certain of these states have submitted Section 804 Importation Program proposals and are awaiting FDA approval. In January 2024, the intent of developing SIPs FDA approved Florida's plan for review and approval by the FDA. Canadian drug importation.

Further, on November 20, 2020, HHS finalized a regulation removing safe harbor protection for price reductions from pharmaceutical manufacturers to plan sponsors under Part D, either directly or through pharmacy benefit managers, unless the price reduction is required by law. The final rule would eliminate the current safe harbor for Medicare drug rebates and create new safe harbors for beneficiary point-of-sale discounts and pharmacy benefit manager or PBM, service fees. It originally was set to go into effect on January 1, 2022, but with passage of the Inflation Reduction Act of 2022, or IRA, has been delayed by Congress to January 1, 2032.

On July 9, 2021, President Biden signed Executive Order 14063, which focuses on, among other things, the price of pharmaceuticals. The Order directs HHS to create a plan within 45 days to combat "excessive pricing of prescription pharmaceuticals and enhance domestic pharmaceutical supply chains, to reduce the prices paid by the federal government for such pharmaceuticals, and to address the recurrent problem of price gouging." On September 9, 2021, HHS released its plan to reduce pharmaceutical prices. The key features of that plan are to: (a) make pharmaceutical prices more affordable and equitable for all consumers and throughout the health care system by supporting pharmaceutical price negotiations with manufacturers; (b) improve and promote competition throughout the prescription pharmaceutical industry by supporting market changes that strengthen supply chains, promote biosimilars and generic drugs, and increase transparency; and (c) foster scientific innovation to promote better healthcare and improve health by supporting public and private research and making sure that market incentives promote discovery of valuable and accessible new treatments.

More recently, on August 16, 2022, the Inflation Reduction Act of 2022, or IRA was signed into law by President Biden. The new legislation has implications for Medicare Part D, which is a program available to individuals who are entitled to Medicare Part A or enrolled in Medicare Part B to give them the option of paying a monthly premium for outpatient prescription drug coverage. Among other things, the IRA requires manufacturers of certain drugs to engage in price negotiations with Medicare (beginning in 2026), with prices that can be negotiated subject to a cap; imposes rebates under Medicare Part B and Medicare Part D to penalize price increases that outpace inflation (first due in 2023); and replaces the Part D coverage gap discount program with a new discounting program (beginning in 2025). The IRA permits the Secretary of HHS to implement many of these provisions through guidance, as opposed to regulation, for the initial years.

Specifically, with respect to price negotiations, Congress authorized Medicare to negotiate lower prices for certain costly single-source drug and biologic products that do not have competing generics or biosimilars and are reimbursed under Medicare Part B and Part D. CMS may negotiate prices for ten high-cost drugs paid for by Medicare Part D starting in 2026, followed by 15 Part D drugs in 2027, 15 Part B or Part D drugs in 2028, and 20 Part B or Part D drugs in 2029 and beyond. This provision applies to drug products that have been approved for at least 9 years and biologics that have been licensed for 13 years, but it does not apply to drugs and biologics that have been approved for a single rare disease or condition. Further, the legislation subjects drug manufacturers to civil monetary penalties and a potential excise tax for failing to comply with the legislation by offering a price that is not equal to or less than the negotiated "maximum fair price" under the law or for taking price increases that exceed inflation. The legislation also requires manufacturers to pay rebates for drugs in Medicare Part D whose price increases exceed inflation. The new law also caps Medicare out-of-pocket drug costs at an estimated $4,000 a year in 2024 and, thereafter beginning in 2025, at $2,000 a year.

The IRA includes a provision exempting orphan drugs from Medicare price negotiation but this exclusion has been interpreted by CMS in final guidance issued in July 2023 to apply only to those orphan drugs with an approved indication (or indications) for a single rare disease or condition. The final guidance clarifies that CMS will consider only active designations/approvals when evaluating a drug for the exclusion, such that designations/indications withdrawn before the selected drug publication date will not be considered. CMS also clarified that, if a drug loses its orphan drug exclusion status, the agency will use the earliest date of approval/licensure to determine whether the product is a qualifying single source drug subject to price negotiations.

In June 2023, Merck filed a lawsuit against HHS and CMS asserting that, among other things, the IRA's Drug Price Negotiation Program for Medicare constitutes an uncompensated taking in violation of the Fifth Amendment of the Constitution. Subsequently, a number of other parties, including the U.S. Chamber of Commerce and pharmaceutical companies, also filed lawsuits in various courts with similar constitutional claims against HHS and CMS. Litigation involving these and other provisions of the IRA will continue with unpredictable and uncertain results.

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At the state level, individual states are increasingly aggressive in passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. A number of states, for example, require drug manufacturers and other entities in the drug supply chain, including health carriers, pharmacy benefit managers, wholesale distributors, to disclose information about pricing of pharmaceuticals. In addition, regional healthcare organizations and individual hospitals are increasingly using bidding procedures to determine what pharmaceutical products and which suppliers will be included in their prescription pharmaceutical and other healthcare programs. These measures could reduce the ultimate demand for our products, once approved, or put pressure on our product pricing. We expect that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand for our product candidates or additional pricing pressures.

Review and Approval of Medicinal Products in the European Union

In order to market any product outside of the United States, a company sponsor must also comply with numerous and varying regulatory requirements of other countries and jurisdictions regarding quality, safety, and efficacy and governing, among other things, clinical trials, marketing authorization, commercial sales, and distribution of products. Whether or not it obtains FDA approval for a product, a sponsor will need to obtain the necessary approvals by the comparable non-U.S. regulatory authorities before it can commence clinical trials or marketing of the product in those countries or jurisdictions. The approval process ultimately varies between countries and jurisdictions and can involve additional product testing and additional administrative review periods. The time required to obtain approval in other countries and jurisdictions might differ from and be longer than that required to obtain FDA approval. Regulatory approval in one country or jurisdiction does not ensure regulatory approval in another, but a failure or delay in obtaining regulatory

approval in one country or jurisdiction may negatively impact the regulatory process in others. Specifically, however, the The process governing approval of medicinal products in the European Union generally follows the same lines as in the United States. It entails satisfactory completion of preclinical studies and adequate and well-controlled clinical trials to establish the safety and efficacy of the product for each proposed indication. It also requires the submission to the relevant competent authorities of a marketing authorization application, or MAA, and granting of a marketing authorization by these authorities before the product can be marketed and sold in the European Union.

Clinical Trial Approval

On January 31, 2022, the new Clinical Trials Regulation (EU) No 536/2014, or the Clinical Trials Regulation, became effective in the European Union and replaced the prior Clinical Trials Directive 2001/20/EC. EC, or the Clinical Trials Directive. The new regulation Clinical Trials Regulation aims at simplifying and streamlining the authorization, conduct and transparency of clinical trials in the European Union. Under the new coordinated procedure for the approval of clinical trials, the sponsor of a clinical trial to be conducted in more than one Member State member state of the European Union, or EU Member State, will only be required to submit a single application for approval. The submission will be made through the Clinical Trials Information System, a new clinical trials portal overseen by the European Medicines Agency, or the EMA, and available to clinical trial sponsors, competent authorities of the EU Member States and the public.

All ongoing clinical trials in the European Union approved under the prior Clinical Trials Directive, or CTD, must be transitioned to the Clinical Trials Information System by January 31, 2025. This date marks the end of a three-year transition period that began when the Clinical Trials Regulation became applicable in the European Union on January 31, 2022. Clinical trials that were started under the Clinical Trials Directive and subject to transition to the Clinical Trials Regulation will, by January 31, 2025, have to comply with the obligations of the Clinical Trials Regulation even if these are not included in the previous study protocol, such as (i) obligations of notification via Clinical Trials Information System; (ii) safety reporting rules; (iii) archiving requirement; and (iv) transparency requirements. The failure to transition ongoing clinical trials to the Clinical Trials Regulation by January 31, 2025 can result in corrective measures under Article 77 Clinical Trials Regulation, including revocation of the authorization of the clinical trial or suspension of the clinical trial as well as criminal sanctions and fines under national law of EU Member States.

Beyond streamlining the process, the new Clinical Trials Regulation includes a single set of documents to be prepared and submitted for the application as well as simplified reporting procedures for clinical trial sponsors, and a harmonized procedure for the assessment of applications for clinical trials, which is divided in two parts. Part I is assessed by the competent authorities of all EU Member States in which an application for authorization of a clinical trial has been submitted (Member (EU Member States concerned). Part II is assessed separately by each EU Member State concerned. Strict deadlines have been established for the assessment of clinical trial applications. The role of the relevant ethics committees in the assessment procedure will continue to be governed by the national law of the concerned EU Member State. However, overall related timelines will be defined by the Clinical Trials Regulation.

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The new regulation Clinical Trials Regulation did not change the preexisting requirement that a sponsor must obtain prior approval from the competent national authority of the EU Member State in which the clinical trial is to be conducted. If the clinical trial is conducted in different EU Member States, the competent authorities in each of these EU Member States must provide their approval for the conduct of the clinical trial. Furthermore, the sponsor may only start a clinical trial at a specific study site after the applicable ethics committee has issued a favorable opinion.

Parties conducting certain clinical trials must, as in the United States, post clinical trial information in the EU at the EudraCT website: https://eudract.ema.europa.eu. EU Clinical Trials Register.

PRIME Designation in the European Union

In March 2016, the European Medicines Agency, or EMA launched an initiative to facilitate development of product candidates in indications, often rare, for which few or no therapies currently exist. The PRIority MEdicines, or PRIME, scheme is intended to encourage drug development in areas of unmet medical need and provides accelerated assessment of products representing substantial innovation reviewed under the centralized procedure. Products from small- and medium-sized enterprises may qualify for earlier entry into the PRIME scheme than larger companies. Many benefits accrue to sponsors of product candidates with PRIME designation, including but not limited to, early and proactive regulatory dialogue with the EMA, frequent discussions on clinical trial designs and other development program elements, and accelerated marketing authorization application assessment once a dossier has been submitted. Importantly, a dedicated agency contact and rapporteur from the Committee for Human Medicinal Products, or CHMP, or Committee for Advanced Therapies are appointed early in PRIME scheme facilitating increased understanding of the product at EMA's Committee

committee level. A kick-off meeting initiates these relationships and includes a team of multidisciplinary experts at the EMA to provide guidance on the overall development and regulatory strategies.

Marketing Authorization

To obtain a marketing authorization for a product under European Union regulatory systems, a sponsor must submit an MAA either under a centralized procedure administered by the EMA, or one of the procedures administered by competent authorities in the EU Member States (decentralized procedure, national procedure or mutual recognition procedure). A marketing authorization may be granted only to a sponsor established in the European Union. Regulation (EC) No 1901/2006 provides that prior to obtaining a marketing authorization in the European Union, sponsors have to demonstrate compliance with all measures included in an EMA-approved Paediatric Investigation Plan, or PIP, covering all subsets of the pediatric population, unless the EMA has granted (1) a product-specific waiver, (2) a class waiver, or (3) a deferral for one or more of the measures included in the PIP.

The centralized procedure provides for the grant of a single marketing authorization by the European Commission that is valid across the European Economic Area (i.e. the European Union as well as Iceland, Liechtenstein and Norway). , or the EEA. Pursuant to Regulation (EC) No 726/2004, the centralized procedure is compulsory for specific products, including for medicines produced by certain biotechnological processes, products designated as orphan medicinal products, advanced therapy medicinal products, and

products with a new active substance indicated for the treatment of certain diseases. For products with a new active substance indicated for the treatment of other diseases and products that are highly innovative or for which a centralized process is in the interest of patients, the centralized procedure may be optional. The centralized procedure may at the request of the sponsor also be used in certain other cases.

Under the centralized procedure, the CHMP is responsible for conducting the initial assessment of a product and for several post-authorization and maintenance activities, such as the assessment of modifications or extensions to an existing marketing authorization. Under the centralized procedure in the European Union, the maximum timeframe for the evaluation of an MAA is 210 days, excluding clock stops, when additional information or written or oral explanation is to be provided by the sponsor in response to questions of the CHMP. Accelerated evaluation might be granted by the CHMP in exceptional cases, when a medicinal product is of major interest from the point of view of public health and in particular from the viewpoint of therapeutic innovation. If the CHMP accepts such request, the time limit of 210 days will be reduced to 150 days but it is possible that the CHMP can revert to the standard time limit for the centralized procedure if it considers that it is no longer appropriate to conduct an accelerated assessment. At the end of this period, the CHMP provides a scientific opinion on whether or not a marketing authorization should be granted in relation to a medicinal product. Within 15 calendar days of receipt of a final opinion from the CHMP, the European Commission must prepare a draft decision concerning an application for marketing authorization. This draft decision must take the opinion and any relevant provisions of European Union law into account. Before arriving at a final decision on an application for centralized authorization of a medicinal product the European Commission must consult the Standing Committee on

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Medicinal Products for Human Use, or the Standing Committee. The Standing Committee is composed of representatives of the EU Member States and chaired by a non-voting European Commission representative. The European Parliament also has a related “droit de regard”. The European Parliament’s role is to ensure that the European Commission has not exceeded its powers in deciding to grant or refuse to grant a marketing authorization.

The European Commission may grant a so-called “marketing authorization under exceptional circumstances”. Such authorization is intended for products for which the sponsor can demonstrate that it is unable to provide comprehensive data on the efficacy and safety under normal conditions of use, because the indications for which the product in question is intended are encountered so rarely that the sponsor cannot reasonably be expected to provide comprehensive evidence, or in the present state of scientific knowledge, comprehensive information cannot be provided, or it would be contrary to generally accepted principles of medical ethics to collect such information. Consequently, marketing authorization under exceptional circumstances may be granted subject to certain specific obligations, which may include the following:

- the sponsor must complete an identified program of studies within a time period specified by the competent authority, the results of which form the basis of a reassessment of the benefit/risk profile;
- the medicinal product in question may be supplied on medical prescription only and may in certain cases be administered only under strict medical supervision, possibly in a hospital and in the case of a radiopharmaceutical, by an authorized person; and
- the package leaflet and any medical information must draw the attention of the medical practitioner to the fact that the particulars available concerning the medicinal product in question are as yet inadequate in certain specified respects.

A marketing authorization under exceptional circumstances is subject to annual review to reassess the risk- benefit balance in an annual reassessment procedure. Continuation of the authorization is linked to the annual reassessment and a negative assessment could potentially result in the marketing authorization being suspended or revoked. The renewal of a marketing authorization of a medicinal product under exceptional circumstances, however, follows the same rules as a “normal” marketing authorization. Thus, a marketing authorization under exceptional circumstances is granted for an initial five years, after which the authorization will become valid indefinitely, unless the EMA decides that safety grounds merit one additional five-year renewal.

The European Commission may also grant a so-called “conditional marketing authorization” prior to obtaining the comprehensive clinical data required for an application for a full marketing authorization. Such conditional marketing authorizations may be granted for product candidates (including medicines designated as orphan medicinal products), if (i) the risk-benefit balance of the product candidate is positive, (ii) it is likely that the sponsor will be in a position to provide the required comprehensive clinical trial data, (iii) the product fulfills an unmet medical need, and (iv) the benefit to public health of the immediate availability on the market of the medicinal product concerned outweighs the risk inherent in the fact that additional data are still required. A conditional marketing authorization may contain specific obligations to be fulfilled by the marketing authorization holder, including obligations with respect to the completion of ongoing or new studies, and with respect to the collection of pharmacovigilance data. Conditional marketing authorizations are valid for one year, and may be renewed annually, if the risk-benefit balance remains positive, and after an assessment of the need for additional or modified conditions and/or specific obligations. The timelines for the centralized procedure described above also apply with respect to the review by the CHMP of applications for a conditional marketing authorization.

The European Union medicines rules expressly permit the EU Member States to adopt national legislation prohibiting or restricting the sale, supply or use of any medicinal product containing, consisting of or derived from a specific type of human or animal cell, such as embryonic stem cells. While the products we have in development do not make use of embryonic stem cells, it is possible that the national laws in certain EU Member States may prohibit or restrict us from commercializing our products, even if they have been granted a European Union marketing authorization.

Unlike the centralized authorization procedure, the decentralized marketing authorization procedure requires a separate application to, and leads to separate approval by, the competent authorities of each EU Member State in which the product is to be marketed. This application is identical to the application that would be submitted to the EMA for authorization through the centralized procedure. The reference EU Member State prepares a draft assessment and drafts of the related materials within 120 days after receipt of a valid application. The resulting assessment report is submitted to the concerned EU Member States who, within 90 days of receipt, must decide whether to approve the assessment report and

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related materials. If a concerned EU Member State cannot approve the assessment report and related materials due to concerns relating to a potential serious risk to public health, disputed elements may be referred to the European Commission, whose decision is binding on all EU Member States.

The mutual recognition procedure similarly is based on the acceptance by the competent authorities of the EU Member States of the marketing authorization of a medicinal product by the competent authorities of other EU Member States. The holder of a national marketing authorization may submit an application to the competent authority of an EU Member State requesting that this authority recognize the marketing authorization delivered by the competent authority of another EU Member State.

As in the United States, information about clinical trials in support of a marketing application must be submitted within specific timeframes to the European Union (EudraCT) website: https://eudract.ema.europa.eu/ and other countries.

Regulatory Data Protection in the European Union

In the European Union, innovative medicinal products approved on the basis of a complete independent data package qualify for eight years of data exclusivity upon marketing authorization and an additional two years of market exclusivity pursuant to Directive 2001/83/EC. Regulation (EC) No 726/2004 repeats this entitlement for medicinal products authorized in accordance with the centralized authorization procedure. Data exclusivity prevents sponsors for authorization of generics of these innovative products from referencing the innovator's data to assess a generic (abridged) application for a period of eight years. During an additional two-year period of market exclusivity, a generic marketing authorization application can be submitted and authorized, and the innovator's data may be referenced, but no generic medicinal product can be placed on the European Union market until the expiration of the market exclusivity. The overall ten-year period will be extended to a maximum of 11 years if, during the first eight years of those ten years, the marketing authorization holder obtains an authorization for one or more new therapeutic indications which, during the scientific evaluation prior to their authorization, are held to bring a significant clinical benefit in comparison with existing therapies. Even if a compound is considered to be a new chemical entity so that the innovator gains the prescribed period of data exclusivity, another company nevertheless could also market another version of the product if such company obtained marketing authorization based on an MAA with a complete independent data package of pharmaceutical tests, preclinical tests, and clinical trials.

Periods of Authorization and Renewals

A marketing authorization has an initial validity for five years in principle. The marketing authorization may be renewed after five years on the basis of a re-evaluation of the risk-benefit balance by the EMA or by the competent authority of the EU Member State. To this end, the marketing authorization holder must provide the EMA or the competent authority with a consolidated version of the file in respect of quality, safety, and efficacy, including all variations introduced since the marketing authorization was granted, at least six months before the marketing authorization ceases to be valid. The European Commission or the competent authorities of the EU Member States may decide, on justified grounds relating to pharmacovigilance, to proceed with one further five- year period of marketing authorization. Once subsequently definitively renewed, the marketing authorization shall be valid for an unlimited period. Any authorization which is not followed by the actual placing of the medicinal product on the European Union market (in case of centralized procedure) or on the market of the authorizing EU Member State within three years after authorization ceases to be valid (the so-called sunset clause). valid.

Brexit Regulatory Requirements after Marketing Authorization

Following approval, the holder of the marketing authorization is required to comply with a range of requirements applicable to the manufacturing, marketing, promotion and sale of the Regulatory Framework medicinal product. These include compliance with the European Union's stringent pharmacovigilance or safety reporting rules, pursuant to which post-authorization studies and additional monitoring obligations can be imposed. In addition, the manufacturing of authorized products, for which a separate manufacturer's license is mandatory, must also be conducted in strict compliance with the United Kingdom

The United Kingdom's withdrawal from EMA's GMP requirements and comparable requirements of other regulatory bodies in the European Union, took place on January 31, 2020. The European Union which mandate the methods, facilities and controls used in manufacturing, processing and packing of drugs to assure their safety and identity. Finally, the United Kingdom reached an agreement on their new partnership in marketing and promotion of authorized products, including industry-sponsored continuing medical education and advertising directed toward the Trade and Cooperation Agreement, prescribers of drugs and/or the Agreement, which was applied provisionally beginning on January 1, 2021 and which entered into force on May 1, 2021. The Agreement focuses primarily on free trade by ensuring no tariffs or quotas on trade general public, are strictly regulated in goods, including healthcare products such as medicinal products. Thereafter, the European Union and the United Kingdom will form two separate markets governed by two distinct regulatory and legal regimes. As such, the Agreement seeks to minimize barriers to trade in goods while accepting that border checks will become inevitable under Directive 2001/83EC, as a consequence that the United Kingdom is no longer part of the single market. As of January 1, 2021, the Medicines and Healthcare products Regulatory Agency, or the MHRA, became responsible for supervising medicines and medical devices in Great Britain, comprising England, Scotland and Wales under domestic law whereas Northern Ireland continues to be subject to EU rules under the Northern Ireland Protocol. The MHRA will rely on the Human Medicines Regulations 2012 (SI 2012/1916) (as amended), or the HMR, as the basis for regulating medicines. The HMR has incorporated into the domestic law the body of EU law instruments governing medicinal products that pre-existed prior to the United Kingdom's withdrawal from the European Union. The MHRA may rely on a decision taken by the European Commission on the approval of a new marketing authorization via the centralized procedure until December 31, 2023. amended.

Furthermore, while the Data Protection Act

Table of 2018 in the United Kingdom that "implements" and complements the European Union's GDPR is now effective in the United Kingdom, it is still unclear whether transfer of data from the EEA to the United Kingdom will remain lawful under GDPR. The Trade and Cooperation Agreement provides for a transitional period during which the United Kingdom will be treated like an European Union member state in relation to processing and transfers of personal data for four months from January 1, 2021. This may be extended by two further months. After such period, the United Kingdom will be a "third country" under the GDPR unless the European Commission adopts an adequacy decision in respect of transfers of personal data to the United Kingdom. The United Kingdom has already determined that it considers all of the European Union and EEA member states to be adequate for the purposes of data protection, ensuring that data flows from the United Kingdom to the European and EEA remain unaffected.Contents

Pricing Decisions for Approved Products

In the European Union, pricing and reimbursement schemes vary widely from country to country. Some countries provide that products may be marketed only after a reimbursement price has been agreed. Some countries may require the completion of additional studies that compare the cost-effectiveness of a particular product candidate to currently available therapies or so-called health technology assessments, in order to obtain reimbursement or pricing approval. For example, EU Member States have the option to

restrict the range of products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. EU Member States may approve a specific price for a product or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the product on the market. Other EU Member States allow companies to fix their own prices for products, but monitor and control prescription volumes and issue guidance to physicians to limit prescriptions. Recently, many countries in the European Union have increased the amount of discounts required on pharmaceuticals and these efforts could continue as countries attempt to manage health care expenditures, especially in light of the severe fiscal and debt crises experienced by many countries in the European Union. The downward pressure on health care costs in general, particularly prescription products, has become intense. As a result, increasingly high barriers are being erected to the entry of new products. Political, economic, and regulatory developments may further complicate pricing negotiations, and pricing negotiations may continue after reimbursement has been obtained. Reference pricing used by various EU Member States, and parallel trade, i.e., arbitrage between low-priced and high-priced EU Member States, can further reduce prices. There can be no assurance that any country that has price controls or reimbursement limitations for pharmaceutical products will allow favorable reimbursement and pricing arrangements for any products, if approved in those countries.

General Data Protection Regulation

Many countries outside of the United States maintain rigorous laws governing the privacy and security of personal information. The collection, use, disclosure, transfer, General Data Protection Regulation, or other processing of personal data, including personal health data, regarding individuals who are located in the EEA, and the processing of personal data that takes place in the EEA, is subject to the GDPR, which became effective on May 25, 2018. The GDPR, is wide-ranging in scope and imposes numerous requirements on companies that process personal data, and it imposes including heightened requirements on companies that process health and other sensitive data, such as requiring in many situations that a company obtain the consent of the individuals to whom the sensitive personal data relate before processing such data. Examples of obligations imposed by the GDPR on companies processing personal data that fall within the scope of the GDPR include providing information to individuals regarding data processing activities, implementing safeguards to protect the security and confidentiality of personal data, appointing a data protection officer, providing notification of data breaches and taking certain measures when engaging third-party processors.

The GDPR also imposes strict rules on the transfer of personal data to countries outside the EEA, including the United States, and permits data protection authorities to impose large penalties for violations of the GDPR, including potential fines of up to €20 million or 4% of annual global revenues, whichever is greater. The GDPR also confers a private right of action on data subjects and consumer associations to lodge complaints with supervisory authorities, seek judicial remedies, and obtain compensation for damages resulting from violations of the GDPR. Compliance with the GDPR is a rigorous and time-intensive process that may increase the cost of doing business or require companies to change their business practices to ensure full compliance. In July 2020, the Court of Justice of the European Union, or the CJEU, invalidated the EU-U.S. Privacy Shield framework, one of the mechanisms used to legitimize the transfer of personal data from the EEA to the United States. The CJEU decision also drew into question the long-term viability of an alternative means of data transfer, the standard contractual clauses, for transfers of personal data from the EEA to the United States. Following the withdrawal of the U.K. from the EU, the U.K. Data Protection Act 2018 applies to the processing of personal data that takes place in the U.K. and includes parallel obligations to those set forth by GDPR.

Additionally, in October 2022, President Biden signed an executive order to implement the EU-U.S. Data Privacy Framework, which would serve as a replacement to the EU-US Privacy Shield. The EC initiated European Commission adopted the process to adopt an adequacy decision for in July 2023. The adequacy decision permits U.S. companies who self-certify to the EU-US EU-U.S. Data Privacy Framework in December 2022. It is unclear if and when to rely on it as a valid data transfer mechanism for data transfers from the framework European Union to the United States. However, some privacy advocacy groups have already suggested that they will be finalized challenging the EU-U.S. Data Privacy Framework. If these challenges are successful, they may not only impact the EU-U.S. Data Privacy Framework, but also further limit the viability of the standard contractual clauses and other data transfer mechanisms.

Brexit and the Regulatory Framework in the United Kingdom

The United Kingdom's withdrawal from the European Union took place on January 31, 2020. The European Union and the United Kingdom reached an agreement on their new partnership in the Trade and Cooperation Agreement, or the Agreement, which was applied provisionally beginning on January 1, 2021 and which entered into force on May 1, 2021. The Agreement focuses primarily on free trade by ensuring no tariffs or quotas on trade in goods, including healthcare products such as medicinal products. Thereafter, the European Union and the United Kingdom will form two

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separate markets governed by two distinct regulatory and legal regimes. As such, the Agreement seeks to minimize barriers to trade in goods while accepting that border checks will become inevitable as a consequence that the United Kingdom is no longer part of the single market. As of January 1, 2021, the Medicines and Healthcare products Regulatory Agency, or the MHRA, became responsible for supervising medicines and medical devices in Great Britain, comprising England, Scotland and Wales under domestic law whereas Northern Ireland continues to be subject to European Union rules under the Northern Ireland Protocol.

On February 27, 2023, the UK government and the European Commission announced a political agreement in principle to replace the Northern Ireland Protocol with a new set of arrangements, known as the "Windsor Framework". This new framework fundamentally changes the existing system under the Northern Ireland Protocol, including with respect to the regulation of medicinal products in the United Kingdom In particular, the MHRA will be responsible for approving all medicinal products destined for the United Kingdom market (i.e., Great Britain and Northern Ireland), and the EMA will no longer have any role in approving medicinal products destined for Northern Ireland. A single UK-wide marketing authorization will be granted by the MHRA for all medicinal products to be sold in the United Kingdom, enabling products to be sold in a single pack and under a single authorization throughout the United Kingdom.The Windsor Framework was approved by the EU-UK Joint Committee on March 24, 2023, so the United Kingdom government and the European Union will enact legislative measures to bring it into law. On June 9, 2023, the MHRA announced that the medicines aspects of the Windsor Framework will apply from January 1, 2025. The Human Medicines Regulations 2012 (SI 2012/1916) (as amended), or HMR, is the primary legal instrument for the regulation of medicines in the United Kingdom. The HMR has incorporated into the domestic law the body of EU law instruments governing medicinal products that pre-existed prior to the United Kingdom's withdrawal from the European Union.

European Union laws which have been transposed into United Kingdom law through secondary legislation continue to be applicable as "retained EU law". However, new legislation, such as the Clinical Trials Regulation, will not be applicable in Great Britain. Since a significant proportion of the regulatory framework for pharmaceutical products in the United Kingdom covering the quality, safety, and efficacy of pharmaceutical products, clinical trials, marketing authorization, commercial sales, and distribution of pharmaceutical products is derived from EU directives and regulations, Brexit may have a material impact upon the regulatory regime with respect to the development, manufacture, importation,

approval and commercialization of our product candidates in the United Kingdom. For example, the United Kingdom is no longer covered by the centralized procedures for obtaining EU-wide marketing authorization from the EMA, and a separate marketing authorization will be required to market our product candidates in the United Kingdom.A new international recognition framework has been in place since January 1, 2024, whereby the MHRA will have regard to decisions on the approval of marketing authorizations made by the EMA and certain other regulators when determining an application for a new marketing authorization in Great Britain.

As with other issues related to withdrawal of the United Kingdom from the European Union, there are open questions about how personal data will be protected in the United Kingdom and whether it will be challenged in court. The uncertainty around this issue may further impact our business operations personal information can transfer from the European Union to the United Kingdom. Following the withdrawal of the United Kingdom from the European Union, the UK Data Protection Act 2018 applies to the processing of personal data that takes place in the EU. United Kingdom and includes parallel obligations to those set forth by the GDPR. While the Data Protection Act 2018 in the United Kingdom that "implements" and complements the GDPR has achieved Royal Assent on May 23, 2018 and is now effective in the United Kingdom, it is still unclear whether transfer of data from the EEA to the United Kingdom will remain lawful under the GDPR. The UK government has already determined that it considers all European Union and EEA member states to be adequate for the purposes of data protection, ensuring that data flows from the United Kingdom to the European Union/EEA remain unaffected. In addition, a recent decision from the European Commission appears to deem the United Kingdom as being "essentially adequate" for purposes of data transfer from the European Union to the United Kingdom, although this decision may be re-evaluated in the future.

Human Capital

As of February 6, 2023 February 5, 2024, we had 787 867 full-time employees, including a total of 344 378 employees with Ph.D. degrees. Of these full-time employees, 573 612 of these employees are located in the United States and 214 255 of these employees are located in our offices outside of the United States. Additionally, as of February 6, 2023 February 5, 2024, 33.3% of our full-time employees self-identified as female, 0.4% 0.3% self-identified as non-binary, and 0.6% 0.9% chose not to disclose their gender, and 33% 42.1% of our executive team self-identified as female. Further, 34% 37.3% of our new hires since January 1, 2022 January 1, 2023 self-identify as female, 1% 0% self-identify as non-binary, and 1% 1.9% have chosen not to disclose their gender. As of February 6, 2023 February 5, 2024, 59% 60.3% of our full-time employees in the United States self-identified as White, 24% 26.1% self-identified as Asian, 4% 4.4% self-identified as having two or more races, 3% 3.3% self-identified as Black or African American, 2% 2.6% self-identified as Hispanic or Latino, 0.2%

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self-identified as American Indian or Alaskan Native, 0.2% self-identified as Native Hawaiian or Other Pacific Islander, and 8% 2.9% chose not to disclose their race or ethnicity. Our employees are our greatest asset and we strive to create a work environment that is inclusive, challenging and rewarding.

We are committed to embedding a long-term, formal Environmental, Social, and Governance, or ESG, strategy within our business, a commitment we refer to as Corporate Sustainability. In 2022, we completed a "double materiality assessment," where we worked to determine the ESG-related topics most important to both our company and our stakeholders. The assessment was informed by both internal and external stakeholders and by key ESG standards and frameworks such as the Global Reporting Initiative, Sustainability Accounting Standards Board and United Nations Sustainable Development Goals. This assessment will served as the foundation for our inaugural Corporate Sustainability Report, which we published in April 2023, and continues to serve as the foundation for our comprehensive, data-driven, Corporate Sustainability strategy.

Among the ESG-related topics identified as most important to our company and stakeholders was Diversity, Equity and Inclusion, or DEI, an area we have been dedicated to addressing for many years. Our DEI philosophy is focused on ensuring that our employees feel safe, heard, comfortable, and valued. We continue to focus many of our recruiting efforts on diversifying our candidate pipeline by participating in specific conferences and hosting our own events that promote racial and gender diversity in the science and technology industries, including, for example, a hackathon for female and non-binary engineers and events for female and non-binary Ph.D. candidates. Further, we utilize a standardized interviewing model to reduce unconscious bias and to create a consistent hiring process across our open positions.

Our DEI Council was founded in 2021 and is comprised of a select group of senior leaders, Employee Resource Group, or ERG, representatives and passionate employees who meet on a monthly basis to advise on our DEI strategy, priorities, and goals. Our The DEI Council also regularly seeks feedback from employees to improve DEI programming and provides a permanent forum for voices to be heard across all levels of the organization. We currently have six ERGs that provide safe and equitable spaces for employees to advance inclusivity, create opportunities for education and awareness, and contribute to ongoing business objectives. Our ERGs, which include Caregivers and Parents of Schrödinger, Schrödinger Allied Sexualities Society, Schrödinger People of Color, Schrödinger Gender Equity, International Community of Schrödinger, and Healthy Minds Alliance, support and the sharing of resources while representing and communicating the interest interests of that group a particular ERG and its allies to the company. While membership in our ERG membership six ERGs directly engages comprises approximately one third one-third of our employees, these forums also provide an environment for community support, professional development, and educational opportunities for our entire employee population. Through Our ERGs are also involved in recruiting diverse candidates and participating in industry conferences, extending their reach well beyond our ERG leadership program, ERG leaders are provided with the opportunity to hone leadership skills such as negotiation and public speaking. company. Additionally, in an effort to advance our DEI aspirations, we have partnered with the Neuroleadership Institute on a learning program to better equip our employees with critical tools and language to talk about inclusion, bias, and leveraging how to leverage a growth mindset in the workplace.

In an industry known for its fierce competition for talent, we have been able to maintain high retention and low turnover rates. For the year ended December 31, 2022 December 31, 2023, our employee retention rate was 92.9% 93.1%.

Given our financial resources, our industry-leading position in the field of physics-based computational drug discovery and materials science research and our developing proprietary drug discovery programs, we believe that we will continue to be able to fill open positions and grow our headcount in support of our software, drug discovery and materials science businesses.

We are committed to providing our employees with compensation that meets the expectations of the market and industry norms. We monitor our compensation programs closely using comprehensive industry surveys and data to guide us, and we provide what we consider to be a competitive mix of incentives, including competitive salaries and bonuses, a 401(k) retirement plan with an employer matching contribution, participation in our equity programs, and health and welfare benefits, including, for example, access to a variety of mental health, family care, and reproductive health benefits for our employees based in the United States. We routinely review our compensation practices and analyze the equity of our compensation decisions for all employees. None A small number of our employees is subject to a who are located in Europe and Japan are covered by some type of collective bargaining agreement or represented by a trade or labor union. agreement. We consider our relations with our employees to be good.

We recognize the value of in-person collaboration and relationship building while also being mindful of the needs and priorities our employees have outside of the workplace. Our flexible We have long supported a hybrid work schedule, currently gives and our employees have the option of coming into the office two working remotely three days per week and working remotely the other three. Prior week. This allows our employees to the COVID-19 pandemic, employees had the option of coming into the office three days develop a week and working remotely the other two. We believe work schedule that our flexible hybrid schedule allows us to engage with each other and our customers effectively and to continue to advance our business. best suits their individual needs.

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Our company culture encourages engagement, both among our employees and within the communities we live and work. In the advancement of these efforts, internally, Internally, we have a well-regarded mentor mentorship program we and learning opportunities for hard and soft skills. We also have expanded our resonance program a variety of communications channels that allow employees to match colleagues to connect over virtual coffee chats globally, updated our management training programs to include mental health stay informed and wellness resources, connected, and refreshed our an annual performance review process to encourage more that emphasizes regular connections and real-time feedback between employees and managers to set and achieve personal performance goals. Some examples of external engagement in managers. In our local communities, include hosting a student internship program we are focused on giving back through educational outreach to students and educators to increase awareness, interest and literacy for students in partnership with a non-profit educational group that supports underserved local high school students who have demonstrated the knowledge, character, and skills to achieve their aspirations. STEM. To further our community engagement efforts, each of our we provide an annual paid volunteer day benefit and matching gift program, and in 2023 we launched a new social impact platform to provide employees is provided with a paid full day each year access to local volunteer opportunities in their various local community, in addition to our matching gifts program. currencies and languages.

Our Corporate Information

Our principal executive offices are located at 1540 Broadway, 24th Floor, New York, New York 10036, and our telephone number is (212) 295-5800. Our website address is http://www.schrodinger.com. The information contained on, or that can be accessed through, our website is not incorporated by reference into this Annual Report or in any other report or document we file with the Securities and Exchange Commission, or SEC, and any reference to our website address is intended to be an inactive textual reference only.

We own or have rights to trademarks, service marks, and trade names that we use in connection with the operation of our business, including our corporate name, logos and website names. Other trademarks, service marks, and trade names appearing in this Annual Report are the property of their respective owners. Solely for convenience, some of the trademarks, service marks, and trade names referred to in this Annual Report are listed without the ® and ™ symbols.

Available Information

We make available free of charge through our website our Annual Report Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Sections 13(a) and 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act. We make these reports available through our website as soon as reasonably practicable after we electronically file such reports with, or furnish such reports to, the SEC. We also make available, free of charge on our website, the reports filed with the SEC by our executive officers, directors and 10% stockholders pursuant to Section 16 under the Exchange Act as soon as reasonably practicable after copies of those filings are provided to us by those persons.

We may also disclose information to the public concerning our software, drug discovery programs, computational platform and other items through a variety of disclosure channels in order to achieve broad, non-exclusionary distribution of information to the public. Some of the information distributed through these disclosure channels may be considered material information. Investors and others are encouraged to review the information we make public in the locations below. This list may be updated from time to time.

- For information concerning our software, drug discovery programs, computational platform, please visit: https://www.schrodinger.com.
- For information provided to the investment community, including news releases, events and presentations, and filings with the SEC, please visit https://ir.schrodinger.com.
- For additional information, please follow us on LinkedIn and Instagram, or visit our blog, Extrapolations.com.

These websites and social media channels, and the contents thereof, are not incorporated by reference into this Annual Report on Form 10-K nor deemed filed with the SEC.

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Item 1A. Risk Factors.

You should carefully consider the risks and uncertainties described below together with all of the other information contained in this Annual Report and our other public filings with the SEC. The risks described below are not the only risks facing our company. The occurrence of any of the following risks, or of additional risks and uncertainties not presently known to us or that we currently believe to be immaterial, could cause our business, prospects, operating results, and financial condition to suffer materially.

Risks Related to Our Financial Position and Need for Additional Capital

We have a history of significant operating losses, and we expect to incur losses over the next several years.

We have a history of significant operating losses. Our net income for the year ended December 31, 2023 was $40.7 million. Our net losses for the years ended December 31, 2022, and 2021 and 2020 were $149.2 million, and $101.2 million, and $26.6 million, respectively. As of December 31, 2022 December 31, 2023, we had an accumulated deficit of $379.1 million $338.4 million.

The net income we generated in the year ended December 31, 2023 was primarily due to the $147.2 million cash distributions we received from Nimbus Therapeutics, LLC, or Nimbus, on account of our equity stake in Nimbus, following the acquisition by Takeda Pharmaceuticals Company, Limited, or Takeda, of Nimbus Lakshmi, Inc., a wholly-owned subsidiary of Nimbus, and its TYK2 inhibitor NDI-034858 and the non-cash gain on our investment in Structure Therapeutics Inc., or Structure Therapeutics, which, following Structure Therapeutics' initial public offering in February 2023, we valued based on the closing price of its American Depositary Shares as of December 31, 2023. However, the potential for future distributions from, or gains in the fair value of, our equity stakes in our drug discovery collaborators are difficult to predict due to the inherent uncertainty of the events which may trigger such distributions or gains. We therefore expect that gain on equity investments and fair value gains and losses will fluctuate significantly in future periods.

We anticipate that our operating expenses will increase substantially in the foreseeable future as we continue to invest in our proprietary drug discovery programs, sales and marketing infrastructure, and our computational platform. We are still in the early stages of development of our own drug discovery programs. In June 2022, the U.S. Food and Drug Administration, or FDA, cleared our investigational new drug, or IND, submission for SGR-1505, our MALT1 inhibitor. We recently initiated a Phase 1 clinical trial of SGR-1505 in patients with relapsed or refractory B-cell lymphomas and currently have clinical trial sites open for screening and enrollment, but we have not yet dosed any patients with SGR-1505. In addition, we continue to advance other wholly-owned programs through IND-enabling studies, and we expect to submit an IND application to the FDA for our CDC7 inhibitor, which we refer to as SGR-2921, in the first half of 2023 and for our WEE1 inhibitor, which we refer to as SGR-3515, in 2024, subject to favorable data from IND-enabling studies. In addition, we plan to initiate a Phase 1 clinical trial of SGR-2921 in the second half of 2023, subject to receipt of regulatory clearance. We have no drug products approved or licensed for commercial sale, and as such, have not generated any revenue from our own drug product sales to date. We expect to continue to incur significant expenses and operating losses over the next several years. Our operating expenses and net income or loss may fluctuate significantly from quarter to quarter and year to year. year and you should not rely upon the results of any quarterly or annual periods as indications of future results. We anticipate that our expenses will increase substantially as we:

- continue to invest in and develop our computational platform and software solutions;
- continue our research and development efforts for our proprietary drug discovery programs;
- conduct preclinical studies and initiate and conduct clinical trials for any of our product candidates;
- prepare and make regulatory submissions for any of our product candidates;
- maintain, expand, enforce, defend, and protect our intellectual property;
- hire additional software engineers, programmers, sales and marketing, and other personnel to support our software business; business and other commercial operations;
- hire additional clinical, quality control, regulatory, chemical, manufacturing and control and other scientific personnel; and
- add operational, financial, and management information systems and personnel to support our operations as a public company.

If we are unable to increase sales of our software, increase revenue from our drug discovery collaborations, or if we and our current and future collaborators are unable to successfully develop and commercialize drug products, our revenues may be insufficient for us to achieve or maintain profitability.

To achieve and maintain profitability, we must succeed in significantly increasing our software sales and increasing revenue from our drug discovery collaborations, or we and our current or future collaborators must succeed in developing, and eventually commercializing, a drug product or drug products that generate significant revenue. We currently generate revenues from the sales of our software solutions and from achieving milestones under our partnered and collaborative drug discovery programs, and we expect to continue to derive most of our revenue from sales of our software and from

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achieving such milestones until such time as our or our collaborators' drug development and commercialization efforts are successful, if ever. As such, increasing sales of our software to existing customers, successfully marketing our software to new customers, and achieving milestones under our drug discovery collaborations are critical to our success. Demand for our software solutions may be affected by a number of factors, including continued market acceptance by the biopharmaceutical industry, market adoption of our software solutions beyond the biopharmaceutical industry including for material materials science applications, the ability of our platform to identify more promising molecules and accelerate and lower the costs of discovery as compared to traditional methods, timing of development and release of new offerings by our competitors, technological change, and the rate of growth in our target markets. If we are unable to continue to meet the demands of our customers, our business operations, financial results, and growth prospects will be adversely affected.

Achieving success in drug development will require us or our current or future collaborators to be effective in a range of challenging activities, including completing preclinical testing and clinical trials of product candidates, obtaining regulatory approval for these product candidates and manufacturing, marketing, and selling any products for which we or they may obtain regulatory approval. We are only in the early stages of most of these activities, and none of our current drug discovery collaborators have completed clinical development of any product candidate. We and they may never succeed in these activities and, even if we do, we may never generate revenues that are significant enough to achieve and sustain profitability, or even if our collaborators do, we may not receive option fees, milestone payments, or royalties from them that are significant enough for us to achieve and sustain profitability. Because of the intense competition in the market for our software solutions and the numerous risks and uncertainties associated with biopharmaceutical product development, we are unable to accurately predict when, or if, we will be able to achieve or sustain profitability.

Even if we achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would depress the value of our company and could impair our ability to raise capital, expand our business, maintain our research and development efforts, increase sales of our software,

develop a pipeline of product candidates, enter into collaborations, or even continue our operations. A decline in the value of our company could also cause our stockholders to lose all or part of their investment.

In addition, although we have experienced Our revenue growth in recent periods, we has and may not be able continue to sustain revenue growth consistent with our recent history or at all. fluctuate from quarter-to-quarter and year-to-year. Our total revenues increased by 20% from $181.0 million in the fiscal year ended December 31, 2022 to $216.7 million in the fiscal year ended December 31, 2023, and increased by 31% from $137.9 million in the fiscal year ended December 31, 2021 to $181.0 million in the fiscal year ended December 31, 2022, . Although we have experienced revenue growth in certain periods, we may not be able to sustain revenue growth and increased by 28% from $108.1 million in the fiscal year ended December 31, 2020 to $137.9 million in the fiscal year ended December 31, 2021. we may experience certain periods of revenue decline. You should not consider our revenue growth in recent periods as indicative of our future performance. As we grow our business, our revenue growth rates may slow in future periods.

Our quarterly and annual results may fluctuate significantly, which could adversely impact the value of our common stock.

Our results of operations, including our revenues, gross margin, profitability, and cash flows, have historically varied from period to period, and we expect that they will continue to do so. As a result, period-to-period comparisons of our operating results may not be meaningful, and our quarterly and annual results should not be relied upon as an indication of future performance. Our quarterly and annual financial results may fluctuate as a result of a variety of factors, many of which are outside of our control. Factors that may cause fluctuations in our quarterly and annual financial results include, without limitation, those listed elsewhere in this “Risk Factors” section and those listed below:

- customer renewal rates and the timing and terms of customer renewals, including the seasonality of customer renewals of our on-premise software arrangements, for which revenue historically has been recognized at a single point in time in the first and fourth quarter of each fiscal year;
- our ability to attract new customers for our software;
- the addition or loss of large customers, including through acquisitions or consolidations of such customers;
- the amount and timing of operating expenses related to the maintenance and expansion of our business, operations, and infrastructure;
- network outages or security breaches;
- general economic, industry and market conditions, including within the life sciences industry;
- general economic conditions, including the impact of increasing or decreasing inflation and interest rates;

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- our ability to collect receivables from our customers;
- the amount of software purchased by our customers, including the mix of on-premise and hosted software sold during a period;
- variations in the timing of the sales of our software, which may be difficult to predict;
- changes in the pricing of our solutions and in our pricing policies or those of our competitors;
- the timing and success of the introduction of new software solutions by us or our competitors or any other change in the competitive dynamics of our industry, including consolidation among competitors, customers, or strategic collaborators;

- changes in the fair value of or receipt of distributions or proceeds on account of the equity interests we hold in our drug discovery collaborators, such as Morphic Holding, Inc., or Morphic, and Structure Therapeutics, Inc., or Structure Therapeutics; and Nimbus;
- the success of our drug discovery collaborators in developing and commercializing drug products for which we are entitled to receive milestone payments or royalties;
- the timing of the recognition of milestones achieved under our collaborative and partnered programs;
- variations in the number and size of milestones achieved under our collaborative and partnered programs;
- the timing of recognition of revenue from any upfront payments from partnering entering into collaborations or out-licensing our wholly-owned proprietary drug discovery programs, such as under our collaboration agreement with Bristol-Myers Squibb Company, or BMS; and
- the timing of expenses related to our drug discovery programs, the development or acquisition of technologies or businesses and potential future charges for impairment of goodwill from acquired companies.

In addition, because we recognize revenues from our hosted software solutions ratably over the life of the contract, a significant upturn or downturn in sales of our hosted software solutions may not be reflected immediately in our operating results. As a result of these factors, we believe that period-to-period comparisons of our operating results are not a good indication of our future performance and that our interim financial results are not necessarily indicative of results for a full year or for any subsequent interim period.

We may will likely require additional capital to fund our operations. If we are unable to raise additional capital on terms acceptable to us or at all or generate cash flows necessary to maintain or expand our operations, we may not be able to compete successfully, which would harm our business, operations, and financial condition.

We expect to devote substantial financial resources to our ongoing and planned activities, including the development of drug discovery programs and continued investment in our computational platform. We expect our expenses to increase substantially in connection with our ongoing and planned activities, particularly as we advance our proprietary drug discovery programs, initiate or progress preclinical and IND-enabling studies, submit IND applications, initiate and progress clinical trials and invest in the further development

of our computational platform. In addition, if we decide to complete clinical development and seek regulatory approval on our own, we expect to incur significant additional expenses. Furthermore, we incur additional costs associated with operating as a public company, as compared to when we were a private company.

Our current drug discovery collaborators, from whom we are entitled to receive milestone payments upon achievement of various development, regulatory, and commercial milestones as well as royalties on commercial sales, if any, under the collaboration agreements that we have entered into with them, face numerous risks in the development of drugs, including the conduct of preclinical and clinical testing, obtaining regulatory approval, and achieving product sales. In addition, the amounts we are entitled to receive upon the achievement of such milestones tend to be smaller for near-term development milestones and increase if and as a collaborative product candidate advances through regulatory development to commercialization and will vary depending on the level of commercial success achieved, if any. We do not anticipate receiving significant milestone payments from many of our drug discovery collaborators for several years, if at all, and our drug discovery collaborators may never achieve milestones that would result in significant cash payments to us. In addition, while we have equity stakes in a number of our collaborators, the value of these equity stakes can vary significantly based on a number of factors beyond our control, and there can be no assurance that we can rely on such

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equity as capital to fund our operations. For these reasons we may need, or choose, to obtain additional capital to fund our continuing operations.

As of December 31, 2022 December 31, 2023, we had cash, cash equivalents, restricted cash, and marketable securities of $456.3 million $468.8 million. On February 13, 2023, on account of our equity stake in Nimbus, we received a $111.3 million cash distribution from Nimbus in connection with Takeda's acquisition of Nimbus Lakshmi, Inc., a wholly-owned subsidiary of Nimbus, and its TYK2 inhibitor NDI-034858. We believe that our existing cash, cash equivalents, and marketable securities as of December 31, 2022, together with the $111.3 million cash distribution from Nimbus received in February 2023, December 31, 2023 will be sufficient to fund our operating expenses and capital expenditure requirements through at least the next 24 months. However, we have based this estimate on assumptions that may prove to be wrong, and our operating plans may change as a result of many factors currently unknown to us. As a result, we could deplete our capital resources sooner than we currently expect.

Our future capital requirements will depend on many factors, including:

- the growth of our software revenue;
- the timing and extent of spending to support research and development efforts;
- the continued expansion of software sales and marketing activities;
- the timing and receipt of payments from our collaborations as well as drug discovery collaborations;
- spending to support, advance, and broaden our proprietary drug discovery programs; and
- the timing and receipt of any distributions or proceeds we may receive from our equity stakes in our drug discovery collaborators and partners. collaborators.

In the event that we require additional financing, we may not be able to raise such financing on terms acceptable to us or at all. In addition, we may seek additional capital due to favorable market conditions or strategic considerations, even if we believe we have sufficient funds for our current or future operating plans. If we are unable to raise additional capital on terms acceptable to us or at all or generate cash flows necessary to maintain or expand our operations and invest in our computational platform, we may not be able to compete successfully, which would harm our business, operations, and financial condition.

Raising additional capital may cause dilution to our stockholders, restrict our operations, or require us to relinquish rights to our technologies or drug programs.

To the extent that we raise additional capital through the sale of equity or convertible debt securities, our stockholders' ownership interests will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect our stockholders' rights as common stockholders. Debt financing and preferred equity financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, selling or licensing our assets, making product acquisitions, making capital expenditures, or declaring dividends.

If we raise additional funds through collaborations, strategic alliances or marketing, distribution, or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs, or product candidates or grant licenses on terms that may not be favorable to us or agree to exploit a drug development target exclusively for one of our collaborators when we may prefer to pursue the drug development target for ourselves.

If our estimates, judgments or judgments assumptions relating to our critical accounting policies prove to be incorrect or financial reporting standards or interpretations change, our results of operations could be adversely affected.

The preparation of financial statements in conformity with generally accepted accounting principles in the United States or U.S. GAAP, requires management to make judgments, estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. We base our estimates on historical experience, known trends and events, our beliefs of what could occur in the future considering available information and various other factors that we believe to be reasonable under the circumstances. The results of these estimates form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Significant judgment, assumptions and estimates used in preparing our consolidated financial statements include, with respect to revenue, determining the allocation of the transaction price and measurement of progress, including (1) the constraint on variable consideration, (2) the allocation of the transaction price to the performance obligations using their standalone selling price

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basis, and (3) the appropriate input or output based method to recognize collaboration revenue and the extent of progress to date.

Our results of operations may be adversely affected if our assumptions change or if actual circumstances differ from those in our assumptions, which could cause our results of operations to fall below the expectations of securities analysts and investors, resulting in a decline in the trading price of our common stock.

Additionally, we regularly monitor our compliance with applicable financial reporting standards and review new pronouncements and drafts thereof that are relevant to us. As a result of new standards, changes to existing standards and changes in their interpretation, we might be required to change our accounting policies, alter our operational policies, and implement new or enhance existing systems so that they reflect new or amended financial reporting standards, or we may be required to restate our published financial statements. Such changes to existing standards or changes in their interpretation may have an adverse effect on our reputation, business, financial position, and profit.

Risks Related to Our Software

If our existing customers do not renew their licenses, do not buy additional solutions from us, or renew at lower prices, our business and operating results will suffer.

We expect to continue to derive a significant portion of our software revenues from renewal of existing license agreements. As a result, maintaining the renewal rate of our existing customers and selling additional software solutions to them is critical to our future operating results. Factors that may affect the renewal rate for our customers and our ability to sell additional solutions to them include:

- the price, performance, and functionality of our software solutions;
- the availability, price, performance, and functionality of competing software solutions;
- the effectiveness of our professional services;
- our ability to develop or acquire complementary software solutions, applications, and services;
- the success of competitive products or technologies;
- the stability, performance, and security of our technological infrastructure;
- the business environment of our customers;
- the willingness of our customers to continue to adopt computational approaches to drug discovery, which can be impacted by changes in our customer's management and/or scientific personnel; and
- the decisions of our customers to discontinue or reduce the amount of drug discovery they undertake internally.

We deliver our software through either (i) a product license that permits our customers to install the software solution directly on their own in-house hardware and use it for a specified term, or (ii) a subscription that allows our customers to access the cloud-based software solution on their own hardware without taking control of the licenses. Our customers have no obligation to renew their product licenses or subscriptions for our software solutions after the license term expires, which is typically after one year, and many of our contracts may be terminated or reduced in scope either immediately or upon notice. In addition, our customers may negotiate terms less advantageous to us upon renewal, which may reduce our revenues from these customers. Factors that are not within our control may contribute to a reduction in our software revenues. For instance, our customers may reduce the number of their employees who are engaged in research and who would have use of our software, which would result in a corresponding reduction in the number of user licenses needed for some of our solutions and thus a lower aggregate renewal fee. The loss, reduction in scope, or delay of a large contract, or the loss or delay of multiple contracts, could materially adversely affect our business.

Our future operating results also depend, in part, on our ability to sell new software solutions and licenses to our existing customers. For example, the willingness of existing customers to license our software will depend on our ability to scale and adapt our existing software solutions to meet the performance and other requirements of our customers, which we may not do successfully. If our customers fail to renew their agreements, renew their agreements upon less favorable terms or at lower fee levels, or fail to purchase new software solutions and licenses from us, our revenues may decline and our future revenues may be constrained.

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Our software sales cycle can vary and be long and unpredictable.

The timing of sales of our software solutions is difficult to forecast because of the length and unpredictability of our sales cycle. We sell our solutions primarily to biopharmaceutical companies, and our sales cycles can be as long as nine to twelve months or longer. Further, the length of time that potential customers devote to their testing and evaluation,

contract negotiation, and budgeting processes varies significantly, depending on the size of the organization and the nature of their needs. In addition, we might devote substantial time and effort to a particular unsuccessful sales effort, and as a result, we could lose other sales opportunities or incur expenses that are not offset by an increase in revenue, which could harm our business.

A significant portion of our revenues are generated by sales to life sciences industry customers, and factors that adversely affect this industry could adversely affect our software sales.

A significant portion of our current software sales are to customers in the life sciences industry, in particular the biopharmaceutical industry. Demand for our software solutions could be affected by factors that adversely affect the life sciences industry. The life sciences industry is highly regulated and competitive and has experienced periods of considerable consolidation. Consolidation among our customers could cause us to lose customers, decrease the available market for our solutions, and adversely affect our business. In addition, changes in regulations that make investment in the life sciences industry less attractive or drug development more expensive could adversely impact the demand for our software solutions. For these reasons and others, selling software to life sciences companies can be competitive, expensive, and time consuming, often requiring significant upfront time and expense without any assurance that we will successfully complete a software sale. Accordingly, our operating results and our ability to efficiently provide our solutions to life sciences companies and to grow or maintain our customer base could be adversely affected as a result of factors that affect the life sciences industry generally.

We also intend to continue leveraging our solutions for broad application to industrial challenges in molecule design, including in the fields of aerospace, energy, semiconductors, and electronic displays. However, we believe the materials science industry is in the very early stages of recognizing the potential of computational methods for molecular discovery, and there can be no assurance that the industry will adopt computational methods such as our platform. Any factor adversely affecting our ability to market our software solutions to customers outside of the life sciences industry, including in these new fields, could increase our dependence on the life sciences industry and adversely affect the growth rate of our revenues, operating results, and business.

The markets in which we participate are highly competitive, and if we do not compete effectively, our business and operating results could be adversely affected.

The overall market for molecular discovery and design software is global, rapidly evolving, competitive, and subject to changing technology and shifting customer interests and priorities. Our software solutions face competition from competitors in the business of selling or providing simulation and modeling software to biopharmaceutical companies. These competitors include BIOVIA, a brand of Dassault Systèmes SE, or BIOVIA, Chemical Computing Group (US) Inc., Cresset Biomolecular Discovery Limited, Cadence Design Systems, Inc., Optibrium Limited, Cyrus Biotechnology, Inc., Molsoft LLC, Insilico Medicine, Inc., Iktos, XtalPi Inc., Inductive Bio, Inc., Chemaxon, PerkinElmer, Inc., and Simulations Plus, Inc.

We also have competitors in materials science, such as BIOVIA and Materials Design, Inc., and in enterprise software for the life sciences, such as BIOVIA, Certara USA, Inc., ChemAxon, PerkinElmer, Chemaxon, Revvity, Inc., and Dotmatics, Inc. In some cases, these competitors are well-established providers of these solutions and have long-standing relationships with many of our current and potential customers, including large biopharmaceutical companies. In addition, there are academic consortia that develop physics-based simulation programs for life sciences and materials applications. In the life sciences industry, the most prominent academic simulation packages include AMBER, CHARMm, GROMACS, GROMOS, OpenMM, and OpenFF. These packages are primarily maintained and developed by graduate students and post-doctoral researchers, often without the intent of commercialization.

We also face competition from solutions that biopharmaceutical companies develop internally and from smaller companies that offer products and services directed at more specific markets than we target, enabling these smaller competitors to focus a greater proportion of their efforts and resources on these markets, as well as a large number of companies that have been founded with the goal of applying machine learning technologies to drug discovery.

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Many of our competitors are able to devote greater resources to the development, promotion, and sale of their software solutions and services. It is possible that our focus on proprietary drug discovery will result in loss of management focus and resources relating to our software business, thereby resulting in decreasing revenues from our software business. Furthermore, third parties with greater available resources and the ability to initiate or withstand substantial price competition could acquire our current or potential competitors. Our competitors may also establish cooperative relationships among themselves or with third parties that may further enhance their product offerings or resources. If our competitors' products, services, or technologies become more accepted than our solutions, if our competitors are successful in bringing their products or services to market earlier than ours, if our competitors are able to respond more quickly and effectively to new or changing opportunities, technologies, or customer requirements, or if their products or services are more technologically capable than ours, then our software revenues could be adversely affected.

In addition, we are facing increasing competition from companies utilizing artificial intelligence, or AI, and other computational approaches for drug discovery. Some of these competitors are involved in drug discovery themselves and/or with partners, and others develop software or other tools utilizing AI which can be used, directly or indirectly, in drug discovery. To the extent these other AI approaches to drug discovery prove to be successful, or more successful, than our approach, the demand for our platform could be adversely affected, which could affect our software demand as well as reduce the demand for us as a collaborator in drug discovery.

We may be required to decrease our prices or modify our pricing practices in order to attract new customers or retain existing customers due to increased competition. Pricing pressures and increased competition could result in reduced sales, reduced margins, losses, or a failure to maintain or improve our competitive market position, any of which could adversely affect our business.

We have invested and expect to continue to invest in research and development efforts that further enhance our computational platform. Such investments may affect our operating results, and, if the return on these investments is lower or develops more slowly than we expect, our revenue and operating results may suffer.

We have invested and expect to continue to invest in research and development efforts that further enhance our computational platform, often in response to our customers' requirements. These investments may involve significant time, risks, and uncertainties, including the risk that the expenses associated with these investments may affect our margins and operating results and that such investments may not generate sufficient revenues to offset liabilities assumed and expenses associated with these new investments. The software industry changes rapidly as a result of technological and product developments, which may render our solutions less desirable. For example, in recent years, a number of companies have entered the drug discovery industry utilizing different AI approaches. While we believe we compete favorably and are meaningfully differentiated from such approaches with the combination of our physics-based computational platform and machine learning capabilities, the success of other such AI approaches to drug discovery could impact the demand for our solutions. We believe that we must continue to invest a significant amount of time and resources in our platform and software solutions to maintain and

improve our competitive position. If we do not achieve the benefits anticipated from these investments, if the achievement of these benefits is delayed, if technological developments render our solutions less desirable, or if a slowdown in general computing power impacts the rate at which we expect our physics-based simulations to increase in power and domain applicability, our revenue and operating results may be adversely affected.

If we are unable to collect receivables from our customers, our operating results may be adversely affected.

While the majority of our current customers are well-established, large companies and universities, we also provide software solutions to smaller companies. Our financial success depends upon the creditworthiness and ultimate collection of amounts due from our customers, including our smaller customers with fewer financial resources. If we are not able to collect amounts due from our customers, we may be required to write-off significant accounts receivable and recognize bad debt expenses, which could materially and adversely affect our operating results.

Defects or disruptions in our solutions could result in diminishing demand for our solutions, a reduction in our revenues, and subject us to substantial liability.

Our software business and the level of customer acceptance of our software depend upon the continuous, effective, and reliable operation of our software and related tools and functions. Our software solutions are inherently complex and may contain defects or errors. Errors may result from our own technology or from the interface of our software solutions with legacy systems and data, which we did not develop. The risk of errors is particularly significant when a new software solution is first introduced or when new versions or enhancements of existing software solutions are

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released. We have from time to time found defects in our software, and new errors in our existing software may be detected in the future. Any errors, defects, disruptions, or other performance problems with our software could hurt our reputation and may damage our customers' businesses. If that occurs, our customers may delay or withhold payment to us, cancel their agreements with us, elect not to renew, make service credit claims, warranty claims, or other claims against us, and we could lose future sales. The occurrence of any of these events could result in diminishing demand for our software, a reduction of our revenues, an increase in collection cycles for accounts receivable, require us to increase our warranty provisions, or incur the expense of litigation or substantial liability.

We rely upon third-party providers of cloud-based infrastructure to host our software solutions. Any disruption in the operations of these third-party providers, limitations on capacity, or interference with our use could adversely affect our business, financial condition, and results of operations.

We outsource substantially all of the infrastructure relating to our hosted software solutions to third-party hosting services. Customers of our hosted software solutions need to be able to access our computational platform at any time, without interruption or degradation of performance, and we provide them with service-level commitments with respect to uptime. Our hosted software solutions depend on protecting the virtual cloud infrastructure hosted by third-party hosting services by maintaining its configuration, architecture, features, and interconnection specifications, as well as the information stored in these virtual data centers, which is transmitted by third-party internet service providers. Any limitation on the capacity of our third-party hosting services could impede our ability to onboard new customers or expand the usage of our existing customers, which could adversely affect our business, financial condition, and results of operations. In addition, any incident affecting our third-party hosting services' infrastructure that may be caused by cyber-attacks, natural disasters, fire, flood, severe storm, earthquake, power loss, telecommunications failures, terrorist or other attacks, and other similar events beyond our control could negatively affect our cloud-based solutions. A prolonged service disruption affecting our cloud-based solutions for any of the foregoing reasons would negatively impact our ability to serve our customers and could damage our reputation with current and potential customers, expose us to liability, cause us to lose customers, or otherwise harm our business. We may also incur significant costs for using alternative equipment or taking other actions in preparation for, or in reaction to, events that damage the third-party hosting services we use.

In the event that our service agreements with our third-party hosting services are terminated, or there is a lapse of service, elimination of services or features that we utilize, interruption of internet service provider connectivity, or damage to such facilities, we could experience interruptions in access to our platform as well as significant delays and additional expense in arranging or creating new facilities and services and/or re-architecting our hosted software solutions for deployment on a different cloud infrastructure service provider, which could adversely affect our business, financial condition, and results of operations.

If our security measures are breached or unauthorized access to customer data is otherwise obtained, our solutions may be perceived as not being secure, customers may reduce the use of or stop using our solutions, and we may incur significant liabilities.

Our solutions involve the collection, analysis, and storage of our customers' proprietary information and sensitive proprietary data related to the discovery efforts of our customers. As a result, unauthorized access or security breaches, as a result of third-party action, employee error, malfeasance, or otherwise could result in the loss of information, litigation, indemnity obligations, damage to our reputation, and other liability. Because the techniques used to obtain unauthorized access or sabotage systems change frequently and generally are not identified until they are launched against a target, we may be unable to anticipate these techniques or to implement adequate preventative measures. In addition, if our employees fail to adhere to practices we have established to maintain a firewall between our drug discovery group, which we refer to as the Schrödinger Therapeutics Group therapeutics group, and our teams that work with software customers, or if the technical solutions we have adopted to maintain the firewall malfunction, our customers and collaborators may lose confidence in our ability to maintain the confidentiality of their intellectual property, we may have trouble attracting new customers and collaborators, we may be subject to breach of contract claims by our customers and collaborators, and we may suffer reputational and other harm as a result. Any or all of these issues could adversely affect our ability to attract new customers, cause existing customers to elect to not renew their licenses, result in reputational damage or subject us to third-party lawsuits or other action or liability, which could adversely affect our operating results. Our insurance may not be adequate to cover losses associated with such events, and in any case, such insurance may not cover all of the types of costs, expenses, and losses we could incur to respond to and remediate a security breach.

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Any failure to offer high-quality technical support services could adversely affect our relationships with our customers and our operating results.

Our customers depend on our support organization to resolve technical issues relating to our solutions, as our software requires expert usage to fully exploit its capabilities. Certain of our customers also rely on us to troubleshoot problems with the performance of the software, introduce new features requested for specific customer projects, inform them about the best way to set up and analyze various types of simulations and illustrate our techniques for drug discovery using examples from publicly available data sets. We may be unable to respond quickly enough to accommodate short-term increases in customer demand for these support services. Increased customer demand for our services, without corresponding revenues, could increase costs and adversely affect our operating results. In addition, our sales process is highly dependent on the reputation of our solutions and business and on positive recommendations from our existing customers. Any failure to offer high-quality technical support, or a market perception that we do not offer high-quality support, could adversely affect our reputation, our ability to sell our solutions to existing and prospective customers and our business and operating results.

Our solutions utilize third-party open-source software, and any failure to comply with the terms of one or more of these open-source software licenses could adversely affect our business or our ability to sell our software solutions, subject us to litigation, or create potential liability.

Our solutions include software licensed by third parties under any one or more open-source licenses, including the GNU General Public License, the GNU Lesser General Public License, the Affero General Public License, the BSD License, the MIT License, the Apache License, and others, and we expect to continue to incorporate open-source software in our solutions in the future. Moreover, we cannot ensure that we have effectively monitored our use of open-source software or that we are in compliance with the terms of the applicable open-source licenses or our current policies and procedures. There have been claims against companies that use open-source software in their products and services asserting that the use of such open-source software infringes the claimants' intellectual property rights. As a result, we and our customers could be subject to suits by third parties claiming that what we believe to be licensed open-source software infringes such third parties' intellectual property rights, and we may be required to indemnify our customers against such claims. Additionally, if an author or other third party that distributes such open-source software were to allege that we had not complied with the conditions of one or more of these licenses, we or our customers could be required to incur significant legal expenses defending against such allegations and could be subject to significant damages, enjoined from the sale of our solutions that contain the open-source software and required to comply with onerous conditions or restrictions on these solutions, which could disrupt the distribution and sale of these solutions. Litigation could be costly for us to defend, have a negative effect on our business, financial condition, and results of operations, or require us to devote additional research and development resources to change our solutions.

Use of open-source software may entail greater risks than use of third-party commercial software, as open-source licensors generally do not provide warranties or other contractual protections regarding infringement claims or the quality of the code, including with respect to security vulnerabilities. In addition, certain open-source licenses require that source code for software programs that interact with such open-source software be made available to the public at no cost and that any modifications or derivative works to such open-source software continue to be licensed under the same terms as the open-source software license. The terms of various open-source licenses have not been interpreted by courts in the relevant jurisdictions, and there is a risk that such licenses could be construed in a manner that imposes unanticipated conditions or restrictions on our ability to market our solutions. By the terms of certain open-source licenses, we could be required to release the source code of our proprietary software, and to make our proprietary software available under open-source licenses, if we combine our proprietary software with open-source software in a certain manner. In the event that portions of our proprietary software are determined to be subject to an open-source license, we could be required to publicly release the affected portions of our source code, re-engineer all or a portion of our solutions, or otherwise be limited in the licensing of our solutions, each of which could reduce or eliminate the value of our solutions. Disclosing our proprietary source code could allow our competitors to create similar products with lower development effort and time and ultimately could result in a loss of sales. Any of these events could create liability for us and damage our reputation, which could have a material adverse effect on our revenue, business, results of operations, and financial condition and the market price of our shares.

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Risks Related to Drug Discovery

We may never realize a return on our investment of resources and cash in our drug discovery collaborations.

We use our computational platform to provide drug discovery services to collaborators who are engaged in drug discovery and development. These collaborators include start-up companies, pre-commercial biotechnology companies, and large-scale pharmaceutical companies. When we engage in drug discovery with these collaborators, we typically provide access to our platform and platform experts who assist the drug discovery collaborator in identifying molecules that have activity against one or more specified protein targets. We historically have not received significant initial cash consideration for these services, except for the upfront payment of $55.0 million we received from BMS upon entry into our collaboration agreement with BMS. However, we have received equity consideration in certain of our collaborators and/or the right to receive option fees, cash milestone payments upon the achievement of specified development, regulatory, and commercial sales milestones for the drug discovery targets, and potential royalties. From time to time, we have also made additional equity investments in our drug discovery collaborators.

We may never realize a return on our investment of resources and cash in our drug discovery collaborations. Clinical drug development involves a lengthy and expensive process, with an uncertain outcome. Our drug discovery collaborators may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of any product candidates. In addition, our ability to realize return from our drug discovery collaborations is subject to the following risks:

- drug discovery collaborators have significant discretion in determining the amount and timing of efforts and resources that they will apply to our collaborations and may not perform their obligations as expected;
- drug discovery collaborators may not pursue development or commercialization of any product candidates for which we are entitled to option fees, milestone payments, or royalties or may elect not to continue or renew development or commercialization programs based on results of clinical trials or other studies, changes in the collaborator's strategic focus or available funding, or external factors, such as an acquisition, that divert resources or create competing priorities;
- drug discovery collaborators may delay clinical trials for which we are entitled to milestone payments;
- we may not have access to, or may be restricted from disclosing, certain information regarding our collaborators' product candidates being developed or commercialized and, consequently, may have limited ability to inform our stockholders about the status of, and likelihood of achieving, milestone payments or royalties under such collaborations;

- drug discovery collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with any product candidates and products for which we are entitled to milestone payments or royalties if the collaborator believes that the competitive products are more likely to be successfully developed or can be commercialized under terms that are more economically attractive;
- product candidates discovered in drug discovery collaborations with us may be viewed by our collaborators as competitive with their own product candidates or products, which may cause our collaborators to cease to devote resources to the commercialization of any such product candidates;
- existing drug discovery collaborators and potential future drug discovery collaborators may begin to perceive us to be a competitor more generally, particularly as we advance our proprietary drug discovery programs, and therefore may be unwilling to continue existing collaborations with us or to enter into new collaborations with us;
- a drug discovery collaborator may fail to comply with applicable regulatory requirements regarding the development, manufacture, distribution, or marketing of a product candidate or product, which may impact our ability to receive milestone payments;

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- disagreements with drug discovery collaborators, including disagreements over intellectual property or proprietary rights, contract interpretation, or the preferred course of development, might cause delays or terminations of the research, development, or commercialization of product candidates for which we are eligible to receive milestone payments, or might result in litigation or arbitration;
- drug discovery collaborators may not properly obtain, maintain, enforce, defend or protect our intellectual property or proprietary rights or may use our proprietary information in such a way as to potentially lead to disputes or legal proceedings that could jeopardize or invalidate our or their intellectual property or proprietary information or expose us and them to potential litigation;
- drug discovery collaborators may infringe, misappropriate, or otherwise violate the intellectual property or proprietary rights of third parties, which may expose us to litigation and potential liability;
- drug discovery collaborators could suffer from operational delays as a result of global health impacts, such as the recent COVID-19 pandemic; and
- drug discovery collaborations may be terminated prior to our receipt of any significant value from the collaboration. collaboration, which has happened to us in the past and may happen to us again in the future.

Our drug discovery collaborations may not lead to development or commercialization of product candidates that results in our receipt of option fees, milestone payments, or royalties in a timely manner, or at all. If any drug discovery collaborations that we enter into do not result in the successful development and commercialization of drug products that result in option fees, milestone payments, or royalties to us, we may not receive return on the resources we have invested in the drug discovery collaboration. Moreover, even if a drug discovery collaboration initially leads to the achievement of milestones that result in payments to us, it may not continue to do so.

We also rely on collaborators for the development and potential commercialization of product candidates we discover internally when we believe it will help maximize clinical and commercial opportunities for the product candidate. For example, under our collaboration agreement with BMS, after mutual agreement on the targets(s) of interest, the Schrödinger Therapeutics Group therapeutics group is responsible for the discovery of development candidates. Once a development candidate meeting specified criteria for a target has been identified, BMS will be solely responsible for the development, manufacturing and commercialization of such development candidate. Even if For example, following selection of a development candidate for the SOS1 program, BMS is now solely responsible for the further preclinical and clinical development, manufacturing and commercialization of such candidate at its own expense. We cannot be certain that we will successfully identify one or more additional development candidates for BMS to develop and commercialize under our collaboration agreement, agreement. Further, BMS may not achieve the research, development, regulatory and sales milestones for those development candidates that would result in additional payments to us.

We may not realize returns on our equity investments in our drug discovery collaborators.

We may not realize returns on our equity investments in our drug discovery collaborators. None of the drug discovery collaborators in which we hold equity generate revenue from commercial sales of drug products. They are therefore dependent on the availability of capital on favorable terms to continue their operations. In addition, if the drug discovery collaborators in which we hold equity raise additional capital, our ownership interest in and degree of control over these drug discovery collaborators will be diluted, unless we have sufficient resources and choose to invest in them further or successfully negotiate contractual anti-dilution protections for our equity investment. The financial success of our equity investment in any collaborator will likely be dependent on a liquidity event, such as a public offering, acquisition, or other favorable market event reflecting appreciation in the value of the equity we hold. The capital markets for public offerings and acquisitions are dynamic, and the likelihood of liquidity events for the companies in which we hold equity interests could significantly worsen. Further, valuations of privately held companies are inherently complex due to the lack of readily available market data. If we determine that any of our investments in such companies have experienced a decline in value, we may be required to record an impairment, which could negatively impact our financial results. The fair value of our equity interests in public companies, such as Morphic and Structure Therapeutics, may fluctuate significantly in future periods since we determine the fair value of such equity interests based on the market value of such companies' common stock as of a given reporting date. All of the equity we hold in our drug discovery collaborators is subject to a risk of partial or total loss of our investment.

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Our drug discovery collaborators have significant discretion in determining when to make announcements, if any, about the status of our collaborations, including about clinical developments and timelines for advancing collaborative programs, and the price of our common stock may decline as a result of announcements of unexpected results or developments.

Our drug discovery collaborators have significant discretion in determining when to make announcements about the status of our collaborations, including about preclinical and clinical developments and timelines for advancing the collaborative programs. While as a general matter we intend to periodically report on the status of our collaborations, our drug discovery collaborators, and in particular, our privately-held collaborators, may wish to report such information more or less frequently than we intend to or may not wish to report such information at all. The price of our common stock may decline as a result of the public announcement of unexpected results or developments in our collaborations, or as a result of our collaborators withholding such information.

Although we believe that our computational platform has the potential to identify more promising molecules than traditional methods and to accelerate drug discovery, our focus on using our platform technology to discover and design molecules with therapeutic potential may not result in the discovery and development of commercially viable products for us or our collaborators.

Our scientific approach focuses on using our platform technology to conduct "computational assays" that leverage our deep understanding of physics-based modeling and theoretical chemistry to design molecules and predict their key properties without conducting time-consuming and expensive physical experiments. Our computational platform underpins our software solutions, our drug discovery collaborations and our own proprietary drug discovery programs.

While the results of certain of our drug discovery collaborators suggest that our platform is capable of accelerating drug discovery and identifying high quality product candidates, these results do not assure future success for our drug discovery collaborators or for us with our proprietary drug discovery programs.

Even if we or our drug discovery collaborators are able to develop product candidates that demonstrate potential in preclinical studies, we or they may not succeed in demonstrating safety and efficacy of product candidates in human clinical trials. For example, in collaboration with us, Nimbus Therapeutics, LLC, or Nimbus was able to identify a unique series of acetyl-CoA carboxylase, or ACC, allosteric protein-protein interaction inhibitors with favorable pharmaceutical properties that inhibit the activity of the ACC enzyme. Nimbus achieved proof of concept in a Phase 1b clinical trial of its ACC inhibitor, firsocostat, and later sold the program to Gilead Sciences, Inc., or Gilead Sciences, in a transaction valued at approximately $1.2 billion, comprised of an upfront payment and earn outs. Of this amount, $601.3 million has been paid to Nimbus to date, and we received a total of $46.0 million in cash distributions in 2016 and 2017. In December 2019, Gilead Sciences announced topline results from its Phase 2 clinical trial which included firsocostat, both as a monotherapy and in combination with other investigational therapies for advanced fibrosis due to nonalcoholic steatohepatitis, in which the primary endpoint was not met. Gilead Sciences is currently evaluating firsocostat in a Phase 2b clinical trial in combination with Novo Nordisk A/S's semaglutide, a GLP-1 receptor agonist, for compensated cirrhosis due to nonalcoholic steatohepatitis. Moreover, preclinical and clinical data are often susceptible to varying interpretations and analyses, and many companies that have believed their product candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing approval of their product candidates.

We may not be successful in our efforts to identify, discover or develop product candidates and may fail to capitalize on programs, collaborations, or product candidates that may present a greater commercial opportunity or for which there is a greater likelihood of success.

Research programs to identify new product candidates require substantial technical, financial, and human resources. As an organization, we have selected are advancing SGR-1505, our first development candidates, which are SGR-1505, our clinical-stage MALT1 inhibitor, SGR-2921, our clinical-stage CDC7 inhibitor, and SGR-3515, our WEE1 preclinical-stage WEE1/MYT1 inhibitor. The FDA cleared our IND for SGR-1505 in June 2022. We recently initiated a Phase 1 clinical trial of SGR-1505 in patients with relapsed or refractory B-cell lymphomas and currently have clinical trial sites open for screening and enrollment, but we have not yet dosed any patients with SGR-1505. We also plan to an submit IND application to the FDA for SGR-2921 in the first half of 2023 and an IND application to the FDA for SGR-3515 in 2024, subject to favorable data from IND-enabling studies. We have not yet advanced any other programs into clinical development or IND-enabling studies, and we may fail to identify potential additional product candidates for clinical development. Similarly, a key element of our business plan is to expand the use of our computational platform through an increase in software sales and drug discovery collaborations. A failure to demonstrate the utility of our platform by successfully using it ourselves to discover internal product candidates could harm our business prospects.

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Because we have limited resources, we focus our research programs on protein targets where we believe our computational assays are a good substitute for experimental assays, where we believe it is theoretically possible to discover a molecule with properties that are required for the molecule to become a drug and where we believe there is a meaningful commercial opportunity, among other factors. The focus of our initial proprietary drug discovery programs was in the area of oncology, and we have only recently begun expanding into other therapeutic areas, including neurology and immunology. We may forego or delay pursuit of opportunities with certain programs, collaborations, or product candidates or for indications that later prove to have greater commercial potential. However, the development of any product candidate we pursue may ultimately prove to be unsuccessful or less successful than another potential product candidate that we might have chosen to pursue on a more aggressive basis with our capital resources. If we do not accurately evaluate the commercial potential for a particular product candidate, we may relinquish valuable rights to that product candidate through strategic collaboration, partnership, licensing, or other arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate. Alternatively, we may allocate internal resources to a product candidate in a therapeutic area in which it would have been more advantageous to enter into a collaboration.

Our research programs may show initial promise in identifying potential product candidates internally or with collaborators, yet fail to yield product candidates for clinical development for a number of reasons, including:

- our research methodology or that of any collaborator may be unsuccessful in identifying potential product candidates that are successful in clinical development;
- potential product candidates may be shown to have harmful side effects or may have other characteristics that may make the product candidates unmarketable or unlikely to receive marketing approval;
- our current or future collaborators may change their development profiles for potential product candidates or abandon a therapeutic area; or
- new competitive developments may render our product candidates obsolete or noncompetitive.

If any of these events occur, we may be forced to abandon our development efforts for a program or programs, which would have a material adverse effect on our business.

We rely on contract research organizations to synthesize any molecules with therapeutic potential that we discover. If such organizations do not meet our supply requirements, or if such organizations do not otherwise perform satisfactorily, development of any product candidate we may develop may be delayed.

We rely and expect to continue to rely on third parties to synthesize any molecules with therapeutic potential that we discover. discover, including SGR-1505, SGR-2921 and SGR-3515. Reliance on third parties may expose us to different risks than if we were to synthesize molecules ourselves. Our reliance on these third parties will reduce our control over these activities but will not relieve us of our responsibilities. If these third parties do not successfully carry out their contractual duties, meet expected deadlines, or synthesize molecules in accordance with regulatory requirements, if there are disagreements between us and such parties or if such parties are unable to expand capacities, we may not be able to fulfill, or may be delayed in producing sufficient product candidates to meet, our supply requirements, and we may not be able to complete, or may be delayed in completing, the necessary preclinical studies to enable us to progress viable product candidates for IND submissions or the necessary clinical trials and we will not be able to, or may be delayed in our efforts to, successfully develop and commercialize such product candidates. These The facilities of these third parties may also be affected by natural disasters, such as floods or fire, or geopolitical developments or public health pandemics, such as COVID-19, or such facilities could face production issues, such as contamination or regulatory concerns following a regulatory inspection of such facility. In such instances, we may need to locate an appropriate replacement third-party facility and establish a contractual relationship, which may not be readily available or on acceptable terms, which would cause additional delay and increased expense, and may have a material adverse effect on our business.

We or any third party may also encounter shortages in the raw materials or active pharmaceutical ingredient, or API, necessary to synthesize any molecule we may discover in the quantities needed for preclinical studies or clinical trials, as a result of capacity constraints or delays or disruptions in the market for the raw materials or API. Even if raw materials or API are available, we may be unable to obtain sufficient quantities at an acceptable cost or quality. The failure by us or the third parties to obtain the raw materials or API necessary to synthesize sufficient quantities of any molecule we may discover could delay, prevent, or impair our development efforts and may have a material adverse effect on our business.

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If we are not able to establish or maintain collaborations to develop and commercialize any of the product candidates we discover internally, we may have to alter our development and commercialization plans for those product candidates and our business could be adversely affected.

We expect to rely on future collaborators for the development and potential commercialization of product candidates we discover internally when we believe it will help maximize the clinical and commercial opportunities of the product candidate. We face significant competition in seeking appropriate collaborators for these activities, and a number of more established companies may also be pursuing such collaborations. These established companies may have a competitive advantage over us due to their size, financial resources, and greater clinical development and commercialization expertise. Whether we reach a definitive agreement for such collaborations will depend, among other things, upon our assessment of the collaborator's resources and expertise, the terms and conditions of the proposed collaboration, and the proposed collaborator's evaluation of a number of factors. Those factors may include the design or results of preclinical studies and clinical trials, the likelihood of approval by the FDA or similar regulatory authorities outside the United States, the potential market for the subject product candidate, the costs and complexities of manufacturing and delivering such product candidate to patients, the potential of competing products, the existence of uncertainty with respect to our ownership of technology, which can exist if there is a challenge to such ownership without regard to the merits of the challenge, and industry and market conditions generally. The collaborator may also consider alternative product candidates or technologies for similar indications that may be available to collaborate on and whether such a collaboration could be more attractive than the one with us for our product candidate. Collaborations are complex and time-consuming to negotiate and document. In addition, there have been a significant number of recent business combinations among large biopharmaceutical companies that have resulted in a reduced number of potential future collaborators.

If we are unable to reach agreements with suitable collaborators on a timely basis, on acceptable terms or at all, we may have to curtail the development of a product candidate, reduce or delay its development program or one or more of our other development programs, or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to fund and undertake development or commercialization activities on our own, we may need to obtain additional expertise and additional capital, which may not be available to us on acceptable terms or at all. If we fail to enter into collaborations and do not have sufficient funds or expertise to undertake the necessary development and commercialization activities, we may not be able to further develop any product candidates or bring them to market.

As a company, we have very limited experience in clinical development, and have not yet demonstrated which may adversely impact the likelihood that we will be successful in advancing our ability to complete any clinical trials. programs.

We only began conducting our own wholly-owned proprietary drug discovery efforts in 2018. We have selected our first development candidates, which are SGR-1505, our MALT1 inhibitor, SGR-2921, our CDC7 inhibitor, and SGR-3515, our WEE1 inhibitor, 2018, and as a company, we have very limited experience in clinical development. The FDA cleared our first IND in June 2022, which is for SGR-1505. We recently initiated a Phase 1 clinical trial of SGR-1505 in patients with relapsed or refractory B-cell lymphomas and currently have clinical trial sites open for screening and enrollment, but we have not yet dosed any patients with SGR-1505.

Our limited experience in designing, conducting and conducting completing clinical development activities may adversely impact the likelihood that we will be successful in advancing our programs. Further, any predictions you make about the future success or viability of our proprietary drug discovery programs may not be as accurate as they could be if we had a history of conducting and completing clinical trials and developing our own product candidates.

Further, if we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies governing clinical trials, our development plans may be impacted. For example, in December 2022, with the passage of Food and Drug Omnibus Reform Act, or FDORA, Congress required sponsors to develop and submit a diversity action plan for each phase 3 clinical trial or any other "pivotal study" of a new drug or biological product. These plans are meant to encourage the enrollment of more diverse patient populations in late-stage clinical trials of FDA-regulated products. Specifically, actions action plans must include the sponsor's goals for enrollment, the underlying rationale for those goals, and an explanation of how the sponsor intends to meet them. In addition to these requirements, the legislation directs the FDA to issue new guidance on diversity action plans.

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In addition, the regulatory landscape related to clinical trials in the European Union, or EU, recently evolved. The EU Clinical Trials Regulation, or CTR, which was adopted in April 2014 and repeals the EU Clinical Trials Directive, became applicable on January 31, 2022. While the Clinical Trials Directive required a separate clinical trial application, or CTA, to be submitted in each member state, to both the competent national health authority and an independent ethics committee, the CTR introduces a centralized process and only requires the submission of a single application to all member states concerned. The CTR allows sponsors to make a single submission to both the competent authority and an ethics committee in each member state, leading to a single decision per member state. The assessment procedure of the CTA has been harmonized as well, including a joint assessment by all member states concerned, and a separate assessment by each member state with respect to specific requirements related to its own territory, including ethics rules. Each member state's decision is communicated to the sponsor via the centralized EU portal. Once the CTA is approved, clinical study development may proceed. The CTR foresees a three-year transition period. The extent to which ongoing and new clinical trials will be governed by the CTR varies. For clinical trials whose CTA was made under the Clinical Trials Directive before January 31, 2022, the Clinical Trials Directive will continue to apply on a transitional basis for three years. Additionally, sponsors may were still permitted to choose to submit a CTA under either the Clinical Trials Directive or the CTR until January 31, 2023 and, if authorized, those will be governed by the Clinical Trials Directive until January 31, 2025. By that date, all ongoing trials will become subject to the provisions of the CTR.

As our wholly-owned proprietary drug discovery business grows, we may encounter unforeseen expenses, difficulties, complications, delays, and other known and unknown factors. Our wholly-owned proprietary drug discovery business will need to transition to a business capable of supporting significant clinical development activities. We may not be successful in such a transition.

Conducting successful clinical trials requires the enrollment of a sufficient number of patients, and suitable patients may be difficult to identify and recruit.

Conducting successful clinical trials requires the enrollment of a sufficient number of patients, and suitable patients may be difficult to identify and recruit. Identifying and qualifying patients to participate in future clinical trials for any other product candidate we develop is critical to our success. Patient enrollment in clinical trials and completion of patient participation and follow-up depends on many factors, including the severity of disease; size of the patient population; the nature of the trial protocol; the attractiveness of, or the discomforts and risks associated with, the treatments received by enrolled subjects; the availability of clinical trial investigators with appropriate competencies and experience; support staff; the number of ongoing clinical trials in the same indication that compete for the same patients; proximity of patients to clinical sites; the number and availability of trial sites; the ability to comply with the eligibility and exclusion criteria for participation in the clinical trial; ability to obtain and maintain patient consents; patient compliance; the ability to monitor patients during and after treatment; and the impact of the ongoing COVID-19 pandemic. any health pandemic or epidemic. For example, patients may be discouraged from enrolling in our clinical trials if the trial protocol requires them to undergo extensive post-treatment procedures or follow-up to assess the safety and effectiveness of our product candidates. Patients may also not participate in our clinical trials if they choose to participate in contemporaneous clinical trials of competitive products with competitors that have more clinical development experience than we do.

Our inability to locate and enroll a sufficient number of patients for our clinical trials would result in significant delays, could require us to abandon one or more clinical trials altogether and could delay or prevent our receipt of necessary regulatory approvals. Enrollment delays in our clinical trials may result in increased development costs for our product candidates, which would cause the value of our company to decline and limit our ability to obtain additional financing.

We rely on, and plan to continue to rely on, third parties to conduct our clinical trials, and those third parties may not perform satisfactorily, including failing to meet deadlines for the completion of such trials, which may prevent or delay our ability to seek or obtain marketing approval for or commercialize our product candidates or otherwise harm our business.

We rely on, and plan to continue to rely on, third-party clinical research organizations, in addition to other third parties such as research collaboratives and consortia, clinical data management organizations, medical institutions and clinical investigators, to conduct our ongoing and future clinical trials. trials, including for SGR-1505 and SGR-2921. These contract research organizations and other third parties play a significant role in the conduct and timing of these trials and subsequent collection and analysis of data. These third-party arrangements might terminate for a variety of reasons, including a failure to perform by the third parties. If we need to enter into alternative arrangements, our product development activities might be delayed.

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Our reliance on third parties for research and development activities reduces our control over these activities but does not relieve us of our responsibilities. For example, we are responsible for ensuring that each of our studies is conducted in accordance with the applicable protocol, and legal, regulatory and scientific standards, and our reliance on third parties does not relieve us of our responsibility to comply with any such standards. We and these third parties are required to comply with current good clinical practices, or cGCP, which are regulations and guidelines enforced by the FDA for all of our products in clinical development. Regulatory authorities in Europe and other jurisdictions have similar requirements. Regulatory authorities enforce these cGCPs through periodic inspections of trial sponsors, principal investigators and trial sites. If we or any of these third parties fail to comply with applicable cGCPs, the clinical data generated in our clinical trials may be deemed unreliable and the FDA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. We cannot assure you that a given regulatory authority will determine that any of our clinical trials comply with cGCP regulations. We also are required to register ongoing clinical trials and post the results of completed clinical trials on a U.S. government-sponsored database, clinicaltrials.gov, within certain timeframes. Failure to do so can result in fines, adverse publicity and civil and criminal sanctions.

Furthermore, third parties on whom we rely may also have relationships with other entities, some of which may be our competitors. In addition, these third parties are not our employees, and except for remedies available to us under our agreements with such third parties, we cannot control whether or not they devote sufficient time and resources to our on-going clinical, nonclinical and preclinical programs. If these third parties do not successfully carry out their contractual duties or obligations or meet expected deadlines, if they need to be replaced or if the quality or accuracy of the clinical data they obtain is compromised, our clinical trials may be extended, delayed or terminated and we may not be able to obtain, or may be delayed in obtaining, marketing approvals for our product candidates and will not be able to, or may be delayed in our efforts to, successfully commercialize our medicines.

Our reliance on third parties to manufacture our product candidates increases the risk that we will not have sufficient quantities of our product candidates or products or such quantities at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.

We do not own or operate manufacturing facilities for the production of any product candidates, nor do we have plans to develop our own manufacturing operations. We rely and expect to continue to rely on third-party contract manufacturers for all of our required raw materials, drug substance, and finished drug product for the preclinical and clinical development of any development candidates we develop ourselves and for any commercial supply of approved products, if any. We have limited personnel with experience in drug manufacturing and lack the resources and the capabilities to manufacture any of our product candidates on a clinical or commercial scale.

In order to conduct preclinical studies and clinical trials of our product candidates, we will need to identify suitable manufacturers with the capabilities to manufacture our compounds in large quantities in a manner consistent with existing regulations. Our third-party manufacturers may be unable to successfully increase the manufacturing capacity for any of our product candidates in a timely or cost-effective manner, or at all. In addition, quality issues may arise during scale-up activities and at any other time. If our manufacturers are unable to successfully scale up the manufacture of our product candidates in sufficient quality and quantity, the development, testing and clinical trials of that product candidate may be delayed or infeasible, and regulatory approval or commercial launch of that product candidate may be delayed or not obtained, which could significantly harm our business.

We do not currently have any agreements with third-party manufacturers for the long-term supply of any of our product candidates. In the future, we may be unable to enter into agreements with third-party manufacturers for commercial supplies of our product candidates, or may be unable to do so on acceptable terms.

Even if we are able to establish and maintain arrangements with third-party manufacturers, reliance on third-party manufacturers entails risks, including reliance on the third party for regulatory compliance and quality assurance; the possible breach of the manufacturing agreement by the third party; the possible misappropriation of our proprietary information, including our trade secrets and know-how; and the possible termination or nonrenewal of the agreement by the third party at a time that is costly or inconvenient for us.

Third-party manufacturers may not be able to comply with cGMP regulations or similar regulatory requirements outside the United States. Our failure, or the failure of our third-party manufacturers, to comply with applicable regulations could result in sanctions being imposed on us, including fines, injunctions, civil penalties, delays, suspension or withdrawal

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of approvals, license revocation, seizures or recalls of product candidates or products, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect supplies of our product candidates.

Our product candidates and any products that we may develop may compete with other product candidates and products for access to manufacturing facilities. There are a limited number of manufacturers that operate under cGMP regulations and that might be capable of manufacturing for us. If the third parties that we engage to supply any materials or manufacture product for our preclinical tests and clinical trials should cease to continue to do so for any reason, we likely would experience delays in advancing these trials while we identify and qualify replacement suppliers, and we may be unable to obtain replacement supplies on terms that are favorable to us. In addition, if we are not able to obtain adequate supplies of our product candidates or the substances used to manufacture them or any of approved drug we may use in combination trials, it will be more difficult for us to develop our product candidates and compete effectively.

Our current and anticipated future dependence upon others for the manufacture of our product candidates may adversely affect our future results of operations and our ability to develop product candidates and commercialize any products that receive marketing approval on a timely and competitive basis.

If serious adverse or unacceptable side effects are identified during the development or commercialization of our product candidates, we may need to abandon or limit our development and/or commercialization efforts for such product candidates.

If serious adverse events or undesirable side effects are observed in any of our clinical trials, we may have difficulty recruiting patients to our clinical trials, patients may drop out of our trials, or we may be required to abandon the trials or our development efforts of one or more product candidates altogether or limit development to certain uses or subpopulations in which the serious adverse events, undesirable side effects or other characteristics are less prevalent, less severe or more acceptable from a risk-benefit perspective. We, the FDA, comparable foreign regulatory authorities or an independent institutional review board may suspend clinical trials of a product candidate at any time for various reasons, including a belief that subjects or patients in such trials are being exposed to unacceptable health risks or adverse side effects. Some potential therapeutics developed in the biotechnology industry that initially showed therapeutic promise in early-stage trials have later been found to cause side effects that prevented their further development. Even if the side effects do not preclude the product candidate from obtaining or maintaining marketing approval, undesirable side effects may inhibit market

acceptance of the approved product due to its tolerability versus other therapies. In addition, adverse events which had initially been considered unrelated to the study treatment may later, even following approval and/or commercialization, be found to be caused by the study treatment. Any of these developments could materially harm our business, financial condition and prospects.

The outcome of preclinical studies and early clinical trials may not be predictive of the success of later clinical trials, and the results of our clinical trials may not satisfy the requirements of the FDA or other comparable foreign regulatory authorities.

Before obtaining regulatory approvals for the commercial sale of any of our product candidates, we will be required to demonstrate with substantial evidence through well-controlled clinical trials that our product candidates are safe and effective for their intended uses. Clinical testing is expensive and can take many years to complete, and its outcome is inherently uncertain. Failure can occur at any time during the clinical trial process. Success in preclinical studies and early-stage clinical trials does not mean that future clinical trials will be successful. We have not completed a clinical trial of any product candidate. The results of SGR-1505 our product candidates in preclinical studies may not be indicative of future results in our ongoing or later stage clinical trials. Product candidates in later-stage clinical trials may fail to demonstrate sufficient safety and efficacy to the satisfaction of the FDA and other comparable foreign regulatory authorities despite having progressed through preclinical studies and early-stage clinical trials.

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In some instances, there can be significant variability in safety and efficacy results between different clinical trials of the same product candidate due to numerous factors, including changes in trial protocols, differences in size and type of the patient populations, differences in and adherence to the dosing regimen and other trial protocols and the rate of dropout among clinical trial participants. Patients treated with our product candidates may also be undergoing surgical, radiation and chemotherapy treatments and may be using other approved products or investigational new drugs, which can cause side effects or adverse events that are unrelated to our product candidate. As a result, assessments of efficacy can vary widely for a particular patient, and from patient to patient and site to site within a clinical trial. This subjectivity can increase the uncertainty of, and adversely impact, our clinical trial outcomes. We do not know whether any clinical trials we may conduct will demonstrate consistent or adequate efficacy and safety sufficient to obtain marketing approval to market our product candidates. Most product candidates that begin clinical trials are never approved by regulatory authorities for commercialization.

Moreover, preclinical studies and clinical data are often susceptible to varying interpretations and analyses and many companies that believed their product candidates performed satisfactorily in preclinical studies and clinical trials nonetheless failed to obtain FDA or comparable foreign regulatory authority approval. We cannot guarantee that the FDA or comparable foreign regulatory authorities will interpret trial results as we do, and more trials than we anticipated could be required before we are able to submit applications seeking approval of our product candidates. To the extent that the results of the trials are not satisfactory to the FDA or comparable foreign regulatory authorities for support of a marketing application, we may be required to expend significant resources, which may not be available to us, to conduct additional trials in support of potential approval of our product candidates. Even if regulatory approval is secured for any of our product candidates, the terms of such approval may limit the scope and use of our product candidate, which may also limit its commercial potential. Furthermore, the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval, which may lead to the FDA or comparable foreign regulatory authorities delaying, limiting or denying approval of our product candidates.

Interim, initial, "topline", and preliminary data from our clinical trials that we announce or publish in the future may change as more patient data become available and are subject to audit and verification procedures that could result in material changes in the final data.

From time to time, we may publicly disclose interim, initial, preliminary or topline data from our clinical trials, which are based on a preliminary analysis of then-available data, and the results and related findings and conclusions are subject to change following a more comprehensive review of the data related to the particular trial. Interim data from clinical trials that we may complete are subject to the risk that one or more of the clinical outcomes may materially change as patient enrollment continues and more patient data become available or as patients from our clinical trials continue other treatments for their disease. We will also have to make assumptions, estimations, calculations and conclusions as part of our analyses of data, and we may not have received or had the opportunity to fully and carefully evaluate all data. As a result, the interim, initial, topline or preliminary results that we report may differ from future results of the same trials, or different conclusions or considerations may qualify such results, once additional data have been received and fully evaluated. Preliminary or topline data also remain subject to audit and verification procedures that may result in the final data being materially different from the preliminary or topline data we previously published. As a result, interim, initial, topline and preliminary data should be viewed with caution until the final data are available.

Adverse differences between interim data and final data could significantly harm our reputation and business prospects and may cause volatility in the price of our common stock.

We intend in the future to conduct clinical trials for our product candidates at sites outside the United States. The FDA may not accept data from trials conducted in such locations, and the conduct of trials outside the United States could subject us to additional delays and expense.

We intend in the future to conduct clinical trials for our product candidates at trial sites that are located outside the United States. Although the FDA may accept data from clinical trials conducted outside the United States, acceptance of these data is subject to certain conditions imposed by the FDA.

In cases where data from foreign clinical trials are intended to serve as the sole basis for marketing approval in the United States, the FDA will generally not approve the application on the basis of foreign data alone unless (i) the data are applicable to the U.S. population and U.S. medical practice; (ii) the trials were performed by clinical investigators of recognized competence and pursuant to cGCP regulations; and (iii) the data may be considered valid without the need for

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an on-site inspection by the FDA, or if the FDA considers such inspection to be necessary, the FDA is able to validate the data through an on-site inspection or other appropriate means.

In addition, even where the foreign study data are not intended to serve as the sole basis for approval, the FDA will not accept the data as support for an application for marketing approval unless the study satisfies certain conditions.For example, the clinical trial must be well designed and conducted and performed by qualified investigators in accordance with cGCPs. The FDA must be able to validate the data from the trial, including, if necessary, through an onsite inspection. The trial population must also have a similar profile to the U.S. population and the data must be applicable to the U.S. population and U.S. medical practice in ways that the FDA deems clinically meaningful, except to the extent the disease being studied does not typically occur in the United States. In addition, while these clinical trials are subject to the applicable local laws, FDA acceptance of the data will be dependent upon its determination that the trials also complied with all applicable U.S. laws and regulations. There can be no assurance that the FDA will accept data from trials conducted outside of the United States. If the FDA does not accept the data from any trial that we conduct outside the United States, it would likely result in the need for additional trials, which would be costly and time-consuming and delay or permanently halt our development of our product candidates or potential product candidates in the future.

In addition, the conduct of clinical trials outside the United States could have a significant adverse impact on us. Risks inherent in conducting international clinical trials include: clinical practice patterns and standards of care that vary widely among countries; non-U.S. regulatory authority requirements that could restrict or limit our ability to conduct our clinical trials; administrative burdens of conducting clinical trials under multiple non-U.S. regulatory authority schema; foreign exchange rate fluctuations; and diminished protection of intellectual property in some countries.

If we and any current or future collaborators are unable to successfully complete clinical development, obtain regulatory approval for, or commercialize any product candidates, or experience delays in doing so, our business may be materially harmed.

We are early in our development efforts. While efforts for our most advanced product candidate, SGR-1505, has been cleared by the FDA to be tested in humans, we have only recently initiated a clinical trial of SGR-1505. We have not yet dosed any patients with SGR-1505 or any other product candidate. own drug discovery programs. Our ability to generate product revenues, which we do not expect will occur for many years, if ever, will depend heavily on the successful development and eventual commercialization of our product candidates. The success of our and any current or future collaborators' development and commercialization programs will depend on several factors, including the following:

- successful completion of necessary preclinical studies to enable the initiation of clinical trials;
- successful enrollment of patients in, and the completion of, the clinical trials;
- acceptance by the FDA or other regulatory agencies of regulatory filings for any product candidates we and our current or future collaborators may develop;
- expanding and maintaining a workforce of experienced scientists and other technical specialists to continue to develop any product candidates;
- obtaining and maintaining intellectual property protection and regulatory exclusivity for any product candidates we and our current or future collaborators may develop;
- making arrangements with third-party manufacturers for, or establishing, clinical and commercial manufacturing capabilities;
- establishing sales, marketing, and distribution capabilities for drug products and successfully launching commercial sales, if and when approved;
- acceptance of any product candidates we and our current or future collaborators may develop, if and when approved, by patients, the medical community, and third-party payors;
- effectively competing with other therapies;
- obtaining and maintaining coverage, adequate pricing, and adequate reimbursement from third-party payors, including government payors;

- patients' willingness to pay out-of-pocket in the absence of coverage and/or adequate reimbursement from third-party payors;

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- ongoing or future any restrictions resulting from the COVID-19 a health epidemic or pandemic and its collateral consequences may result in internal and external operational delays and limitations; and
- maintaining a continued acceptable safety profile following receipt of any regulatory approvals.

Many of these factors are beyond our control, including clinical outcomes, the regulatory review process, potential threats to our intellectual property rights, and the manufacturing, marketing, and sales efforts of any current or future collaborator. Clinical drug development involves a lengthy and expensive process, with an uncertain outcome. If we or our current or future collaborators are unable to develop, receive marketing approval for, and successfully commercialize any product candidates, or if we or they experience delays as a result of any of these factors or otherwise, we may need to spend significant additional time and resources, which would adversely affect our business, prospects, financial condition, and results of operations.

Even if any product candidate that we may develop receives marketing approval, it may fail to achieve the degree of market acceptance by physicians, patients, third-party payers and others in the medical community necessary for commercial success.

If any product candidate we may develop receives marketing approval, it may nonetheless fail to gain sufficient market acceptance by physicians, patients, third-party payers and others in the medical community. Sales of medical products depend in part on the willingness of physicians to prescribe the treatment, which is likely to be based on a determination by these physicians that the products are safe, therapeutically effective and cost-effective. In addition, the inclusion or exclusion of products from treatment guidelines established by various physician groups and the viewpoints of influential physicians can affect the willingness of other physicians to prescribe the treatment. We cannot predict whether physicians, physicians' organizations, hospitals, other healthcare providers, government agencies or private insurers will determine that any of our product candidates, if approved for commercial sale, is safe, therapeutically effective and cost-effective as compared with competing treatments. Efforts to educate the medical community and third-party payers on the benefits of any product candidates we may develop may require significant resources and may not be successful. If any product candidates we may develop do not achieve an adequate level of acceptance, we may not generate significant product revenues and we may not become profitable. The degree of market acceptance of any product candidates we may develop, if approved for commercial sale, will depend on a number of factors, including:

- the efficacy and safety of such product candidates as demonstrated in clinical trials;
- the potential advantages and limitations compared to alternative treatments;
- the effectiveness of sales and marketing efforts;
- the cost of treatment in relation to alternative treatments;
- the clinical indications for which the product is approved;
- the convenience and ease of administration compared to alternative treatments;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the strength of marketing and distribution support;
- the timing of market introduction of competitive products;
- the availability of third-party coverage and adequate reimbursement;
- the prevalence and severity of any side effects; and
- any restrictions on the use of our products, if approved, together with other medications.

Clinical trial and product liability lawsuits against us could divert our resources, could cause us to incur substantial liabilities and could limit commercialization of our product candidates.

We face an inherent risk of clinical trial and product liability exposure related to the testing of our product candidates in clinical trials, and we will face an even greater risk if we commercially sell any products that we may develop. While we currently have no product candidates that have been approved for commercial sale, the use of product candidates by us in clinical trials, and the sale of any approved products in the future, may expose us to liability claims. These claims might be made by patients that use the product, healthcare providers, pharmaceutical companies or others

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selling such products. If we cannot successfully defend ourselves against claims that our product candidates or products caused injuries, we will incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any product candidates we may develop;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants;
- significant costs to defend any related litigation;
- substantial monetary awards to trial participants or patients;
- loss of revenue;
- reduced resources of our management to pursue our business strategy; and
- the inability to commercialize any product candidates we may develop.

We have insurance coverage in countries in which we conduct clinical trials and will need to increase our insurance coverage if we conduct clinical trials in additional countries or of additional product candidates or if we commence commercialization of any product candidates. Insurance coverage is increasingly expensive. We may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise. If a successful clinical trial or product liability claim or series of claims is brought against us for uninsured liabilities or in excess of insured liabilities, our assets may not be sufficient to cover such claims and our business operations could be impaired.

We face substantial competition, which may result in others discovering, developing or commercializing products before or more successfully than we do, thus rendering our products non-competitive, obsolete or reducing the size of our market.

We face competition with respect to our and our collaborators' product candidates from many biopharmaceutical and biotechnology companies. The biotechnology and pharmaceutical industries are characterized by rapidly advancing technologies, intense competition and a strong emphasis on proprietary and novel products and product candidates. Our competitors have developed, are developing or may develop products, product candidates that are competitive with or superior to our product candidates. Any

product candidates that we successfully develop and commercialize, internally or with our collaborators, will compete with existing therapies and new therapies that may become available in the future.

In particular, there is intense competition in the field of oncology, which is a focus of our drug discovery efforts. We have competitors both in the United States and internationally, including major multinational pharmaceutical companies, established biotechnology companies, specialty pharmaceutical companies, emerging and start-up companies, universities and other research institutions. We also compete with these organizations to recruit management, scientists and clinical development personnel, which could negatively affect our level of expertise and our ability to execute our business plan. We also face competition in finding and establishing clinical trial sites, enrolling subjects for clinical trials, assessing combination studies and recruiting credible principal investigators and advisors from key clinical disciplines and academic centers.

For example, with respect to SGR-1505, our MALT1 inhibitor, SGR-1505, which we are advancing for the treatment of patients with relapsed or refractory B-cell lymphomas, we are aware of several MALT1 inhibitors in clinical development, including by Janssen Research and Development, LLC, a Johnson & Johnson company, AbbVie Inc., Ono Pharmaceutical Co., Ltd., AbbVie HotSpot Therapeutics, and Exelixis, Inc. and Zentalis Pharmaceuticals. In addition, we compete with are also aware of other therapeutics, such as bi-specifics and CAR-Ts, both approved and in clinical development, for the treatment of B-cell lymphomas.

With respect to our CDC7 inhibitor, SGR-2921, which we are advancing for the treatment of relapsed or refractory acute myeloid leukemia or high-risk myelodysplastic syndrome, we are aware of several CDC7 inhibitors in Phase 1 clinical development, including by Chia Tai Tianqing Pharmaceutical Group Co., Ltd., Lin BioScience, Inc., and Cancer Research UK.

With respect to our WEE1/MYT1 inhibitor, SGR-3515, which we are advancing for the treatment of solid tumors, we are aware of several WEE1 inhibitors in clinical development, including by Zentalis Pharmaceuticals, Debiopharm International SA, IMPACT Therapeutics, Inc., Shouyao Holdings Co. Ltd., BioCity Biopharma, and Aprea Therapeutics, Inc., as well as a MYT1 inhibitor in clinical development being advanced by Repare Therapeutics Inc.. Furthermore, we are also aware of a WEE1/MYT1 inhibitor in preclinical development being advanced by Acrivon Therapeutics, Inc.

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Large pharmaceutical and biotechnology companies, in particular, have extensive experience in building and accessing networks of expert investigators, designing and conducting clinical trials, obtaining regulatory approvals, and manufacturing and commercializing biotechnology products. These companies also have significantly greater research and development and marketing capabilities than we do and may also have products that have been approved or are in late stages of development, and collaborative arrangements in our target markets with leading companies and research institutions. Established pharmaceutical and biotechnology companies may also invest heavily to accelerate discovery and development of novel compounds or to in-license novel compounds that could make the product candidates that we develop obsolete. Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than our products. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies, as well as in acquiring technologies complementary to, or necessary for, our programs. As a result of all of these factors, our competitors may succeed in obtaining approval from the FDA or other comparable foreign regulatory authorities or in discovering, developing and commercializing products in our field before we do.

Risks Related to Our Operations

Doing business internationally creates operational and financial risks for our business.

For the fiscal year ended December 31, 2022 December 31, 2023, sales to customers outside of the United States accounted for approximately 32% 25% of our total revenues. Operating in international markets requires significant resources and management attention and subjects us to regulatory, economic, and political risks that are different from those in the United States. We have limited operating experience in some international markets, and we cannot assure you that our expansion efforts into other international markets will be successful. Our experience in the United States and other international markets in which we already have a presence may not be relevant to our ability to expand in other markets. Our international expansion efforts may not be successful in creating further demand for our solutions outside of the United States or in effectively selling our solutions in the international markets we enter. In addition, we face risks in doing business internationally that could adversely affect our business, including:

- the need to localize and adapt our solutions for specific countries, including translation into foreign languages;
- data privacy laws which require that customer data be stored and processed in a designated territory or handled in a manner that differs significantly from how we typically handle customer data;
- difficulties in staffing and managing foreign operations, including employee laws and regulations;
- different pricing environments, longer sales cycles, and longer accounts receivable payment cycles and collections issues;
- differences in healthcare systems, drug regulation and reimbursement, and drug discovery and development practices and technologies;
- new and different sources of competition;
- weaker protection for intellectual property and other legal rights than in the United States and practical difficulties in enforcing intellectual property and other rights outside of the United States;
- laws and business practices favoring local competitors;
- compliance challenges related to the complexity of multiple, conflicting, and changing governmental laws and regulations, including employment, tax, reimbursement and pricing, privacy and data protection, and anti-bribery laws and regulations;

- increased financial accounting and reporting burdens and complexities;
- restrictions on the transfer of funds;
- changes in diplomatic and trade relationships, including new tariffs, trade protection measures, import or export licensing requirements, trade embargoes, and other trade barriers;

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- changes in social, political, and economic conditions or in laws, regulations, and policies governing foreign trade, manufacturing, development, and investment both domestically as well as in the other countries and jurisdictions;
- adverse tax consequences, including the potential for required withholding taxes;
- global health pandemics or epidemics, such as COVID-19; the recent COVID-19 pandemic; and
- unstable regional, economic and political conditions.

Our international agreements may provide for payment denominated in local currencies and our local operating costs are denominated in local currencies. Therefore, fluctuations in the value of the U.S. dollar and foreign currencies may impact our operating results when translated into U.S. dollars. We do not currently engage in currency hedging activities to limit the risk of exchange rate fluctuations.

Furthermore, with respect to our proprietary drug discovery programs, the current conflict involving ongoing war between Russia and Ukraine may impact the ability of our contract research organizations, or CROs, in the region to produce materials we require to conduct certain of our preclinical studies. If the conflict were to be prolonged or worsened, and if we are unable to obtain alternative sources for such materials that we require, the ability for us to timely execute and complete certain of our preclinical studies may be adversely impacted.

Additionally, we could face heightened risks as a result of the withdrawal of the United Kingdom from the European Union, commonly referred to as Brexit. Since the regulatory framework for pharmaceutical products in the United Kingdom covering quality, safety and efficacy of pharmaceutical products, clinical trials, marketing authorization, commercial sales and distribution of pharmaceutical products is derived from European Union directives and regulations, the consequences of Brexit and the future regulatory regime that applies to products and the approval of product candidates in the United Kingdom remains unclear.

A widespread outbreak of an illness or other public health issue, pandemic or epidemic such as the recent COVID-19 pandemic, could negatively affect various aspects of our business and make it more difficult to meet our obligations to our customers, and could result in reduced demand from our customers as well as delays in our drug discovery and development programs.

Our business and operations could be adversely affected by public health epidemics, including the ongoing recent COVID-19 pandemic, impacting the markets and industries in which we and our customers and collaborators operate.

In early March 2020, we implemented a work-from-home policy for all of our employees. Beginning in June 2020, we began limited re-openings of certain of our offices in the United States and abroad. All of our offices are currently open, though we may take future actions that alter our operations as may be required by federal, state, or local authorities, or which we determine are in our best interests. While most of our operations can be performed remotely, there is no guarantee that we will continue to be as effective while working remotely because our team is dispersed, many employees may have additional personal needs to attend to (such as looking after children as a result of school closures or family who become sick), and employees may become sick themselves and be unable to work. Decreased effectiveness of our team could adversely affect our results due to our inability to meet in person with potential or current customers and collaborators, or other decreases in productivity that could seriously harm our business.

On January 30, 2023, the Biden Administration announced that it will end the The public health emergency declarations related to COVID-19 ended on May 11, 2023. On January 31, 2023, the The FDA indicated that it would soon issue a Federal Register notice describing how the termination of ended certain COVID-19-related policies when the public health emergency will impact the agency's COVID-19 related guidance, including the clinical trial guidance ended and updates thereto. retained others. At this point, it is unclear how, if at all, these developments will impact our efforts to develop and commercialize our product candidates.

The full extent of Public health epidemics or pandemics, including the future impact of the recent COVID-19 pandemic, will depend on many factors outside of our control, including, without limitation, the extent, trajectory and duration of the pandemic, the development, availability and distribution of effective treatments and vaccines, the imposition of protective public safety measures, the emergence of new strains and variants of COVID-19 and the effectiveness of vaccines against such strains and variants, and the impact of the pandemic on the global economy. For instance, if certain of our customers experience downturns or uncertainty in their own business operations and revenue because of the economic effects resulting from the spread of COVID-19, they may decrease their spending, which may result in decreased software revenue.

In addition, as a result of the COVID-19 pandemic, we may experience cause delays in the progress of certain of our and our collaborators' drug discovery and development programs, particularly those that are in preclinical studies and clinical trials or that are preparing to enter clinical trials. Relative to our and our collaborators' drug discovery programs, the recent COVID-19 pandemic has resulted in, and may in the future result in, disruptions in current and future IND-enabling studies and clinical trials, manufacturing disruptions, trial site disruptions and impact the ability to obtain necessary institutional review board, institutional biosafety committee, or other necessary site approvals. These disruptions have caused and may in the future cause delays in certain of our and our collaborators' drug discovery programs. For example, our contract manufacturing organizations, or CMOs, and our contract research organizations, or CROs have had experienced reductions in the capacity to undertake research-scale production and have had experienced delays in executing preclinical studies, including our completed IND-enabling studies for SGR-2921. We expect to submit the IND application to the FDA for SGR-2921

in the first half of 2023 and to initiate a Phase 1 clinical trial in the second half of 2023, subject to receipt of regulatory clearance. In addition, the resurgence of COVID-19 in certain cities in China, and related subsequent lockdowns, have also reduced the capacity of a number of CROs that we work with in those affected areas. These reductions and delays may persist reoccur in the future, and we, together with our CMOs and CROs, are closely monitoring the impact of the COVID-19 pandemic on these operations, and we are actively working to add supplemental or substitute capacity to minimize the impact of these reduced operations. future. Furthermore, if our collaborators experience similar delays with their drug discovery and development programs, that could cause additional delays in our achievement of milestones and related revenue.

Inadequate funding Certain of our customers could experience downturns or disruptions at the FDA and other agencies may also slow the time necessary for new product candidates to be reviewed and/or approved by necessary government agencies, which would adversely affect our business. For example, over the last several years the U.S. government has shut down several times and certain regulatory agencies, such as the FDA and the SEC, have had to furlough critical FDA, SEC and other government employees and stop critical activities. If a prolonged government shutdown occurs, it could significantly impact the ability uncertainty in their own business because of the FDA to timely review and process our regulatory submissions, economic effects resulting from public health pandemics, which could have a material adverse effect decrease their spending on our business. Further, future government shutdowns could impact our ability to access the public markets software products and obtain necessary capital in order to properly capitalize and continue our operations. services.

The global impact of COVID-19 continues to rapidly evolve, and we will continue to monitor the situation closely. The ultimate impact of a resurgence of COVID-19, the emergence of a variant of the COVID-19 pandemic virus or a similar an outbreak of any other widespread public health epidemic is highly uncertain, not predictable and subject to change. We do not yet know change, and a resurgence of the full extent of recent COVID-19 pandemic has the potential delays or impacts on to adversely affect our business, financial condition, results of operations or the global economy as a whole. While the spread and prospects.

Table of COVID-19 may eventually be contained or mitigated, there is no guarantee that a future outbreak of this or any other widespread epidemics will not occur, or that the global economy will recover, either of which could seriously harm our business.Contents

If we fail to manage our technical operations infrastructure, our existing customers, and our internal drug discovery team, may experience service outages, and our new customers may experience delays in the deployment of our solutions.

We have experienced significant growth in the number of users and data that our operations infrastructure supports. We seek to maintain sufficient excess capacity in our operations infrastructure to meet the needs of all of our customers and to support our proprietary drug discovery programs. We also seek to maintain excess capacity to facilitate the rapid provision of new customer deployments and the expansion of existing customer deployments. In addition, we need to properly manage our technological operations infrastructure in order to support version control, changes in hardware and software parameters and the evolution of our solutions. However, the provision of new hosting infrastructure requires adequate lead-time. We have experienced, and may in the future experience, website disruptions, outages, and other performance problems. These types of problems may be caused by a variety of factors, including infrastructure changes, human or software errors, viruses, security attacks, fraud, spikes in usage, and denial of service issues. In some instances, we may not be able to identify the cause or causes of these performance problems within an acceptable period of time. If we do not accurately predict our infrastructure requirements, our existing customers may experience service outages that may subject us to financial penalties, financial liabilities, and customer losses. If our operations infrastructure fails to keep pace with increased sales and usage, customers and our internal drug discovery team may experience delays in the deployment of our solutions as we seek to obtain additional capacity, which could adversely affect our reputation and adversely affect our revenues.

Changes in tax laws or in their implementation or interpretation could adversely affect our business and financial condition.

Changes in tax law may adversely affect our business or financial condition. The Tax Cuts and Jobs Act, or the 2017 Tax Act, as amended by the Coronavirus Aid, Relief, and Economic Security Act, or CARES Act, significantly revises the Internal Revenue Code of 1986, as amended, or the Code. The 2017 Tax Act, among other things, contains significant changes to corporate taxation, including a reduction of the corporate tax rate from a top marginal rate of 35% to a flat rate of 21% and limitation of the deduction for net operating losses, or NOLs, to 80% of current-year taxable income for losses arising in taxable years beginning after December 31, 2017 (though any such NOLs may be carried forward indefinitely. indefinitely). In addition, beginning in 2022, the 2017 Tax Act eliminates the option to deduct research and development expenditures currently and requires corporations to capitalize and amortize them over five years. years or 15 years (for expenditures attributable to foreign research).

In addition to the CARES Act, as part of Congress's response to the COVID-19 pandemic, economic relief legislation was enacted in 2020 and 2021 containing tax provisions. The Inflation Reduction Act, or IRA, was also signed into law in August 2022. The IRA introduced new tax provisions, including a one percent excise tax imposed on certain stock repurchases by publicly traded companies. The one percent excise tax generally applies to any acquisition of stock by the publicly traded company (or certain of its affiliates) from a stockholder of the company in exchange for money or other property (other than stock of the company itself), subject to a de minimis exception. Thus, the excise tax could apply to certain transactions that are not traditional stock repurchases. Regulatory guidance under the 2017 Tax Act, the IRA, and such additional legislation is and continues to be forthcoming, and such guidance could ultimately increase or lessen the impact of these laws on our business and financial condition. Additional tax legislation may be enacted, and any such additional legislation could have an impact on our company. In addition, it is uncertain if and to what extent various states will conform to the 2017 Tax Act, the IRA, and additional tax legislation.

Our ability to use our NOLs and research and development tax credit carryforwards to offset future taxable income may be subject to certain limitations.

As of December 31, 2022 December 31, 2023, we had federal NOLs of approximately $270.9 $179.1 million and state NOLs of approximately $170.0 $98.6 million, which, if not utilized, generally begin began to expire in 2023. 2025. As of December 31, 2022 December 31, 2023, we also had federal research and development tax credit carryforwards of approximately $19.5 $23.3 million and state research and development tax credit carryforwards of approximately $1.3 $1.6 million. Unused credits began to expire in 2021 2024 and generally expire over time if they remain unused. These NOLs and research and development tax credit carryforwards could expire unused and be unavailable to offset future income tax liabilities.

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In addition, under Section 382 and 383 of the Code, and corresponding provisions of state law, a corporation that undergoes an "ownership change," generally defined as a greater than 50 percentage point change (by value) in its equity ownership by certain stockholders over a three-year period, is subject to limitations on its ability to utilize its pre-change NOLs and research and development tax credit carryforwards to offset future taxable income. We have performed an analysis through December 31, 2022 December 31, 2023 and determined that such an ownership change occurred on March 31, 2021. As a result of such ownership change or future ownership changes, our ability to use our NOLs and research and development tax credit carryforwards may be materially limited.

There is also a risk that due to regulatory changes, such as suspension of the use of NOLs, or other unforeseen reasons, our existing NOLs could expire or otherwise become unavailable to offset future income tax liabilities. As described above in "Changes in tax laws or in their implementation or interpretation could adversely affect our business and financial condition," the 2017 Tax Act, as amended by the CARES Act, includes changes to U.S. federal tax rates and rules governing NOL carryforwards that may significantly impact our ability to utilize NOLs to offset taxable income in the future. In addition, state NOLs generated in one state cannot be used to offset income generated in another state. For these reasons, we may be unable to use a material portion of our NOLs and other tax attributes.

Our international operations subject us to potentially adverse tax consequences.

We report our taxable income in various jurisdictions worldwide based upon our business operations in those jurisdictions. These jurisdictions include Germany, United Kingdom, Japan, India and South Korea. The international nature and organization of our business activities are subject to complex transfer pricing regulations administered by taxing authorities in various jurisdictions. The relevant taxing authorities may disagree with our determinations as to the income and expenses attributable to specific jurisdictions. If such a disagreement were to occur, and our position were not sustained, we could be required to pay additional taxes, interest, and penalties, which could result in one-time tax charges, higher effective tax rates, reduced cash flows, and lower overall profitability of our operations.

Taxing authorities may successfully assert that we should have collected or in the future should collect sales and use, value added, or similar taxes, and we could be subject to tax liabilities with respect to past or future sales, which could adversely affect our results of operations.

We do not collect sales and use, value added, and similar taxes in all jurisdictions in which we have sales, based on our belief that such taxes are not applicable or that we are not required to collect such taxes with respect to the jurisdiction. Sales and use, value added, and similar tax laws and rates vary greatly by jurisdiction. Certain jurisdictions in which we do not collect such taxes may assert that such taxes are applicable, which could result in tax assessments, penalties, and interest, and we may be required to collect such taxes in the future. Such tax assessments, penalties, and interest or future requirements may adversely affect our results of operations.

Unanticipated changes in our effective tax rate could harm our future results.

We are subject to income taxes in the United States and various foreign jurisdictions, and our domestic and international tax liabilities are subject to the allocation of expenses in differing jurisdictions. Forecasting our estimated annual effective tax rate is complex and subject to uncertainty, and there may be material differences between our forecasted and actual tax rates. Our effective tax rate could be adversely affected by changes in the mix of earnings and losses in countries with differing statutory tax rates, certain non-deductible expenses as a result of acquisitions, the valuation of deferred tax assets and liabilities, and changes in federal, state, or international tax laws and accounting principles. Increases in our effective tax rate would reduce our profitability or in some cases increase our losses.

In addition, we may be subject to income tax audits by many tax jurisdictions throughout the world. Although we believe our income tax liabilities are reasonably estimated and accounted for in accordance with applicable laws and principles, an adverse resolution of one or more uncertain tax positions in any period could have a material impact on the results of operations for that period.

We have acquired, and we may again in the future acquire, companies, businesses, solutions or technologies, which could divert our management's attention, result in additional dilution to our stockholders, and otherwise disrupt our operations and adversely affect our operating results.

We have acquired, and we may again in the future seek to acquire, or invest in, businesses, solutions, or technologies that we believe could complement or expand our solutions, enhance our technical capabilities, or otherwise offer growth opportunities. For

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example, in January 2022, we acquired XTAL BioStructures, Inc., or XTAL, a company that provides structural biology services, including biophysical methods, protein production and purification, and X-ray crystallography, which we believe will augment has augmented our ability to produce high quality target structures for our drug discovery programs. The pursuit of potential acquisitions may divert the attention of management and cause us to incur various expenses in identifying, investigating, and pursuing suitable acquisitions, whether or not they are consummated.

In addition, other than our acquisition of XTAL, we have limited experience in acquiring other businesses. If we acquire additional businesses, we may not be able to integrate the acquired personnel, operations, and technologies successfully, effectively manage the combined business following the acquisition or preserve the operational synergies between our business units that we believe currently exist. We cannot assure you that following any acquisition we would achieve the expected synergies to justify the transaction, due to a number of factors, including:

- inability to integrate or benefit from acquired technologies or services in a profitable manner;
- unanticipated costs or liabilities associated with the acquisition;
- acquisition-related costs;
- difficulty integrating the accounting systems, operations, and personnel of the acquired business;
- difficulties and additional expenses associated with supporting legacy products and hosting infrastructure of the acquired business;

- difficulty converting the customers of the acquired business onto our solutions and contract terms, including disparities in the revenues, licensing, support, or professional services model of the acquired company;
- diversion of management's attention from other business concerns;
- adverse effects to our existing business relationships with business partners and customers as a result of the acquisition;
- the potential loss of key employees;
- use of resources that are needed in other parts of our business; and
- use of substantial portions of our available cash to consummate the acquisition.

In addition, a significant portion of the purchase price of companies we acquire may be allocated to acquired goodwill and other intangible assets, which must be assessed for impairment at least annually. In the future, if our acquisitions do not yield expected returns, we may be required to take charges to our operating results based on this impairment assessment process, which could adversely affect our results of operations.

Acquisitions could also result in dilutive issuances of equity securities or the incurrence of debt, which could adversely affect our operating results. In addition, if an acquired business fails to meet our expectations, our operating results, business, and financial position may suffer.

Our operations may be interrupted by the occurrence of a natural disaster or other catastrophic event at our primary facilities.

Our operations are primarily conducted at our facilities in New York, New York, Portland, Oregon, and Hyderabad, India, and our internal hosting facility located in Clifton, New Jersey. The occurrence of natural disasters or other catastrophic events could disrupt our operations. Any natural disaster or catastrophic event in our facilities or the areas in which they are located could have a significant negative impact on our operations.

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Risks Related to Our Intellectual Property

If we fail to comply with our obligations under our existing license agreements with Columbia University, under any of our other intellectual property licenses, or under any future intellectual property licenses, or otherwise experience disruptions to our business relationships with our current or any future licensors, we could lose intellectual property rights that are important to our business.

We are party to a number of license agreements pursuant to which we have been granted exclusive and non-exclusive worldwide licenses to certain patents, software code, and software programs to, among other things, reproduce, use, execute, copy, operate, sublicense, and distribute the licensed technology in connection with the marketing and sale of our software solutions and to develop improvements thereto. In particular, the technology that we license from Columbia University pursuant to our license agreements with them are used in and incorporated into a number of our software solutions which we market and license to our customers. For further information regarding our license agreements with Columbia University, see "Business—"Item 1. Business—License Agreements with Columbia University".University." Our license agreements with Columbia University and other licensors impose, and we expect that future licenses will impose, specified royalty and other obligations on us.

In spite of our best efforts, our current or any future licensors might conclude that we have materially breached our license agreements with them and might therefore terminate the license agreements, thereby delaying our ability to market and sell our existing software solutions and develop and commercialize new software solutions that utilize technology covered by these license agreements. If these in-licenses are terminated, or if the underlying intellectual property fails to provide the intended exclusivity, competitors could market products and technologies similar to ours. This could have a material adverse effect on our competitive position, business, financial condition, results of operations, and prospects.

Disputes may arise regarding intellectual property subject to a licensing agreement, including:

- the scope of rights granted under the license agreement and other interpretation related issues;
- the extent to which our technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- the sublicensing of patent and other rights under any collaborative development relationships;
- the inventorship and ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our current or future licensors and us and our collaborators; and
- the priority of invention of patented technology.

In addition, license agreements are complex, and certain provisions in such agreements may be susceptible to multiple interpretations. The resolution of any contract interpretation disagreement that may arise could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology, or increase what we believe to be our financial or other obligations under the relevant agreement. For example, our counterparties have in the past and may in the future dispute the amounts owed to them pursuant to payment obligations. If disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on

commercially acceptable terms, we may experience delays in the development and commercialization of new software solutions and in our ability to market and sell existing software solutions, which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

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Our obligations under our existing or future drug discovery collaboration agreements may limit our intellectual property rights that are important to our business. Further, if we fail to comply with our obligations under our existing or future collaboration agreements, or otherwise experience disruptions to our business relationships with our prior, current, or future collaborators, we could lose intellectual property rights that are important to our business.

We are party to collaboration agreements with biopharmaceutical companies, pursuant to which we provide drug discovery services but have no ownership rights, or only co-ownership rights, to certain intellectual property generated through the collaborations. We are also party to a collaboration agreement with BMS for the development and potential commercialization of product candidates we discover internally, which also provides for co-ownership rights to certain intellectual property generated through the collaboration in certain scenarios. We may enter into additional collaboration agreements in the future, pursuant to which we may have no ownership rights, or only co-ownership rights, to certain intellectual property generated through the future collaborations. If we are unable to obtain ownership or license of such intellectual property generated through our prior, current, or future collaborations and overlapping with, or related to, our own proprietary technology or product candidates, then our business, financial condition, results of operations, and prospects could be materially harmed.

Our existing collaboration agreements contain certain exclusivity obligations that require us to design compounds exclusively for our collaborators with respect to certain specific targets over a specified time period. Our future collaboration agreements may grant similar exclusivity rights to future collaborators with respect to target(s) that are the subject of such collaborations. Existing or future collaboration agreements may also impose diligence obligations on us. For example, existing or future collaboration agreements may impose restrictions on us from pursuing the drug development targets for ourselves or for our other current or future collaborators, thereby removing our ability to develop and commercialize, or to jointly develop and commercialize with other current or future collaborators, product candidates, and technology related to the drug development targets. Under our collaboration with BMS, for example, we are prohibited from developing and commercializing product candidates anywhere in the world that are directed at the targets specified under the agreement, until the earlier of such target ceasing to be included under the agreement or the expiration of the last to expire royalty term for the program related to the target. In spite of our best efforts, our prior, current, or future collaborators might conclude that we have materially breached our collaboration agreements. If these collaboration agreements are terminated, or if the underlying intellectual property, to the extent we have ownership or license of, fails to provide the intended exclusivity, competitors would have the freedom to seek regulatory approval of, and to market, products and technology identical to ours. This could have a material adverse effect on our competitive position, business, financial condition, results of operations, and prospects.

Disputes may arise regarding intellectual property subject to a collaboration agreement, including:

- the scope of ownership or license granted under the collaboration agreement and other interpretation related issues;
- the extent to which our technology and product candidates infringe on intellectual property of the collaborator of which we do not have ownership or license under the collaboration agreement;
- the assignment or sublicense of intellectual property rights and other rights under the collaboration agreement;
- our diligence obligations under the collaboration agreement and what activities satisfy those diligence obligations; and
- the inventorship and ownership of inventions and know-how resulting from the joint creation or use of intellectual property by us and our current or future collaborators.

In addition, collaboration agreements are complex, and certain provisions in such agreements may be susceptible to multiple interpretations. The resolution of any contract interpretation disagreement that may arise could narrow what we believe to be the scope of our rights to the relevant intellectual property, or increase what we believe to be our obligations under the relevant agreements, either of which could have a material adverse effect on our business, financial condition, results of operations, and prospects. Moreover, if disputes over intellectual property that we have owned, co-owned, or in-licensed under the collaboration agreements prevent or impair our ability to maintain our current collaboration arrangements on commercially acceptable terms, we may be unable to successfully develop and commercialize the affected technology or product candidates, which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

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If we are unable to obtain, maintain, enforce, and protect patent protection for our technology and product candidates or if the scope of the patent protection obtained is not sufficiently broad, our competitors could develop and commercialize technology and products similar or identical to ours, and our ability to successfully develop and commercialize our technology and product candidates may be adversely affected.

Our success depends in large part on our ability to obtain and maintain protection of the intellectual property we may own solely and jointly with others or may license from others, particularly patents, in the United States and other countries with respect to any proprietary technology and product candidates we develop. We seek to protect our proprietary position by filing patent applications in the United States and abroad related to our technology and any product candidates we may develop that are important to our business and by in-licensing intellectual property related to our technology and product candidates. If we are unable to obtain or maintain patent protection with respect to any proprietary technology or product candidate, our business, financial condition, results of operations, and prospects could be materially harmed.

The patent prosecution process is expensive, time-consuming, and complex, and we may not be able to file, prosecute, maintain, defend, or license all necessary or desirable patent applications at a reasonable cost or in a timely manner. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. Moreover, in some circumstances, we may not have the right to control the preparation, filing, and prosecution of patent applications,

or to maintain, enforce, and defend the patents, covering technology that we co-own with third parties or license from third parties. Therefore, these co-owned and in-licensed patents and applications may not be prepared, filed, prosecuted, maintained, defended, and enforced in a manner consistent with the best interests of our business.

The patent position of software and biopharmaceutical companies generally is highly uncertain, involves complex legal and factual questions, and has in recent years been the subject of much litigation. In addition, the scope of patent protection outside of the United States is uncertain and laws of non-U.S. countries may not protect our rights to the same extent as the laws of the United States or vice versa. With respect to both owned and in-licensed patent rights, we cannot predict whether the patent applications we, our collaborators, and our licensor are currently pursuing will issue as patents in any particular jurisdiction or whether the claims of any issued patents will provide sufficient protection from competitors. Further, we may not be aware of all third-party intellectual property rights or prior art potentially relating to our computational platform, technology, and any product candidates we may develop. In addition, publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing of the priority application, or in some cases not published at all. Therefore, neither we nor our collaborators, or our licensor can know with certainty whether either we, our collaborators, or our licensor were the first to make the inventions claimed in the patents and patent applications we own or in-license now or in the future, or that either we, our collaborators, or our licensor were the first to file for patent protection of such inventions. As a result, the issuance, scope, validity, enforceability, and commercial value of our owned, co-owned, and in-licensed patent rights are highly uncertain. Moreover, our owned, co-owned, and in-licensed pending and future patent applications may not result in patents being issued that protect our technology and product candidates, in whole or in part, or that effectively prevent others from commercializing competitive technologies and products. Changes in either the patent laws or interpretation of the patent laws in the United States and other countries may diminish the value of our owned, co-owned, or in-licensed current or future patents and our ability to obtain, protect, maintain, defend, and enforce our patent rights, narrow the scope of our patent protection and, more generally, could affect the value of, or narrow the scope of, our patent rights. For example, recent Supreme Court decisions have served to curtail the scope of subject matter eligible for patent protection in the United States, and many software patents have since been invalidated on the basis that they are directed to abstract ideas.

In order to pursue protection based on our pending provisional patent applications, we will need to file Patent Cooperation Treaty applications, non-U.S. applications, and/or U.S. non-provisional patent applications prior to applicable deadlines. Even then, as highlighted above, patents may never issue from our patent applications, or the scope of any patent may not be sufficient to provide a competitive advantage.

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Moreover, we, our collaborators, or our licensor may be subject to a third-party preissuance submission of prior art to the U.S. Patent and Trademark Office, or USPTO, or become involved in opposition, derivation, revocation, reexamination, *inter partes* review, post-grant review or interference proceedings challenging our patent rights or the patent rights of others. An adverse determination in any such submission, proceeding or litigation could reduce the scope of, or invalidate, our patent rights or allow third parties to commercialize our technology or product candidates and compete directly with us, without payment to us. If the breadth or strength of protection provided by our owned, co-owned, or in-licensed current or future patents and patent applications is threatened, regardless of the outcome, it could dissuade

companies from collaborating with us to license, develop, or commercialize current or future technology or product candidates.

Additionally, the coverage claimed in a patent application can be significantly reduced before the patent is issued, and its scope can be reinterpreted after issuance. Even if our owned, co-owned, and in-licensed current and future patent applications issue as patents, they may not issue in a form that will provide us with any meaningful protection, prevent competitors from competing with us, or otherwise provide us with any competitive advantage. The issuance of a patent is not conclusive as to its inventorship, scope, validity, or enforceability, and our owned and in-licensed patents may be challenged in the courts or patent offices in the United States and abroad. Such challenges may result in loss of exclusivity or in patent claims being narrowed, invalidated, or held unenforceable, in whole or in part, which could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology and product candidates. Such proceedings also may result in substantial cost and require significant time from our management and employees, even if the eventual outcome is favorable to us. In particular, given the amount of time required for the development, testing, and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. Furthermore, our competitors may be able to circumvent our owned, co-owned, or in-licensed current or future patents by developing similar or alternative technologies or products in a non-infringing manner. As a result, our owned, co-owned, and in-licensed current or future patent portfolio may not provide us with sufficient rights to exclude others from commercializing technology and products similar or identical to any of our technology and product candidates.

Changes to patent laws in the United States and other jurisdictions could diminish the value of patents in general, thereby impairing our ability to protect our products.

Changes in either the patent laws or interpretation of patent laws in the United States, including patent reform legislation such as the Leahy-Smith America Invents Act, or the Leahy-Smith Act, could increase the uncertainties and costs surrounding the prosecution of our owned and in-licensed patent applications and the maintenance, enforcement or defense of our owned and in-licensed issued patents. The Leahy-Smith Act includes a number of significant changes to United States patent law. These changes include provisions that affect the way patent applications are prosecuted, redefine prior art, provide more efficient and cost-effective avenues for competitors to challenge the validity of patents, and enable third-party submission of prior art to the USPTO during patent prosecution and additional procedures to attack the validity of a patent at USPTO-administered post-grant proceedings, including post-grant review, *inter partes* review, and derivation proceedings. Assuming that other requirements for patentability are met, prior to March 2013, in the United States, the first to invent the claimed invention was entitled to the patent, while outside the United States, the first to file a patent application was entitled to the patent. After March 2013, under the Leahy-Smith Act, the United States transitioned to a first-to-file system in which, assuming that the other statutory requirements for patentability are met, the first inventor to file a patent application will be entitled to the patent on an invention regardless of whether a third party was the first to invent the claimed invention. As such, the Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

In addition, the patent positions of companies in the development and commercialization of software, biologics and pharmaceuticals are particularly uncertain. Recent U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. This combination of events has created uncertainty with respect to the validity and enforceability of patents once obtained. Depending on future actions by the U.S. Congress, the federal courts, and the USPTO, the laws and regulations governing patents could change in unpredictable ways that could have a material adverse effect on our patent rights and our ability to protect, defend and enforce our patent rights in the future.

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A number of recent cases decided by the U.S. Supreme Court have involved questions of when claims reciting abstract ideas, laws of nature, natural phenomena and/or natural products are eligible for a patent, regardless of whether the claimed subject matter is otherwise novel and inventive. These cases include Association for Molecular Pathology v. Myriad Genetics, Inc., 569 U.S. 12-398 (2013) or Myriad; Alice Corp. v. CLS Bank International, 573 U.S. 13-298 (2014); and Mayo Collaborative Services v. Prometheus Laboratories, Inc., or Prometheus, 566 U.S. 10-1150 (2012). In response to these cases, federal courts have held numerous patents invalid as claiming subject matter ineligible for patent protection. Moreover, the USPTO has issued guidance to the examining corps on how to apply these cases during examination. The full impact As a result of these decisions, obtaining broad patents in the United States covering software innovations is not yet known.

more challenging than before.

In addition to increasing uncertainty with regard to our ability to obtain future patents, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on these and other decisions by Congress, the federal courts and the USPTO, the laws and regulations governing patents could change or be interpreted in unpredictable ways that would weaken our ability to obtain new patents or to enforce any patents that may issue to us in the future. In addition, these events may adversely affect our ability to defend any patents that may issue in procedures in the USPTO or in courts.

We, our prior, existing, or future collaborators, and our existing or future licensors, may become involved in lawsuits to protect or enforce our patent or other intellectual property rights, which could be expensive, time-consuming and unsuccessful.

Competitors and other third parties may infringe, misappropriate, or otherwise violate our, our prior, current and future collaborators', or our current and future licensors' issued patents or other intellectual property. As a result, we, our prior, current, or future collaborators, or our current or future licensor may need to file infringement, misappropriation, or other intellectual property related claims, which can be expensive and time-consuming. Any claims we assert against perceived infringers could provoke such parties to assert counterclaims against us alleging that we infringe, misappropriate, or otherwise violate their intellectual property. In addition, in a patent infringement proceeding, such parties could assert that the patents we, our collaborators, or our licensors have asserted are invalid or unenforceable. In patent litigation in the United States, defenses alleging invalidity or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness, or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO, or made a misleading statement, during prosecution. Third parties may institute such claims before administrative bodies in the United States or abroad, even outside the context of litigation. Such mechanisms include re-examination, post-grant review, *inter partes* review, interference proceedings, derivation proceedings, and equivalent proceedings in non-U.S. jurisdictions (e.g., opposition proceedings). The outcome following legal assertions of invalidity and unenforceability is unpredictable.

An adverse result in any such proceeding could put one or more of our owned, co-owned, or in-licensed current or future patents at risk of being invalidated or interpreted narrowly and could put any of our owned, co-owned, or in-licensed current or future patent applications at risk of not yielding an issued patent. A court may also refuse to stop the third party from using the technology at issue in a proceeding on the grounds that our owned, co-owned, or in-licensed current or future patents do not cover such technology. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information or trade secrets could be compromised by disclosure during this type of litigation. Any of the foregoing could allow such third parties to develop and commercialize competing technologies and products in a non-infringing manner and have a material adverse impact on our business, financial condition, results of operations, and prospects.

Interference or derivation proceedings provoked by third parties, or brought by us or by our collaborators or licensor, or declared by the USPTO may be necessary to determine the priority of inventions with respect to our patents or patent applications. An unfavorable outcome could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms or at all, or if a non-exclusive license is offered and our competitors gain access to the same technology. Our defense of litigation or interference or derivation proceedings may fail and, even if successful, may result in substantial costs and distract our management and other employees. In addition, the uncertainties associated with litigation could have a material adverse effect on our ability to raise the funds necessary to conduct clinical trials, continue our research programs, license necessary technology from third parties, or enter into development collaborations that would help us bring any product candidates to market.

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Third parties may initiate legal proceedings alleging that we are infringing, misappropriating or otherwise violating their intellectual property rights, the outcome of which would be uncertain and could have a material adverse effect on the success of our business.

Our commercial success depends upon our ability and the ability of our collaborators and licensor to develop, manufacture, market and sell any product candidates we may develop and for our collaborators, licensor, customers and partners to use our proprietary technologies without infringing, misappropriating or otherwise violating the intellectual property and proprietary rights of third parties. There is considerable patent and other intellectual property litigation in the software, pharmaceutical, and biotechnology industries. We may become party to, or threatened with, adversarial proceedings or litigation regarding intellectual property rights with respect to our technology and product candidates,

including interference proceedings, post grant review, *inter partes* review, and derivation proceedings before the USPTO and similar proceedings in non-U.S. jurisdictions such as oppositions before the European Patent Office. Numerous U.S. and non-U.S. issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we are pursuing development candidates. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our technologies or product candidates that we may identify may be subject to claims of infringement of the patent rights of third parties.

The legal threshold for initiating litigation or contested proceedings is low, so that even lawsuits or proceedings with a low probability of success might be initiated and require significant resources to defend. Litigation and contested proceedings can also be expensive and time-consuming, and our adversaries in these proceedings may have the ability to dedicate substantially greater resources to prosecuting these legal actions than we can. The risks of being involved in such litigation and proceedings may increase if and as any product candidates near commercialization and as we gain the greater visibility associated with being a public company. Third parties may assert infringement claims against us based on existing patents or patents that may be granted in the future, regardless of merit. We may not be aware of all such intellectual property rights potentially relating to our technology and product candidates and their uses, or we may incorrectly conclude that third-party intellectual property is invalid or that our activities and product candidates do not infringe such intellectual property. Thus, we do not know with certainty that our technology and product candidates, or our development and commercialization thereof, do not and will not infringe, misappropriate or otherwise violate any third party's intellectual property.

Third parties may assert that we are employing their proprietary technology without authorization. There may be third-party patents or patent applications with claims to materials, formulations or methods, such as methods of manufacture or methods for treatment, related to the discovery, use or manufacture of the product candidates that we may identify or related to our technologies. Because patent applications can take many years to issue, there may be currently pending patent applications which may later result in issued patents that the product candidates that we may identify may infringe. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents. Moreover, as noted above, there may be existing patents that we are not aware of or that we have incorrectly concluded are invalid or not infringed by our activities. If any third-party patents were held by a court of competent jurisdiction to cover, for example, the manufacturing process of the product candidates that we may identify, any molecules formed during the manufacturing process or any final product itself, the holders of any such patents may be able to block our ability to commercialize such product candidate unless we obtained a license under the applicable patents, or until such patents expire.

Parties making claims against us may obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize the product candidates that we may identify. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from our business. In the event of a successful claim of infringement against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, pay royalties, redesign our infringing products, be forced to indemnify our customers, licensor, or collaborators or obtain one or more licenses from third parties, which may be impossible or require substantial time and monetary expenditure.

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We may choose to take a license or, if we are found to infringe, misappropriate or otherwise violate a third party's intellectual property rights, we could also be required to obtain a license from such third party to continue developing, manufacturing and marketing our technology and product candidates. However, we may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors and other third parties access to the same technologies licensed to us and could require us to make substantial licensing and royalty payments. We could be forced, including by court order, to cease developing, manufacturing and commercializing the infringing technology or product. A finding of infringement could prevent us from commercializing any product candidates or force us to cease some of our business operations, which could materially harm our business. In addition, we may be forced to redesign any product candidates, seek new regulatory approvals and indemnify third parties pursuant to contractual agreements. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar material adverse effect on our business, financial condition, results of operations and prospects.

We may be subject to claims by third parties asserting that our employees, consultants, or contractors have wrongfully used or disclosed confidential information of third parties, or we have wrongfully used or disclosed alleged trade secrets of their current or former employers or claims asserting we have misappropriated their intellectual property, or claiming ownership of what we regard as our own intellectual property.

Certain of our employees, consultants, and contractors were previously employed at universities or other software or biopharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees, consultants and contractors do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that these individuals or we have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such individual's current or former employer. Litigation may be necessary to defend against these claims.

In addition, while it is our policy to require that our employees, consultants and contractors who may be involved in the development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who in fact develops intellectual property that we regard as our own. Our intellectual property assignment agreements with them may not be self-executing or may be breached, and we may be forced to bring claims against third parties, or defend claims they may bring against us, to determine the ownership of what we regard as our intellectual property. Such claims could have a material adverse effect on our business, financial condition, results of operations, and prospects.

If we fail in prosecuting or defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel, which could have a material adverse effect on our competitive business position and prospects. Such intellectual property rights could be awarded to a third party, and we could be required to obtain a license from such third party to commercialize our technology or products, which license may not be available on commercially reasonable terms, or at all, or such license

may be non-exclusive. Even if we are successful in prosecuting or defending against such claims, litigation could result in substantial costs and be a distraction to our management and employees.

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If we are unable to protect the confidentiality of our trade secrets, our business and competitive position may be harmed.

In addition to seeking patents for any product candidates and technology, we also rely on trade secrets and confidentiality agreements to protect our unpatented know-how, technology, and other proprietary information, to maintain our competitive position. We seek to protect our trade secrets and other proprietary technology, in part, by entering into non-disclosure and confidentiality agreements with parties who have access to them, such as our employees, corporate collaborators, outside scientific collaborators, contract research organizations, contract manufacturers, consultants, advisors, collaborators, and other third parties. We also enter into confidentiality and invention or patent assignment agreements with our employees and consultants, but we cannot guarantee that we have entered into such agreements with each party that may have or has had access to our trade secrets or proprietary technology. Despite these efforts, any of these parties may inadvertently or intentionally breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Detecting the disclosure or misappropriation of a trade secret and enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive, and time-consuming, and the outcome is unpredictable. In addition, some courts inside and outside of the United States are less willing or unwilling to protect trade secrets. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor or other third party, we would have no right to prevent them, or those to whom they communicate it, from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor or other third party, our competitive position may be materially and adversely harmed.

Risks Related to Regulatory and Other Legal Compliance Matters

Even if we complete the necessary preclinical studies and clinical trials, the regulatory approval process is expensive, time consuming and uncertain and may prevent us from obtaining approvals for the commercialization of some or all of our product candidates. As a result, we cannot predict when or if, and in which territories, we will obtain marketing approval to commercialize a product candidate.

The research, testing, manufacturing, labeling, approval, selling, marketing, promotion and distribution of products are subject to extensive regulation by the FDA and comparable foreign regulatory authorities. We are not permitted to market our product candidates in the United States or in other countries until we receive approval of an NDA a new drug application from the FDA or marketing approval from applicable regulatory authorities outside the United States. Our product candidates are in various stages of development and are subject to the risks of failure inherent in drug development. We have not submitted an application for or received marketing approval for any of our product candidates in the United States or in any other jurisdiction. We have no experience as a company in filing and supporting the applications necessary to gain marketing approvals and expect to rely on third-party CROs to assist us in this process.

The process of obtaining marketing approvals, both in the United States and abroad, is lengthy, expensive and uncertain. It may take many years, if approval is obtained at all, and can vary substantially based upon a variety of factors, including the type, complexity and novelty of the product candidates involved. Securing marketing approval requires the submission of extensive preclinical and clinical data and supporting information, including manufacturing information, to regulatory authorities for each therapeutic indication to establish the product candidate's safety and efficacy. The FDA or other regulatory authorities may determine that our product candidates are not safe and effective, only moderately effective or have undesirable or unintended side effects, toxicities or other characteristics that preclude our obtaining marketing approval or prevent or limit commercial use.

In addition, changes in marketing approval policies during the development period, changes in or the enactment or promulgation of additional statutes, regulations or guidance or changes in regulatory review for each submitted product application, may cause delays in the approval or rejection of an application. Regulatory authorities have substantial discretion in the approval process and varying interpretations of the data obtained from preclinical and clinical testing could delay, limit or prevent marketing approval of a product candidate. Any marketing approval we ultimately obtain may be limited or subject to restrictions or post-approval commitments that render the approved product not commercially viable.

Further, our ability to develop and market new products may be impacted by ongoing litigation challenging the FDA's approval of mifepristone. Specifically, in April 2023, the U.S. District Court for the Northern District of Texas stayed the approval by the FDA of mifepristone, a drug product which was originally approved in 2000 and whose distribution is governed by various conditions adopted under a REMS. In reaching that decision, the district court made a number of findings that may negatively impact the development, approval and distribution of drug products in the United States. In April 2023, the district court decision was stayed, in part, by the U.S. Court of Appeals for the Fifth Circuit.

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Thereafter, the U.S. Supreme Court entered a stay of the district court's decision, in its entirety, pending disposition of the appeal of the district court decision in the Court of Appeals for the Fifth Circuit and the disposition of any petition for a writ of certiorari to the Supreme Court. In August 2023, the Court of Appeals declined to order the removal of mifepristone from the market, finding that a challenge to the FDA's initial approval in 2000 is barred by the statute of limitations. But the Appeals Court did hold that plaintiffs were likely to prevail in their claim that changes allowing for expanded access of mifepristone that FDA authorized in 2016 and 2021 were arbitrary and capricious. In December 2023, the Supreme Court granted these petitions for writ of certiorari for the appeals court decision.

In order to market and sell our products in the European Union and other foreign jurisdictions, we must obtain separate marketing approvals and comply with numerous and varying regulatory requirements. The approval procedure varies among countries and can involve additional testing. The time required to obtain approval may differ substantially from that required to obtain FDA approval. The marketing approval process outside the United States generally includes all of the risks associated with obtaining FDA approval. We may not obtain approvals from regulatory authorities outside the United States on a timely basis, if at all. Approval by the FDA does not ensure approval by regulatory authorities in other countries or jurisdictions, and approval by one regulatory authority outside the United States does not ensure approval by regulatory authorities in other countries or jurisdictions or by the FDA. We may file for marketing approvals but not receive necessary approvals to commercialize our products in any market.

We may seek certain designations for our product candidates, including Breakthrough Therapy, Fast Track and Priority Review designations in the United States, and PRIME Designation in the European Union, but we might not receive such designations, and even if we do, such designations may not lead to a faster development or regulatory review or approval process.

We may seek certain designations for one or more of our product candidates that could expedite review and approval by the FDA. A Breakthrough Therapy product is defined as a product that is intended, alone or in combination with one or more other products, to treat a serious condition, and preliminary clinical evidence indicates that the product may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. For products that have been designated as Breakthrough Therapies, interaction and communication between the FDA and the sponsor of the trial can help to identify the most efficient path for clinical development while minimizing the number of patients placed in ineffective control regimens.

The FDA may also designate a product for Fast Track review if it is intended, whether alone or in combination with one or more other products, for the treatment of a serious or life threatening disease or condition, and it demonstrates the potential to address unmet medical needs for such a disease or condition. For Fast Track products, sponsors may have greater interactions with the FDA and the FDA may initiate review of sections of a Fast Track product's application before the application is complete. This rolling review may be available if the FDA determines, after preliminary evaluation of clinical data submitted by the sponsor, that a Fast Track product may be effective.

We may also seek a priority review designation for one or more of our product candidates. If the FDA determines that a product candidate offers major advances in treatment or provides a treatment where no adequate therapy exists, the FDA may designate the product candidate for priority review. A priority review designation means that the goal for the FDA to review an application is six months, rather than the standard review period of ten months.

These designations are within the discretion of the FDA. Accordingly, even if we believe that one of our product candidates meets the criteria for these designations, the FDA may disagree and instead determine not to make such designation. Further, even if we receive a designation, the receipt of such designation for a product candidate may not result in a faster development or regulatory review or approval process compared to products considered for approval under conventional FDA procedures and does not assure ultimate approval by the FDA. In addition, even if one or more of our product candidates qualifies for these designations, the FDA may later decide that the product candidates no longer meet the conditions for qualification or decide that the time period for FDA review or approval will not be shortened.

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In the EU, we may seek PRIME designation for our product candidates in the future. PRIME is a voluntary program aimed at enhancing the EMA's role to reinforce scientific and regulatory support in order to optimize development and enable accelerated assessment of new medicines that are of major public health interest with the potential to address unmet medical needs. The program focuses on medicines that target conditions for which there exists no satisfactory method of treatment in the EU or even if such a method exists, it may offer a major therapeutic advantage over existing treatments. PRIME is limited to medicines under development and not authorized in the EU and the applicant intends to apply for an initial marketing authorization application through the centralized procedure. To be accepted for PRIME, a product candidate must meet the eligibility criteria in respect of its major public health interest and therapeutic innovation based on information that is capable of substantiating the claims. The benefits of a PRIME designation include the appointment of a CHMP rapporteur to provide continued support and help to build knowledge ahead of a marketing authorization application, early dialogue and scientific advice at key development milestones, and the potential to qualify products for accelerated review, meaning reduction in the review time for an opinion on approvability to be issued earlier in the application process. PRIME enables an applicant to request parallel EMA scientific advice and health technology assessment advice to facilitate timely market access. Even if we receive PRIME designation for any of our product candidates, the designation may not result in a materially faster development process, review or approval compared to conventional EMA procedures. Further, obtaining PRIME designation does not assure or increase the likelihood of EMA's grant of a marketing authorization.

Current and future legislation may increase the difficulty and cost for us to obtain reimbursement for any of our product candidates that do receive marketing approval.

In the United States and foreign jurisdictions, there have been a number of legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay marketing approval of our product candidates, restrict or regulate post-approval activities and affect our ability to profitably sell any product candidates for which we obtain marketing approval. We expect that current laws, as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and in additional downward pressure on the price that we may receive for any approved products. If reimbursement of our products is unavailable or limited in scope, our business could be materially harmed.

In March 2010, President Obama signed into law the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act, or collectively the ACA. In addition, other legislative changes have been proposed and adopted since the ACA was enacted. In August 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. These changes included aggregate reductions to Medicare payments to providers of up to 2% per fiscal year, which went into effect in April 2013 and will remain in effect through 2031 the first half of 2032 under the Coronavirus Aid, Relief, and Economic Security Act, or the CARES Act. Pursuant to subsequent legislation, these Medicare sequester reductions were suspended and reduced in 2021 and 2022 but, as of July 1, 2022, the full 2% cut has resumed. The American Taxpayer Relief Act of 2012, among other things, reduced Medicare payments to several providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. These laws may result in additional reductions in Medicare and other healthcare funding and otherwise affect the prices we may obtain for any of our product candidates for which we may obtain regulatory approval or the frequency with which any such product candidate is prescribed or used.

Indeed, under current legislation, the actual reductions in Medicare payments may vary up to 4%. The Consolidated Appropriations Act, which was signed into law by President Biden in December 2022, made several changes to sequestration of the Medicare program. Section 1001 of the Consolidated Appropriations Act delays the 4% Statutory Pay-As-You-Go Act of 2010 sequester for two years, through the end of 2024. Triggered by enactment of the American Rescue Plan Act of 2021, the 4% cut to the Medicare

program would have taken effect in January 2023. The Consolidated Appropriations Act's health care offset title includes Section 4163, which extends the 2% Budget Control Act of 2011 Medicare sequester for six months into 2032 and lowers the payment reduction percentages in 2030 and 2031.

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Since enactment of the ACA, there have been, and continue to be, numerous legal challenges and Congressional actions to repeal and replace provisions of the law. For example, with enactment of the 2017 Tax Cuts and Jobs Act, or TCJA, in 2017, Congress repealed the "individual mandate." The repeal of this provision, which requires most Americans to carry a minimal level of health insurance, became effective in 2019. Further, in December 2018, a U.S. District Court judge in the Northern District of Texas ruled that the individual mandate portion of the ACA is an essential and inseverable feature of the ACA and therefore because the mandate was repealed as part of the TCJA, 2017 Tax Act, the remaining provisions of the ACA are invalid as well. The U.S. Supreme Court heard this case and in June 2021, dismissed this action after finding that the plaintiffs do not have standing to challenge the constitutionality of the ACA. Litigation and legislation over the ACA are likely to continue, with unpredictable and uncertain results.

The Trump Administration also took executive actions to delay implementation of the ACA, including directing federal agencies with authorities and responsibilities under the ACA to waive, defer, grant exemptions from, or delay the implementation of any provision of the ACA that would impose a fiscal or regulatory burden on states, individuals, healthcare providers, health insurers or manufacturers of pharmaceuticals or medical devices. On January 28, 2021, however, President Biden revoked those orders and issued a new executive order which directs federal agencies to reconsider rules and other policies that limit Americans' access to health care, and consider actions that will protect and strengthen that access. Under this order, federal agencies are directed to re-examine: policies that undermine protections for people with pre-existing conditions, including complications related to COVID-19; demonstrations and waivers under Medicaid and the ACA that may reduce coverage or undermine the programs, including work requirements; policies that undermine the Health Insurance Marketplace or other markets for health insurance; policies that make it more difficult to enroll in Medicaid and the ACA; and policies that reduce affordability of coverage or financial assistance, including for dependents.

In the European Union, on December 13, 2021, Regulation No 2021/2282 on Health Technology Assessment, or HTA, amending Directive 2011/24/EU, was adopted. While the HTA entered into force in January 2022, it will only begin to apply from January 2025 onwards, with preparatory and implementation-related steps to take place in the interim. Once applicable, it will have a phased implementation depending on the concerned products. The HTA intends to boost cooperation among European Union member states in assessing health technologies, including new medicinal products as well as certain high-risk medical devices, and provide the basis for cooperation at the European Union level for joint clinical assessments in these areas. It will permit European Union member states to use common HTA tools, methodologies, and procedures across the European Union, working together in four main areas, including joint clinical assessment of the innovative health technologies with the highest potential impact for patients, joint scientific consultations whereby developers can seek advice from HTA authorities, identification of emerging health technologies to identify promising technologies early, and continuing voluntary cooperation in other areas. Individual European Union member states will continue to be responsible for assessing non-clinical (e.g., economic, social, ethical) aspects of health technology, and making decisions on pricing and reimbursement.

We expect that these healthcare reforms, as well as other healthcare reform measures that may be adopted in the future, may result in additional reductions in Medicare and other healthcare funding, more rigorous coverage criteria, new payment methodologies and additional downward pressure on the price that we receive for any approved product and/or the level of reimbursement physicians receive for administering any approved product we might bring to market. Reductions in reimbursement levels may negatively impact the prices we receive or the frequency with which our products are prescribed or administered. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors. Accordingly, such reforms, if enacted, could have an adverse effect on anticipated revenue from product candidates that we may successfully develop and for which we may obtain marketing approval and may affect our overall financial condition and ability to develop or commercialize product candidates.

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The prices of prescription pharmaceuticals in the United States and foreign jurisdictions are subject to considerable legislative and executive actions and could impact the prices we obtain for our products, if and when licensed, as well as impact our ability to find collaborators and/or partners for our drug discovery programs on commercially acceptable terms.

The prices of prescription pharmaceuticals have been the subject of considerable discussion in the United States. There have been several recent Congressional inquiries, as well as proposed and enacted state and federal legislation designed to, among other things, bring more transparency to pharmaceutical pricing, review the relationship between pricing and manufacturer patient programs, and reduce the costs of pharmaceuticals under Medicare and Medicaid. In 2020 President Trump issued several executive orders intended to lower the costs of prescription products and certain provisions in these orders have been incorporated into regulations. These regulations include an interim final rule implementing a most favored nation model for prices that would tie Medicare Part B payments for certain physician-administered pharmaceuticals to the lowest price paid in other economically advanced countries, effective January 1, 2021. That rule, however, has been subject to a nationwide preliminary injunction and, on December 29, 2021, Centers for Medicare & Medicaid Services, or CMS, issued a final rule to rescind it. With issuance of this rule, CMS stated that it will explore all options to incorporate value into payments for Medicare Part B pharmaceuticals and improve beneficiaries' access to evidence-based care.

In addition, in October 2020, the Department of Health and Human Services, or HHS, and the FDA published a final rule allowing states and other entities to develop a Section 804 Importation Program or SIP, to import certain prescription drugs from Canada into the United States. The final rule is currently That regulation was challenged in a lawsuit by the subject Pharmaceutical Research and Manufacturers of ongoing litigation, America, or PhRMA, but at least six the case was dismissed by a federal district court in February 2023 after the court found that PhRMA did not have standing to sue HHS. A number of states (Vermont, Colorado, Florida, Maine, New Mexico, and New Hampshire) have passed laws allowing for the importation of drugs from Canada.Certain of these states have submitted Section 804 Importation Program proposals and are awaiting FDA approval.In January 2024, the FDA authorized the importation of mass medications from Canada with the intent of developing SIPs for review and approval by the FDA. into Florida. Further, on November 20, 2020, HHS finalized a regulation that would eliminate the current safe harbor for Medicare drug rebates and create new safe harbors for beneficiary point-of-sale discounts and pharmacy benefit manager or PBM, service fees. It originally was set to go into effect on January 1, 2022, but with passage of the Inflation Reduction Act IRA has been delayed by Congress until January 1, 2032.

In September 2021, acting pursuant to an executive order signed by President Biden, the Department of Health and Human Services, or HHS, released its plan to reduce pharmaceutical prices. The key features of that plan are to: (a) make pharmaceutical prices more affordable and equitable for all consumers and throughout the health care system by supporting pharmaceutical price negotiations with manufacturers; (b) improve and promote competition throughout the prescription pharmaceutical industry by supporting market changes that strengthen supply chains, promote biosimilars and generic drugs, and increase transparency; and (c) foster scientific innovation to promote better healthcare and improve health by supporting public and private research and making sure that market incentives promote discovery of valuable and accessible new treatments.

More recently, on On August 16, 2022, the Inflation Reduction Act of 2022, or IRA was signed into law by President Biden. The new legislation has implications for Medicare Part D, which is a program available to individuals who are entitled to Medicare Part A or enrolled in Medicare Part B to give them the option of paying a monthly premium for outpatient prescription drug coverage. Among other things, the IRA requires manufacturers of certain drugs to engage in price negotiations with Medicare (beginning in 2026), with prices that can be negotiated subject to a cap; imposes rebates under Medicare Part B and Medicare Part D to penalize price increases that outpace inflation (first due in 2023); and replaces the Part D coverage gap discount program with a new discounting program (beginning in 2025). The IRA permits the Secretary of the Department of Health and Human Services (HHS) HHS to implement many of these provisions through guidance, as opposed to regulation, for the initial years.

Specifically, with respect to price negotiations, Congress authorized Medicare to negotiate lower prices for certain costly single-source drug and biologic products that do not have competing generics or biosimilars and are reimbursed under Medicare Part B and Part D. CMS may negotiate prices for ten high-cost drugs paid for by Medicare Part D starting in 2026, followed by 15 Part D drugs in 2027, 15 Part B or Part D drugs in 2028, and 20 Part B or Part D drugs in 2029 and beyond. This provision applies to drug products that have been approved for at least 9 years and biologics that have been licensed for 13 years, but it does not apply to drugs and biologics that have been approved for a single rare disease or condition. Nonetheless, since CMS may establish a maximum price for these products in price negotiations, we would be fully at risk of government action if our products or those of our partners are the subject of Medicare price negotiations. Moreover, given the risk that could be the case, these provisions of the IRA may also further heighten the risk that we would not be able to achieve the expected return on our drug products or full value of our patents protecting our products if prices are set after such products have been on the market for nine years.

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Furthermore, these provisions of the IRA may cause some companies to shift their research portfolio and priorities more towards large molecules (i.e. biologics such as antibodies) rather than small molecules. Although we do have applications of our technology to biologics, we do not yet have the same validation or value for large molecule discovery as we do for small molecule discovery. Accordingly, if the IRA causes the pharmaceutical industry to pivot investment and portfolio strategy away from small molecule drug discovery and towards biologics, it could have a material adverse effect on the expected value of our drug discovery programs and also on the perceived value of using our software to develop product candidates. In addition, if investment levels and development interest in small molecule therapeutics decreased, it may become more difficult for us to enter into collaborations on commercially acceptable terms, or at all, for our proprietary programs. If we are unable to find suitable collaborators and/or partners for our programs, we may be forced to fund and undertake development or commercialization activities on our own for more programs than we would otherwise expect to, or plan for, which could adversely affect our business and financial condition.

On June 6, 2023, Merck & Co., Inc., filed a lawsuit against HHS and CMS asserting that, among other things, the IRA's Drug Price Negotiation Program for Medicare constitutes an uncompensated taking in violation of the Fifth Amendment of the U.S. Constitution. Subsequently, other parties, including the U.S. Chamber of Commerce and other pharmaceutical companies also filed lawsuits in various courts with similar constitutional claims against HHS and CMS. On July 12, 2023, the Chamber of Commerce moved for preliminary injunctive relief seeking to halt implementation of the drug pricing provisions of the IRA. On September 29, 2023, in the first substantive ruling in this litigation, the U.S. District Court for the Southern District of Ohio denied the Chamber of Commerce's motion, finding that the Chamber of Commerce did not show, among other things, a strong likelihood of success on its constitutional arguments because Medicare is voluntary. The U.S. District Court for the Southern District of Ohio also denied the government's motion to dismiss, indicating that it needs more information from the parties before ruling on that motion. We expect that litigation involving these and other provisions of the IRA will continue, with unpredictable and uncertain results.

Further, the legislation subjects drug manufacturers to civil monetary penalties and a potential excise tax for failing to comply with the legislation by offering a price that is not equal to or less than the negotiated "maximum fair price" under the law or for taking price increases that exceed inflation. The legislation also requires manufacturers to pay rebates for drugs in Medicare Part D whose price increases exceed inflation. The new law also caps Medicare out-of-pocket drug costs at an estimated $4,000 a year in 2024 and, thereafter beginning in 2025, at 2,000 $2,000 a year. In addition, the IRA potentially raises legal risks with respect to individuals participating in a Medicare Part D prescription drug plan who may experience a gap in coverage if they required coverage above their initial annual coverage limit before they reached the higher threshold, or "catastrophic period" of the plan. Individuals requiring services exceeding the initial annual coverage limit and below the catastrophic period, must pay 100% of the cost of their prescriptions until they reach the catastrophic period. Among other things, the IRA contains many provisions aimed at reducing this financial burden on individuals by reducing the co-insurance and co-payment costs, expanding eligibility for lower income subsidy plans, and price caps on annual out-of-pocket expenses, each of which could have potential pricing and reporting implications.

Accordingly, while it is currently unclear how the IRA will be effectuated, we cannot predict with certainty what impact any federal or state health reforms will have on us, but such changes could impose new or more stringent regulatory requirements on our activities or result in reduced reimbursement for approved products, any of which could adversely affect our business, results of operations and financial condition.

At the state level, individual states are increasingly aggressive in passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. In addition, regional healthcare organizations and individual hospitals are increasingly using bidding procedures to determine what pharmaceutical products and which suppliers will be included in their prescription drug and other healthcare programs. These measures could reduce the ultimate demand for our products, once approved, or put pressure on our product pricing. We expect that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand for our product candidates or additional pricing pressures.

In the European Union, similar political, economic and regulatory developments may affect our ability to profitably commercialize our product candidates, if approved. In markets outside of the United States and the European Union, reimbursement and healthcare payment systems vary significantly by country, and many countries have instituted price ceilings on specific products and therapies. In many countries, including those of the European Union, the pricing of prescription pharmaceuticals is subject to governmental control and access. In these countries, pricing negotiations with

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governmental authorities can take considerable time after the receipt of marketing approval for a product. To obtain reimbursement or pricing approval in some countries, we or our collaborators may be required to conduct a clinical trial that compares the cost-effectiveness of our product to other available therapies. If reimbursement is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our business could be materially harmed.

Compliance with global privacy and data security requirements could result in additional costs and liabilities to us or inhibit our ability to collect and process data globally, and the failure to comply with such requirements could subject us to significant fines and penalties, which may have a material adverse effect on our business, financial condition, or results of operations.

The regulatory framework for the collection, use, safeguarding, sharing, transfer, and other processing of information worldwide is rapidly evolving and is likely to remain uncertain for the foreseeable future. Globally, virtually every jurisdiction in which we operate has established its own data security and privacy frameworks with which we must comply. For example, the collection, use, disclosure, transfer, or other processing of personal data regarding individuals in the European Union, including personal health data and employee data, is subject to the European Union General Data Protection Regulation, or the GDPR, which took effect across all member states of the European Economic Area, or EEA, in May 2018. The GDPR is wide-ranging in scope and imposes numerous requirements on companies that process personal data, including requirements relating to processing health and other sensitive data, obtaining consent of the individuals to whom the personal data relates, providing information to individuals regarding data processing activities, implementing safeguards to protect the security and confidentiality of personal data, providing notification of data breaches, and taking certain measures when engaging third-party processors. The GDPR would increase increases our obligations with respect to any clinical trials conducted in the EEA by expanding the definition of personal data to include coded data and requiring changes to informed consent practices and more detailed notices for clinical trial subjects and investigators. In addition, the GDPR also imposes strict rules on the transfer of personal data to countries outside the European Union, including the United States and, as a result, increases the scrutiny that such rules should apply to transfers of personal data from any clinical trial sites located in the EEA to the United States. In October 2022, President Biden signed an executive order to implement the EU-U.S. Data Privacy Framework, which serves as a replacement to the EU-U.S. Privacy Shield. The European Commission initiated the process to adopt an adequacy decision for the EU-U.S. Data Privacy Framework in December 2022, and the European Commission adopted the adequacy decision on July 10, 2023. The adequacy decision permits companies in the United States who self-certify to the EU-U.S. Data Privacy Framework to rely on it as a valid data transfer mechanism for data transfers from the European Union to the United States. However, some privacy advocacy groups have already suggested that they will be challenging the EU-U.S. Data Privacy Framework. If these challenges are successful, they may not only impact the EU-U.S. Data Privacy Framework, but also further limit the viability of the standard contractual clauses and other data transfer mechanisms. The uncertainty around this issue has the potential to impact our business internationally.

Following the withdrawal of the United Kingdom from the European Union, the United Kingdom's Data Protection Act 2018 applies to the processing of personal data that takes place in the United Kingdom and includes parallel obligations to those set forth by GDPR. In relation to data transfers, both the United Kingdom and the European Union have determined, through separate "adequacy" decisions, that data transfers between the two jurisdictions are in compliance with the United Kingdom's Data Protection Act 2018 and the GDPR, respectively. In October 2023, the United Kingdom and the United States implemented a US-UK "data bridge," which functions similarly to the EU-U.S. Data Privacy Framework and provides an additional legal mechanism for companies to transfer data from the United Kingdom to the United States.Any changes or updates to these developments have the potential to impact our business.

The GDPR also permits data protection authorities to require destruction of improperly gathered or used personal information and/or impose substantial fines for violations of the GDPR, which can be up to four percent of global revenues or 20 million Euros, whichever is greater, and confers a private right of action on data subjects and consumer associations to lodge complaints with supervisory authorities, seek judicial remedies, and obtain compensation for damages resulting from violations of the GDPR. In addition, the GDPR provides that European Union member states may make their own further laws and regulations limiting the processing of personal data, including genetic, biometric, or health data.

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Given the breadth and depth of changes in data protection obligations, preparing for and complying with the GDPR's requirements is rigorous and time intensive and requires significant resources and a review of our technologies, systems and practices, as well as those of any third-party collaborators, service providers, contractors, or consultants that process or transfer personal data collected in the European Union. The GDPR and other changes in laws or regulations associated with the enhanced protection of certain types of sensitive data, such as healthcare data or other personal information, could require us to change our business practices and put in place additional compliance mechanisms, may interrupt or delay our development, regulatory and commercialization activities and increase our cost of doing business, and could lead to government enforcement actions, private litigation, and significant fines and penalties against us, and could have a material adverse effect on our business, financial condition, or results of operations.

Similar privacy and data security requirements are either in place or underway in the United States. There are a broad variety of data protection laws that may be applicable to our activities, and a range of enforcement agencies at both the state and federal levels that can review companies for privacy and data security concerns. The Federal Trade Commission, or FTC, and state Attorneys General are aggressive in reviewing privacy and data security protections for consumers. New laws For example, the FTC has been particularly focused on the unpermitted processing of health and genetic data through its recent enforcement actions and is expanding the types of privacy violations that it interprets to be "unfair" under Section 5 of the Federal Trade Commission Act, as well as the types of activities it views to trigger the Health Breach Notification Rule (which the FTC also has the authority to enforce). The agency is also in the process of developing rules related to commercial surveillance and data security that may impact our business. We will need to account for the FTC's evolving rules and guidance for proper privacy and data security practices in order to mitigate our risk for a potential enforcement action, which may be costly. If we are being considered at both subject to a potential FTC enforcement action, we may be subject to a settlement order that requires us to adhere to very specific privacy and

data security practices, which may impact our business. We may also be required to pay fines as part of a settlement (depending on the state nature of the alleged violations). If we violate any consent order that we reach with the FTC, we may be subject to additional fines and federal levels. compliance requirements.

States are also active in creating specific rules relating to the processing of personal information. For example, the California Consumer Privacy Act, or CCPA, which went into effect on January 1, 2020, is creating similar risks and obligations as those created by GDPR. Because of this, we may need to engage in additional activities (e.g., data mapping) to identify the personal information we are collecting and the purposes for which such information is collected. In addition, we will need to ensure that our policies recognize the rights granted to consumers (as that phrase is broadly defined in the CCPA and can include business contact information), including granting consumers the right to opt-out of the sale of their personal information. Many other states are considering similar legislation. . In November 2020, California voters passed a ballot initiative for the California Privacy Rights Act, or the CPRA, which went into effect on January 1, 2023 and significantly expanded the CCPA to incorporate additional GDPR-like provisions including requiring that the use, retention, and sharing of personal information of California residents be reasonably necessary and proportionate to the purposes of collection or processing, granting additional protections for sensitive personal information, and requiring greater disclosures related to notice to residents regarding retention of information. At In addition to California, a number of other states have passed comprehensive privacy laws similar to the CCPA and CPRA. These laws are either in effect or will go into effect sometime before the end of 2026. Like the CCPA and CPRA, these laws create obligations related to the processing of personal information, as well as special obligations for the processing of "sensitive" data (which includes health data in some cases). Some of the provisions of these laws may apply to our business activities. There are also states that are strongly considering privacy laws that will go into effect in 2025 and beyond. Other states will be considering these laws in the future, and at the same time, a broad range of legislative measures also have been introduced at the federal level. Accordingly, failure to comply with current and any future federal and state laws regarding privacy and security of personal information could expose us to fines and penalties. We also face a threat of consumer class actions related to these laws and the overall protection of personal data. Even if we are not determined to have violated these laws, investigations into these issues typically require the expenditure of significant resources and generate negative publicity, which could harm our reputation and our business.

We, and the collaborators who use our computational platform, may be subject to applicable anti-kickback, fraud and abuse, false claims, transparency, health information privacy and security, and other healthcare laws and regulations. Failure to comply with such laws and regulations, may result in substantial penalties.

We, and the collaborators who use our computational platform, may be subject to broadly applicable healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we market, sell, and distribute our software solutions and any products for which we obtain marketing approval. Such healthcare laws and regulations include, but are not limited to, the federal health care Anti-Kickback Statute; federal civil and criminal false

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claims laws, such as the federal False Claims Act; the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA; the Federal Food, Drug, and Cosmetic Act; the federal Physician Payments Sunshine Act; and analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws and transparency laws.

Efforts to ensure that our business arrangements with third parties will comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices may not comply with current or future statutes, regulations, or case law involving applicable fraud and abuse or other healthcare laws and regulations. Violations of applicable healthcare laws and regulations may result in significant civil, criminal, and administrative penalties, damages, disgorgement, fines, imprisonment, exclusion of products from government funded healthcare programs, such as Medicare and Medicaid, additional reporting requirements, and/or oversight if a corporate integrity agreement or similar agreement is executed to resolve allegations of non-compliance with these laws and the curtailment or restructuring of operations. In addition, violations may also result in reputational harm, diminished profits, and future earnings.

We are subject to anti-corruption laws, as well as export control laws, customs laws, sanctions laws, and other laws governing our operations. If we fail to comply with these laws, we could be subject to civil or criminal penalties, other remedial measures, and legal expenses, be precluded from developing, manufacturing, and selling certain products outside the United States or be required to develop and implement costly compliance programs, which could adversely affect our business, results of operations and financial condition.

Our operations are subject to anti-corruption laws, including the U.K. Bribery Act 2010, or Bribery Act, the U.S. Foreign Corrupt Practices Act, or FCPA, and other anti-corruption laws that apply in countries where we do business and may do business in the future. The Bribery Act, FCPA, and these other laws generally prohibit us, our officers, and our employees and intermediaries from bribing, being bribed, or making other prohibited payments to government officials or other persons to obtain or retain business or gain some other business advantage. Compliance with the FCPA, in particular, is expensive and difficult, particularly in countries in which corruption is a recognized problem. In addition, the FCPA presents particular challenges in the biopharmaceutical industry, because, in many countries, hospitals are operated by the government, and doctors and other hospital employees are considered foreign officials. Certain payments to hospitals in connection with clinical trials and other work have been deemed to be improper payments to government officials and have led to FCPA enforcement actions.

We may in the future operate in jurisdictions that pose a high risk of potential Bribery Act or FCPA violations, and we may participate in collaborations and relationships with third parties whose actions could potentially subject us to liability under the Bribery Act, FCPA, or local anti-corruption laws. In addition, we cannot predict the nature, scope or effect of future regulatory requirements to which our international operations might be subject or the manner in which existing laws might be administered or interpreted. If we further expand our operations outside of the United States, we will need to dedicate additional resources to comply with numerous laws and regulations in each jurisdiction in which we plan to operate.

We are also subject to other laws and regulations governing our international operations, including regulations administered by the governments of the United Kingdom and the United States, and authorities in the European Union, including applicable export control regulations, economic sanctions on countries and persons, customs requirements, and currency exchange regulations, collectively referred to as the Trade Control laws. In addition, various laws, regulations, and executive orders also restrict the use and dissemination outside of the United States, or the sharing with certain non-U.S. nationals, of information classified for national security purposes, as well as certain products and technical data relating to those products. If we expand our presence outside of the United States, it will require us to dedicate additional resources to comply with these laws, and these laws may preclude us from developing, manufacturing, or selling certain products and product candidates outside of the United States, which could limit our growth potential and increase our development costs.

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There is no assurance that we will be completely effective in ensuring our compliance with all applicable anti-corruption laws, including the Bribery Act, the FCPA, or other legal requirements, including Trade Control laws. If we are not in compliance with the Bribery Act, the FCPA, and other anti-corruption laws or Trade Control laws, we may be subject to criminal and civil penalties, disgorgement and other sanctions and remedial measures, and legal expenses, which could have an adverse impact on our business, financial condition, results of operations, and liquidity. The U.S. Securities and Exchange Commission, or SEC, also may suspend or bar issuers from trading securities on U.S. exchanges for violations of the FCPA's accounting provisions. Any investigation of any potential violations of the Bribery Act, the FCPA, other anti-corruption laws or Trade Control laws by the United Kingdom, U.S., or other authorities could also have an adverse impact on our reputation, our business, results of operations, and financial condition.

Our employees, independent contractors, consultants, and vendors may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements and insider trading laws, which could cause significant liability for us and harm our reputation.

We are exposed to the risk of fraud or other misconduct by our employees, independent contractors, consultants, and vendors. Misconduct by these partners could include intentional failures to comply with FDA regulations or similar regulations of comparable foreign regulatory authorities, provide accurate information to the FDA or comparable foreign regulatory authorities, comply with manufacturing standards, comply with federal and state healthcare fraud and abuse laws and regulations and similar laws and regulations established and enforced by comparable foreign regulatory authorities, report financial information or data accurately, or disclose unauthorized activities to us. Employee misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. This could include violations of HIPAA, other U.S. federal and state law, and requirements of non-U.S. jurisdictions, including the European Union Data Protection Directive. We are also exposed to risks in connection with any insider trading violations by employees or others affiliated with us. It is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws, standards, regulations, guidance, or codes of conduct. Furthermore, our employees may, from time to time, bring lawsuits against us for employment issues, including injury, discrimination, wage and hour disputes, sexual harassment, hostile work environment, or other employment issues. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business and results of operations, including the imposition of significant fines or other sanctions.

Our internal information technology systems, or those of our third-party vendors, contractors, or consultants, may fail or suffer security breaches, loss or leakage of data, and other disruptions, which could result in a material disruption of our services, compromise sensitive information related to our business, or prevent us from accessing critical information, potentially exposing us to liability or otherwise adversely affecting our business.

We are increasingly dependent upon information technology systems, infrastructure, and data to operate our business. In the ordinary course of business, we collect, store, and transmit confidential information (including but not limited to intellectual property, proprietary business information, and personal information). It is critical that we do so in a secure manner to maintain the confidentiality and integrity of such confidential information. We also have outsourced elements of our operations to third parties, and as a result we manage a number of third-party vendors and other contractors and consultants who have access to our confidential information.

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Despite the implementation of security measures, given the size and complexity of our internal information technology systems and those of our third-party vendors and other contractors and consultants, and the increasing amounts of confidential information that they maintain, our information technology systems are potentially vulnerable to breakdown or other damage or interruption from service interruptions, system malfunction, natural disasters, terrorism, war, and telecommunication and electrical failures, as well as security breaches from inadvertent or intentional actions by our employees, third-party vendors, contractors, consultants, business partners, and/or other third parties, or from cyber-attacks by malicious third parties (including the deployment of harmful malware, ransomware, denial-of-service attacks, social engineering, and other means to affect service reliability and threaten the confidentiality, integrity, and availability of information), which may compromise our system infrastructure, or that of our third-party vendors and other contractors and consultants or lead to data leakage. The risk of a security breach or disruption, particularly through cyber-attacks or cyber intrusion, including by computer hackers, foreign governments, and cyber terrorists, has generally increased as the number, intensity, and sophistication of attempted attacks and intrusions from around the world have increased. We may not be able to anticipate all types of security threats, and we may not be able to implement preventive measures effective against all such security threats. For example, third parties have in the past and may in the future illegally pirate our software and make that software publicly available on peer-to-peer file sharing networks or otherwise. The techniques used by cyber criminals change frequently, may not be recognized until launched, and can originate from a wide variety of sources, including outside groups such as external service providers, organized crime affiliates, terrorist organizations, or hostile foreign governments or agencies. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, or those of our third-party vendors and other contractors and consultants, or inappropriate disclosure of confidential or proprietary information, we could incur liability and reputational damage and the further development and commercialization of our software could be delayed. The costs related to significant security breaches or disruptions could be material and exceed the limits of the cybersecurity insurance we maintain against such risks. If the information technology systems of our third-party vendors and other contractors and consultants become subject to disruptions or security breaches, we may have insufficient recourse against such third parties and we may have to expend significant resources to mitigate the impact of such an event, and to develop and implement protections to prevent future events of this nature from occurring.

While we have not experienced any significant system failure, accident, or security breach to date, and believe that our data protection efforts and our investment in information technology reduce the likelihood of such incidents in the future, we cannot assure you that our data protection efforts and our investment in information technology will prevent significant breakdowns, data leakages, breaches in our systems, or those of our third-party vendors and other contractors and consultants, or other cyber incidents that could have a material adverse effect upon our reputation, business, operations, or financial condition. For example, if such an event were to occur and cause interruptions in our operations, or those of our third-party vendors and other contractors and consultants, it could result in a material disruption of our programs and the development of our services and technologies could be delayed. Furthermore, significant disruptions of our internal information technology systems or those of our third-party vendors and other contractors and consultants, or security breaches could result in the loss, misappropriation, and/or unauthorized access, use, or disclosure of, or the prevention of access to, confidential information (including trade secrets or other intellectual property, proprietary business information, and personal information), which could result in financial, legal, business, and reputational harm to us. For example, any such event that leads to unauthorized access, use, or disclosure of personal information, including personal information regarding our customers or employees, could harm our reputation directly, compel us to comply with federal and/or state breach notification laws and foreign law equivalents, subject us to mandatory corrective action, and otherwise subject us to liability under laws and regulations that protect the privacy and security of personal information, which could result in significant legal and

financial exposure and reputational damages that could potentially have an adverse effect on our business. Further, sophisticated cyber attackers (including foreign adversaries engaged in industrial espionage) are skilled at adapting to existing security technology and developing new methods of gaining access to organizations' sensitive business data, which could result in the loss of sensitive information, including trade secrets. For example, attackers have used artificial intelligence and machine learning to launch more automated, targeted and coordinated attacks against targets. Additionally, actual, potential, or anticipated attacks may cause us to incur increasing costs, including costs to deploy additional personnel and protection technologies, train employees, and engage third-party experts and consultants.

Climate change-related risks and uncertainties and legal or regulatory responses to climate change could negatively impact our business, financial condition, results of operations, prospects and reputation.

We are subject to increasing climate-related risks and uncertainties, many of which are outside of our control. Climate change may result in more frequent severe weather events, potential changes in precipitation patterns, and extreme variability in weather patterns, which can disrupt our operations as well as those of our vendors, suppliers, and collaborators.

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Climate-related macroeconomic trends, including the transition to a lower carbon economy, the effects of carbon pricing, changes in public sentiment, and the potential enactment of climate-related rules and regulations, continue to evolve and may increase our legal, compliance and business costs. Further, increases in climate-related litigation instituted against companies, the cost of insurance premiums, and the implementation of a more robust business continuity plan and a disaster recovery plan could increase the costs necessary to maintain our operations or achieve any sustainability commitments we may make, which could harm our business.

We annually assess the impacts of our operations and of our customers on the climate. The execution and achievement of any future commitments that we may make or of any goals that we may set relating to climate change are subject to risks and uncertainties. Given the focus on sustainable investing and corporate sustainability, if we fail to adopt policies and practices to enhance environmental initiatives, our reputation and our customer and stakeholder relationships could be negatively impacted, which may make it more difficult for us to compete effectively or to gain access to financing on acceptable terms when needed, which would negatively affect our business, financial condition, results of operations, prospects, and reputation.

Risks Related to Employee Matters and Managing Growth

Our future success depends on our ability to retain key executives and to attract, retain, and motivate qualified personnel.

We are highly dependent on the research and development, clinical, financial, operational, scientific, software engineering, and other business expertise of our executive officers, as well as the other principal members of our management, scientific, clinical, and software engineering teams. Although we have entered into employment agreements with our executive officers, each of them may terminate their employment with us at any time. We do not maintain "key person" insurance for any of our executives or other employees.

The loss of the services of our executive officers or other key employees could impede the achievement of our development and sales goals in our software business and the achievement of our research, development, and commercialization objectives in our drug discovery business. In either case, the loss of the services of our executive officers or other key employees could seriously harm our ability to successfully implement our business strategy. Furthermore, replacing executive officers and key employees may be difficult and may take an extended period of time because of the limited number of individuals with the breadth of skills and experience required to successfully develop, gain regulatory approval of, and commercialize products in the life sciences industry.

Recruiting and retaining qualified scientific, clinical, manufacturing, accounting, legal, and sales and marketing personnel, as well as software engineers and computational chemists, will also be critical to our success. In the technology industry, there is substantial and continuous competition for engineers with high levels of expertise in designing, developing, and managing software and related services, as well as competition for sales executives, data scientists, and operations personnel. Competition to hire these individuals is intense, and we may be unable to hire, train, retain, or motivate these key personnel on acceptable terms given the competition among numerous biopharmaceutical and technology companies for similar personnel. We also experience competition for the hiring of scientific and clinical personnel from universities and research institutions. In addition, we rely on consultants and advisors to assist us in formulating our research and development and commercialization strategy and advancing our computational platform. Our consultants and advisors may be employed by employers other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability to us. If we are unable to continue to attract and retain high quality personnel, our ability to pursue our growth strategy will be limited and our business would be adversely affected.

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We are pursuing multiple business strategies and expect to expand our development and regulatory capabilities, and as a result, we may encounter difficulties in managing our multiple business units and our growth, which could disrupt our operations.

Currently, we are pursuing multiple business strategies simultaneously, including activities in research and development, software sales, and collaborative and proprietary drug discovery. We believe pursuing these multiple business strategies offers financial and operational synergies, but these diversified operations place increased demands on our limited resources. Furthermore, we have recently experienced, and we expect to continue to experience, significant growth in the number of our employees and the scope of our operations, particularly in the areas of drug development, clinical and regulatory affairs. To manage our multiple business units and our ongoing and anticipated future growth, we must continue to implement and improve our managerial, operational and financial systems, expand our facilities, and continue to recruit and train additional qualified personnel. Due to our limited financial resources and our management team's limited attention and limited experience in managing a company with such ongoing and anticipated growth, we may not be able to effectively manage our multiple business units and the expansion of our operations or recruit and train additional qualified personnel. The expansion of our operations has led to and may continue to lead to significant costs and may divert our management and business development resources. In addition, in order to meet our obligations as a public company and to support our anticipated long-term growth, we will need to increase our general and administrative capabilities. Our management, personnel,

and systems may not be adequate to support this future growth. Any inability to manage our multiple business units and growth could delay the execution of our business plans or disrupt our operations and the synergies we believe currently exist between our business units. In addition, adverse developments in one of these business units may disrupt these synergies.

Risks Related to Ownership of Our Common Stock

An active trading market for our common stock may not be sustained.

Our shares of common stock began trading on the Nasdaq Global Select Market on February 6, 2020. Prior to February 6, 2020, there was no public market for our common stock, and we cannot assure you that an active trading market for our shares will be sustained. As a result, it may be difficult for our stockholders to sell their shares without depressing the market price of our common stock, or at all.

Our executive officers, directors, and principal stockholders, if they choose to act together, have the ability to influence all matters submitted to stockholders for approval.

As of February 21, 2023 February 21, 2024, our executive officers and directors and our stockholders who beneficially owned more than 5% of our outstanding common stock, in the aggregate, beneficially owned shares representing approximately 34.3% 44.2% of our common stock and all of our limited common stock, or, if the holder of our limited common stock exercised its right to convert each share of its limited common stock for one share of our common stock, approximately 42.8% 51.3% of our common stock. As a result, if these stockholders were to choose to act together, they would be able to influence all matters submitted to our stockholders for approval, as well as our management and affairs. For example, these persons, if they choose to act together, would influence the election of directors and approval of any merger, consolidation, or sale of all or substantially all of our assets.

This concentration of ownership control may:

- delay, defer, or prevent a change in control;
- entrench our management and board of directors; or
- delay or prevent a merger, consolidation, takeover, or other business combination involving us that other stockholders may desire.

This concentration of ownership may also adversely affect the market price of our common stock.

The price of our common stock is volatile and fluctuates substantially, which could result in substantial losses for our stockholders.

Our stock price has been, and is likely to continue to be, volatile. Since our initial public offering in February 2020 and through February 21, 2023 February 21, 2024, the intraday price of our common stock has fluctuated from a low of $15.85 to a high

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of $117.00. As a result of volatility, our stockholders may not be able to sell their common stock at or above the price paid for the shares. The market price for our common stock may be influenced by many factors, including:

- our investment in, and the success of, our software solutions;
- the success of our research and development efforts for our proprietary drug discovery programs;
- initiation and progress of preclinical studies and clinical trials for any product candidates that we may develop;
- results of or developments in preclinical studies and clinical trials of any product candidates we may develop or those of our competitors or potential collaborators;
- the success of our drug discovery collaborators and any milestone or other payments we receive from such collaborators;
- the success of competitive products or technologies;
- regulatory or legal developments in the United States and other countries;
- the recruitment or departure of key personnel;
- variations in our financial results or the financial results of companies that are perceived to be similar to us;
- guidance or announcements by us with respect to our anticipated financial or operational performance;
- sales of common stock by us, our executive officers, directors or principal stockholders, or others, or the anticipation of such sales;
- market conditions in the biopharmaceutical sector;
- general economic, industry, and market conditions;

- the societal and economic impact of public health epidemics, such as the ongoing recent COVID-19 pandemic; and
- the other factors described in this “Risk Factors” section.

In the past, following periods of volatility in the market price of a company’s securities, securities class-action litigation has often been instituted against that company. Any lawsuit to which we are a party, with or without merit, may result in an unfavorable judgment. We also may decide to settle lawsuits on unfavorable terms. Any such negative outcome could result in payments of substantial damages or fines, damage to our reputation, or adverse changes to our offerings or business practices. Such litigation may also cause us to incur other substantial costs to defend such claims and divert management’s attention and resources.

Our actual operating results may differ significantly from our guidance.

We have released, and may in the future release, guidance in our annual or quarterly earnings conference calls, annual or quarterly earnings releases, or otherwise, regarding our future performance that represents our management’s estimates as of the date of such guidance. Our guidance, which includes forward-looking statements, is based on projections prepared by our management. Neither our registered public accountants nor any other independent expert or outside party compiles or examines the projections. Accordingly, no such person expresses any opinion or any other form of assurance with respect to the projections.

Projections are based upon a number of assumptions and estimates that, while presented with numerical specificity, are inherently subject to significant business, economic, and competitive uncertainties and contingencies, many of which are beyond our control and are based upon specific assumptions with respect to future business decisions, some of which will change. The principal reason that we have released, and would continue to release, guidance is to provide a basis for our management to discuss our business outlook with analysts and investors. We do not accept any responsibility for any projections or reports published by any such third parties.

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Guidance is necessarily speculative in nature, and it can be expected that some or all of the assumptions underlying any guidance furnished by us will not materialize or will vary significantly from actual results. Accordingly, our guidance is only an estimate of what management believes is realizable as of the date of release. Actual results may vary from our guidance and the variations may be material.

We and our collaborators may not achieve projected discovery and development milestones and other anticipated key events in the time frames that we or they announce, which could have an adverse impact on our business and could cause our stock price to decline.

From time to time, we expect that we will make public statements regarding the expected timing of certain milestones and key events, such as the commencement and completion of preclinical and IND-enabling studies and clinical trials in our proprietary drug discovery programs as well as developments and milestones under our collaborations. For example, Morphic and Structure Therapeutics have also made public statements regarding their expectations for the development of programs under collaboration with us and they and other collaborators may in the future make additional statements about their goals and expectations for collaborations with us. The actual timing of these events can vary dramatically due to a number of factors such as delays or failures in our or our current and future collaborators’ drug discovery and development programs, including as a result of COVID-19, the amount of time, effort, and resources committed by us and our current and future collaborators, and the numerous uncertainties inherent in the development of drugs. As a result, there can be no assurance that our or our current and future collaborators’ programs will advance or be completed in the time frames we or they announce or expect. If we or any collaborators fail to achieve one or more of these milestones or other key events as planned, our business could be materially adversely affected and the price of our common stock could decline.

If securities analysts do not publish or cease publishing research or reports or publish misleading, inaccurate or unfavorable research about our business or if they publish negative evaluations of our stock, the price and trading volume of our stock could decline.

The market price and trading volume for our common stock relies, in part, on the research and reports that industry or financial analysts publish about us or our business. We do not have control over these analysts. There can be no assurance that existing analysts will continue to cover us or that new analysts will begin to cover us. There is also no assurance that any covering analyst will provide favorable coverage. Although we have obtained analyst coverage, if one or more of the analysts covering our business downgrade their evaluations of our stock or publish inaccurate or unfavorable research about our business, or provides more favorable relative recommendations about our competitors, the price of our stock could decline. If one or more of these analysts cease to cover our stock, we could lose visibility in the market for our stock, which in turn could cause our stock price and trading volume to decline.

We have broad discretion in the use of our cash, cash equivalents, and marketable securities and may not use them effectively.

Our management has broad discretion in the deployment and use of our cash, cash equivalents, and marketable securities and could use such funds in ways that do not improve our results of operations or enhance the value of our common stock or in ways that our stockholders may not agree with. The failure by our management to apply these funds effectively could harm our business, financial condition, results of operations, and prospects and could cause the price of our common stock to decline.

Because we do not anticipate paying any cash dividends on our common stock in the foreseeable future, capital appreciation, if any, will be the sole source of gain for our stockholders.

We have never declared or paid cash dividends on our common stock. We currently intend to retain all of our future earnings to fund the development and expansion of our business. Any determination to pay dividends in the future will be at the discretion of our board of directors. As a result, capital appreciation of our common stock, if any, will be the sole source of gain for our stockholders for the foreseeable future.

Sales of a substantial number of shares of our common stock in the public market could cause the market price of our common stock to drop significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock in the public market, or the perception in the market that the holders of a large number of shares intend to sell shares, could reduce the market price of our common stock, impair our ability to raise capital through the sale of additional equity securities, and make it more difficult for our stockholders to sell their common stock at a time and price that they deem appropriate. As of February 21, 2023 February 21, 2024, we had outstanding 62,321,454 63,146,419 shares of common stock and 9,164,193 shares of limited common stock. All of our outstanding shares of common stock, including shares of common stock issuable upon the conversion of shares of our limited common stock, are available for sale in the public market, subject only to the restrictions of Rule 144 under the Securities Act of 1933, as amended, in the case of our affiliates. In addition, certain of our executive officers, directors and affiliated stockholders have entered or may enter into Rule 10b5-1 plans providing for sales of shares of our common stock from time to time. Under a Rule 10b5-1 plan, a broker executes trades pursuant to parameters established by the executive officer, director or affiliated stockholder when entering into the plan, without further direction from the executive officer, director or affiliated stockholder. A Rule 10b5-1 plan may be amended or terminated in some circumstances. Our executive officers, directors and affiliated stockholders also may buy or sell additional shares outside of a Rule 10b5-1 plan when they are not in possession of material, nonpublic information.

We have also filed a universal shelf registration statement on Form S-3 which allows us to offer and sell an indeterminate number of shares of common stock, preferred stock, depositary shares or warrants, or an indeterminate principal amount of debt securities, from time to time pursuant to one or more offerings at prices and terms to be determined at the time of the sale. Moreover, certain holders of our common stock and our limited common stock have rights, subject to specified conditions, to include their shares in registration statements that we may file for ourselves or other stockholders and may require us to file Form S-3 registration statements covering their shares.

We are party to a sales agreement with Leerink Partners LLC (formerly SVB Securities LLC), or Leerink Partners, as sales agent, with respect to an "at the market" offering program, or the ATM, under which we could offer and sell, from time to time pursuant to our Form S-3, shares of our common stock having an aggregate offering price of up to $250.0 million, through Leerink Partners. The number of shares that are sold by Leerink Partners after we request that sales be made will fluctuate based on the market price of our common stock during the sales period and limits we set with Leerink Partners. Therefore, it is not possible to predict the number of shares that will be ultimately issued by us, if any, pursuant to the sales agreement. To date, we have not sold any shares of common stock under the ATM.

We also have filed registration statements on Forms S-8 to register shares of common stock that we may issue under our equity compensation plans. Shares registered under such registration statements are available for sale in the public market upon issuance, subject to volume limitations applicable to affiliates, vesting arrangements and exercise of options.

We have incurred and will continue to incur increased costs as a result of operating as a public company, and our management has devoted and will continue to be required to devote substantial time to new compliance initiatives and corporate governance practices.

As a public company, we have incurred and will continue to incur significant legal, accounting, and other expenses that we did not incur as a private company. The Securities Exchange Act of 1934, as amended, or the Exchange Act, Sarbanes-Oxley Act of 2002, the Dodd-Frank Wall Street Reform and Consumer Protection Act, the listing requirements of Nasdaq, and other applicable securities rules and regulations impose various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. Our management and other personnel devote and will need to continue to devote a substantial amount of time and resources to these compliance initiatives, potentially at the expense of other business concerns, which could harm our business, financial condition, results of operations, and prospects. Moreover, these rules and regulations have increased and will continue to increase our legal and financial compliance costs, and have made and will continue to make some activities more time-consuming and costly compared to when we were a private company.

We are evaluating frequently evaluate our compliance with these rules and regulations, and cannot predict or estimate the amount of additional costs we may incur or the timing of such costs. These rules and regulations are often subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices.

As a result of becoming a public company, we are obligated to develop and maintain proper and effective internal control over financial reporting. Any failure to maintain the adequacy of these internal controls may adversely affect investor confidence in our company and, as a result, the value of our common stock.

Pursuant to Section 404 of the Sarbanes-Oxley Act, we are required to furnish a report by our management on our internal control over financial reporting on an annual basis. This assessment will need needs to include disclosure of any material weaknesses identified by our management in our internal control over financial reporting. Pursuant to Section 404, we are also required to have our independent registered public accounting firm issue an opinion on the effectiveness of our internal control over financial reporting on an annual basis.

During our evaluation of our internal control, if we identify one or more material weaknesses in our internal control over financial reporting, we will be unable to assert that our internal control over financial reporting is effective. In addition, if we have an unremediated material weakness, we would receive an adverse opinion regarding our internal control over financial reporting from our independent registered public accounting firm. In For example, in connection with the audit of our consolidated financial statements for the

year ended December 31, 2022, we and our independent registered public accounting firm identified a material weakness in our internal control over financial reporting. We While we remediated this material weakness as of December 31, 2023, we cannot assure you that we can remedy our existing material weakness or that there will not be material weaknesses or significant deficiencies in our internal control over financial reporting in the future. If in the future we again identify a material weakness, we cannot assure you that any measures we may take in the future will be sufficient to remediate such material weakness or avoid the identification of additional material weaknesses in the future. If the steps we take do not remediate a future material weakness in a timely manner, there could be a reasonable possibility that this control deficiency or others could result in a material misstatement of our annual or interim financial statements that would not be prevented or detected on a timely basis.

Any failure to maintain internal control over financial reporting could severely inhibit our ability to accurately report our financial condition, or results of operations. If we are unable to conclude in the future that our internal control over financial reporting is effective, or if we or our independent registered public accounting firm determines we have a material weakness in our internal control over financial reporting, we could lose investor confidence in the accuracy and completeness of our financial reports, we may be unable to maintain compliance with securities law requirements regarding timely filing of periodic reports in addition to applicable stock exchange listing requirements, the market price of shares of our common stock could decline, and we could be subject to sanctions or investigations by Nasdaq, the SEC, or other regulatory authorities. Failure to remedy any material weakness in our internal control over financial reporting, or to implement or maintain other effective control systems required of public companies, could also restrict our future access to the capital markets.

We identified a material weakness in our internal control over our financial reporting. If we are unable to remediate this material weakness, we may not be able to accurately or timely report our financial condition or results of operations, and we may conclude that our internal control over financial reporting is not effective, which could adversely impact our investors' confidence and our stock price.

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of a company's annual or interim financial statements will not be prevented or detected on a timely basis. In connection with the audit of our consolidated financial statements for the year ended December 31, 2022, we and our independent registered public accounting firm identified a material weakness in our internal control over financial reporting. The material weakness related to a deficiency in the design of our control in our revenue process to determine whether performance milestones in a newly executed drug discovery arrangement were probable of achievement and the constraint on variable consideration in the form of milestone payments can be removed. The deficiency was a result of ineffective risk assessment, as our existing controls were designed insufficiently to identify a change in timing of performance milestones in the newly executed contract. This material weakness resulted in a $1.7 million understatement of drug discovery revenue and a related understatement of contract assets that were corrected prior to the issuance of our consolidated financial statements as of and for the year ended December 31, 2022.

We have developed a detailed remediation plan and are making progress in what will be a multi-step process to fully remediate the material weakness described above. Specifically, as of December 31, 2022, we are in the process of implementing and expanding our controls and procedures in our revenue process in order to timely identify changes to the timing of when a performance milestone becomes probable of achievement in drug discovery arrangements and to ensure such determinations are made through the end of the reporting period. In addition, we will continue to assess risks on an ongoing basis to timely identify changes in our business that may create new exposures or risk categories, and we plan to conduct a comprehensive review and, as applicable, update our existing internal control framework to ensure that we have identified, developed, and deployed the appropriate business process controls to address the new exposures or risk categories that are identified.

While we have designed and are implementing new controls to remediate this material weakness, they have not operated for a sufficient period of time to demonstrate the material weakness has been remediated. We cannot assure you that the measures we have taken to date, together with any measures we may take in the future, will be sufficient to remediate the material weakness we identified or avoid the identification of additional material weaknesses in the future. If the steps we take do not remediate the material weakness in a timely manner, there could continue to be a reasonable possibility that this control deficiency or others could result in a material misstatement of our annual or interim financial statements that would not be prevented or detected on a timely basis.

Furthermore, investors' perceptions that our internal controls are inadequate or that we are unable to produce accurate financial statements on a timely basis may harm our stock price.

Our disclosure controls and procedures may not prevent or detect all errors or acts of fraud.

As a public company, we are subject to certain reporting requirements of the Exchange Act. Our disclosure controls and procedures are designed to reasonably assure that information required to be disclosed by us in reports we file or submit under the Exchange Act is accumulated and communicated to management, recorded, processed, summarized, and reported within the time periods specified in the rules and forms of the SEC. We believe that any disclosure controls and procedures or internal controls and procedures, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by an unauthorized override of the controls. Accordingly, because of the inherent limitations in our control system, misstatements or insufficient disclosures due to error or fraud may occur and not be detected.

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Provisions in our corporate charter documents and under Delaware law could make an acquisition of our company, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current directors and members of management.

Provisions in our certificate of incorporation and our bylaws may discourage, delay, or prevent a merger, acquisition, or other change in control of our company that stockholders may consider favorable, including transactions in which stockholders might otherwise receive a premium for their shares. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock, thereby depressing the market price of our common stock. In addition, because our board of directors is responsible for appointing the members of our management team, these provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors. Among other things, these provisions:

- establish a classified board of directors such that only one of three classes of directors is elected each year;
- allow the authorized number of our directors to be changed only by resolution of our board of directors;

- limit the manner in which stockholders can remove directors from our board of directors;

- establish advance notice requirements for stockholder proposals that can be acted on at stockholder meetings and nominations to our board of directors;
- require that stockholder actions must be effected at a duly called stockholder meeting and prohibit actions by our stockholders by written consent;
- limit who may call stockholder meetings to the board of directors or to the secretary at the request of the holders of at least 25% of the outstanding shares of our common stock and limited common stock; and
- authorize our board of directors to issue preferred stock without stockholder approval, which could be used to institute a "poison pill" that would work to dilute the stock ownership of a potential hostile acquirer, effectively preventing acquisitions that have not been approved by our board of directors.

Moreover, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, or the DGCL, which prohibits a person who owns in excess of 15% of our outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner.

Our certificate of incorporation designates the state courts in the State of Delaware as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could discourage lawsuits against the company and our directors, officers, and employees.

Our certificate of incorporation provides that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware (or, if the Court of Chancery of the State of Delaware does not have jurisdiction, the federal district court for the District of Delaware) will be the sole and exclusive forum for: (1) any derivative action or proceeding brought on our behalf, (2) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers, employees or stockholders to our company or our stockholders, (3) any action asserting a claim arising pursuant to any provision of the DGCL or as to which the DGCL confers jurisdiction on the Court of Chancery of the State of Delaware or (4) any action asserting a claim arising pursuant to any provision of our certificate of incorporation or bylaws (in each case, as they may be amended from time to time) or governed by the internal affairs doctrine. These choice of forum provisions will not apply to suits brought to enforce a duty or liability created by the Securities Act of 1933, as amended, the Exchange Act or any other claim for which federal courts have exclusive jurisdiction.

This exclusive forum provision may limit the ability of our stockholders to bring a claim in a judicial forum that such stockholders find favorable for disputes with us or our directors, officers, or employees, which may discourage such lawsuits against us and our directors, officers, and employees. Alternatively, if a court were to find the choice of forum provision contained in our certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could materially adversely affect our business, financial condition, and operating results.

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Item 1B. Unresolved Staff Comments.

None.

Item 1C. Cybersecurity.

We have certain processes for assessing, identifying and managing cybersecurity risks, which are built into our overall information technology function and are designed to help protect our information assets and operations from internal and external cyber threats, as well as secure our networks and systems. Such processes include physical, procedural and technical safeguards, response plans, regular tests on our systems, incident simulations and routine review of our policies and procedures to identify risks and refine our practices. We engage certain external parties, including consultants, computer security firms and risk management advisors, peer companies, industry groups and governance experts, to enhance our cybersecurity oversight. We consider the internal risk oversight programs of third-party service providers before engaging them in order to help protect our company from any related vulnerabilities. As part of our overall risk mitigation strategy, we also maintain cybersecurity insurance coverage; however, such insurance may not be sufficient in type or amount to cover us against claims related to security breaches, cyber-attacks and other related breaches.

We do not believe that there are currently any known risks from cybersecurity threats that are reasonably likely to materially affect our company or our business strategy, results of operations or financial condition.

The audit committee of our board of directors provides direct oversight over cybersecurity risk and provides regular updates to the board of directors regarding such oversight. The audit committee receives periodic updates from management regarding cybersecurity matters and is notified between such updates regarding significant new cybersecurity threats or incidents.

Our vice president of information security leads the operational oversight of company-wide cybersecurity strategy, policy, standards and processes and works across relevant departments to assess and help prepare our company and our employees to address cybersecurity risks, including phishing attacks, ransomware, data breaches, and insider threats. Our vice president of information security has over 15 years of information security experience, including in developing, overseeing and managing information technology and information security teams. He has been with our company since 2017 and has served as our vice president of information security since April 2023. He previously served as our executive director of information security from January 2022 through April 2023, senior director of information security from February 2019 through January 2022 and director of information security from June 2017 through February 2019. Prior to joining our company, our vice president of information security worked at several technology companies and served in roles of increasing responsibility with respect to information security during his tenure.

In an effort to deter and detect cyber threats, we annually provide all employees, including part-time and temporary employees, with a cybersecurity awareness program, which covers timely and relevant topics, including social engineering and phishing, and educates employees on the importance of reporting all incidents immediately. We also use

technology-based tools to mitigate cybersecurity risks throughout our information security systems. These tools are integrated into our comprehensive security framework, used to bolster our employee-based cybersecurity programs and are regularly updated to respond to evolving threats.

Item 2. Properties.

Our principal facilities consist of office space. We occupy approximately 136,047 square feet of office space in New York, New York under a lease that currently expires in December 2037. We also occupy approximately 2037, 35,000 square feet of office space in Portland, Oregon under a lease that currently expires in September 2026, and 48,987 square feet of office space in Hyderabad, India under a lease that currently expires in April 2028. Additionally, we lease additional office space at our other office locations around the world. We believe our facilities are adequate and suitable for our current needs and that should it be needed, suitable additional or alternative space will be available to accommodate our operations.

Item 3. Legal Proceedings.

From time to time, we may become involved in legal proceedings arising in the ordinary course of our business. We are not currently subject to any material legal proceedings.

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Item 4. Mine Safety Disclosures.

Not applicable.

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PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information

Our common stock has been publicly traded on the Nasdaq Global Select Market under the symbol "SDGR" since February 6, 2020. Prior to that date, there was no public market for our common stock. Our limited common stock is not listed or traded on any stock exchange.

Performance Graph

The following performance graph and related information shall not be deemed to be "soliciting material" or to be "filed" with the Securities and Exchange Commission for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or the Exchange Act, or otherwise subject to the liabilities under that Section, nor shall such information be incorporated by reference into any future filing under the Exchange Act or the Securities Act of 1933, as amended, or the Securities Act, except to the extent that we specifically incorporate it by reference into such filing.

The following graph compares the cumulative total return on our common stock with the cumulative total return of the Nasdaq composite and the Nasdaq Biotechnology Index from February 6, 2020 (the first date that shares of our common stock were publicly traded on the Nasdaq Global Select Market) through December 31, 2022 December 31, 2023. The graph assumes an investment of $100 on February 6, 2020, in each of the foregoing indices and in our common stock. Data for each of the indices and our common stock assumes that all dividends were reinvested on the day of issuance, if any. The comparisons are not intended to forecast or be indicative of future performance of our common stock.


Part II Item 5 Stock Performance Graph FY23.jpg

Holders of Record

As of February 21, 2023 February 21, 2024, there were approximately 112 104 holders of record of our common stock and one holder of record of our limited common stock. The actual number of stockholders is greater than this number of holders of record

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and includes stockholders who are beneficial owners but whose shares are held in street name by brokers and other nominees. This number of holders of record also does not include stockholders whose shares may be held in trust by other entities.

Dividends

We have never declared or paid cash dividends on our common stock or our limited common stock. We currently intend to retain all available funds and any future earnings to fund the development and expansion of our business and we do not anticipate paying any cash dividends in the foreseeable future. Any future determination to declare and pay dividends will be made at the discretion of our board of directors and will depend on then-existing conditions, including our results of operations, financial condition, contractual restrictions, capital requirements, business prospects, and other factors our board of directors may deem relevant.

Recent Sales of Unregistered Securities

Not applicable.

Issuer Purchases of Equity Securities

Not applicable.

Item 6. [Reserved.]

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

You should read the following discussion and analysis of our financial condition and results of operations together with our consolidated financial statements and related notes appearing elsewhere in this Annual Report. Some of the information contained in this discussion and analysis or set forth elsewhere in this Annual Report, including information with respect to our plans and strategy for our business, and related financing, includes forward-looking statements that involve risks and uncertainties.

The following discussion and analysis of our financial condition and results of operations covers fiscal 2023 and fiscal 2022 items and year-over-year comparisons between fiscal 2023 and fiscal 2022. Discussions of fiscal 2021 items and year-over-year comparisons between fiscal 2022 and fiscal 2021. Discussions of fiscal 2020 items and year-over-year comparisons between fiscal 2021 and 2020 that are not included in this Form 10-K can be found in "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part II, Item 7 of our Annual Report on Form 10-K for the fiscal year ended December 31, 2021 December 31, 2022, that was filed with the SEC on February 24, 2022 February 28, 2023.

As a result of many factors, including those factors set forth in "Risk Factors" of this Annual Report, our actual results could differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis. For further information regarding our forward-looking statements, see "Cautionary Note Regarding Forward-Looking Statements and Industry Data" in this Annual Report.

Overview

We are transforming the way therapeutics and materials are discovered. Our differentiated, physics-based computational platform enables discovery of high-quality, novel molecules for drug development and materials applications more rapidly and at a lower cost, compared to traditional methods. Our software platform is licensed by biopharmaceutical and industrial companies, academic institutions, and government laboratories around the world. We are applying our computational platform to discover and advance a broad pipeline of development drug discovery programs in collaboration with leading biopharmaceutical companies. In addition, we use our computational platform to advance a discover novel molecules for our pipeline of partnered and wholly-owned proprietary drug discovery programs, which we refer to collectively as our proprietary drug discovery programs. are advancing through preclinical and clinical development.

Since our founding, we have been primarily focused on developing our computational platform, which is capable of predicting critical properties of molecules with a high degree of accuracy, as well as advancing drug discovery programs both with our collaborators and on our own. We have devoted substantially all of our resources to introducing new capabilities and refining our software, conducting research and development activities, recruiting skilled personnel, and providing general and administrative support for these operations.

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Over the last decade, we have entered into a number of collaborations with leading biopharmaceutical companies that have provided us with significant income and have the potential to produce additional milestone payments, option fees, and future royalties. In 2018, we began to develop a pipeline of wholly-owned proprietary drug discovery programs with the goal of using our platform to produce a portfolio of novel, high value therapeutics. We submitted an In June 2022, the U.S. Food and Drug Administration, or FDA, cleared our first investigational new drug application, or IND, for our MALT1 inhibitor, which we refer to as SGR-1505, and the U.S. Food and Drug Administration, or FDA, cleared the IND SGR-1505. We have initiated dosing in June 2022. We recently initiated a Phase 1 clinical trial of SGR-1505 in patients with relapsed or refractory B-cell lymphomas and currently have we anticipate reporting initial data from the trial in late 2024 or 2025. We also completed a Phase 1 clinical trial sites open of SGR-1505 in 73 healthy volunteers to gather additional data, including data relating to the safety, tolerability and pharmacokinetics of SGR-1505, as well as the effect of food and drug-drug interactions. In the healthy volunteer trial, SGR-1505 was well tolerated with no drug-related serious adverse events or dose limiting toxicities observed. In the trial, we observed that SGR-1505 achieved greater than 90 percent inhibition of IL-2 secretion in an activated T cell whole blood assay, confirming target engagement and meeting the pharmacodynamic goals for screening the trial. Inhibition of IL-2 secretion is a marker for target engagement and enrollment, but we have not yet dosed any pathway modulation as it is tightly linked to MALT1 and the downstream NF-κB signaling. The data supported continued evaluation of SGR-1505 in the ongoing Phase 1 clinical trial in patients with SGR-1505. relapsed or refractory B-cell lymphomas. In addition, we continue the FDA recently granted orphan drug designation to advance other wholly-owned programs through IND-enabling studies. We expect to submit an IND application to SGR-1505 for the potential treatment of mantle cell lymphoma.

In July 2023, the FDA cleared our IND for our CDC7 inhibitor, which we refer to as SGR-2921. We have initiated dosing in a Phase 1 clinical trial of SGR-2921 in patients with relapsed or refractory acute myeloid leukemia or high-risk myelodysplastic syndrome, and we anticipate reporting initial data from the trial in late 2024 or 2025. We are also

advancing SGR-3515, our novel WEE1/MYT1 inhibitor for the treatment of solid tumors. We expect to submit an IND to the FDA for SGR-3515 in the first half of 2023 and an IND application to the FDA for our WEE1 inhibitor, which we refer to as SGR-3515, in 2024, subject to favorable data from ongoing IND-enabling studies. In addition, studies, and we plan to initiate a Phase 1 clinical trial of SGR-2921 in SGR-3515 by the second half end of 2023, 2024, subject to receipt of regulatory clearance.

We have funded our operations to date principally from the sale of our equity securities, including our initial public offering and our follow-on public offering, and to a lesser extent, from sales of our software solutions and from upfront payments, research funding and milestone payments from our drug discovery collaborations, and from distributions on account of, or proceeds from the sale of, our equity stakes in our collaborators. On February 13, 2023, April 6, 2023, and November 9, 2023, on account of our equity stake in Nimbus Therapeutics, LLC, or Nimbus, we received cash distributions of $111.3 million, $35.8 million, and $0.1 million, respectively, from Nimbus in connection with Takeda's acquisition of Nimbus Lakshmi, Inc., a wholly-owned subsidiary of Nimbus, and its TYK2 inhibitor NDI-034858.

We currently conduct our operations through two reportable segments: software and drug discovery. The software segment is focused on selling our software to transform drug discovery across the life sciences industry, as well as to customers in materials science industries. The drug discovery segment is focused on generating revenue from a diverse portfolio of preclinical and clinical programs, internally and through collaborations, that have advanced to various stages of discovery and development.

Our software segment generates revenue from software product licenses, hosted software subscriptions, software maintenance, professional services, and contributions. The revenue we generate through our software solutions from each of our customers varies largely depending on the number of software licenses our customers purchase from us. The licenses that our customers purchase from us provide them the ability to perform a certain number of calculations used in the design of molecules for drug discovery or materials science. We deliver our software through either (i) a product license that permits our customers to install the software solution directly on their own in-house hardware and use it for a specified term, or (ii) a subscription that allows our customers to access our cloud-based software solution on their own hardware without taking control of licenses.

We currently generate drug discovery revenue from our collaborations, including upfront payments, research funding payments and discovery and development milestones. In the future, we may also derive drug discovery revenue from our collaborations from option fees, the achievement of regulatory and commercial milestones, and royalties on commercial drug sales. In addition to revenue from our collaborations, we may also derive drug discovery revenue from collaborating on or out-licensing our wholly-owned proprietary drug discovery programs when we believe it will help maximize our clinical and commercial opportunity opportunities for the program.

In November 2020, we entered into an exclusive, worldwide collaboration and license agreement with Bristol-Myers Squibb Company, or BMS, pursuant to which we and BMS agreed to collaborate in the discovery, research and development of small molecule compounds for biological targets in the oncology, neurology and immunology therapeutic areas. The initial collaboration targets included HIF-2 alpha Aftermutual agreement on the targets(s) of interest, the Schrödinger therapeutics group is responsible for the

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discovery of development candidates. Once a development candidate meeting specified criteria for a target has been identified, BMS will be solely responsible for the development, manufacturing and SOS1/KRAS, which were two commercialization of our wholly-owned pipeline programs. In November 2021, we and BMS mutually agreed to replace the HIF-2 alpha target with another precision oncology target. Following the replacement election, all rights to the HIF-2 alpha target program reverted to us. In September 2022, BMS elected not to proceed with further such development of another target and all rights to this program reverted to us. In December 2022, we and BMS entered into an amendment to the agreement to include an additional target in neurology on terms similar to the original agreement. Under the terms of the agreement, as amended, we received an upfront payment of $55.0 million from BMS in November 2020 and an additional upfront payment in December 2022, and we candidate. We are eligible to receive up to $2.7 billion $1.5 billion in total milestone payments across all the potential targets currently subject to the collaboration, of which we have received $25.0 million as of December 31, 2023, as well as a tiered percentage royalty on net sales of each product commercialized by BMS ranging from mid-single digits to low-double digits, subject to certain specified reductions. See "Collaboration and License Agreement" in Note 3 to our consolidated financial statements for additional information relating to this agreement.

In August 2021, we entered into a global discovery, development and commercialization collaboration with Zai Lab Limited focused on a novel program in oncology targeting DNA damage response. Under the terms of the agreement, we received an upfront payment to help fund our share of research costs, and if we elect to co-fund clinical development of a product candidate under the collaboration, we will be entitled to receive 50% of any profits from the commercialization of an approved therapeutic in the United States. We are also eligible to receive up to approximately $338.0 million in preclinical, clinical, regulatory and sales-based milestone payments from Zai Lab Limited for any product candidate developed under the collaboration, and we are entitled to receive tiered royalties on net sales outside the United States.

In January 2022, we acquired XTAL BioStructures, Inc., or XTAL, a company that provides structural biology services, including biophysical methods, protein production and purification, and X-ray crystallography, which we believe will augment our ability to produce high quality target structures for our drug discovery programs. See "Business Acquisition" in Note 5 to our consolidated financial statements for additional information relating to this acquisition.

In September 2022, we entered into a collaboration with Eli Lilly and Company, or Lilly, under which we are responsible for the discovery and optimization of small molecule compounds addressing a specific an immunology target. Lilly will be responsible for the completion of preclinical development, clinical development and commercialization. Under the terms of the agreement we received an upfront payment and we are eligible to receive up to $425 million $425.0 million in discovery, development and commercial milestone payments. We are also eligible to receive low single- to low double-digit royalties on net sales of any products emerging from the collaboration in all markets.

We generated revenue of $216.7 million and $181.0 million in 2023 and $137.9 million in 2022, and 2021, respectively, representing a year-over-year growth of 31% 20%. Our net losses were $149.2 income for the year ended December 31, 2023 was $40.7 million and $101.2 million our net loss for the years year ended December 31, 2022 and 2021, respectively. was $149.2 million.

Business Impact of COVID-19 Pandemic

In order to safeguard the health of our employees in light of the COVID-19 pandemic, in early March 2020 we implemented a company-wide work-from-home policy. Beginning in June 2020, we began limited re-openings of certain of our offices in the United States and abroad. All of our offices are currently open, though we may take future actions that alter our operations as may be required by federal, state, or local authorities, or which we determine are in our best interests.

We did not see material impacts to our business from the COVID-19 pandemic during 2022. While we do not expect the COVID-19 pandemic to have future material impacts on our business, the full extent of the future impact will depend on many factors outside of our control, including, without limitation, the extent, trajectory and duration of the COVID-19 pandemic, the development, availability and distribution of effective treatments and vaccines, the imposition of protective public safety measures, the emergence of new strains and variants of COVID-19 and the effectiveness of vaccines against such strains and variants, and the impact of the COVID-19 pandemic on the global economy. For instance, with respect to our software business, some of our customers may experience increasing budgetary pressures as a result of downturns or uncertainty in their respective businesses, which may cause them to delay or reduce purchases. Relative to our and our collaborators' drug discovery programs, the COVID-19 pandemic has resulted in, and may in the future result in, disruptions in current and future IND-enabling studies and clinical trials, manufacturing disruptions, trial site disruptions and impact the ability to obtain necessary institutional review board, institutional biosafety committee, or other necessary site approvals. These disruptions have caused, and may in the future cause, delays in certain of our and our collaborators' drug discovery programs. For example, our contract manufacturing organizations, or CMOs, and our contract research organizations, or CROs, have experienced reductions in the capacity to undertake research-scale production and delays in executing some preclinical studies, including our IND-enabling studies for SGR-2921. We expect to submit the IND application to the FDA for SGR-2921 in the first half of 2023 and to initiate a Phase 1 clinical trial in the second half of 2023, subject to regulatory clearance. In addition, the recent resurgence of COVID-19 in certain cities in China, and related subsequent lockdowns, have also reduced the capacity of a number of CROs that we work with in those affected areas. We, together with our CMOs and CROs, are closely monitoring the impact of the COVID-19 pandemic on these operations, and we are actively working to add supplemental or substitute capacity to minimize the impact of these reduced operations. Furthermore, if our collaborators experience similar delays with their drug discovery and development programs, that could cause additional delays in our achievement of milestones and related revenue. While there remains uncertainty about the extent of the effect of the COVID-19 pandemic, we do not envision a long-term impact from the COVID-19 pandemic on our ability to execute on our strategy.

Management is actively monitoring the COVID-19 pandemic and its possible effects on our financial condition, liquidity, operations, customers, contractors, and workforce. For additional information on risks posed by the COVID-19 pandemic, please see "Risk Factors – Risks Related to Our Operations – A widespread outbreak of an illness or other health issue, such as the COVID-19 pandemic, could negatively affect various aspects of our business and make it more difficult to meet our obligations to our customers, and could result in reduced demand from our customers as well as delays in our drug discovery and development programs," included elsewhere in this Annual Report.

In response to the COVID-19 pandemic, we have joined a multi-company philanthropic effort to discover and develop novel small-molecule antiviral therapeutics to address COVID-19. The intent of the alliance, which to date also includes Takeda Pharmaceutical Company Limited, Novartis AG, Alphabet, Inc., Gilead Sciences, Inc., and WuXi AppTec, Inc., is to make any discoveries from this alliance available to the public. There is no expectation that this effort will generate revenue for any of the companies involved in the alliance, including us.

Key Factors Affecting Our Performance

Ability to drive additional revenue from our software solutions from existing customers

Our large existing base of customers represents a significant opportunity for us to expand our revenue through increased utilization of our software. We had 1,785 and 1,748 active customers for the years ended December 31, 2023 and 2022, respectively. We define the number of active customers as the number of customers who had an annual contract value, or ACV, of at least $1,000 in the fiscal year. We use $1,000 as a threshold for defining our active customers as this amount will generally exclude customers who only license our PyMOL software, which is our open-source molecular visualization system broadly available at low cost. The revenue that we generate through our software solutions from each of our customers varies depending on the number of licenses for each software solution that each customer purchases from us. Accordingly, we work with our customers to improve their experience and increase the utility of our platform in order to expand the scale at which they deploy our platform in their business. Biopharmaceutical companies are increasingly adopting our software at a larger scale, and we anticipate that this scaling-up will drive future revenue growth. Our ability to expand within our customer base is demonstrated by the increasing number of our customers with an annual contract value, or ACV at higher thresholds, including customers with an ACV of over $100,000. We at least $500,000 or $1.0 million. For the year ended December 31, 2023, we had 227 and 190 54 customers with an ACV of these customers at least $500,000 compared to 52 for the years year ended December 31, 2022 and 2021, respectively. This subset of customers represented approximately 82% and 80% of our total ACV for the years ended December 31, 2022 and 2021, respectively. In addition, . Furthermore, we had 27, 18, and 15 customers with an ACV of over at least $1.0 million for the years ended December 31, 2022 December 31, 2023, 2022, and 2021, respectively. We also had four customers with an ACV in excess of at least $5.0 million for the year ended December 31, 2022 December 31, 2023, compared to four and two such customers for the year years ended December 31, 2021. December 31, 2022 and 2021, respectively.

With respect to contracts that have a duration of one year or less, or contracts of more than one year in duration that are billed annually, we define ACV as the contract value billed during the applicable period. For contracts with a duration of more than one year that are billed upfront, ACV in each period represents the total billed contract value divided by the term. ACV should be viewed independently of revenue and does not represent revenue calculated in accordance with generally accepted accounting principles in the United States, or U.S. GAAP, on an annualized basis, as it is an operating metric that can be impacted by contract execution start and end dates and renewal rates. ACV is not intended to be a replacement for, or forecast of, revenue. Our ACV was $140.6 million $154.2 million and $112.1 million $140.6 million for the years ended December 31, 2022 December 31, 2023 and 2021, 2022, respectively.

Ability to retain our customer base for our software solutions

Another important driver of our performance is our ability to expand retain our customer relationships is the retention of our base. We had 222, 227, and 190 customers with an ACV over $100,000. of at least $100,000 for the years ended December 31, 2023, 2022, and 2021, respectively. For the year ended December 31, 2022 December 31, 2023, our year-over-year customer retention rate for such customers was 96% 92% and was 96% or higher for each of the previous nine fiscal years. Our customer retention rate for our customers with an ACV of at least $500,000 was 98% for the year ended December 31, 2023 and 100% for the year ended December 31, 2022. We calculate year-over-year customer retention for our customers with an ACV over of at least $100,000 or $500,000 by starting with the number of such customers we had in the previous fiscal year. We then calculate how many of these customers were active

customers in the current fiscal year. We then divide this number by the number of customers with an ACV over of at least $100,000 or $500,000, as applicable, that, we had in the previous fiscal year to arrive at the year-over-year customer retention rate for such customers.

We aim to continue to grow believe our software sales by increasing and marketing approach and the adoption quality of our software solutions result in long-term relationships and high retention with our largest customers. This is demonstrated by the length of our existing key relationships, with the average tenure of our 10 largest software customers and identifying and adding new customers. If we are unable to continue to increase revenue from existing customers or identify new customers, our financial performance will be adversely impacted.

Ability to increase our customer base for our software solutions

We believe that we have significant opportunity to continue to increase the number of customers who use our solutions. We had 1,748 and 1,647 active customers for the years ended December 31, 2022 and 2021, respectively. We define the number of active customers as the number of customers who had an ACV of at least $1,000 in the fiscal year. We use $1,000 as a threshold for defining our active customers as this amount will generally exclude customers who only license our PyMOL software, which is our open-source molecular visualization system broadly available at low cost.

While 2023 being nearly 19 years. Furthermore, we have significantly penetrated the pharmaceutical industry, with all of the top 20 pharmaceutical companies, measured by 2021 2022 revenue, licensing our software in 2022, our strategy is to grow our customer base. We believe there remains a large opportunity for growth as there are thousands of biopharmaceutical companies that could benefit from our solutions. Additionally, since the physics underlying the properties of drug molecules and materials is the same, we have been able to extend our computational platform to materials science applications in fields such as aerospace, energy, semiconductors, and electronic displays.

We sell our software solutions to a growing number of materials science customers, and we believe materials science industries are only beginning to recognize the potential of computational methods. We continue to provide education and information to increase the awareness of our computational platform across different industries. As part of our strategy, we have driven the adoption of our software by researchers, and we had more than 1,720 academic institutions across the world using our software in 2022. We believe that by introducing the benefits of our computational software at the academic stage, we will drive brand awareness and expand the use of our platform to industries that have historically relied on traditional methods for discovery of molecules. 2023. Our ability to continue to grow our customer base software revenue is dependent upon our ability to educate retain customers through the market continued support and support the business through investment in our sales and marketing efforts and the ongoing enhancement of our software solutions.

Advancement of our collaborative programs

We have entered into a number of collaborations with various leading biopharmaceutical companies to advance drug discovery. We will seek to enter into additional collaboration agreements, driven by the synergies we expect to achieve between our platform and the capabilities and expertise of our potential collaborators. We believe that our collaborations will be a significant driver of value for us in the form of equity stakes, research fees, preclinical, clinical, and commercial milestone payments, and option fees, as well as royalties on any potential future sales of products, if approved. We continue to work with our current collaborators to advance existing programs through discovery research stages and initiate additional programs. However, we do not generally exercise control over the development programs of our collaborators and often rely depend on our collaborators' decisions of the management of such companies with respect to clinical development and commercialization. Our ability to continue to derive value from our collaborations will be driven by both our capability to make progress in these programs, as well as whether our collaborators successfully advance such programs beyond the discovery stage. stage, and the strategic priorities of our collaboration partners. We track the aggregate number of collaborative and partnered programs for which we are eligible to receive any amount of royalties on sales and as of December 31, 2022 December 31, 2023, we had an aggregate of 15 12 collaborative and partnered programs for which we are eligible to receive future royalties compared to 13 15 collaborative and partnered programs as of December 31, 2021 December 31, 2022.

Ability to progress and expand our pipeline of proprietary drug discovery programs

We are advancing our pipeline of proprietary drug discovery programs through extensive application of our software platform. preclinical and clinical development. Our initial programs were focused on discovering and developing inhibitors for targets in DNA damage response pathways and genetically defined cancers. Since then, we have expanded into other therapeutic areas, including in the areas of immunology and neurology. We recently have initiated dosing in a Phase 1 clinical trial of SGR-1505 in patients with relapsed or refractory B-cell lymphomas and currently have as well as in a Phase 1 clinical trial sites open for screening and enrollment, but we have not yet dosed any of SGR-2921 in patients with SGR-1505. relapsed or refractory acute myeloid leukemia or high-risk myelodysplastic syndrome, and we anticipate reporting initial data from both clinical trials in late 2024 or 2025. In addition, we continue to advance other wholly-owned programs through IND-enabling studies. We expect to submit an IND application to the FDA for SGR-2921 SGR-3515 in the first half of 2023 and for SGR-3515 in 2024, subject to favorable data from IND-enabling studies. In addition, studies, and we plan to initiate a Phase 1 clinical trial of SGR-2921 in SGR-3515 by the second half end of 2023, 2024, subject to the receipt of regulatory clearance.

We continue to advance new programs where we can leverage our computational platform to discover novel molecules, and we have recently announced new discovery-stage programs targeting PRMT5-MTA, EGFR$_{C797S}$, and NLRP3. As we progress these and expand our pipeline of proprietary programs, we will strategically evaluate on a program-by-program basis advancing them into preclinical and clinical development ourselves, entering into collaborations to co-develop them with leading industry partners, or out-licensing them to maximize their probability of clinical and commercial success. As part of this strategy, we entered into an exclusive, worldwide collaboration and license agreement with BMS in November 2020, as well as collaboration agreements with Zai Lab Limited in August 2021 and Lilly in September 2022. We will need to continue to devote substantial resources to develop and expand our proprietary drug discovery programs. Our ability to advance and build value in our proprietary drug discovery programs will impact our financial performance, especially as we increasingly shift our focus to these programs.

Components of Results of Operations

Software Products and Services Revenue

Our software business generates revenue from five sources: (i) on-premise software license fees, (ii) hosted software subscription fees, (iii) software maintenance fees, (iv) professional services fees, and (v) contributions.

On-premise software. Our on-premise software license arrangements grant customers the right to use our software on their own in-house servers or their own cloud instances for a specified term, typically for one year. year, though in recent years, we have entered into a small number of large multi-year on-premise software license agreements. We recognize revenue for on-premise software license fees upfront, either upon delivery transfer of control of the license or the effective date of the agreement, whichever is later.

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Hosted software. Hosted software revenue consists primarily of fees to provide our customers with hosted licenses, which allows these customers to access our cloud-based software solution on their own hardware without taking control of the licenses, and is recognized ratably over the term of the arrangement, which is typically one year. year, though in recent years, we have entered into a small number of large multi-year hosted software license agreements. When a

customer enters into a hosted arrangement for which revenue is recognized over time, the amount paid upfront that is not recognized in the current period is included in deferred revenue in our statement of financial position until the period in which it is recognized.

Software maintenance. Software maintenance includes technical support, updates, and upgrades related to our on-premise software licenses. Software maintenance revenue is recognized ratably over the term of the arrangement. Software maintenance activities are performed in connection with the use of our on-premise software, and may fluctuate from period to period.

Professional services. Professional services include training, technical setup, installation or assisting customers with modeling and structural biology services, where we use our software to perform tasks such as virtual screening and homology modeling on behalf of our customers. These services are generally not related to the core functionality of our software and are recognized as revenue when resources are consumed. Since each professional services agreement represents a unique, ad hoc engagement, professional services revenue may fluctuate from period to period.

Software contribution revenue. Software contribution revenue consists of funds received under a non-reciprocal agreement with Gates Ventures, LLC originally entered into in June 2020. 2020 and further extended through August 2026. The agreement is an unconditional non-exchange contribution without restrictions. Revenue was recognized annually from June 2020 through June 2022 and upon execution extension of the agreement and on the first anniversary of the agreement in August 2023, when invoiced, in accordance with Accounting Standard Codification, or ASC, Topic 958*, Not-for-Profit Entities* as the agreement is not an exchange transaction.

Drug Discovery Revenue

Drug discovery services. We currently generate drug discovery revenue from discovery collaboration arrangements, including upfront payments, research and development payments, and discovery and development milestones. We expect our drug discovery revenue to trend higher over time as collaboration arrangements advance and we receive additional revenue from research funding payments, the achievement of discovery, development, and commercial milestones, option fees, and royalties on commercial drug sales. The majority of our current collaborations are in the discovery stage. and preclinical development stages. Milestone payments typically increase in magnitude as a program advances. However, our focus is increasingly on investing in our proprietary drug discovery programs, which may result in a smaller number of collaborative programs over time and, as a result, fewer milestone payments on account of those collaborative programs. In addition to revenue from our collaborations, we may also derive drug discovery revenue from out-licensing our wholly-owned proprietary drug discovery programs when we believe it will help maximize the probability of clinical and commercial success of the program. Accordingly, in November 2020, we entered into an exclusive, worldwide collaboration and license agreement with BMS, pursuant to which we received an upfront payment of $55.0 million from BMS, of which approximately $22.1 million and $13.7 million were included in our drug discovery revenue for the years ended December 31, 2022 and 2021, respectively. Overall, we expect that our drug discovery revenue will fluctuate from period to period due to the inherently uncertain nature of the timing of milestone achievement and our dependence on the program decisions of our collaborators.

Drug discovery contribution revenue. Contribution revenue consists of funds received under an agreement agreements with the Bill and Melinda Gates Foundation on a cost reimbursement basis, to perform services aimed at accelerating drug discovery in women's health. Revenue is recognized as conditions are met in accordance with ASC Topic 958, *Not-for-Profit Entities*.

Cost of Revenues

Software products and services. Cost of revenues for software includes personnel-related expenses (comprised of salaries, benefits, and stock-based compensation) for employees directly involved in the delivery of software solutions, maintenance and professional services, royalties paid for products sold and services performed using third-party licensed software functionality, and allocated overhead (facilities and information technology support) costs. Pursuant to various third-party arrangements, we license technology that is used in our software. These arrangements require us to pay royalties based on sales volume, and such royalty payments represented 4.8% 4.1% and 7.1% 4.8% of software revenues in the years ended December 31, 2022 December 31, 2023 and 2021, 2022, respectively.

Drug discovery. Costs of revenue for drug discovery includes personnel-related expenses and costs of third-party contract research organizations, or CROs, that support discovery activities in our collaborations, royalties paid for services performed using third-party licensed software functionality, allocated compute capacity and overhead costs. While we have incurred costs associated with discovery efforts since late 2017, we have recognized and expect to continue to recognize

revenues in the future if and when milestones are deemed probable or achieved. Generally, drug discovery costs of revenue for collaborations are incurred in advance of the revenue milestone achievement.

Royalty payments to third-parties represented 4.8% 3.5% and 4.6% 4.8% of drug discovery revenues in the years ended December 31, 2022 December 31, 2023 and 2021, 2022, respectively. We expect our drug discovery costs of revenue to trend higher lower over time as we shift our focus to proprietary drug discovery collaborations advance. programs.

Gross Profit and Gross Margin

Gross profit represents revenue less cost of revenues. Gross margin is gross profit expressed as a percentage of revenue. Our software products and services gross margin may fluctuate from period to period as our revenue fluctuates, and as a result of changes in sales mix between on-premise and hosted software solutions. solutions due to timing of recognition. For example, the cost of royalties due for sales of our hosted software arrangements are recognized upfront, whereas the associated hosted software revenue for these arrangements is recognized over the term of the underlying agreement. Currently,

While the gross margin is less meaningful for measuring the operating results of our drug discovery business. business will fluctuate significantly from period to period depending on factors such as the timing of recognition of milestones, we expect the gross margins to generally trend higher over time as more programs advance to later stages of development, the milestones increase in size and our ongoing research and development obligations to such programs decline in cost.

Research and Development Expense

Research and development expense accounts for a significant portion of our operating expenses. We recognize research and development expense as incurred. Research and development expense consists of drug discovery and development program costs and costs incurred for continuous development of the technology and science that supports our computational platform, primarily:

- personnel-related expenses, including salaries, benefits, bonuses, and stock-based compensation for employees engaged in research and development functions;
- expenses incurred under agreements with third-party CROs and consultants involved in our proprietary drug discovery and development programs; and
- allocated compute capacity on our internal proprietary drug discovery and development programs and overhead (facilities and information technology support) costs.

We expect our research and development expense to increase substantially in absolute dollars for the foreseeable future as we continue to invest in activities related to discovery and development of our proprietary drug discovery programs, in advancing our computational platform, and as we incur expenses associated with hiring additional personnel directly involved in such efforts. The amount to which our research and development expense may increase in the future will also be dependent on our development plans for our proprietary drug discovery programs, including the timing of any partnering or out-licensing decisions. At this time, we do not know, nor can we reasonably estimate, the nature, timing, or costs of the efforts that will be necessary to complete the development of any of our proprietary drug discovery programs. Since our proprietary drug discovery efforts are in the early stages, currently we do not track research and development expense on a program-by-program basis.

Sales and Marketing Expense

Sales and marketing expense consists primarily of personnel-related costs for our sales and marketing staff and application scientists supporting our sales efforts, including salaries, benefits, bonuses, and stock-based compensation. Other sales and marketing costs include promotional events that promote and expand knowledge of our company and platform, including industry conferences and events and our annual user group meetings in the United States and Europe, advertising, and allocated overhead costs. Due to the inherent scientific complexity of our software solutions, a high level of scientific expertise is needed to support our sales and marketing efforts. We plan to make focused investments in sales and marketing over the foreseeable future to foster the growth of our business as we aim to expand software sales to existing customers and increase our customer base.

General and Administrative Expense

General and administrative expense consists of personnel-related expenses associated with our executive, legal, finance, human resources, information technology, and other administrative functions, including salaries, benefits, bonuses,

and stock-based compensation. General and administrative expense also includes professional fees for external legal, accounting and other consulting services, allocated overhead costs, and other general operating expenses.

We expect to increase the size of our general and administrative staff to support the anticipated growth of our business. We expect to continue to incur additional expenses as a result of operating as a public company, including costs to comply with the rules and regulations applicable to companies listed on a U.S. securities exchange and costs related to compliance and reporting obligations pursuant to the rules and regulations of the Securities and Exchange Commission, or SEC. In addition, as a public company, we expect to continue to incur increased expenses such as insurance and professional services. As a result, we expect the dollar amount of our general and administrative expense to increase for the foreseeable future.

Gain (Loss) on Equity Investments

Gain (loss) on equity investments consists of realized gains in the form of cash distributions received from our equity investments offset by realized losses on the sale of equity.

investments.

Change in Fair Value

Fair value gains and losses consist of adjustments to the fair value of our equity investments, including Nimbus Therapeutics, Inc., or which may include Nimbus, Structure Therapeutics Inc., formerly known as ShouTi Inc., or Structure Therapeutics, Eonix, LLC, or Eonix, and Morphic Holding, Inc., or Morphic. We remeasure our investments at each period end.

We expect that fair value gains and losses will fluctuate significantly in future periods.

Other Income

Other income consists of interest earned on our cash equivalents and marketable securities, interest expense, and transactional foreign exchange gains and losses.

Income Tax Expense

Income tax expense consists of U.S. federal and state income taxes and income taxes in certain foreign jurisdictions in which we conduct business. We maintain a full valuation allowance on our federal and state deferred tax assets as we have concluded that it is not more likely than not that the deferred tax assets will be realized.

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Results of Operations

Comparison of the years ended December 31, 2022 December 31, 2023 and 2021 2022

The following table summarizes our results of operations data for the years ended December 31, 2022 December 31, 2023 and 2021: 2022:

	Year Ended December 31,		Change	
	2022	2021	$	%
	(in thousands)			
Revenues:				
Software products and services	$ 135,578	$ 113,236	$ 22,342	20%
Drug discovery	45,377	24,695	20,682	84%
Total revenues	180,955	137,931	43,024	31%
Cost of revenues:				
Software products and services	29,576	26,495	3,081	12%
Drug discovery	50,357	45,816	4,541	10%

	Year Ended December 31,		
	2023	2022	$
	(in thousands)		
Revenues:			
Software products and services	$ 159,124	$ 135,578	$ 23,546
Drug discovery	57,542	45,377	12,165
Total revenues	216,666	180,955	35,711
Cost of revenues:			
Software products and services	29,514	29,576	(62)
Drug discovery	46,460	50,357	(3,897)

	Year Ended December 31,		
	2023	2022	%
Revenues:			
Software products and services	17%		
Drug discovery	27%		
Total revenues	20%		
Cost of revenues:			
Software products and services	— %		
Drug discovery	(8)%		

Total cost of revenues	Total cost of revenues	79,933	72,311	7,622	11%	Total cost of revenues	75,974	79,933		79,933	(3,959)		(3,959)	(5)%		
Gross profit	Gross profit	101,022	65,620	35,402	54%	Gross profit	140,692	101,022		101,022	39,670		39,670	39%		
Operating expenses:	Operating expenses:															
Research and development	Research and development	126,372	90,904	35,468	39%											
Research and development																
Research and development							181,766			126,372			55,394			
Sales and marketing	Sales and marketing	30,642	22,150	8,492	38%	Sales and marketing	37,226	30,642		30,642	6,584		6,584	21%		
General and administrative	General and administrative	90,825	64,009	26,816	42%	General and administrative	99,148	90,825		90,825	8,323		8,323	9%		
Total operating expenses	Total operating expenses	247,839	177,063	70,776	40%	Total operating expenses	318,140	247,839		247,839	70,301		70,301	28%		
Loss from operations	Loss from operations	(146,817)	(111,443)	(35,374)	32%	Loss from operations	(177,448)	(146,817)		(146,817)	(30,631)		(30,631)	21%		
Other income (expense):	Other income (expense):															
Gain (loss) on equity investments		11,825	(1,781)	13,606												
Gain on equity investments																
Gain on equity investments																
Gain on equity investments																
Change in fair value																
Change in fair value																
Change in fair value	Change in fair value	(18,084)	11,359	(29,443)												
Other income	Other income	3,950	1,057	2,893												
Total other (expense) income		(2,309)	10,635	(12,944)												
Loss before income taxes		(149,126)	(100,808)	(48,318)												
Other income																
Other income																
Total other income (expense)																
Total other income (expense)																
Total other income (expense)																
Income (loss) before income taxes																
Income (loss) before income taxes																
Income (loss) before income taxes																
Income tax expense	Income tax expense	63	411	(348)												
Net loss		(149,189)	(101,219)	(47,970)												
Net loss attributable to noncontrolling interest		(3)	(826)	823												
Net loss attributable to Schrödinger stockholders		$(149,186)	$(100,393)	$(48,793)												
Income tax expense																
Income tax expense																
Net income (loss)																
Net income (loss)																

Net income (loss)	
Net income (loss) attributable to noncontrolling interest	
Net income (loss) attributable to noncontrolling interest	
Net income (loss) attributable to noncontrolling interest	
Net income (loss) attributable to Schrödinger stockholders	
Net income (loss) attributable to Schrödinger stockholders	
Net income (loss) attributable to Schrödinger stockholders	

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Revenues

	Year Ended December 31,		Change	
	2022	2021	$	%
	(in thousands)			

	Year Ended December 31,				Year Ended December 31,				Change	
	2023				2023	2022			$	%
	(in thousands)								(in thousands)	
Revenues:	Revenues:									
Software	Software									
Software										
Software										
On-premise software										
On-premise software										
On-premise software	On-premise software	$ 84,487	$ 74,598	$ 9,889	13%	$ 104,511	$	$ 84,487	$	$ 20,024	24%	24%
Hosted software	Hosted software	14,890	11,076	3,814	34%	Hosted software	20,381	14,890	14,890	5,491	5,491	37%	37%
Software maintenance	Software maintenance	19,996	17,294	2,702	16%	Software maintenance	23,066	19,996	19,996	3,070	3,070	15%	15%
Professional services	Professional services	15,205	9,268	5,937	64%	Professional services	9,366	15,205	15,205	(5,839)	(5,839)	(38)%	(38)%
Software contribution	Software contribution	1,000	1,000	—	—%	Software contribution	1,800	1,000	1,000	800	800	80%	80%
Total software products and services	Total software products and services	135,578	113,236	22,342	20%	Total software products and services	159,124	135,578	135,578	23,546	23,546	17%	17%
Drug Discovery	Drug Discovery												
Drug discovery services	Drug discovery services	43,427	24,584	18,843	77%								

Drug discovery services																					
Drug discovery services												54,720				43,427				11,293			26%	
Drug discovery contribution	Drug discovery contribution	1,950	111	1,839	1657%	Drug discovery contribution	2,822	1,950		1,950	872		872	45%		45%
Total drug discovery	Total drug discovery	45,377	24,695	20,682	84%	Total drug discovery	57,542	45,377		45,377	12,165		12,165	27%		27%
Total revenues	Total revenues	$180,955	$137,931	$43,024	31%	Total revenues	$216,666	$		$180,955	$		$35,711	20%		20%

Software Products and Services Revenue

On-premise software. The increase in revenues for on-premise software during the year ended December 31, 2022 December 31, 2023 as compared to the year ended December 31, 2021 December 31, 2022 was primarily attributable to growth from existing customers, new customer growth, and an increase in multi-year arrangements for which revenue was recognized ahead of annual billings, as well as growth from existing and new customers during the year ended December 31, 2022 December 31, 2023 as compared to the year ended December 31, 2021 December 31, 2022.

Hosted software. The increase in revenues for hosted software during the year ended December 31, 2022 December 31, 2023 as compared to the year ended December 31, 2021 December 31, 2022 was primarily due to increased spend from existing hosted customers, as well as growth in new customers purchasing hosted software subscriptions, for which revenue is recognized ratably over time. the period of the contract.

Software maintenance. The increase in revenues for software maintenance during the year ended December 31, 2022 December 31, 2023 as compared to the year ended December 31, 2021 December 31, 2022 was primarily due to the increase in on-premise software sales in current and previous years. Software maintenance revenue is recognized ratably over time. the period of the contract.

Professional services. The increase decrease in revenues from professional services during the year ended December 31, 2022 December 31, 2023 as compared to the year ended December 31, 2021 December 31, 2022 was primarily due to the addition decreases of XTAL service revenue subsequent approximately $3.1 million in structural biology services and approximately $2.7 million related to the acquisition, progress and the increased sales and timing completion of technology and modeling service projects.

Software contribution revenue. Contribution revenue during the year ended December 31, 2022 December 31, 2023 and the year ended December 31, 2021 December 31, 2022 was due to funds received under an agreement with Gates Ventures, LLC, which began in June 2020. 2020 and was extended in August 2023.

Drug Discovery Revenue

Drug discovery services. The increase in revenues for drug discovery services during the year ended December 31, 2022 December 31, 2023 as compared to the year ended December 31, 2021 December 31, 2022 was primarily due to the timing and amount of collaboration milestones achieved, including $25.0 million received from BMS, and the progress of existing and new collaborations accomplished during the period, the timing and amount of collaboration milestones achieved, as well as research funding received during 2022 2023 as compared to 2021. 2022. We expect that our revenue will fluctuate from period to period due to the inherently uncertain nature of the timing of milestone achievement and our dependence on the program decisions of our collaborators.

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Drug discovery contribution revenue. Contribution revenue during the year ended December 31, 2022 December 31, 2023 was due to services performed under an agreement with the Bill and Melinda Gates Foundation aimed at accelerating drug discovery in women's health, which began in November 2021.

Cost of Revenues

	Year Ended December 31,		Change	
	2022	2021	$	%
	(in thousands)			

Year Ended December 31,		Year Ended December 31,		Change	
2023		2023	2022	$	%
(in thousands)				(in thousands)	
Cost of revenues:	Cost of revenues:				
Software products and services					
Software products and services					

Software products and services	Software products and services	$29,576	$26,495	$3,081	12%	$	29,514		$	$	29,576		$	$	(62)		—%		—%	
Gross margin	Gross margin	78 %	77 %																	
Drug discovery	Drug discovery	50,357	45,816	4,541	10%															
Drug discovery																				
Drug discovery								46,460				50,357				(3,897)		(8)%		

Software products and services. The increase decrease in cost of revenues for software products and services during the year ended December 31, 2022 December 31, 2023 as compared to the year ended December 31, 2021 December 31, 2022 was attributable to increases decreases of approximately $3.3 million $0.9 million in personnel-related expense and approximately $1.5 million $0.1 million in other expenses, offset by decreases an increase of approximately $1.5 million in royalty expense and approximately $0.2 million $0.9 million in cloud computing expense.

Software products and services gross margin. The increase in software gross margin during the year ended December 31, 2022 December 31, 2023 as compared to the year ended December 31, 2021 December 31, 2022 was primarily due to an increase in software revenue and relatively flat fixed costs, which was due to the reduction re-allocation of $0.7 million in royalty expense as a result resources from cost of replacing third-party licensed code with internally built functionality, as well as the sales mix. revenue to research and development activities.

Drug discovery. The increase decrease in cost of revenues for drug discovery during the year ended December 31, 2022 December 31, 2023 as compared to the year ended December 31, 2021 December 31, 2022 was attributable to decreases of approximately $4.6 million in personnel-related expense reflecting the redeployment of our discovery organization towards proprietary drug discovery programs, approximately $0.5 million in cloud computing expense, and approximately $0.1 million in royalty expense, offset by increases of approximately $1.3 million $1.1 million in third-party CRO costs associated with the expansion and progression of collaboration drug discovery collaborative programs, approximately $1.3 million in personnel-related expense, approximately $1.0 million in royalty expense, approximately $0.1 million in cloud computing expense, and approximately $0.8 million $0.2 million in other expenses.

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Research and Development Expense

	Year Ended December 31,		Change	
	2022	2021	$	%
	(in thousands)			
Research and development	$ 126,372	$ 90,904	$ 35,468	39%

A significant portion of our research and development costs have been external preclinical and clinical CRO costs, which we track on a program-by-program basis related to a product candidate, once the candidate has been identified. Our internal research and development costs are primarily personnel-related costs, rent expense, and other indirect costs and are not tracked on a program-by-program basis. All other research and development costs are related to non-program related costs. The following table summarizes our research and development expense for the years ended December 31, 2023 and 2022:

	Year Ended December 31,		Change	
	2023	2022	$	%
	(in thousands)			
External costs by program:				
SGR-1505	$15,337	$7,635	$7,702	101%
SGR-2921	6,090	4,430	1,660	37%
SGR-3515	6,363	8,533	(2,170)	(25)%
Other early development candidates and unallocated costs	30,880	14,621	16,259	111%
Total external costs for programs in preclinical and clinical development	58,670	35,219	23,451	67%
Internal costs for discovery, preclinical and clinical development:				
Employee compensation and benefits	32,949	19,273	13,676	71%
Facility and other	2,015	661	1,354	205%
Total internal costs	34,964	19,934	15,030	75%
All other research and development	88,132	71,219	16,913	24%
Total research and development expense	$181,766	$126,372	$55,394	44%

The increase in external costs of $23.5 million during the year ended December 31, 2023 as compared to the year ended December 31, 2022 was primarily attributable to an increase in costs associated with the ongoing Phase 1 clinical trials and other development activities for SGR-1505, as well as other external research costs to support our early-stage product candidates, including SGR-2921 and SGR-3515.

The increase in internal costs for programs in clinical and preclinical development of $15.0 million during the year ended December 31, 2023 as compared to the year ended December 31, 2022 was primarily attributable to an increase in personnel-related expense and rent expense.

The increase in all other research and development expense during the year ended December 31, 2022 December 31, 2023 as compared to the year ended December 31, 2021 December 31, 2022 was attributable to increases of approximately $21.8 million $8.4 million in personnel-related expense, approximately $5.4 million in CRO costs associated with the expansion and progression of our proprietary drug discovery programs, approximately $4.0 million $4.1 million in cloud computing expense, approximately $2.0 million $3.4 million related to office rent, approximately $0.6 million in travel and entertainment expenses, approximately $0.3 million related to professional services, and approximately $2.3 million $0.1 million in other expenses.

Sales and Marketing Expense

	Year Ended December 31,		Change	
	2022	2021	$	%
	(in thousands)			
Sales and marketing	$ 30,642	$ 22,150	$ 8,492	38%

	Year Ended December 31,		Change	
	2023	2022	$	%
	(in thousands)			
Sales and marketing	$ 37,226	$ 30,642	$ 6,584	21%

The increase in sales and marketing expense during the year ended December 31, 2022 December 31, 2023 as compared to the year ended December 31, 2021 December 31, 2022 was attributable to increases of approximately $4.9 million $4.6 million in personnel-related expense,

approximately $1.3 million $0.9 million related to office rent, approximately $0.7 million in travel and entertainment expenses, and approximately $0.7 million $0.4 million in cloud computing expense, and approximately $1.6 million in other expenses. expense.

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General and Administrative Expense

	Year Ended December 31,		Change	
	2022	2021	$	%
	(in thousands)			
General and administrative	$ 90,825	$ 64,009	$ 26,816	42%

	Year Ended December 31,		Change	
	2023	2022	$	%
	(in thousands)			
General and administrative	$ 99,148	$ 90,825	$ 8,323	9%

The increase in general and administrative expense during the year ended December 31, 2022 December 31, 2023 as compared to the year ended December 31, 2021 December 31, 2022 was attributable to increases of approximately $16.6 million $8.5 million of personnel-related expense, approximately $2.6 million $2.2 million in royalties related to cash distributions we received from Nimbus, approximately $0.8 million in cloud computing expense, approximately $0.8 million related to office rent, approximately $0.5 million in travel and entertainment expense, and approximately $0.5 million in amortization related to the acceleration of customer relationship intangible assets, offset by decreases of approximately $2.4 million related to professional services, approximately $1.3 million $1.1 million related to a one-time non-recurring state and local tax items, approximately $1.2 million in travel and entertainment expense, approximately $1.2 million in cloud computing expense, approximately $1.2 million related to office rent, item, and approximately $2.7 million $1.5 million in other expenses, primarily reflecting costs necessary to build and maintain a public company infrastructure. expenses.

Gain (Loss) on Equity Investments

	Year Ended December 31,		
	2022	2021	Change
	(in thousands)		
Gain (loss) on equity investments	$ 11,825	$ (1,781)	$ 13,606

	Year Ended December 31,		
	2023	2022	Change
	(in thousands)		
Gain on equity investments	$ 147,213	$ 11,825	$ 135,388

The gain on equity investments during the year ended December 31, 2023 was due to the realized gain on our equity investment in Nimbus following the closing of Takeda's acquisition of Nimbus Lakshmi, Inc., a wholly-owned subsidiary of Nimbus, and its tyrosine kinase 2 inhibitor, NDI-034858. The gain on equity investments during the year ended December 31, 2022 was due to cash received from a third party, who previously acquired a collaborator in which we held an equity stake, in exchange for the termination of our rights to receive potential earnouts under the acquisition agreement. The loss on equity investments during the year ended December 31, 2021 was primarily due to the realized loss on the disposal of our equity stake in Relay Therapeutics, or Relay.

Change in Fair Value

	Year Ended December 31,		
	2022	2021	Change
	(in thousands)		
Change in fair value	$ (18,084)	$ 11,359	$ (29,443)

	Year Ended December 31,		
	2023	2022	Change
	(in thousands)		
Change in fair value	$ 53,461	$ (18,084)	$ 71,545

The change in fair value during the year ended December 31, 2023 was due to an unrealized gain on our investment in Structure of $49.8 million, an unrealized gain on our investment in Nimbus of $1.9 million, and an unrealized gain on our investment in Morphic of $1.8 million. The change in fair value during the year ended December 31, 2022 was primarily due to a an unrealized loss on our investment in Morphic. The change in fair value during the year ended December 31, 2021 was primarily due to a gain on our investment in Morphic.

Other Income

	Year Ended December 31,		
	2022	2021	Change
	(in thousands)		
Other income	$ 3,950	$ 1,057	$ 2,893

	Year Ended December 31,		
	2023	2022	Change
	(in thousands)		
Other income	$ 19,693	$ 3,950	$ 15,743

The increase in other income during the year ended December 31, 2022 December 31, 2023 as compared to the year ended December 31, 2021 December 31, 2022 was primarily attributable to an increase in interest rates on our investment portfolio offset by exchange rate variances. portfolio.

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Income Tax Expense

	Year Ended December 31,		
	2022	2021	Change
	(in thousands)		
Income tax expense	$ 63	$ 411	$ (348)

	Year Ended December 31,		
	2023	2022	Change
	(in thousands)		
Income tax expense	$ 2,199	$ 63	$ 2,136

Due to Income tax expense for the full valuation allowance on year ended December 31, 2023 represents our U.S. federal and certain state deferred tax assets, income tax obligations and taxes in foreign jurisdictions for which we conduct business. Income tax expense for the year ended December 31, 2022 represents our income tax obligations in certain states and taxes in foreign jurisdictions in which we conduct business. As of December 31, 2023, we have a full valuation allowance on our U.S. federal and state deferred tax assets.

At December 31, 2022 December 31, 2023, we had federal and state net operating loss carryforwards of approximately $270.9 million $179.1 million and $170.0 million $98.6 million, respectively. These carryforwards, with the exception of federal The state net operating losses generated post 2017, loss carryforwards will expire between 2023 2025 and 2042, if not used by us to reduce income taxes payable in future periods. Utilization of post-2017 utilized. The federal net operating loss carryforwards is are limited to 80% of taxable income generated in a given tax year and carry forward indefinitely. At December 31, 2022 December 31, 2023, we had federal and state research and development tax credit carryforwards of approximately $19.5 million $23.3 million and $1.3 million $1.6 million, respectively. These carryforwards will expire between 2023 2024 and 2042 2043, if not used by us to reduce income taxes payable in future periods. utilized.

As required by ASC Topic 740, Income Taxes, our management has evaluated the positive and negative evidence bearing upon the realizability of our deferred tax assets, which are composed principally of net operating loss carryforwards and research and development credit carryforwards. Management has determined that it is more likely than not that we will not realize the benefits of our federal and state deferred tax assets and, as a result, a valuation allowance of $138.0 million $136.0 million and $95.3 million $138.0 million has been established at December 31, 2022 December 31, 2023 and 2021, 2022, respectively. The change in the valuation allowance for the years ended December 31, 2022 December 31, 2023 and 2021 2022 was $42.7 million $1.9 million and $37.1 million $42.7 million, respectively. We recorded income tax expense of $0.1 million $2.2 million and $0.4 million $0.1 million for the years ended December 31, 2022 December 31, 2023 and 2021, 2022, respectively.

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Quarterly Results of Operations

The following tables summarize our selected unaudited quarterly results of operations data for each of the eight quarters in the period ended December 31, 2022 December 31, 2023. The information for each of these quarters has been prepared on the same basis as our audited annual consolidated financial statements and reflect, in the opinion of management, all adjustments of a normal, recurring nature that are necessary for the fair statement of the results of operations for these periods. This data should be read in conjunction with our audited consolidated financial statements included elsewhere in this Annual Report.

Historical results are not necessarily indicative of the results that may be expected for the full fiscal year or any other period.

	Three Months Ended							
	December 31, 2022	September 30, 2022	June 30, 2022	March 31, 2022	December 31, 2021	September 30, 2021	June 30, 2021	March 31, 2021
	(in thousands)							

	Three Months Ended				Three Months Ended			
	December 31, 2023	September 30, 2023	June 30, 2023	March 31, 2023	December 31, 2022	September 30, 2022	June 30, 2022	March 31, 2022
	(in thousands)				(in thousands)			
Revenues:	Revenues:							
Software products and services								
Software products and services								

Software products and services	Software products and services	$ 47,819	$ 24,667	$ 30,011	$ 33,081	$ 38,564	$ 24,280	$ 24,052	$26,340
Drug discovery	Drug discovery	9,024	12,313	8,458	15,582	7,606	5,570	5,732	5,787
Total revenues	Total revenues	56,843	36,980	38,469	48,663	46,170	29,850	29,784	32,127
Cost of revenues:	Cost of revenues:								
Software products and services(1)	Software products and services(1)	8,098	6,866	7,101	7,511	8,337	6,611	5,641	5,906
Software products and services(1)	Software products and services(1)								
Drug discovery(1)	Drug discovery(1)	10,041	12,913	14,234	13,169	11,472	12,124	12,163	10,057
Total cost of revenues	Total cost of revenues	18,139	19,779	21,335	20,680	19,809	18,735	17,804	15,963
Gross profit	Gross profit	38,704	17,201	17,134	27,983	26,361	11,115	11,980	16,164
Operating expenses:	Operating expenses:								
Research and development(1)	Research and development(1)								
Research and development(1)	Research and development(1)	34,542	32,885	31,123	27,822	25,145	23,219	21,092	21,448
Sales and marketing(1)	Sales and marketing(1)	9,382	7,161	7,428	6,671	5,975	5,556	5,380	5,239
General and administrative(1)	General and administrative(1)	23,318	23,318	22,056	22,133	17,756	17,014	15,850	13,389
Total operating expenses	Total operating expenses	67,242	63,364	60,607	56,626	48,876	45,789	42,322	40,076
Loss from operations	Loss from operations	(28,538)	(46,163)	(43,473)	(28,643)	(22,515)	(34,674)	(30,342)	(23,912)
Other (expense) income:	Other (expense) income:								
(Loss) gain on equity investments	(Loss) gain on equity investments	—	(3)	11,828	—	—	—	—	(1,781)
(Loss) gain on equity investments	(Loss) gain on equity investments								
Change in fair value	Change in fair value	(1,493)	5,273	(15,700)	(6,164)	(7,920)	(627)	(4,918)	24,824
Other income (expense)	Other income (expense)	2,687	1,231	(296)	328	(6)	286	357	420
Total other income (expense)		1,194	6,501	(4,168)	(5,836)	(7,926)	(341)	(4,561)	23,463
Loss before income taxes		(27,344)	(39,662)	(47,641)	(34,479)	(30,441)	(35,015)	(34,903)	(449)
Total other (expense) income									
(Loss) income before income taxes									
Income tax (benefit) expense	Income tax (benefit) expense	(136)	194	33	(28)	274	(4)	67	74
Net loss		(27,208)	(39,856)	(47,674)	(34,451)	(30,715)	(35,011)	(34,970)	(523)
Net (loss) income									
Net (loss) income attributable to noncontrolling interest	Net (loss) income attributable to noncontrolling interest	(1)	(3)	12	(11)	(2)	(4)	(326)	(494)
Net loss attributable to Schrödinger stockholders		$ (27,207)	$ (39,853)	$(47,686)	$(34,440)	$ (30,713)	$ (35,007)	$(34,644)	$ (29)

Net (loss) income attributable to Schrödinger stockholders	

(1) Includes stock-based compensation as indicated in the table located further below.

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Revenues:

	Three Months Ended							
	December 31, 2022	September 30, 2022	June 30, 2022	March 31, 2022	December 31, 2021	September 30, 2021	June 30, 2021	March 31, 2021
	(in thousands)							

	Three Months Ended							
	December 31, 2023	September 30, 2023	June 30, 2023	March 31, 2023	December 31, 2022	September 30, 2022	June 30, 2022	March 31, 2022
	(in thousands)							
Revenues:								
Software								
On-premise software	$ 33,627	$ 12,579	$16,595	$21,686	$ 27,295	$ 15,496	$14,452	$17,355
Hosted software	4,125	3,914	3,596	3,255	3,088	2,684	2,704	2,600
Software maintenance	5,255	5,063	4,952	4,726	4,612	4,401	4,176	4,105
Professional services	4,812	3,111	3,868	3,414	3,569	1,699	1,720	2,280
Revenue from contracts with customers	47,819	24,667	29,011	33,081	38,564	24,280	23,052	26,340
Software contribution	—	—	1,000	—	—	—	1,000	—
Total software products and services revenue	47,819	24,667	30,011	33,081	38,564	24,280	24,052	26,340
Drug discovery								
Drug discovery services	8,450	11,717	8,019	15,241	7,495	5,570	5,732	5,787
Drug discovery contribution	574	596	439	341	111	—	—	—
Total drug discovery revenue	9,024	12,313	8,458	15,582	7,606	5,570	5,732	5,787

Total revenues	Total revenues	$ 56,843	$ 36,980	$38,469	$48,663	$ 46,170	$ 29,850	$29,784	$32,127

Deferred Revenue:

	As of							
	December 31, 2022	September 30, 2022	June 30, 2022	March 31, 2022	December 31, 2021	September 30, 2021	June 30, 2021	March 31, 2021
	(in thousands)							
Deferred revenue	$ 83,529	$ 65,897	$ 67,545	$ 78,353	$ 85,432	$ 76,318	$ 78,526	$ 78,115

	As of							
	December 31, 2023	September 30, 2023	June 30, 2023	March 31, 2023	December 31, 2022	September 30, 2022	June 30, 2022	March 31, 2022
	(in thousands)							
Deferred revenue	$ 65,274	$ 55,415	$ 62,294	$ 71,926	$ 83,529	$ 65,897	$ 67,545	$ 78,353

Gross Margin:

	Three Months Ended							
	December 31, 2022	September 30, 2022	June 30, 2022	March 31, 2022	December 31, 2021	September 30, 2021	June 30, 2021	March 31, 2021
Software products and services gross margin	83 %	72 %	76 %	77 %	78 %	73 %	77 %	78 %

	Three Months Ended							
	December 31, 2023	September 30, 2023	June 30, 2023	March 31, 2023	December 31, 2022	September 30, 2022	June 30, 2022	March 31, 2022
Software products and services gross margin	87 %	76 %	77 %	78 %	83 %	72 %	76 %	77 %

Stock-Based Compensation:

	Three Months Ended							
	December 31, 2022	September 30, 2022	June 30, 2022	March 31, 2022	December 31, 2021	September 30, 2021	June 30, 2021	March 31, 2021
	(in thousands)							

	Three Months Ended							
	December 31, 2023	September 30, 2023	June 30, 2023	March 31, 2023	December 31, 2022	September 30, 2022	June 30, 2022	March 31, 2022
	(in thousands)							
Stock-based compensation:								
Cost of revenues:								
Cost of revenues:								
Cost of revenues:								
Software products and services								
Software products and services								

		December 31, 2022	September 30, 2022	June 30, 2022	March 31, 2022	December 31, 2021	September 30, 2021	June 30, 2021	March 31, 2021
Software products and services	Software products and services	$ 580	$ 596	$ 584	$ 485	$ 389	$ 396	$ 382	$ 229
Drug discovery	Drug discovery	$ 626	$ 764	$ 944	$ 803	$ 626	$ 669	$ 738	$ 428
Research and development	Research and development	$ 3,231	$ 3,026	$ 2,977	$2,582	$ 2,157	$ 2,130	$1,925	$1,228
Sales and marketing	Sales and marketing	$ 867	$ 728	$ 699	$ 524	$ 331	$ 370	$ 362	$ 218
General and administrative	General and administrative	$ 4,902	$ 4,750	$ 5,223	$4,740	$ 3,953	$ 4,087	$3,609	$2,263
Total stock-based compensation expense	Total stock-based compensation expense	$ 10,206	$ 9,864	$10,427	$9,134	$ 7,456	$ 7,652	$7,016	$4,366

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Depreciation and Amortization:

		Three Months Ended							
		December 31, 2022	September 30, 2022	June 30, 2022	March 31, 2022	December 31, 2021	September 30, 2021	June 30, 2021	March 31, 2021
		(in thousands)							
		Three Months Ended							
		December 31, 2023	December 31, 2023	September 30, 2023	June 30, 2023	March 31, 2023	December 31, 2022	September 30, 2022	June 30, 2022
		(in thousands)							
Depreciation and amortization:	Depreciation and amortization:								
Cost of revenues:	Cost of revenues:								
Software products and services	Software products and services	$ 113	$ 106	$ 118	$ 99	$ 61	$ 56	$ 68	$ 86
Drug discovery	Drug discovery	$ 97	$ 117	$ 127	$ 112	$ 82	$ 106	$167	$ 232
Research and development	Research and development	$ 425	$ 384	$ 351	$ 308	$ 212	$ 163	$195	$ 247
Sales and marketing	Sales and marketing	$ 114	$ 101	$ 118	$ 79	$ 65	$ 59	$ 57	$ 66
General and administrative	General and administrative	$ 393	$ 399	$ 412	$ 371	$ 232	$ 197	$240	$ 256
Total depreciation and amortization expense	Total depreciation and amortization expense	$ 1,142	$ 1,107	$1,126	$ 969	$ 652	$ 581	$727	$ 887

Depreciation and amortization:

Cost of revenues:

Quarterly Revenue Trends

On-premise software revenue is subject to seasonality that generally favors the first and fourth quarter of each year, primarily due to the timing of customer renewals for on-premise software arrangements, for which revenue is recognized at a single point in time. Hosted software revenue grew more steadily over the periods presented, as existing customers and new customers increased their spend on hosted solutions, for which revenue is recognized ratably over time. the term of the contract. As a result, a portion of the software products and services revenue we reported in each period was attributable to sales we made in prior periods. Software maintenance revenue is related to on-premise software sales and also is recognized ratably over the term of the underlying agreement. Therefore, increases or decreases in customer sales, customer expansion, or renewals in a period may not be immediately reflected in revenue for the period. Our professional services arrangements are typically project-based and, therefore, fluctuated based on individual

customer needs and ongoing project support. Drug discovery revenue fluctuated from period to period based on the achievement of specific collaboration milestones, as well as advancements of collaborative services. The majority of our current collaborations are in the discovery stage.

Milestone payments typically increase in magnitude as a program advances.

Quarterly Deferred Revenue Trends

Deferred revenue consists of the unearned portion of customer billings, which is recognized as revenue in accordance with our revenue recognition policy, as well as the unearned portion of unbilled collaboration milestones that are deemed probable in advance of actual achievement. Deferred revenue balances have fluctuated based on the measurement of progress toward completion for service projects, the timing of sales, shifts in product mix, and fluctuations to the number and size of milestones that were deemed probable in advance of actual achievement, and the measurement of progress toward completion for service projects. achievement.

Quarterly Gross Margin Trends

Our software products and services gross margin experienced fluctuations over the periods presented due to increased headcount and the product mix for software and services, as the cost of royalties due on sales of our hosted software is recognized upfront, while the associated revenue is recognized over the term of the related agreement. Currently, gross margin is less meaningful for measuring the operating results of our drug discovery business.

Quarterly Operating Expense Trends

Operating expenses generally increased during the periods presented due to increased headcount and personnel-related expenses involved in research and development, sales and marketing, general and administrative activities, and CRO costs related to our proprietary drug discovery programs. These increases in headcount across our operations have supported the overall growth and management of our business. CRO cost increases were driven by the expansion and progression of our proprietary drug discovery programs.

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Quarterly Other (Expense) Income (Expense) Trends

Other (expense) income (expense) during the periods presented consisted primarily of fair value gains and losses related to our equity investments in Morphic and Structure Therapeutics, and, to a lesser degree, interest income.

Segment Information

The following tables summarize segment information for the years ended December 31, 2022 December 31, 2023 and 2021. 2022. See Note 16 – Segment Reporting in our audited consolidated financial statements for additional information regarding our segments.

Segment gross profit is derived by deducting operational expenditures, with the exception of research and development, sales and marketing, and general and administrative activities, from U.S. GAAP revenue. Operational expenditures are expenditures made that are directly attributable to the reportable segment. In many cases, these expenditures are allocated to the segments based on headcount. The reportable segment expenditures include compensation, supplies, and services from contract research organizations.

Certain cost items are not allocated to our reportable segments. These cost items primarily consist of non-drug discovery program related compensation and general operational expenses associated with our research and development, sales and marketing, and general and administrative activities. These costs are incurred by both segments and, due to the integrated nature of our software and drug discovery segments, any allocation methodology would be arbitrary and provide no meaningful analysis.

Additionally, we report assets on a consolidated basis and do not allocate assets to our reportable segments for purposes of assessing segment performance or allocating resources.

	Year Ended December 31,	
	2022	2021
	(in thousands)	
Segment revenues:		
Software	$ 135,578	$ 113,236
Drug discovery	45,377	24,695

	Year Ended December 31,	
	2023	2022
	(in thousands)	
Segment revenues:		

Total segment revenues	Total segment revenues	$ 180,955	$ 137,931
Segment gross profit:	**Segment gross profit:**		
Software	Software	$ 106,002	$ 86,741
Drug discovery	Drug discovery	$ (4,980)	$ (21,121)
Total segment gross profit	Total segment gross profit	$ 101,022	$ 65,620
Unallocated (expense) income:	**Unallocated (expense) income:**		
Research and development	Research and development	(126,372)	(90,904)
Sales and marketing	Sales and marketing	(30,642)	(22,150)
General and administrative	General and administrative	(90,825)	(64,009)
Gain (loss) on equity investment		11,825	(1,781)
Change in fair value	Change in fair value	(18,084)	11,359
Interest		3,950	1,057
Income taxes	Income taxes	(63)	(411)
Consolidated net loss		$(149,189)	$(101,219)

Segment gross profit:	
Research and development	
Other income	
Consolidated net income (loss)	

Liquidity, Capital Resources and Funding Requirements

We have a history of significant operating losses and have incurred negative cash flows from operations from inception through the year ended December 31, 2022 December 31, 2023. As of December 31, 2022 December 31, 2023, we had an accumulated deficit of $379.1 million $338.4 million.

We have funded our operations to date principally from the sale of our equity securities, including our initial public offering and our follow-on public offering, and to a lesser extent, from sales of our software solutions and from upfront payments, research funding and milestone payments from our drug discovery collaborations, and from distributions

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on account of, or proceeds from the sale of, our equity stakes in our collaborators. Our operating cash flows are impacted by the magnitude and timing of our software sales and by the magnitude and timing of our drug discovery milestone achievements and research funding fees.

As of December 31, 2022, we had cash, cash equivalents, restricted cash, and marketable securities of $456.3 million. On February 13, 2023, on account of our equity stake in Nimbus, we received a $111.3 million cash distribution from Nimbus in connection with Takeda's acquisition of Nimbus Lakshmi, Inc., a wholly-owned subsidiary of Nimbus, and its TYK2 inhibitor NDI-034858.

On March 4, 2021, we filed a universal shelf registration statement on Form S-3 which allows us to offer and sell an indeterminate number of shares of common stock, preferred stock, depositary shares or warrants, or an indeterminate principal amount of debt securities, from time to time pursuant to one or more offerings at prices and terms to be determined at the time of the sale. As of December 31, 2022 December 31, 2023, no securities had been sold under the Form S-3.

In May 2023, we entered into a sales agreement with Leerink Partners LLC (formerly SVB Securities LLC), or Leerink Partners, as sales agent, with respect to an at-the-market offering program, or the ATM, under which we could offer and sell, from time to time pursuant to our Form S-3, shares of common stock, having an aggregate offering price of up to $250.0 million, through Leerink Partners. During the three months ended December 31, 2023, no shares of common stock were sold under the ATM and as of December 31, 2023, we had $250.0 million of common stock remaining available for sale under the ATM.

As of December 31, 2023, we had cash, cash equivalents, restricted cash, and marketable securities of $468.8 million.

We believe our existing cash, cash equivalents, and marketable securities as of December 31, 2022, together with the $111.3 million cash distribution received from Nimbus in February 2023, December 31, 2023 will be sufficient to fund our operating expenses and capital expenditure requirements through at least the next 24 months. Our future capital requirements will depend on many factors, including the growth of our software revenue, the timing and extent of spending to support research and development efforts, the continued expansion of software sales and marketing activities, the timing and receipt of milestone payments from our collaborations, as well as spending to support, advance, and broaden our proprietary drug discovery programs. Furthermore, our capital requirements will also change depending on the timing and receipt of any distributions we may receive from our equity stakes in our drug discovery collaborators and partners. collaborators. The potential for these distributions, and the amounts which we may be entitled to receive, are difficult to predict due to the inherent uncertainty of the events which may trigger such distributions.

We plan to utilize the existing cash, cash equivalents, and marketable securities on hand primarily to fund our software and drug discovery activities. With respect to our wholly-owned proprietary drug discovery programs, as part of our strategy we may choose to advance them into preclinical and clinical development ourselves, enter into collaborations to co-develop them with leading industry partners, or out-license them to maximize their clinical and commercial opportunities.

We may be required to seek additional equity or debt financing. In the event that we require additional financing, we may not be able to raise such financing on terms acceptable to us or at all. If we are unable to raise additional capital or generate cash flows necessary to maintain or expand our operations and invest in our platform, we may not be able to compete successfully, which would harm our business, operations and financial condition. In addition, we may seek additional capital due to favorable market conditions or strategic considerations, even if we believe we have sufficient funds for our current or future operating plans.

Our contractual obligations as of December 31, 2022 December 31, 2023 include operating lease obligations of $187.1 million $195.5 million, consisting of our continuing rent obligations through December 2037, primarily for our principal offices located in New York, New York for $152.2 million $145.4 million, Cambridge, Massachusetts for $18.1 million $16.4 million and Portland, Oregon Framingham, Massachusetts for $5.0 million $11.3 million, which expire in December 2037, June 2032 and September 2026, March 2033, respectively. In December 2022, we entered into an agreement with a third-party to establish an exclusive integrated drug discovery dedicated facility in Hyderabad, India. The agreement contains a minimum payment obligation, which totals $21.8 million over five years after the date of first occupancy. In addition, see Note 7 – Commitments and Contingencies to our consolidated financial statements appearing in Item 8 of this Annual Report for more information relating to our operating lease obligations.

In December 2022, we entered into an agreement with a third-party to establish an exclusive integrated drug discovery dedicated facility. The agreement contains a minimum payment obligation, which totals $21.8 million over five years after the date of first occupancy.

In June 2022, we entered into an agreement with a third-party CRO to provide approximately $10.5 million of services, with an estimated service period extending through March 2025.

In June 2022, we entered into a non-cancelable contract to purchase laboratory equipment of $4.2 million, with payment terms extending through June 2023.

In December 2020, we entered into a five-year agreement with a third-party cloud provider for compute power. The agreement contains a minimum payment obligation, which totals $60 million over the five years after the date we entered into the agreement. There is no annual commitment.

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We also enter into agreements in the normal course of business with CRO vendors for research, preclinical studies, and clinical trials, professional consultants for expert advice, and other vendors for various products and services. These contracts do not contain any minimum purchase commitments and are cancellable at any time by us, generally upon 30 days prior written notice, and therefore we believe that our non-cancelable obligations under these agreements are not material. We have also agreed to pay volume-based royalties to third-parties for use of software functionality under various licensing and related agreements. See Note 2 - Significant Accounting Policies to our audited consolidated financial statements appearing in Item 8 of this Annual Report for more information relating to our royalties. royalty obligations.

Cash Flows

The following table presents a summary of our cash flows for the periods shown:

	Year Ended December 31,	
	2022	2021
	(in thousands)	

Year Ended December 31,	Year Ended December 31,	
2023	2023	2022
(in thousands)		(in thousands)

Net cash used in operating activities	Net cash used in operating activities	$(119,683)	$(70,669)
Net cash provided by (used in) investing activities		90,023	(16,812)
Net cash provided by investing activities			
Net cash provided by financing activities	Net cash provided by financing activities	2,110	7,952
Net decrease in cash and cash equivalents and restricted cash		$ (27,550)	$(79,529)
Net increase (decrease) in cash and cash equivalents and restricted cash			

Operating activities

During the year ended December 31, 2023, operating activities used approximately $136.7 million in cash, due to a $147.2 million gain from equity investments, of which the cash received is included in investing activities, $53.5 million of non-cash gain on changes in fair value, $22.4 million in changes in our operating assets and liabilities, and $2.1 million of non-cash operating expenses. These items are offset by a net income of $40.7 million, including depreciation and investment accretion costs and $47.8 million in stock-based compensation.

During the year ended December 31, 2022, operating activities used approximately $119.7 million in cash primarily resulting from net loss of $149.2 million, which included an $11.8 million gain from equity investments, partially offset by $5.0 million of non-cash operating expenses included in net loss, including depreciation and investment accretion costs, $39.6 million in stock-based compensation, and $18.1 million of non-cash loss on changes in fair value. Changes in our operating assets and liabilities used cash of approximately $21.4 million.

Investing activities

During the year ended December 31, 2021 December 31, 2023, operating investing activities used provided approximately $70.7 million $193.0 million of cash, consisting of $147.2 million cash distributions received, on account of our equity investment in Nimbus, from Nimbus in connection with Takeda's acquisition of Nimbus Lakshmi, Inc., a wholly-owned subsidiary of Nimbus, and its TYK2 inhibitor NDI-034858 and $63.3 million provided by marketable securities, net of purchases. These items are partially offset by $13.4 million in cash primarily resulting from net loss used for purchases of $101.2 million, which included an $11.4 million non-cash gain from changes property and equipment, $4.1 million used for purchases of equity investments in fair value, $26.5 million in stock-based compensation costs and $9.0 million of other non-cash operating expenses included in net loss, including depreciation and investment accretion costs, and a $1.8 million loss on equity investment that is classified as an investing activity. Changes in our operating assets and liabilities provided cash of approximately $4.7 million.

Investing activities Structure Therapeutics.

During the year ended December 31, 2022, investing activities provided approximately $90.0 million of cash, consisting of $93.2 million provided by marketable securities, net of purchases and $11.8 million in cash from a third party, who previously acquired a collaborator in which we held an equity stake, in exchange for the termination of our rights to receive potential earnouts under the acquisition agreement. These items are partially offset by $8.0 million in cash used for purchases of property and equipment, $0.6 million used to make equity investments in Structure Therapeutics, and $6.4 million used to acquire XTAL, net of cash acquired.

Financing activities

During the year ended December 31, 2021 December 31, 2023, investing financing activities used provided approximately $16.8 million $9.0 million of cash, consisting of $22.1 million used for purchases of marketable securities, net of maturities, $7.2 million used for purchases of property and equipment and $3.7 million used primarily attributable to make equity investments in Ajax Therapeutics, Inc. and Structure Therapeutics, partially offset by $15.7 million provided by the sale of our equity stake in Relay and $0.4 million provided by the distribution of funds proceeds from Petra Pharma Corporation in connection with its acquisition by a third party. stock option exercises.

During the year ended December 31, 2022, financing activities provided approximately $2.1 million of cash, primarily attributable to proceeds from stock option exercises.

During the year ended December 31, 2021, financing activities provided approximately $8.0 million of cash, primarily attributable to proceeds from stock option exercises.

Seasonality

Generally, the first and fourth quarter of each year have typically been our largest quarters for software products and services revenue, primarily due to the timing of customer renewals of on-premise software arrangements, for which revenue is recognized at a single point in time. Seasonality has been a less significant factor for our hosted software arrangements, for which revenue is recognized ratably over time. Seasonality has not been a factor for our drug discovery revenues. Historical seasonality may not be indicative of future periods.

Critical Accounting Policies and Estimates

Critical accounting policies are those that are both most important to the portrayal of a company's financial condition and results, and that require management's most difficult, subjective, and complex judgments, often as a result of the need to make estimates about the effect of matters that are inherently uncertain. Our management's discussion and analysis of our financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with U.S. GAAP. The preparation of these consolidated financial statements requires us to make judgments and estimates that affect the reported amounts of assets, liabilities, revenues, and expenses and the disclosure of contingent assets and liabilities in our consolidated financial statements and the accompanying notes. We base our estimates on historical experience, known trends and events, and our beliefs of what could occur in the future considering available information. Actual results may differ from these estimates under different assumptions or conditions. On an ongoing basis, we evaluate our judgments and estimates in light of changes in circumstances, facts, and experience. The effects of material revisions in estimates, if any, are reflected in the consolidated financial statements prospectively from the date of change in estimates.

While our significant accounting policies are described in more detail in Note 2 – Significant Accounting Policies to our consolidated financial statements appearing in Item 8 of this Annual Report, we believe the following critical accounting estimates used in the preparation of our consolidated financial statements require the most difficult, subjective and complex judgments and estimates and have had, or are reasonably likely to have a material impact on our financial condition or results of operations.

Revenue

We recognize revenue in accordance with ASC Topic 606, Revenue from Contracts with Customers, or Topic 606, except for contracts that are within the scope of other standards, such as contribution grants and certain collaboration arrangements. In accordance with ASC Topic 606, we recognize revenue when our customer obtains control of promised goods or services, in an amount that reflects the consideration which we expect to receive in exchange for those goods or services. To determine revenue recognition for arrangements that we determine are within the scope of ASC Topic 606, we perform the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when or as we satisfy a performance obligation.

Significant management judgment is applied to determine the allocation of the transaction price and measurement of progress, including (1) the constraint on variable consideration, (2) the allocation of the transaction price to the performance obligations using their standalone selling price, or SSP, and (3) the appropriate input or output based method to recognize collaboration revenue and the extent of progress to date.

Variable consideration: Our revenue may include upfront payments for the performance of services in the future, which have both fixed and variable consideration. We include the unconstrained amount of estimated variable consideration in the transaction price. The amount included in the transaction price is constrained to the amount for which it is probable that a significant reversal of cumulative revenue recognized will not occur. At the end of each subsequent reporting period, we re-evaluate the estimated variable consideration included in the transaction price and any related constraint and, if necessary, adjust our estimate of the overall transaction price.

Research and development, regulatory or commercial milestones in our collaboration agreements may include some, but not necessarily all, of the following types of events:

- completion of preclinical research and development work leading to selection of product candidates;

- initiation of Phase 1, Phase 2, and Phase 3 clinical trials;
- filing of regulatory applications for marketing approval in the United States, Europe or Japan;
- marketing approval in major markets, such as the United States, Europe, or Japan;
- commercial milestones and/or commercial royalties; and
- achievement of certain other technical, scientific, or development criteria.

At the inception of each arrangement that includes research, development, or regulatory milestone payments, we evaluate whether the milestones are considered probable of being reached and estimate the amount to be included in the transaction price using the most likely amount method. If it is probable that a significant revenue reversal would not occur,

the associated milestone value is included in the transaction price. Milestone payments that are not within our control or that of the licensee, such as regulatory approvals, are not considered probable of being achieved until those approvals are received. The transaction price is then allocated to each performance obligation on an SSP basis, for which we recognize revenue as or when the performance obligations under the contract are satisfied. At the end of each subsequent reporting period, we re-evaluate the probability of achievement of such development milestones and any related constraint, and if necessary, adjust our estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which may affect license, collaboration, and other revenues and earnings in the period of adjustment. The process of successfully achieving the criteria for the milestone payments is highly uncertain. Consequently, there is a risk that we may not earn all of the milestone payments from each of our collaborators. We recognized $14.7 million $27.7 million and $6.3 million $14.7 million from drug discovery milestones for the years ended December 31, 2022 December 31, 2023 and 2021, 2022, respectively.

Software performance obligations and transaction price allocation: At contract inception, we assess the goods or services promised within each contract that falls under the scope of ASC Topic 606 to identify distinct performance obligations, which requires significant judgment based on the nature of each transaction. We allocate the transaction price to each distinct performance obligation on an SSP basis. We determine the SSP using information that includes historical discounting practices, market conditions, cost-plus analysis, and other observable inputs. We typically have more than one SSP for individual performance obligations due to the stratification of those items by classes of customers and circumstances. In these instances, we may use information such as the size and geographic region of the customer in determining the SSP. We may also estimate SSP based on management judgment by considering available data such as internal cost and margin objectives, pricing strategies, market/competitive conditions, historical profitability data, as well as other observable inputs. We establish SSP ranges for our products and services and reassesses them periodically. The determination of SSP required significant management judgment.

Collaboration agreement transaction price allocation and measurement of progress: At the inception of each arrangement, we utilize judgment to assess the nature of the performance obligations to determine whether they are distinct or a single combined performance obligation. We allocate the transaction price to each performance obligation based on the relative SSP of each performance obligation at inception, which will be determined based on each performance obligation's estimated SSP. We determine the SSP at contract inception of the research activities based on internal estimates of the costs to perform the services, inclusive of a reasonable profit margin. Significant judgment is used to determine the inputs for total costs to perform the research activities, which may include the length of time required, the internal hours expected to be incurred on the services and the number and costs of various studies that will be performed by third-parties to complete the research plan. Revenue is recognized on a proportional performance basis over the period of service, using input-based measurements to estimate the performance. Changes to these assumptions may have a material effect on the amount and timing of revenue recognized. We recognized revenue of $24.3 million $52.2 million and $14.6 million $24.3 million related to collaboration agreements with proportional performance measurement for the years ended December 31, 2022 December 31, 2023 and 2021, 2022, respectively.

Recent Accounting Pronouncements

See Note 2 – Significant Accounting Policies to our consolidated financial statements appearing elsewhere in this Annual Report for a discussion of recently issued accounting pronouncements.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

Our primary exposure to market risk is interest rate sensitivity, which is affected by changes in the general level of U.S. interest rates, particularly because our investments, including cash equivalents and marketable securities, are in the form of U.S. Treasury and corporate bonds and a money market fund that is invested in U.S. Treasury and corporate bonds.

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Due to the nature of these investments, an immediate 10% change in interest rates would not have a material effect on the fair market value of this investment portfolio.

We are also exposed to market risk related to changes in foreign currency exchange rates. We maintain bank accounts denominated in Japanese yen, British pound sterling, Indian rupee, European Union euro, and Korean Republic won to accommodate deposits of amounts due from certain customers. We also contract with certain vendors that are located outside of the United States whose invoices are denominated in foreign currencies. We are subject to fluctuations in foreign currency rates in connection with these arrangements. We do not currently hedge Our hedging activity related to our foreign currency exchange rate risk. risk is immaterial. Our cash balances and outstanding vendor invoices denominated in foreign currencies were not material as of December 31, 2022 December 31, 2023 and 2021, 2022, and our market risk associated with foreign currency exchange rates was deemed insignificant. An immediate 10% change in foreign exchange rates would not have a material effect on our consolidated financial statements.

Inflation generally affects us by increasing our cost of labor and target development costs. We do not believe that inflation had a material effect on our business, financial condition, or results of operations for the years ended December 31, 2022 and 2021.

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Item 8. Financial Statements and Supplementary Data.

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Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
Schrödinger, Inc.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Schrödinger, Inc. and subsidiaries (the Company) as of December 31, 2022 December 31, 2023 and 2021, 2022, the related consolidated statements of operations, comprehensive loss, convertible preferred stock and income (loss), stockholders' equity, (deficit), and cash flows for each of the years in the three-year period ended December 31, 2022 December 31, 2023, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2022 December 31, 2023 and 2021, 2022, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2022 December 31, 2023, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022 December 31, 2023, based on criteria established in *Internal Control – Integrated Framework (2013)*issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 28, 2023 February 28, 2024 expressed an adverse unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters Matter

The critical audit matters matter communicated below are matters is a matter arising from the current period audit of the consolidated financial statements that were was communicated or required to be communicated to the audit committee and that: (1) relate relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of a critical audit matters matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters matter below, providing a separate opinions opinion on the critical audit matters matter or on the accounts or disclosures to which they relate.

Estimation of total costs to perform for Bristol-Myers Squibb Company collaboration and license agreement

As discussed in Note 3(c) to the consolidated financial statements, the Company recorded revenue of $22.1 million during the year ended December 31, 2022 related to research activities for the Bristol-Myers Squibb Company ("BMS") collaboration and license agreement on a proportional performance basis. The proportional performance is determined using input-based measurements of total costs of research activities incurred for the agreement relative to the total estimate of costs of research activities for the agreement. The Company remeasures proportional performance at the end of each reporting period based on measuring progress towards completion.

We identified the estimation of total costs to perform research activities for the BMS collaboration and license agreement as a critical audit matter. There was subjective auditor judgment in evaluating the Company's estimate of total costs to perform research activities.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls related to the Company's process to account for the BMS collaboration and license agreement, including controls related to the determination of total costs to perform research activities. We evaluated the Company's estimate of costs to be incurred by:

— comparing the estimated length of time required to complete the research plan to both industry publications and actual time incurred to achieve development candidate for a selection of the Company's proprietary drug discovery programs

—comparing the estimated internal employee hours and external contract research organizations costs to be incurred to historical actual results for the BMS collaboration and license agreement

—attending the fourth quarter forecast review meeting and inspecting quarterly meeting minutes to evaluate factors impacting total costs to perform research activities

—inspecting minutes of Joint Steering Committee meetings between the Company and BMS to evaluate factors impacting total costs to perform research activities and comparing them with the outcome of the inquiries stated above it relates.

Identification of performance obligations in complex or unusual revenue arrangements

As discussed in Notes Note 3(a) and 3(b) to the consolidated financial statements, the Company reported on-premise software revenue of $84.5 million, $104,511 thousand and hosted software revenue of $14.9 million, and drug discovery revenue of $45.4 million $20,381 thousand for the year ended December 31, 2022 December 31, 2023. As discussed in Note 3(d), the Company's contracts with customers often include promises to transfer multiple software products and services, including training, professional services, technical support services, and rights to unspecified updates. At contract inception, the Company assesses the products and services promised within each contract to determine distinct performance obligations that should be accounted for separately.

We identified the determination of distinct performance obligations in complex or unusual revenue arrangements as a critical audit matter. There was subjective auditor judgment in evaluating whether promised products and services in

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complex or unusual revenue arrangements are separate performance obligations or inputs into a combined performance obligation.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls related to the revenue process, including controls related to the determination of distinct performance obligations. For a selection of complex or unusual revenue arrangements, we evaluated whether the performance obligations identified by the Company were capable of being distinct in the context of the contract by obtaining an understanding of the Company's product and service offerings, obtaining and inspecting contracts, and evaluating the application of the revenue recognition accounting guidance for the selected contract.

/s/ KPMG LLP

We have served as the Company's auditor since 2010.

Portland, Oregon
February 28, 2023 2024

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Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
Schrödinger, Inc.:

Opinion on Internal Control Over Financial Reporting

We have audited Schrödinger, Inc. and subsidiaries' (the Company) internal control over financial reporting as of December 31, 2022 December 31, 2023, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, because of the effect of the material weakness, described below, on the achievement of the objectives of the control criteria, the Company has not maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022 December 31, 2023, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2022 December 31, 2023 and 2021, 2022, the related consolidated statements of operations, comprehensive loss, convertible preferred stock and income (loss), stockholders' equity, (deficit), and cash flows for each of the years in the three-year period ended December 31, 2022 December 31, 2023, and the related notes (collectively, the consolidated financial statements), and our report dated February 28, 2023 February 28, 2024 expressed an unqualified opinion on those consolidated financial statements.

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis. A material weakness was identified and included in management's assessment related to a deficiency in the design of a control in the Company's revenue process to determine whether performance milestones in a newly executed drug discovery arrangement were probable of achievement and the constraint on variable consideration in the form of milestone payments can be removed. The deficiency was the result of ineffective risk assessment as the Company's existing controls were designed insufficiently to identify a change in timing of performance milestones in the newly executed contract. The material weakness was considered in determining the nature, timing, and extent of audit tests applied in our audit of the 2022 consolidated financial statements, and this report does not affect our report on those consolidated financial statements.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ KPMG LLP

Portland, Oregon
February 28, 2023 2024

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SCHRÖDINGER, INC. AND SUBSIDIARIES
Consolidated Balance Sheets
(in thousands, except for share and per share amounts)

Assets	Assets	December 31, 2022	December 31, 2021	Assets	December 31, 2023	December 31, 2022
Current assets:	Current assets:			Current assets:		
Cash and cash equivalents	Cash and cash equivalents	$ 90,474	$ 120,267			
Restricted cash	Restricted cash	5,243	3,000			
Marketable securities	Marketable securities	360,613	456,212			
Accounts receivable, net of allowance for doubtful accounts of $125 and $108		55,953	31,744			
Unbilled and other receivables, net for allowance for unbilled receivables of $100 and $30		13,137	8,807			

Accounts receivable, net of allowance for doubtful accounts of $220 and $125			
Unbilled and other receivables, net for allowance for unbilled receivables of $100 and $100			
Prepaid expenses	Prepaid expenses	8,569	5,030
Total current assets	Total current assets	533,989	625,060
Property and equipment, net	Property and equipment, net	14,244	10,025
Equity investments	Equity investments	25,683	43,167
Goodwill	Goodwill	4,791	—
Intangible assets, net	Intangible assets, net	587	—
Right of use assets		105,982	75,384
Right of use assets - operating leases			
Other assets	Other assets	3,311	2,851
Total assets	Total assets	$ 688,587	$ 756,487

Liabilities and Stockholders' Equity	**Liabilities and Stockholders' Equity**			**Liabilities and Stockholders' Equity**	
Current liabilities:	Current liabilities:			Current liabilities:	
Accounts payable	Accounts payable	$ 9,470	$ 8,079		
Accrued payroll, taxes, and benefits	Accrued payroll, taxes, and benefits				
Accrued payroll, taxes, and benefits	Accrued payroll, taxes, and benefits	24,882	18,405		
Deferred revenue	Deferred revenue	57,931	55,368		
Lease liabilities		11,006	2,042		
Lease liabilities - operating leases					
Other accrued liabilities	Other accrued liabilities	5,510	7,317		
Total current liabilities	Total current liabilities	108,799	91,211		
Deferred revenue, long-term	Deferred revenue, long-term	25,598	30,064		
Lease liabilities, long-term		105,485	77,827		
Lease liabilities - operating leases, long-term					
Other liabilities, long-term	Other liabilities, long-term	800	300		
Total liabilities	Total liabilities	240,682	199,402		
Commitments and contingencies (Note 7)	Commitments and contingencies (Note 7)			Commitments and contingencies (Note 7)	
Stockholders' equity:	Stockholders' equity:			Stockholders' equity:	
Preferred stock, $0.01 par value. Authorized 10,000,000 shares; zero shares issued and outstanding at December 31, 2022 and December 31, 2021, respectively		—	—		
Common stock, $0.01 par value. Authorized 500,000,000 shares; 62,163,739 and 61,834,515 shares issued and outstanding at December 31, 2022 and December 31, 2021, respectively		622	618		

Limited common stock, $0.01 par value. Authorized 100,000,000 shares; 9,164,193 shares issued and outstanding at December 31, 2022 and December 31, 2021, respectively		92	92
Preferred stock, $0.01 par value. Authorized 10,000,000 shares; zero shares issued and outstanding at December 31, 2023 and December 31, 2022, respectively			
Common stock, $0.01 par value. Authorized 500,000,000 shares; 62,977,316 and 62,163,739 shares issued and outstanding at December 31, 2023 and December 31, 2022, respectively			
Limited common stock, $0.01 par value. Authorized 100,000,000 shares; 9,164,193 shares issued and outstanding at December 31, 2023 and December 31, 2022, respectively			
Additional paid-in capital	Additional paid-in capital	828,700	786,964
Accumulated deficit	Accumulated deficit	(379,138)	(229,952)
Accumulated other comprehensive loss	Accumulated other comprehensive loss	(2,382)	(651)
Total stockholders' equity of Schrödinger stockholders	Total stockholders' equity of Schrödinger stockholders	447,894	557,071
Noncontrolling interest	Noncontrolling interest	11	14
Total stockholders' equity	Total stockholders' equity	447,905	557,085
Total liabilities and stockholders' equity	Total liabilities and stockholders' equity	$ 688,587	$ 756,487

See accompanying notes to consolidated financial statements.

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SCHRÖDINGER, INC. AND SUBSIDIARIES
Consolidated Statements of Operations
(in thousands, except for share and per share amounts)

	Year Ended December 31,		
	2022	2021	2020

	Year Ended December 31,				Year Ended December 31,		
	2023				2023	2022	2021
Revenues:	Revenues:						
Software products and services	Software products and services						
Software products and services	Software products and services	$ 135,578	$ 113,236	$ 92,530			
Drug discovery	Drug discovery	45,377	24,695	15,565			
Total revenues	Total revenues	180,955	137,931	108,095			
Cost of revenues:	Cost of revenues:						
Software products and services	Software products and services	29,576	26,495	18,003			
Software products and services	Software products and services						
Drug discovery	Drug discovery	50,357	45,816	26,620			
Total cost of revenues	Total cost of revenues	79,933	72,311	44,623			
Gross profit	Gross profit	101,022	65,620	63,472			
Operating expenses:	Operating expenses:						
Research and development	Research and development						
Research and development	Research and development	126,372	90,904	64,695			
Sales and marketing	Sales and marketing	30,642	22,150	17,795			
General and administrative	General and administrative	90,825	64,009	41,898			
Total operating expenses	Total operating expenses	247,839	177,063	124,388			
Loss from operations	Loss from operations	(146,817)	(111,443)	(60,916)			
Other income (expense):	Other income (expense):						
Gain (loss) on equity investments	Gain (loss) on equity investments	11,825	(1,781)	4,108			
Gain (loss) on equity investments	Gain (loss) on equity investments						
Change in fair value	Change in fair value	(18,084)	11,359	28,263			
Other income	Other income	3,950	1,057	2,253			
Total other (expense) income		(2,309)	10,635	34,624			
Loss before income taxes		(149,126)	(100,808)	(26,292)			
Total other income (expense)							
Income (loss) before income taxes							

Income tax expense	Income tax expense	63	411	345
Net loss		(149,189)	(101,219)	(26,637)
Net loss attributable to noncontrolling interest		(3)	(826)	(2,174)
Net loss attributable to Schrödinger common and limited common stockholders		$(149,186)	$(100,393)	$ (24,463)
Net loss per share attributable to Schrödinger common and limited common stockholders, basic and diluted:		$ (2.10)	$ (1.42)	$ (0.41)
Weighted average shares used to compute net loss per share attributable to Schrödinger common and limited common stockholders, basic and diluted:		71,173,419	70,594,950	60,024,658
Net income (loss)				
Net income (loss) attributable to noncontrolling interest				
Net income (loss) attributable to Schrödinger common and limited common stockholders				
Net income (loss) per share attributable to Schrödinger common and limited common stockholders, basic:				
Weighted average shares used to compute net income (loss) per share attributable to Schrödinger common and limited common stockholders, basic:	Weighted average shares used to compute net income (loss) per share attributable to Schrödinger common and limited common stockholders, basic:	71,776,301	71,173,419	70,594,950

Net income (loss) per share attributable to Schrödinger common and limited common stockholders, diluted:				
Weighted average shares used to compute net income (loss) per share attributable to Schrödinger common and limited common stockholders, diluted:	Weighted average shares used to compute net income (loss) per share attributable to Schrödinger common and limited common stockholders, diluted:	74,986,816	71,173,419	70,594,950

See accompanying notes to consolidated financial statements.

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SCHRÖDINGER, INC. AND SUBSIDIARIES

Consolidated Statements of Comprehensive Loss Income (Loss)

(in thousands)

	Year Ended December 31,		
	2022	2021	2020
Net loss attributable to Schrödinger common and limited common stockholders	$ (149,186)	$ (100,393)	$ (24,463)
Changes in market value of investments, net of tax:			
Unrealized (loss) gain on marketable securities	(1,731)	(968)	301
Comprehensive loss	$ (150,917)	$ (101,361)	$ (24,162)

	Year Ended December 31,		
	2023	2022	2021
Net income (loss) attributable to Schrödinger common and limited common stockholders	$ 40,720	$ (149,186)	$ (100,393)
Changes in market value of investments, net of tax:			
Unrealized gain (loss) on marketable securities	2,663	(1,731)	(968)
Comprehensive income (loss)	$ 43,383	$ (150,917)	$ (101,361)

See accompanying notes to consolidated financial statements.

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SCHRÖDINGER, INC. AND SUBSIDIARIES

Consolidated Statements of Convertible Preferred Stock and Stockholders' Equity (Deficit)

(in thousands, except for share amounts)

	Series E preferred stock		Series D preferred stock		Series C preferred stock		Series B preferred stock		Series A preferred stock		Common stock		Limited common stock		Additional paid-in	Accumulated	Accumulated other comprehensive	Non controlling	Total stockholders equity
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	capital	deficit	loss (income)	interest	(deficit)
Balance at December 31, 2019	73,795,777	$ 109,270	39,540,611	$22,000	47,242,235	$19,844	29,468,101	$ 9,840	134,704,785	$30,626	6,121,821	$ 61	—	$ —	$ 11,655	$ (105,096)	$ 16	$ 41	$ (93,323)
Change in unrealized gain on marketable securities	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	301	—	301
Issuances of common stock upon stock option exercises	—	—	—	—	—	—	—	—	—	—	1,398,177	14	—	—	4,169	—	—	—	4,183
Stock-based compensation	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10,545	—	—	—	10,545
Issuances of common stock upon initial public offering, net of issuance costs of $22,667	—	—	—	—	—	—	—	—	—	—	13,664,704	136	—	—	209,497	—	—	—	209,633
Issuances of common stock upon follow-on offering, net of issuance costs of $20,901	—	—	—	—	—	—	—	—	—	—	5,250,000	53	—	—	325,547	—	—	—	325,600
Conversion of convertible preferred stock into common stock	(73,795,777)	(109,270)	(17,844,124)	(9,928)	—	—	—	—	(134,704,785)	(30,626)	30,278,832	303	—	—	149,521	—	—	—	149,824
Exchange of convertible preferred stock into limited common stock	—	—	(21,696,487)	(12,072)	(47,242,235)	(19,844)	(29,468,101)	(9,840)	—	—	—	—	13,164,193	132	41,624	—	—	—	41,756
Conversion of limited common stock into common stock	—	—	—	—	—	—	—	—	—	—	4,000,000	40	(4,000,000)	(40)	—	—	—	—	—
Contributions by non-controlling interest	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	2,137	2,137
Net loss	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	(24,463)	—	(2,174)	(26,637)

		Common stock Shares	Common stock Amount	Common stock Shares	Common stock Amount	Common stock Shares	Common stock Amount	Common stock Shares	Common stock Amount	Common stock Shares	Common stock Amount	Common stock Shares	Common stock Amount	Limited common stock Shares	Limited common stock Amount	Additional paid-in capital	Accumulated deficit	Accumulated other comprehensive loss (income)	Non controlling interest	Total stockholders equity (deficit)
Balance at December 31, 2020	Balance at December 31, 2020	—	—	—	—	—	—	—	—	—	—	60,713,534	607	9,164,193	92	752,558	(129,559)	317	4	624,019
Change in unrealized loss on marketable securities	Change in unrealized loss on marketable securities	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	(968)	—	(968)
Issuances of common stock upon stock option exercises	Issuances of common stock upon stock option exercises	—	—	—	—	—	—	—	—	—	—	1,120,981	11	—	—	7,916	—	—	—	7,927
Stock-based compensation	Stock-based compensation	—	—	—	—	—	—	—	—	—	—	—	—	—	—	26,490	—	—	—	26,490
Contributions by non-controlling interest	Contributions by non-controlling interest	—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	836	836
Net loss	Net loss	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	(100,393)	—	(826)	(101,219)
Balance at December 31, 2021	Balance at December 31, 2021	—	—	—	—	—	—	—	—	—	—	61,834,515	618	9,164,193	92	786,964	(229,952)	(651)	14	557,085
Change in unrealized loss on marketable securities	Change in unrealized loss on marketable securities	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	(1,731)	—	(1,731)
Issuances of common stock upon stock option exercises	Issuances of common stock upon stock option exercises	—	—	—	—	—	—	—	—	—	—	329,224	4	—	—	2,106	—	—	—	2,110
Stock-based compensation	Stock-based compensation	—	—	—	—	—	—	—	—	—	—	—	—	—	—	39,630	—	—	—	39,630
Contributions by non-controlling interest		—	—	—	—	—	—	—	—	—	—	—	—	—	—		—	—	—	—
Net loss																				
Net loss																				
Net loss	Net loss	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	(149,186)	—	(3)	(149,189)
Balance at December 31, 2022	Balance at December 31, 2022	—	$ —	—	$ —	—	$ —	—	$ —	—	$ —	62,163,739	622	9,164,193	92	828,700	(379,138)	(2,382)	11	447,905
Change in unrealized gain on marketable securities																				

Reclassification of non-controlling interest	
Issuances of common stock upon stock option exercises	
Issuance of common stock upon vesting of restricted stock units	
Stock-based compensation	
Stock-based compensation	
Stock-based compensation	
Net income	
Net income	
Net income	
Balance at December 31, 2023	

See accompanying notes to consolidated financial statements.

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SCHRÖDINGER, INC. AND SUBSIDIARIES
Consolidated Statements of Cash Flows
(in thousands)

	Year Ended December 31,		
	2022	2021	2020
Cash flows from operating activities:			
Net loss	$(149,189)	$(101,219)	$ (26,637)
Adjustments to reconcile net loss to net cash (used in) provided by operating activities:			
(Gain) loss on equity investments	(11,825)	1,781	(4,108)
Noncash revenue from equity investments	—	(107)	(397)
Fair value adjustments	18,084	(11,359)	(28,263)
Depreciation and amortization	4,344	2,847	3,658
Stock-based compensation	39,630	26,490	10,545

	Year Ended December 31,		
	2023	2022	2021
Cash flows from operating activities:			
Net income (loss)			
Adjustments to reconcile net income (loss) to net cash used in operating activities:			
(Gain) loss on equity investments			

Noncash research and development expenses	Noncash research and development expenses	—	811	2,137
Noncash investment amortization		629	5,270	646
Noncash investment (accretion) amortization				
Loss on disposal of property and equipment	Loss on disposal of property and equipment	19	140	—
(Increase) decrease in assets, net of acquisition:				
(Increase) decrease in assets, net of acquisition:				
(Increase) decrease in assets, net of acquisition:	(Increase) decrease in assets, net of acquisition:			
Accounts receivable, net	Accounts receivable, net	(23,697)	(321)	(12,747)
Accounts receivable, net				
Accounts receivable, net				
Unbilled and other receivables	Unbilled and other receivables	(4,253)	(5,187)	3,468
Reduction in the carrying amount of right of use assets		7,287	5,799	5,342
Reduction in the carrying amount of right of use assets - operating leases				
Prepaid expenses and other assets	Prepaid expenses and other assets	(7,067)	(1,121)	187
Increase (decrease) in liabilities, net of acquisition:	Increase (decrease) in liabilities, net of acquisition:			
Accounts payable	Accounts payable	1,179	(411)	4,882
Accounts payable				
Accounts payable				
Accrued payroll, taxes, and benefits				
Accrued payroll, taxes, and benefits				
Accrued payroll, taxes, and benefits	Accrued payroll, taxes, and benefits	6,477	6,405	4,966
Deferred revenue	Deferred revenue	(1,903)	(1,028)	59,705

Lease liabilities		1,900	(2,949)	(5,417)
Lease liabilities - operating leases				
Other accrued liabilities	Other accrued liabilities	(1,298)	3,490	(1,210)
Net cash (used in) provided by operating activities		(119,683)	(70,669)	16,757
Net cash used in operating activities				
Cash flows from investing activities:	Cash flows from investing activities:			
Purchases of property and equipment				
Purchases of property and equipment				
Purchases of property and equipment	Purchases of property and equipment	(8,014)	(7,167)	(2,538)
Purchases of equity investments	Purchases of equity investments	(600)	(3,700)	(2,869)
Distribution from equity investment	Distribution from equity investment	11,825	375	4,582
Proceeds from sale of equity investments	Proceeds from sale of equity investments	—	15,735	—
Acquisition, net of acquired cash	Acquisition, net of acquired cash	(6,427)	—	—
Purchases of marketable securities	Purchases of marketable securities	(271,472)	(414,802)	(519,668)
Proceeds from maturity of marketable securities	Proceeds from maturity of marketable securities	364,711	392,747	138,772
Net cash provided by (used in) investing activities	Net cash provided by (used in) investing activities	90,023	(16,812)	(381,721)
Cash flows from financing activities:	Cash flows from financing activities:			
Issuances of common stock upon initial public offering, net		—	—	211,491
Issuances of common stock upon follow-on public offering, net		—	—	325,600
Issuances of common stock upon stock option exercises	Issuances of common stock upon stock option exercises	2,110	7,927	4,183
Issuances of common stock upon stock option exercises				
Issuances of common stock upon stock option exercises				
Payment of offering costs				
Principal payments on finance leases				
Contribution by noncontrolling interest	Contribution by noncontrolling interest	—	25	—

Net cash provided by financing activities	Net cash provided by financing activities	2,110	7,952	541,274
	Net (decrease) increase in cash and cash equivalents and restricted cash	(27,550)	(79,529)	176,310
	Net cash provided by financing activities			
	Net cash provided by financing activities			
	Net increase (decrease) in cash and cash equivalents and restricted cash			
Cash and cash equivalents and restricted cash, beginning of year	Cash and cash equivalents and restricted cash, beginning of year	123,267	202,796	26,486
Cash and cash equivalents and restricted cash, end of year	Cash and cash equivalents and restricted cash, end of year	$ 95,717	$ 123,267	$ 202,796
Supplemental disclosure of cash flow and noncash information	**Supplemental disclosure of cash flow and noncash information**			
Supplemental disclosure of cash flow and noncash information				
Supplemental disclosure of cash flow and noncash information				
Cash paid for income taxes				
Cash paid for income taxes				
Cash paid for income taxes	Cash paid for income taxes	$ 787	$ 448	$ 381
Supplemental disclosure of non-cash investing and financing activities	**Supplemental disclosure of non-cash investing and financing activities**			
Purchases of property and equipment in accounts payable				
Purchases of property and equipment in accounts payable				
Purchases of property and equipment in accounts payable	Purchases of property and equipment in accounts payable	169	705	8
Purchases of property and equipment in accrued liabilities	Purchases of property and equipment in accrued liabilities	293	—	—
	Acquisition of right to use assets, contingency resolution	1,513	—	
	Acquisitions of right of use assets	34,763	71,054	2,709
	Acquisition of lease liabilities	34,430	71,054	—
	Reclassification of deferred financing costs to additional paid-in capital	—	—	1,858

Acquisition of right of use assets - operating leases, contingency resolution
Acquisition of right of use assets - operating leases
Acquisition of lease liabilities - operating leases
Acquisition of right of use assets in exchange for lease liabilities - finance leases

See accompanying notes to consolidated financial statements.

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SCHRÖDINGER, INC. AND SUBSIDIARIES

Notes to Consolidated Financial Statements

For the years ended December 31, 2022 December 31, 2023, 2021, 2022, and 2020 2021

(in thousands, except for share and per share amounts and note 3(c))

(1) Description of Business

Schrödinger, Inc. (the “Company”) has developed a differentiated, physics-based computational platform that enables discovery of high-quality, novel molecules for drug development and materials applications more rapidly and at a lower cost, compared to traditional methods. The Company's software platform is licensed by biopharmaceutical and industrial companies, academic institutions, and government laboratories around the world. The Company is also applies applying its computational platform to advance a broad pipeline of drug discovery and development programs in collaboration with leading biopharmaceutical companies. In addition, the Company uses its computational platform to advance a discover novel molecules for its pipeline of partnered and wholly-owned proprietary drug discovery programs, which the Company refers to as its proprietary drug discovery programs. is advancing through preclinical and clinical development.

(2) Significant Accounting Policies

(a) Recently Issued Accounting Pronouncements

Not Yet Adopted

In October 2021, November 2023, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Standard Update (“ASU" ("ASU") No. 2021-08, 2023-07, *Business Combinations – Accounting for Contract Assets and Contract Liabilities from Contracts with Customers* *Segment Reporting* ("Topic 805"), (Topic 280) — *Improvements to Reportable Segment Disclosures,* which requires the measurement and recognition of contract assets and contract liabilities acquired in a business combination in accordance with Accounting Standards Codification (“ASC”) 606, *Revenue from Contracts with Customers* ("Topic 606"). improves reportable segment disclosure requirements, primarily through enhanced disclosures about significant segment expenses. This update replaces the existing guidance requiring contract assets and contract liabilities to be measured and recognized at fair value. The standard is effective on a prospective basis for annual periods beginning after December 15, 2022 December 15, 2023, including and interim periods within the fiscal year, annual periods beginning after December 15, 2024, with early adoption permitted. The Company has not yet adopted ASU 2023-07 and is still evaluating the impact of the adoption on its consolidated financial statements.

In December 2023, the FASB issued ASU No. 2023-09, *Income Taxes* (Topic 740) — *Improvements to Income Tax Disclosures*, which requires public business entities to disclose specific categories in the tax rate reconciliation and provide additional information for reconciling items that meet a quantitative threshold. This standard is effective for annual periods beginning after December 15, 2024, and interim periods within annual periods beginning after December 15, 2025, on a prospective basis, with early adoption permitted. The Company has not yet adopted this new standard effective January 1, 2022 with no material ASU 2023-09 and is still evaluating the impact of the adoption on its consolidated financial statements.

(b) Basis of Presentation and Use of Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles ("U.S. GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the consolidated financial statements, and the reported amounts of revenues and expenses during the reporting period. Significant estimates include the assumptions used in the allocation of revenue and estimates regarding the progress of completing performance obligations under collaboration agreements. Actual results could differ from those estimates, and such differences may be material to the consolidated financial statements.

(c) Principles of Consolidation

The Company's consolidated financial statements include the accounts of Schrödinger, Inc., its wholly owned subsidiaries, and its variable interest entity. All intercompany balances and transactions have been eliminated in consolidation. The functional currency for foreign entities is the United States dollar. The Company accounts for investments over which it has significant influence, but not a controlling financial interest, using the equity method.

(d) Cash and Cash Equivalents and Marketable Securities and Restricted Cash

Included in cash and cash equivalents were cash equivalents of $78,066 $85,497 and $90,477 $78,066 as of December 31, 2022 December 31, 2023 and 2021, 2022, respectively, which consisted of money market funds and certificates of deposit, and are stated at cost, which approximates market value. The Company classifies all highly liquid investments with an original maturity of 90 days or

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less to be cash equivalents. The Company classifies all marketable securities, which consist of fixed income securities, as available for sale securities.

At times, cash balances held at financial institutions were in excess of the Federal Deposit Insurance Corporation's insured limits; however, the Company primarily places its cash with high-credit quality financial institutions.

Restricted cash consists of letters of credit held with the Company's financial institution related to facility leases and is classified as current in the Company's balance sheets based on the maturity of the underlying letters of credit. Additionally, funds received from certain grants are restricted as to their use and are therefore classified as restricted cash.

(e) Accounts Receivable

Accounts receivable are stated at original invoice amount less an allowance for doubtful accounts. Management estimates the allowance for doubtful accounts by evaluating individual customer receivables and considering a customer's financial condition, credit history, and current economic conditions. Account balances are considered delinquent if payment is not received by the due date. Accounts receivable are written off when deemed uncollectible. Recovery of accounts receivable previously written off is recorded when received. Changes in the balance of accounts deemed uncollectible were deemed immaterial as of December 31, 2022 December 31, 2023 and 2021. 2022. Interest is not charged on accounts receivable.

(f) Fair Value of Financial Instruments

The carrying values of cash and cash equivalents, accounts receivable, accounts payable, and accrued liabilities approximate fair value due to their short maturities.

(g) Property and Equipment

Property and equipment are stated at cost. The Company did not capitalize any interest during 2022 2023 and 2021. 2022. Maintenance and repairs are expensed as incurred.

Depreciation is calculated using the straight-line method over the estimated useful lives of the assets, which range from 3 to 10 years. Amortization of leasehold improvements is calculated using the straight-line method over the remaining life of the lease or the useful life of the asset, whichever is shorter.

Property and equipment are reviewed for impairment as discussed below under Accounting for the Impairment of Long-Lived Assets.

(h) (h) Goodwill

Goodwill represents the excess purchase price over the fair value of net assets acquired which is not allocable to separately identifiable intangible assets. Other identifiable intangible assets are separately recognized if the intangible asset is obtained through contractual or other legal right or if the intangible asset can be sold, transferred, licensed or exchanged.

Goodwill is not amortized but tested for impairment at least annually, and more frequently if events or circumstances indicate the carrying amount more likely than not exceeds the fair value. We have The Company has the option to qualitatively or quantitatively assess its goodwill for impairment.

We test our The Company tests its goodwill for impairment on October 1 of each year. In 2022, we 2023, the Company evaluated our its goodwill using a qualitative process. If the qualitative factors determine that it is more likely than not that the fair value exceeds the carrying amount, goodwill is not impaired. If the qualitative assessment determines it is more likely than not the fair value is less than the carrying amount, we the Company would further evaluate for potential impairment. We have The Company has deemed our its goodwill not impaired for the year ended December 31, 2022 December 31, 2023.

(i) Accounting for the Impairment of Long-Lived Assets

Long-lived assets, such as property and equipment and intangible assets subject to amortization, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. If circumstances require a long-lived asset or asset group be tested for potential impairment, the Company first compares undiscounted cash flows expected to be generated by that asset or asset group to its carrying value. If the carrying value of the long-lived asset or asset group is not recoverable on an undiscounted cash flow basis, an impairment is recognized to the extent that carrying value exceeds fair value. Fair value is determined using various valuation

techniques, including discounted cash flow models, quoted market values, and third-party independent appraisals, depending on the nature of the asset. No impairment was identified for the years ended December 31, 2022 December 31, 2023, 2021, 2022, and 2020. 2021.

(ij) (j) Warranties

The Company typically warrants that its products will perform in a manner consistent with the product specifications provided to the customer for a period of 30 days. Historically, the Company has not been required to make payments under these obligations. Therefore, no liabilities for such obligations are presented in the consolidated financial statements.

(k) Concentrations

Financial instruments that potentially subject the Company to concentrations of credit risk consist primarily of trade receivables and contract assets, which represent contracted unbilled receivables.

The Company does not require customers to provide collateral to support accounts receivable. If deemed necessary, credit reviews of significant new customers may be performed prior to extending credit. The determination of a customer's ability to pay requires judgment, and failure to collect from a customer can adversely affect revenue, cash flows, and results of operations.

As of December 31, 2023, two customers accounted for 15% and 11% of total accounts receivable, respectively. As of December 31, 2022, one customer accounted for 26% of total accounts receivable. As of December 31, 2021 December 31, 2023, three two customers accounted for 17%, 15%, 42% and 11% 22% of total accounts receivable, contract assets, respectively. As of December 31, 2022, two customers accounted for 23% and 17% of total contract assets, respectively. As of December 31, 2021 For the year ended December 31, 2023, three two customers accounted for 27%, 18%, 26% and 17% 11% of total contract assets, revenues, respectively. For the year ended December 31, 2022, one customer accounted for 16% of total revenues. For the year ended December 31, 2021, one customer accounted for 14% of total revenues. For the year ended December 31, 2020, no customers accounted for more than 10% 14% of total revenues.

(l) Royalties

Royalties represent a component of cost of revenues and consist of royalties paid to owners of intellectual property used in or bundled with the Company's software. Generally, royalties are incurred and recorded at the time a customer enters into a binding purchase agreement, although some royalty agreements are based instead on cash collections. Royalty expense was $13,349, $9,191, $9,826, and 7,663 9,826 for the years ended December 31, 2022 December 31, 2023, 2021, 2022, and 2020, 2021, respectively.

(m) Software Development Costs

Costs to develop new software products and substantial enhancements to existing software products are expensed as incurred. Historically, the Company has not capitalized any software development costs because the software development process was essentially completed concurrent with the establishment of technological feasibility.

(n) Research and Development and Advertising

Research and development and advertising costs are expensed as incurred. The Company did not incur any significant advertising costs in 2023, 2022, 2021, and 2020. 2021.

(o) Stock-Based Compensation

The Company calculates stock-based compensation expense utilizing fair value–based methodologies and recognizes expense over the vesting period of such awards. For performance-based restricted stock units, the Company records stock-based compensation expense with a cumulative catch-up at the time when performance conditions are considered probable of achievement, and on a straight-line basis over the remaining period for which the performance criteria are expected to be completed.

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(p) Commissions

Commissions represent a component of sales and marketing expense and consist of the variable compensation paid to the Company's sales representatives. Generally, sales commissions are earned and recorded as expense at the time that a customer has entered into a binding purchase agreement. Commissions paid to sales representatives are recoverable only in the case that the Company cannot collect against any invoiced fee associated with a sales order. Commission expense was $1,636, $2,291, and $1,829 in 2023, 2022, and $1,362 in 2022, 2021, and 2020, respectively.

(q) Income Taxes

The Company records deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the financial statement carrying amounts and the tax basis of the assets and liabilities. Deferred tax assets are reduced by a valuation allowance when it is estimated to become more likely than not that a portion of the deferred tax assets will not be realized. Accordingly, the Company currently maintains a full valuation allowance against existing net deferred tax assets.

The Company recognizes the effect of income tax positions only if such positions are deemed “more likely than not” capable of being sustained. Interest and penalties accrued on unrecognized tax benefits are included within income tax expense in the consolidated financial statements.

(r) Comprehensive Loss Income (Loss)

Comprehensive loss income (loss) includes net loss income (loss) and changes in equity related to changes in unrealized gains or losses on marketable securities.

(s) Equity Investments

In the normal course of business, the Company has entered, and may continue to enter, into collaboration agreements with companies to perform drug design services for such companies in exchange for equity ownership stakes in such companies. If it is determined that the Company has control over the investee, the investee is consolidated in the financial statements. If the investee is consolidated with the Company and less than 100% of the equity is owned by the Company, the Company will present non-controlling interest to represent the portion of the investee owned by other investors. If it is determined that the Company does not have control over the investee, the Company evaluates the investment for the ability to exercise significant influence.

Equity investments over which the Company has significant influence may be accounted for under equity method accounting in accordance with ASC Accounting Standards Codification ("ASC") Topic 323, *Equity Method and Joint Ventures. Ventures*. If it is determined that the Company does not have significant influence over the investee, and there is no readily determinable fair value for the investment, the equity investment may be accounted for at cost minus less impairment, in accordance with ASC Topic 321 ("Topic 321"), *Equity Securities. Securities*.

For further information regarding the Company’s equity investments, see Note 6, Fair Value Measurements Note 11, Noncontrolling Interest, and Note 13, Equity Investments.

(t) Net Loss Income (Loss) per Share Attributable to Common and Limited Common Stockholders

The outstanding equity of the Company consists of common stock and limited common stock. Under the Company’s certificate of incorporation, the rights of the holders of common stock and limited common stock are identical, except with respect to voting and conversion. Holders of limited common stock are precluded from voting such shares in any election of directors or on the removal of directors. Limited common stock may be converted into common stock at any time at the option of the stockholder.

Undistributed earnings allocated to the participating securities are subtracted from net income in determining net income (loss) income attributable to common and limited common stockholders. Basic net income (loss) income per share is computed by dividing net income (loss) income attributable to common and limited common stockholders by the weighted-average number of shares of common and limited common stock outstanding during the period.

For the calculation of diluted net income, net income attributable to common and limited common stockholders for basic net income is adjusted by the effect of dilutive securities, including awards under the Company’s equity

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compensation plans. Diluted net income per share attributable to common and limited common stockholders is computed by dividing the resulting net income attributable to common and limited common stockholders by the weighted-average number of fully diluted shares of common and limited common stock outstanding.

(3) Revenue Recognition

Revenue is recognized upon transfer of control of promised products or services to customers in an amount that reflects the consideration to which the Company expects to be entitled in exchange for promised goods or services. The

Company’s performance obligations are satisfied either over time or at a point in time, which can result in different revenue recognition patterns.

The following table illustrates the timing of the Company’s revenue recognition patterns:

	Year Ended December 31,		
	2022	2021	2020

Year Ended December 31,		
2023		

	Year Ended December 31,	
2023	2022	2021

Software products and services – point in time	Software products and services – point in time	47.3 %	55.5 %	55.0 %	Software products and services – point in time	49.1	%	47.3	%	55.5	%
Software products and services – over time	Software products and services – over time	27.6	26.6	30.6							
Drug Discovery – point in time	Drug Discovery – point in time	8.8	3.3	6.7							
Drug Discovery – over time	Drug Discovery – over time	16.3	14.6	7.7							

(a) Software Products and Services

The Company enters into contracts that can include various combinations of licenses, products and services, some of which are distinct and are accounted for as separate performance obligations. For contracts with multiple performance obligations, the Company allocates the transaction price of the contract to each performance obligation on a relative standalone selling price ("SSP") basis. Revenue is recognized net of any sale and value-added taxes collected from customers and subsequently remitted to governmental authorities.

The Company's software business derives revenue from five sources: (i) on-premise software license fees, (ii) hosted software subscription fees, (iii) software maintenance fees, (iv) professional services fees, and (v) contributions.

*On-premise software.*The Company's on-premise software license arrangements grant customers the right to use its software on their own in-house servers or their own cloud instances for a specified term, typically for one year. year, though in recent years, the Company has entered into a small number of large multi-year on-premise software license agreements. The Company recognizes revenue for on-premise software license fees upfront, either upon delivery transfer of control of the license or the effective date of the agreement, whichever is later. In instances where the timing of delivery differs from the timing of invoicing, the Company considers whether a significant financing component exists.The Company has elected the practical expedient to not assess for significant financing where the term is less than one year. The Company's updates and upgrades are not integral to maintaining the utility of the software licenses. Payments typically are received upfront or annually.

Hosted software. Hosted software revenue consists primarily of fees to provide the Company's customers with hosted licenses, which allows these customers to access the Company's Company's cloud-based software solution on their own hardware without taking control of licenses. Hosted software the licenses, and is recognized ratably over the term of the arrangement. arrangement, which is typically one year, though in recent years, the Company has entered into a small number of large multi-year hosted software license agreements. When a customer enters into a hosted arrangement for which revenue is recognized over time, the amount paid upfront that is not recognized in the current period is included in deferred revenue in the Company's statement of financial position until the period in which it is recognized.

Software maintenance. Software maintenance includes technical support, updates, and upgrades related to our the Company's on-premise software licenses. Software maintenance revenue is considered to be a separate performance obligation and is recognized ratably over the term of the arrangement.Software maintenance activities are performed in connection with the use of the Company's on-premise software, and may fluctuate from period to period.

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Professional services. Professional services include training, technical setup, installation or assisting customers with modeling and structural biology services, where the Company uses its software to perform tasks such as virtual screening and homology modeling on behalf of the Company's customers. These services are generally not related to the core functionality of the Company's software and are recognized as revenue when resources are consumed. The Company has historically estimated project status with relative accuracy, although Since each professional services agreement represents a number of internal and external factors can affect such estimates, including labor rates, utilization and efficiency variances. Payments for unique, ad hoc engagement, professional services are due in advance or upon consumption of resources. revenue may fluctuate from period to period.

Software contribution revenue. Software contribution revenue consists of funds received under a non-reciprocal agreement with Gates Ventures, LLC. LLC originally entered into in June 2020 and further extended through August 2026. The agreement is an unconditional non-exchange contribution without restrictions. Revenue was recognized annually

from June 2020 through June 2022 and upon execution extension of the agreement and on the first anniversary of the agreement in August 2023, when invoiced, in accordance with ASC Topic 958, *Not-for-Profit Entities* as the agreement is not an exchange transaction.

The agreement with Gates Ventures, LLC covers initially covered the period from June 23, 2020 through June 22, 2023 for total consideration of up to $3,000. The Company recognized revenue of $1,000 upon entry to into the agreement and $1,000 upon each of the first and second anniversary of the agreement. During the period ended September 30, 2023, the agreement was extended through August 13, 2026 and provides for total additional consideration of up to $6,000. The Company recognized revenue of $1,800 upon extension of the agreement. As of December 31, 2022 December 31, 2023, the Company had no deferred revenue balance related to this agreement. As of December 31, 2022, December 31, 2023 and 2022, the Company had no accounts receivable related to this agreement.

The following table presents the revenue recognized from the sources of software products and services revenue:

	Year Ended December 31,			Year Ended December 31,		
	2022	2021	2020	2023	2022	2021
On-premise software	$ 84,487	$ 74,598	$58,311			
Hosted software	14,890	11,076	9,192			
Software maintenance	19,996	17,294	14,465			
Professional services	15,205	9,268	9,562			
Revenue from contracts with customers	134,578	112,236	91,530			
Software contribution	1,000	1,000	1,000			
Total software revenue	$135,578	$113,236	$92,530			

(b) Drug Discovery

Drug discovery services. Revenue from drug discovery and collaboration services contracts is recognized either over time or at a point in time, typically by using costs incurred, hours expended to measure progress, or based on the achievement of milestones. Payments for services are generally due upfront at the start of a contract, upon achieving milestones stated in a contract, or upon consumption of resources. Services may at times include variable consideration, and the Company has estimated the amount of consideration that is variable using the most likely amount method. The Company evaluates milestones on a case-by-case basis, including whether there are factors outside the Company's control that could result in a significant reversal of revenue, and the likelihood and magnitude of a potential reversal. If achievement of a milestone is not considered probable, the Company constrains (reduces) variable consideration to exclude the milestone payment until it is probable to be achieved. Upon removal of the constraint on variable consideration, revenue may be recognized at a point in time or over time by applying the allocation guidance of ASC Topic 606. 606, Revenue from Contracts with Customers ("Topic 606").

As of December 31, 2022 December 31, 2023, 2021, 2022, and 2020, 2021, milestones not yet achieved that were determined to be probable of achievement totaled $350, $4,000, $2,250, and $250, $2,250, respectively, and $350, $3,939, $2,250, and $85 $2,250 of those milestones were recognized as revenue for the years ended December 31, 2022 December 31, 2023, 2022, and 2021, and 2020, respectively.

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Drug discovery contribution revenue. Drug discovery contribution revenue consists of funds received under an agreement with the Bill and Melinda Gates Foundation on a cost reimbursement basis, to perform services aimed at accelerating drug discovery in women's health, which health. The initial agreement began in November 2021. 2021 and expired in September 2023. In September 2023, the Company entered into a new agreement with the Bill and Melinda Gates Foundation to perform services aimed at accelerating drug discovery in women's health that expires in October 2025. Revenue is recognized as conditions are met in accordance with ASC Topic 958, *Not-for-Profit Entities. Entities.* As of December 31, 2022 December 31, 2023 and 2021, 2022, the Company had deferred revenue balances related to this agreement these agreements of $1,718 $1,581 and $1,129, $1,718, respectively.

The following table presents the revenue recognized from the sources of drug discovery revenue:

	Year Ended December 31,			Year Ended December 31,		
	2022	2021	2020	2023	2022	2021

Drug discovery services revenue from contracts with customers	Drug discovery services revenue from contracts with customers	$43,427	$24,584	$15,565
Drug discovery contribution	Drug discovery contribution	1,950	111	—
Total drug discovery revenue	Total drug discovery revenue	$45,377	$24,695	$15,565

(c) Collaboration and License Agreement

On November 22, 2020, the Company entered into an exclusive, worldwide collaboration and license agreement with Bristol-Myers Squibb Company ("BMS"), pursuant to which the Company and BMS have agreed to collaborate in the discovery, research and preclinical development of new small molecule compounds for disease indications in oncology, neurology, and immunology therapeutics areas. Under the agreement, the Company was initially responsible, at its own cost and expense, for the discovery of small molecule compounds directed to five specified biological targets pursuant to a mutually agreed research plan for each such target. The initial targets included HIF-2 alpha and SOS1/KRAS, which were two of the Company's wholly-owned proprietary programs. In November 2021, the Company and BMS mutually agreed to replace the HIF-2 alpha target with another precision oncology target. Following the replacement election, all rights to the HIF-2 alpha target program reverted to the Company. In September 2022, BMS elected not to proceed with further development of another target and all rights to this program reverted to the Company, which increased revenue recognition in the third quarter of 2022 due to the accelerated completion of our the Company's obligations related to the program. In December 2022, the Company and BMS entered into an amendment to the agreement to include an additional target in neurology on terms similar to the original agreement. In September 2023, BMS elected not to proceed with further development of two related oncology programs and all rights to these programs reverted to the Company, which increased revenue recognition in the third quarter of 2023 due to the accelerated completion of the Company's obligations related to those programs.

Once a development candidate meeting specified criteria for a target under the agreement has been identified by the Company, BMS will be solely responsible for the further development, manufacturing and commercialization of such development candidate at its own cost and expense.

Under the terms of the agreement, as amended, BMS paid the Company an initial upfront fee payment of $55.0 million in November 2020 and an additional upfront payment in December 2022. The Company also is eligible to receive up to $2.7 billion $1.5 billion in total milestone payments across all the potential currently targets subject to the collaboration, consisting of: a) up to $585.0 million in milestone payments per oncology target, including consisting of $360.0 million in the aggregate for the achievement of certain specified research, development, and regulatory milestones and $225.0 million in the aggregate for the achievement of certain specified commercial milestones; and b) up to $489.0 million in milestone payments per neurology and immunology target, including consisting of $264.0 million in the aggregate for the achievement of certain specified research, development, and regulatory milestones and $225.0 million in the aggregate for the achievement of certain specified commercial milestones. As of December 31, 2023, the Company has recognized $25.0 million in revenue related to milestones under this agreement.

The Company is also entitled to a tiered percentage royalty on annual net sales ranging from mid-single digits to low-double digits, subject to certain specified reductions. Royalties are payable by BMS on a licensed product-by-licensed product and country-by-country basis until the later of the expiration of the last valid claim covering the licensed product in such country, expiration of all applicable regulatory exclusivities in such country for such licensed product and the tenth anniversary of the first commercial sale of such licensed product in such country.

The Company assessed the collaboration and license agreement in accordance with Topic 606, and concluded that BMS is a customer based on the agreement structure. At inception, the Company identified one performance obligation for

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each of the five programs initially covered under the agreement, which includes research activities for each program and a license grant for the underlying intellectual property. The Company determined that the license grant for intellectual property is not separable from the research activities, as the research activities are expected to significantly modify or enhance the license grant over the period of service, and therefore are not distinct in the context of the contract.

The Company determined that the transaction price at the onset of the agreement is $55.0 million. Additional consideration to be paid to the Company upon the achievement of future milestone payments were excluded from the transaction price as they represent milestone payments that are not considered probable as of the inception date such that there is not a significant risk of revenue reversal.

The Company has allocated the transaction price of $55.0 million to each performance obligation based on the SSP of each performance obligation at inception, which was determined based on each performance obligation's estimated SSP. The Company determined the estimated SSP at contract inception of the research activities based on internal estimates of the costs to perform the services, inclusive of a reasonable profit margin. Significant inputs used to determine the total costs to perform the research activities included the length of time required, the internal hours expected to be incurred on the services and the number and costs of various studies that will be performed to complete the research plan.

Revenue associated with the research activities is recognized on a proportional performance basis over the period of service for research activities, using input-based measurements of total costs of research incurred to estimate the proportion performed. Progress towards completion is remeasured at the end of each reporting period.

During the years ended December 31, 2022 December 31, 2023, 2021, 2022, and 2020, 2021, the Company recognized $22.1 million $43.2 million, $13.7 million $22.1 million, and $1.0 million, $13.7 million of revenue, respectively, associated with the agreement based on the research activities performed. performed and milestones achieved. As of December 31, 2022 December 31, 2023 and 2021, 2022, there was $25.5 $7.3 million and $40.3 $25.5 million of deferred revenue related to the agreement, which was classified as either current or non-current in the consolidated balance sheet based on the period the services are expected to be performed. There was $8.0 of were no outstanding receivables for this collaboration as of December 31, 2022 December 31, 2023.

(d) Significant Judgments

Significant judgments and estimates are required under Topic 606. Due to the complexity of certain contracts, the actual revenue recognition treatment required under Topic 606 for the Company's arrangements may be dependent on contract-specific terms and may vary in some instances.

The Company's contracts with customers often include promises to transfer multiple software products and services, including training, professional services, technical support services, and rights to unspecified updates. Determining whether licenses and services are distinct performance obligations that should be accounted for separately, or are not distinct and therefore should be accounted for together, requires significant judgment. In some arrangements, such as most of the Company's term-based software license arrangements, the Company has concluded that the licenses and associated services are distinct from each other. In other arrangements, including collaboration services arrangements, the licenses and certain services may not be distinct from each other. The Company's time-based software arrangements may include multiple software licenses and a right to updates or upgrades to the licensed software products, and technical support. The Company has concluded that such promised goods and services are separate distinct performance obligations.

The Company is required to estimate the total consideration expected to be received from contracts with customers, including any variable consideration. For collaborative arrangements, under which we are the Company is eligible to receive variable consideration in the form of milestones payments, we judgment is required to evaluate whether the milestones are considered probable of being achieved. If it is probable that a significant revenue reversal would not occur, the constraint is removed and value of the associated milestone is included in the estimated transaction price using the most likely amount method based on contractual requirements and historical experience. Once the estimated transaction price is established, amounts are allocated to the performance obligations that have been identified. The transaction price is allocated to each separate performance obligation on a relative SSP basis consistent with the allocation objectives of Topic 606.

Judgment is required to determine the SSP for each distinct performance obligation. The Company rarely licenses or sells products on a standalone basis, so the Company is required to estimate the range of SSPs for each performance obligation. In instances where the SSP is not directly observable because the Company does not sell the license, product, or service separately, the Company determines the SSP using information that includes historical discounting practices, market conditions, cost-plus analysis, and other observable inputs. The Company typically has more than one SSP for

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individual performance obligations due to the stratification of those items by volume of sales, classes of customers and other relevant circumstances. In these instances, the Company may use information such as the size and geographic region of the customer in determining the SSP. Professional service revenue is recognized as costs and hours are incurred, and judgment is required in estimating both the project status and the costs incurred or hours expended.

If a group of agreements are so closely related to each other that they are, in effect, part of a single arrangement, such agreements are deemed to be one arrangement for revenue recognition purposes. The Company exercises significant judgment to evaluate the relevant facts and circumstances in determining whether the separate agreements should be accounted for separately or as, in substance, a single arrangement. The Company's judgments about whether a group of contracts comprises a single arrangement can affect the allocation of consideration to the distinct performance obligations, which could have an effect on results of operations for the periods involved.

Judgment is required to determine the total costs to perform research activities, which include the length of time required, the internal hours expected to be incurred on the services, and the number and costs of various studies that may be performed by third-parties to complete the research plan.

Generally, the Company has not experienced significant returns or refunds to customers.

The Company's estimates related to revenue recognition may require significant judgment and a change in these estimates could have an effect on the Company's results of operations during the periods involved.

(e) Contract Balances

The timing of revenue recognition may differ from the timing of invoicing to customers and these timing differences result in receivables, contract assets, or contract liabilities (deferred revenue) on the consolidated balance sheets. The Company records a contract asset when revenue is recognized prior to invoicing. A deferred revenue liability is recorded when revenue is expected to be recognized subsequent to invoicing. For the Company's time-based software agreements, customers are generally invoiced at the beginning of the arrangement for the entire term, though when the term spans multiple years the customers may be invoiced on an annual basis. For certain drug discovery agreements where the milestones are deemed probable in a period prior to when the milestone is achieved, the Company records a contract asset for the full value of the milestone.

Contract assets are included in unbilled and other receivables within the consolidated balance sheets and are transferred to receivables when the Company invoices the customer.

Contract balances were as follows:

		As of December 31, 2022	As of December 31, 2021		As of December 31, 2023	As of December 31, 2022
Contract assets	Contract assets	$11,378	$ 8,271			
Deferred revenue, short-term:	**Deferred revenue, short-term:**			**Deferred revenue, short-term:**		
Software products and services	Software products and services	37,085	32,945			
Drug discovery	Drug discovery	20,846	22,423			
Deferred revenue, long-term:	**Deferred revenue, long-term:**			**Deferred revenue, long-term:**		
Software products and services	Software products and services	2,526	3,938			
Drug discovery	Drug discovery	23,072	26,126			

For the years ended December 31, 2022 December 31, 2023 and 2021, respectively, 2022, the Company recognized $60,039 $64,120 and $42,127 $60,039 of revenue, respectively, that was included in deferred revenue at the end of the respective preceding periods. All other deferred revenue activity is due to the timing of invoices in relation to the timing of revenue, as described above. The Company expects to recognize as revenue approximately 69% 86% of its December 31, 2022 December 31, 2023 deferred revenue balance in the next 12 months and the remainder thereafter. Additionally, contracted but unsatisfied performance obligations that had not yet been billed to the customer or included in deferred revenue were $20,205 $36,357 as of December 31, 2022 December 31, 2023.

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Payment terms and conditions vary by contract type, although terms typically require payment within 30 to 60 days. In instances where the timing of revenue recognition differs from that of invoicing, the Company has determined that its contracts generally do not include a significant financing component. The primary purpose of invoicing terms is to provide customers with simplified and predictable ways of purchasing the Company's products and services, not to facilitate financing arrangements.

(f) Deferred Sales Commissions

The Company has applied the practical expedient for sales commission expense, as any material compensation paid to sales representatives to obtain a contract relates to a period of one year or less. Therefore, the The Company has not capitalized any costs related to sales commissions.

(4) Property and Equipment

Property and equipment consisted of the following:

		As of December 31,	
		2022	2021
	As of December 31,		
	2023		
Computers and equipment	Computers and equipment	$20,387	$16,059
Leasehold improvements	Leasehold improvements	2,229	2,276
Furniture and fixtures	Furniture and fixtures	5,665	4,045
Lab equipment	Lab equipment	76	—
		28,357	22,380

	As of December 31,	
	2023	2022

Right of use asset - finance leases			
	41,475		
Less accumulated depreciation	Less accumulated depreciation	(14,113)	(12,355)
		$14,244	$10,025
	$		

Depreciation expense for 2023, 2022, and 2021 was $4,965, $3,831, and 2020 was $3,831, $2,847, and $3,658, respectively, and is included within cost of revenues and research and development, sales and marketing, and general and administrative expenses within the consolidated statements of operations.

(5) Business Acquisition

On January 14, 2022, the Company used cash on hand to acquire all outstanding shares of XTAL BioStructures, Inc. (“XTAL”), a company that provides structural biology services, including biophysical methods, protein production and purification, and X-ray crystallography. The transaction qualified as a business combination for accounting purposes, which involves application of the acquisition method described in ASC 805, *Business Combinations* ("Topic 805. 805"). The cash purchase price was approximately $7,429 which included $6,427 in upfront purchase price, net of cash acquired. The acquisition of XTAL enables the Company to pursue scientific advancements in the field of structural biology, augment its ability to produce high quality target structures for its proprietary drug discovery programs, and expand its offerings to include an advanced and differentiated service that provides customers access to protein structures that have been computationally validated and are ready for structure-based virtual screening and lead optimization, giving rise to expected benefits supporting the amount of acquired goodwill.

The following table summarizes the fair values of the assets acquired and liabilities assumed by the Company as of the January 14, 2022 acquisition date. The business combination accounting under Topic 805 was finalized for this acquisition during the three months ended June 30, 2022, with no changes to the provisional amounts disclosed for the three months ended March 31, 2022. The Company has elected to use both practical expedients provided by ASU No. 2021-08

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for the valuation of contract assets and contract liabilities from contracts with customers, with no material impact to the consolidated financial statements.

Cash	$
Accounts receivable	
Other current assets	
Property, plant and equipment	
Intangible assets	
Goodwill	
Total assets acquired	
Current liabilities	
Deferred tax liability	
Total liabilities assumed	
Net assets acquired	$

The following table summarizes the purchase price allocation to the identifiable intangible assets and their estimated useful lives as of the January 14, 2022 acquisition date: date. All intangibles have been fully amortized as of December 31, 2023:

	Amount	Useful Life (years)
Backlog	$ 270	1
Customer relationships	710	5
Tradename/Trademark	120	1
	$ 1,100	

The results of operations for XTAL beginning as of the January 14, 2022 acquisition date are included in these consolidated financial statements. For the fiscal year ended December 31, 2022, the amount of revenues and net income of XTAL were not material to the consolidated financial statements taken as a whole. Because the pro forma results of operations of the Company for the periods presented in these consolidated financial statements would not be materially different as a result of the acquisition, such information is not

presented. The costs incurred to acquire XTAL were not material and have been fully expensed and are included in general and administrative expenses in the consolidated statements of operations. Amortization of intangibles was $513 $587 and zero $513 in general and administrative expenses as of December 31, 2022 December 31, 2023 and 2021, 2022, respectively.

(6) Fair Value Measurements

Various inputs are used in determining the fair value of the Company's financial assets and liabilities. These inputs are summarized into the following three broad categories:

Level 1 – quoted prices in active markets for identical securities

Level 2 – other significant observable inputs, including quoted prices for similar securities, interest rates, credit risk, etc.

Level 3 – significant unobservable inputs, including the Company's own assumptions in determining fair value

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The inputs or methodology used for valuing securities are not necessarily an indication of the risk associated with investing in those securities. Marketable securities, which consist primarily of corporate and U.S. government agency bonds, are classified as available for sale and fair value did not differ significantly from carrying value as of December 31, 2022 December 31, 2023 and 2021. 2022. The following table presents information about the Company's assets and liabilities measured at fair value as of December 31, 2022 December 31, 2023:

	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets:	**Assets:**							
Cash and cash equivalents and restricted cash								
Cash and cash equivalents and restricted cash								
Cash and cash equivalents and restricted cash	Cash and cash equivalents and restricted cash	$ 95,717	$ —	$ —	$ 95,717			
Marketable securities	Marketable securities	$ —	$360,613	$ —	$360,613			
Equity investments	Equity investments	22,335	—	1,629	23,964			
Total	**Total**	$118,052	$360,613	$1,629	$480,294			

The following table presents information about the Company's assets and liabilities measured at fair value as of December 31, 2021 December 31, 2022:

	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets:	**Assets:**							
Cash and cash equivalents and restricted cash								
Cash and cash equivalents and restricted cash								
Cash and cash equivalents and restricted cash	Cash and cash equivalents and restricted cash	$123,267	$ —	$ —	$123,267			
Marketable securities	Marketable securities	$ —	$456,212	$ —	$456,212			

Equity investments	Equity investments	39,561	—	1,887	41,448
Total	**Total**	$162,828	$456,212	$1,887	$620,927

Fair value of the Company's investments in Nimbus Therapeutics, LLC ("Nimbus"), Structure Therapeutics Inc., formerly known as ShouTi Inc., ("Structure Therapeutics"), and Eonix, LLC ("Eonix"), classified as Level 3 in the fair value hierarchy, was determined under the hypothetical liquidated book value method ("HLBV method"), as further described in Note 13, Equity Investments. Significant unobservable inputs used under the HLBV method include Nimbus', Structure Therapeutics', and Eonix's annual financial statements and the Company's respective liquidation priorities. The following table sets forth changes in fair value of the Company's Level 3 investments:

	Amount
As of December 31, 2020 December 31, 2021	$ —
Cash contributions	2,000
Unrealized loss	(113)
As of December 31, 2021	1,887
Cash contributions	600
Unrealized loss	(858)
As of December 31, 2022	1,629
Realized gain	147,213
Cash distributions	(147,213)
Transfer to Level 1	(1,629)
Unrealized gain	1,928
As of December 31, 2023	$ 1,629 1,928

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The fair value of the Company's investment in Nimbus Therapeutics, LLC ("Nimbus"), classified as Level 3 in the fair value hierarchy, was recorded as an equity method investment under ASC Topic 323, *Investments -Equity Method and Joint Ventures,* using the hypothetical liquidated book value method ("HLBV method") through June 30, 2023, as further described in Note 13, Equity Investments. Significant unobservable inputs used to determine Nimbus' fair value under the HLBV method were the entity's annual financial statements and the Company's liquidation preference. During the year ended December 31, 2023, the Company recorded a gain of $147,213 on account of its equity position in Nimbus following the closing of Takeda's acquisition of Nimbus Lakshmi, Inc., a wholly-owned subsidiary of Nimbus, and its tyrosine kinase 2 inhibitor, NDI-034858. On February 13, 2023, the Company reported receipt of a $111,328 cash distribution from Nimbus related to the sale. On April 6, 2023, the Company reported receipt of a $35,789 cash distribution from Nimbus related to the sale. On November 9, 2023, the Company reported receipt of a $96 cash distribution from Nimbus related to the sale. The realized gain on Level 3 investment during the year ended December 31, 2023 relates to these cash distributions from Nimbus. Following the dilution of the Company's investment in Nimbus during the three months ended September 30, 2023, the fair value of the Company's investment is recorded under ASC Topic 321as a non-marketable equity security as the Company no longer exercises significant influence over Nimbus. This change in accounting method resulted in an unrealized gain of $1,928.

During the three months ended March 31, 2023, the Company recorded a transfer of $1,629 from a Level 3 investment to a Level 1 investment due to the completion of Structure Therapeutics Inc.'s, ("Structure Therapeutics"), initial public offering ("IPO"). The Company's investment in Structure Therapeutics was previously recorded using the HLBV method. Following the completion of Structure Therapeutics' IPO, the Company's investment in Structure Therapeutics is recorded under Topic 321 because there is an observable price of the investment. During the year ended December 31, 2022 there were no transfers between Level 1, Level 2 and Level 3 investments.

Unrealized gains and losses arising from changes in fair value of the Company's equity investments are classified within change in fair value in the consolidated statements of operations. During Realized gains arising from distributions receivable from the years ended December 31, 2022 and Company's equity investments are classified within gain on equity investments in the consolidated statements of operations.

2021, there were no transfers between Level 1, Level 2 and Level 3 investments. See For further information regarding the Company's equity investments, see Note 13, Equity Investments, for further information. Investments.

(7) Commitments and Contingencies

(a) Leases

The Company has multiple operating leases for office space under operating leases and a finance lease for equipment that expire at various dates through 2037. The Company has elected the package of practical expedients under the transition guidance of ASC Topic 842, *Leases*, to exclude short-term leases from the balance sheet and to

combine lease and non-lease components. The Company classifies finance lease right of use assets under property and equipment, net and finance short-term and long-term lease liabilities under other accrued liabilities and other liabilities, long-term, respectively.

Upon inception of a lease, the Company determines if an arrangement is a lease, if it is classified as an operating or finance lease, if it includes options to extend or terminate the lease, and if it is reasonably certain that the Company will exercise the options. Lease cost, representing lease payments over the term of the lease and any capitalizable direct costs less any incentives received, is recognized on a straight-line basis over the lease term as lease expense.

In determining the present value of lease payments, the Company uses its incremental borrowing rate based on the information available at the lease commencement date if the rate implicit in the lease is not readily determinable. Upon execution of a new lease, the Company performs an analysis to determine its incremental borrowing rate using its current borrowing rate, adjusted for various factors including level of collateralization and lease term. As of December 31, 2022 December 31, 2023, the remaining weighted average lease term for operating and finance leases was 13 12 years.

During the year ended December 31, 2022 December 31, 2023, right-of-use operating lease right of use ("ROU") assets increased by $34,763 $15,173 due to the accounting commencement of seven five new leases and by $2,824 $4,388 due to a contingency resolution resolutions associated with the Company's New York office lease. leases. During the same period, operating lease liabilities increased by $34,430 $15,085 due the accounting commencement of the new leases. During the year ended December 31, 2023, finance lease right of use assets increased by $579 and finance lease liabilities increased by $279 due to the accounting commencement of an equipment lease for the Company's Framingham, Massachusetts lab.

On August 15, 2022, the Company entered into an office lease agreement for 17,500 square feet

Table of office space in Framingham, Massachusetts. Under the terms of the agreement, the Company is obligated to pay base rent of approximately $114 per month with a 2% annual rental escalation each year. The Company estimates that the lease commencement date will occur during the three months ending June 30, 2023 and continue to the end of the lease, which is ten years after commencement.Contents

On December 20, 2022, the Company entered into a service agreement with a contract research organization, which includes the use of 12,000 square feet of lab space and lab equipment in Hyderabad, India. This agreement has been identified as an embedded lease in this contract research agreement. Under the terms of the agreement, the Company is obligated to pay a base fee of approximately $29 per month for the first year, and $56 per month for the four remaining years. The Company estimates that the lease commencement date will occur during the three months ending June 30, 2023 and continue to the end of the lease, which is five years after commencement.

Variable and short-term lease costs for the Company's operating and finance leases were immaterial for the year ended December 31, 2022 December 31, 2023. Additional details of the Company's operating and finance leases are presented in the following table:

	Year Ended December 31,		
	2022	2021	2020
Operating lease costs	$ 11,999	$ 7,627	$ 5,895
Cash paid for operating leases	3,275	4,561	6,050

	Year Ended December 31,		
	2023	2022	2021
Lease costs	$ 16,769	$ 11,999	$ 7,627
Cash paid for leases	12,263	3,275	4,561

Maturities of operating and finance lease liabilities as of December 31, 2022 December 31, 2023 under noncancelable operating leases were as follows:

Year ending December 31:	Year ending December 31:	
2023		$ 11,396
2024		
2024		
2024	2024	14,454
2025	2025	14,547
2026	2026	14,142
2027	2027	12,978
2028		
Thereafter	Thereafter	119,602
Total future minimum lease payments	Total future minimum lease payments	187,119
Less: imputed interest	Less: imputed interest	(70,628)
Present value of future minimum lease payments	Present value of future minimum lease payments	116,491
Less: current portion of operating leases payments		(11,006)
Less: current portion of lease payments		
Lease liabilities, long-term	Lease liabilities, long-term	$ 105,485

(b) Legal Matters

From time to time, the Company may become involved in routine litigation arising in the ordinary course of business. While the results of such litigation cannot be predicted with certainty, management believes that the final outcome of such matters is not likely to have a material adverse effect on the Company's financial position or results of operations or cash flows.

(c) Contingencies

The Company is currently under audit with a royalty partner. As of December 31, 2023, the Company believes a contingency is probable and has accrued $2,500 related to this audit.

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(8) Income Taxes

Income tax expense is comprised of the following:

	Year ended December 31,		
	2022	2021	2020

	Year Ended December 31,			Year Ended December 31,		
	2023			2023	2022	2021
Current:	**Current:**					
Federal	Federal	$(195)	$ —	$ —		
State	State	(280)	67	178		
Foreign	Foreign	538	344	167		
Current income tax expense	Current income tax expense	63	411	345		
Deferred:	**Deferred:**					
Federal	Federal	—	—	—		
Federal	Federal					
State	State	—	—	—		
Foreign	Foreign	—	—	—		
Deferred income tax expense	Deferred income tax expense	—	—	—		
Income tax expense	Income tax expense	$ 63	$411	$345		

Components of loss income (loss) before income taxes by tax jurisdiction were as follows:

	Year ended December 31,		
	2022	2021	2020

	Year Ended December 31,			Year Ended December 31,		
	2023			2023	2022	2021
United States	United States	$(150,147)	$(101,341)	$(24,567)		
Foreign	Foreign	1,021	1,359	449		
Loss before income taxes		$(149,126)	$ (99,982)	$(24,118)		

Income (loss) before income taxes

Reconciliation of income tax expense at the applicable statutory income tax rates to the effective income tax rate is as follows:

	Year ended December 31,		
	2022	2021	2020
Statutory federal income tax rate	21.0 %	21.0 %	21.0 %
State taxes, net of federal benefits	5.1	4.9	14.2
Section 162(m) limitation	(1.1)	(5.2)	(12.8)
Stock compensation	0.6	12.4	68.5
Return-to-provision adjustments	0.2	(1.7)	(1.3)
Research and development credit	3.1	6.3	6.2
Tax contingencies, net of reversals	(0.3)	(0.7)	(0.6)
Change in valuation allowance	(28.6)	(37.2)	(95.0)
Other	—	(0.2)	(1.6)
Effective income tax rate	— %	(0.4)%	(1.4)%

	Year Ended December 31,		
	2023	2022	2021
Statutory federal income tax rate	21.0 %	21.0 %	21.0 %
Effective income tax rate	5.1 %	— %	(0.4) %

The Income tax expense for the year ended December 31, 2023 represents our federal and certain state income tax obligations and taxes in foreign jurisdictions for which we conduct business. Income tax expense for the years ended December 31, 2022, and 2021 and 2020 primarily related to state taxes represents our income tax obligations in certain states and taxes in foreign jurisdictions. jurisdictions in which we conduct business. As of December 31, 2023, the Company has a full valuation allowance on U.S. federal and state deferred tax assets.

The total change in valuation allowance for the year ended December 31, 2022 December 31, 2023 was $42,653, $1,926, which was primarily was due to the generation temporary differences for capitalized research and development expenses and share based compensation, partially offset by adjustments to equity method investments.

Table of net operating losses.Contents

Tax effects of temporary differences that give rise to significant portions of deferred income tax assets and deferred income tax liabilities were as follows:

	As of December 31,		
	2022	2021	2020
Deferred income tax assets:			

	As of December 31,		
	2023	2022	2021

Net operating loss carryforwards	Net operating loss carryforwards	$ 67,758	$67,985	$51,498
Net operating loss carryforwards				
Net operating loss carryforwards				
Capitalized research and development				
Accrued expenses	Accrued expenses	48,873	10,309	7,918
Deferred revenue	Deferred revenue	6,532	10,632	394
Lease liabilities	Lease liabilities	28,952	18,773	2,165
Credits	Credits	18,456	14,559	8,752
Gross deferred tax assets	Gross deferred tax assets	170,571	122,258	70,727
Less valuation allowance	Less valuation allowance	(137,957)	(95,304)	(58,155)
Net deferred tax assets	Net deferred tax assets	32,614	26,954	12,572
Deferred income tax liabilities:	Deferred income tax liabilities:			
Unrealized gain on equity investments	Unrealized gain on equity investments	(4,439)	(8,545)	(10,185)
Unrealized gain on equity investments				
Unrealized gain on equity investments				
Prepaid expenses	Prepaid expenses	(1,435)	(969)	(889)
Depreciation and amortization	Depreciation and amortization	(26,740)	(17,440)	(1,498)
Net deferred income tax assets	Net deferred income tax assets	$ —	$ —	$ —

As of December 31, 2022 December 31, 2023, the Company had federal and state net operating loss ("NOL") carryforwards of $270,940 $179,076 and $169,955, $98,576, respectively. These The state NOL carryforwards with the exception of federal NOLs generated post 2017, will expire between 2023 2025 and 2042, if not used by the Company to reduce income taxes payable in future periods. Utilization of post 2017 utilized. The federal NOL carryforwards are limited to 80% of taxable income generated in a given year and carry forward indefinitely. As of December 31, 2022 December 31, 2023, the Company had federal and state research and development tax credit carryforwards of $19,521 $23,336 and $1,318, $1,598, respectively. These carryforwards will expire between 2023 2024 and 2042 2043 if not used by the Company to reduce income taxes payable in future periods.

utilized.

Pursuant to Internal Revenue Code Sections 382 and 383, the utilization of NOLs and other tax attributes may be substantially limited due to cumulative changes in ownership greater than 50% that may have occurred or could occur during applicable testing periods. The Company has performed an analysis through December 31, 2022 December 31, 2023 and determined that such an ownership change occurred on March 31, 2021. There was no material impact to the financial statements due to this ownership change.

The Company has not recognized a deferred tax liability for the undistributed earnings of its foreign operations as the Company considers these earnings to be indefinitely reinvested.

The Company classifies interest and penalties related to unrecognized tax benefits within income tax expense in the consolidated statement of operations. Following is a reconciliation of total gross unrecognized tax benefits:

	Year ended December 31,		
	2022	2021	2020
Balance, January 1	$1,702	$1,046	$ 902
Additions for tax positions taken in prior years	35	282	25
Reductions for tax positions taken in prior years	(24)	(20)	(16)
Additions for tax positions related to the current year	429	394	135
Balance, December 31	$2,142	$1,702	$1,046

	Year Ended December 31,		
	2023	2022	2021
Balance, January 1	$1,702	$1,046	$ 902
Additions for tax positions taken in prior years	35	282	25
Reductions for tax positions taken in prior years	(24)	(20)	(16)
Additions for tax positions related to the current year	429	394	135
Balance, December 31	$2,142	$1,702	$1,046

The Company does not anticipate any significant increases or decreases in its uncertain tax positions within the next 12 months.

The Company and its subsidiaries file U.S. federal income tax returns and various state, local and foreign income tax returns. As of December 31, 2022 December 31, 2023, the Company's statutes of limitations are open for all federal and state years tax

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returns filed after the years ended December 31, 2018 December 31, 2020 and 2017, 2019, respectively. Net operating loss NOL and credit carryforwards for all years are subject to examination and adjustments for the three years following the year in which the carryforwards are utilized. The Company is not currently under Internal Revenue Service or state examination.

(9) Stockholders' Equity (Deficit)

(a) Common Stock

As of December 31, 2022 December 31, 2023, the Company had authorized 500,000,000 shares of common stock with a par value of $0.01 per share. Holders of common stock are entitled to one vote per share, to receive dividends, if and when declared by the board of directors, and upon liquidation or dissolution, to receive a portion of the assets available for distributions to stockholders, subject to preferential amounts owed to holders of the Company's preferred stock, if any.

Common stockholders have no preemptive or other subscription rights and there are no redemption or sinking fund provisions with respect to such shares. The rights, preferences and privileges of holders of the common stock are subject to and may be adversely affected by the right of the holders of shares of any series of preferred stock that the Company may designate and issue in the future.

(b) Limited Common Stock

As of December 31, 2022 December 31, 2023, the Company had authorized 100,000,000 shares of limited common stock with a par value of $0.01 per share. Holders of limited common stock are entitled to one vote per share, however, the holders of limited common stock shall not be entitled to vote such shares in any election of directors or on the removal of directors. Holders of limited common stock are entitled to receive dividends, if and when declared by the board of directors, and upon liquidation or dissolution, to receive a portion of the assets available for distributions to stockholders, subject to preferential amounts owed to holders of the Company's preferred stock, if any. Holders of the Company's limited common stock have the right to convert each share of limited common stock into one share of the Company's common stock.

Limited common stockholders have no preemptive or other subscription rights and there are no redemption or sinking fund provisions with respect to such shares. The rights, preferences and privileges of holders of the limited common stock are subject to and may be adversely affected by the right of the holders of shares of any series of preferred stock that the Company may designate and issue in the future.

(c) Preferred Stock

As of December 31, 2022 December 31, 2023, the Company had authorized 10,000,000 shares of undesignated preferred stock with a par value of $0.01 per share. The Company's board of directors has the discretion to determine the rights, preferences, privileges, and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges, and liquidation preferences, of each series of preferred stock. stock.

(10) Stock-Based Compensation

Stock Incentive Plans

As of December 31, 2022 December 31, 2023, the Company's stock incentive plans included the 2010 Stock Plan (the "2010 Plan"), the 2020 Equity Incentive Plan (the "2020 Plan"), the 2021 Inducement Equity Incentive Plan, as amended (the "2021 Plan"), and the 2022 Equity Incentive Plan (the "2022 Plan") (together, the "Plans").

The 2022 Plan provides for the award of incentive stock options, nonstatutory stock options, stock appreciation rights, restricted stock awards, restricted stock units, other stock-based awards, and cash-based awards to employees, directors, consultants or advisors. Shares of common stock subject to outstanding awards granted under the 2020 Plan and the 2010 Plan that expire, terminate, or are otherwise surrendered, cancelled, forfeited, or repurchased by the Company are available for issuance under the 2022 Plan.

The 2021 Plan provides for the award of incentive stock options, nonstatutory stock options, stock appreciation rights, restricted stock awards, restricted stock units, and other stock-based awards to persons who were not previously an employee or director of the Company or who are commencing employment with the Company following a bona fide period of non-employment, in either case, as an inducement material to such person's entry into employment with the Company

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and in accordance with the requirements of the Nasdaq Stock Market Rule 5635(c)(4). Neither consultants nor advisors are eligible to participate in the 2021 Plan.

The 2020 Plan provided for the award of incentive stock options, nonstatutory stock options, stock appreciation rights, restricted stock awards, restricted stock units, and other stock-based awardsto employees, directors, consultants or advisors. As of June 15, 2022, the effective date of the 2022 Plan, no further awards will be made under the 2020 Plan. Any options or awards outstanding under the 2020 Plan remain outstanding and effective. are governed by the terms of the 2020 Plan.

The 2010 Plan provided for the granting of incentive stock options and nonstatutory stock options to employees, directors, consultants or advisors. As of the effective date of the 2020 Plan, no further awards will be made under the 2010 Plan. Any options or awards outstanding under the 2010 Plan remain outstanding and effective. are governed by the terms of the 2010 Plan.

As of December 31, 2022 December 31, 2023, there were 5,470,240 3,472,195 shares available for grant under the Plans. The following table presents classification of stock-based compensation expense within the consolidated statements of operations:

		Year Ended December 31,		
		2022	2021	2020
Year Ended December 31,				Year Ended December 31,
2023				2023 2022 2021
Cost of sales	Cost of sales	$ 5,382	$ 3,858	$ 1,384
Research and development	Research and development	11,816	7,440	3,050
Sales and marketing	Sales and marketing	2,818	1,281	516
General and administrative	General and administrative	19,614	13,911	5,595
Total stock-based compensation	Total stock-based compensation	$39,630	$26,490	$10,545

Restricted Stock Units

Each restricted stock unit ("RSU") represents the right to receive one share of the Company's common stock upon vesting. The fair value of RSUs granted by the Company was calculated based upon the Company's closing stock price on the date of the grant, and the stock-based compensation expense is recognized over the vesting period. RSUs generally vest over four years with 25% of the grants vesting at the end of the first year and the remaining vesting annually over the following three years.

Restricted stock unit activity was as follows:

	Number of shares	Weighted Average Grant Date Fair Value Per Share
Beginning, January 1, 2022	—	$ —

	Number of Shares	Number of Shares	Weighted Average Grant Date Fair Value Per Share
Beginning, January 1, 2023			
Granted	Granted	57,600	26.86
Vested	Vested	—	—
Forfeited	Forfeited	(8,800)	27.76
Balance, December 31, 2022		48,800	26.69
Balance, December 31, 2023			

The weighted average grant date fair value for each RSU granted during the year years ended December 31, 2022 December 31, 2023 and 2022 was $26.86. There was no intrinsic value of RSUs settled during 2022. $26.09 and $26.86, respectively.

As of December 31, 2022 December 31, 2023, there was $1,012 $15,375 of unrecognized compensation cost related to RSUs granted under the Plans, which is expected to be recognized over a weighted average period of 3.11 3 years. During the year ended December 31, 2023, 13,241 RSUs vested. The fair value of RSUs vested during the year ended December 31, 2023 was $355. No RSUs vested during twelve months year ended December 31, 2022.

Performance-Based Restricted Stock Units

In August 2022, February 2023, the Company awarded performance-based restricted stock units ("PRSUs") under the 2021 2022 Plan. Each PRSU represents a contingent right to receive one share of common stock upon the achievement of specified

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performance goals. The fair value of PRSUs granted by the Company was calculated based upon the Company's closing stock price on the date of the grant, and the stock-based compensation expense is recognized when the grant date is determined and performance conditions are probable of achievement. At the point where performance conditions are considered probable of achievement, the Company records stock-based compensation expense with a cumulative catch-up expense in the period first recognized and on a straight-line basis over the remaining period for which the performance criteria are expected to be completed.

Performance based restricted stock unit activity was as follows:

	Number of shares	Weighted Average Grant Date Fair Value Per Share
Beginning, January 1, 2022	—	$ —
Granted	30,150	28.55
Vested	—	—
Forfeited	—	—
Balance, December 31, 2022	30,150	28.55

During the year ended December 31, 2022, In February 2023, the Company awarded 90,000 to certain executive officers PRSUs to an employee for a maximum of which 30,150 62,693 shares (based on 150% achievement of the applicable performance conditions outlined in the awards), with a target award of 41,795 PRSUs (based on 100% achievement of the applicable performance conditions), and a threshold award of 20,898 PRSUs (based on 50% achievement of the applicable performance conditions). All PRSUs were considered granted under ASC 718, *Compensation—Stock Compensation*. ("Topic 718") in February 2023. The weighted average grant date fair value PRSUs granted in February 2023 are scheduled to vest, if at all, upon the certification by the Company's compensation committee of the achievement of the applicable performance conditions following the filing of the Company's Annual Report on Form 10-K for each PRSU the fiscal year ending December 31, 2025.

In August 2022, the Company awarded 90,000 PRSUs to an executive officer of which 30,150 PRSUs were considered granted during under Topic 718 at the year ended December 31, 2022 was $28.55. There was no intrinsic value time the PRSUs were awarded. In March 2023, of the 90,000 PRSUs settled during the year ended December 31, 2022. No awarded in August 2022, an additional 45,000 PRSUs vested during the year ended December 31, 2022. were considered granted under Topic 718. Of the 30,150 45,000 PRSUs that were considered granted during in March 2023, 18,000 PRSUs are scheduled to vest, if at all, upon the certification by the Company's compensation committee of the achievement of the applicable performance conditions following the filing of the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2022, 18,000 of the December 31, 2023 and 27,000 PRSUs are scheduled to vest, if at all, upon the certification by the Company's compensation committee of the achievement of the applicable performance conditions following the filing of the Company's Annual Report on Form 10-K for the fiscal year ending December 31, 2025.

Performance based restricted stock unit activity was as follows:

	Number of Shares	Weighted Average Grant Date Fair Value Per Share
Beginning, January 1, 2023	30,150	$ 28.55
Granted	86,795	22.48
Vested	—	—
Forfeited	—	—
Balance, December 31, 2023	116,945	24.05

The weighted average grant date fair value for each PRSU granted during the years ended December 31, 2023 and 12,150 2022 was $22.48 and $28.55, respectively. No PRSUs are scheduled to vest, if at all, upon the certification by the Company's compensation committee of the achievement of the applicable performance conditions following the filing of the

Company's Annual Report on Form 10-K for the fiscal year ending December 31, 2024. No conditions were determined to be probable as of December 31, 2022 and no expense was recorded vested during the year years ended December 31, 2022. December 31, 2023 and 2022.

Stock Options

Stock options must be granted at an exercise price not less than 100% of the fair market value per share at the grant date. The board of directors or compensation committee determines the exercise price of the Company's stock options based on the closing price of the common stock as reported on the Nasdaq Global Select Market on the day date of the grant. The maximum contractual term of options granted under the Plans is typically 10 years, options generally vest over four years with 25% of the shares underlying the option vesting at the end of the first year and the remaining vesting monthly over the following three years. In February 2023, the Company granted the chief executive officer a premium priced option to purchase 65,525 shares of common stock with an exercise price equal to 110% of the closing price of the Company's common stock on the date of grant.

During the years ended December 31, 2022 December 31, 2023, 2022, and 2021, 800,336, 329,224, and 2020, 329,224, 1,120,981 and 1,398,177 options under the Plans were exercised for total proceeds of $9,440, $2,110, $7,927, and $4,183, $7,927, respectively.

The fair value of each option award is determined on the date of grant using the Black Scholes Merton option-pricing model. The calculation of fair value includes several assumptions that require management's judgment. The expected terms of options granted to employees during the years ended December 31, 2022 December 31, 2023, 2021, 2022, and 2020 2021 were calculated using an average of historical exercises. Estimated volatility for 2023, 2022, 2021, and 2020 2021 incorporates a calculated volatility derived from the historical closing prices of shares of common stock of similar entities whose share prices were

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publicly available for the expected term of the option. The risk-free interest rate is based on the U.S. Treasury constant maturities in effect at the time of grant for the expected term of the option. The Company accounts for forfeitures as they occur, occur; as such, the Company does not estimate forfeitures at the time of grant.

Following are the weighted average valuation assumptions used for option awards during the periods presented:

	Year Ended December 31,		
	2022	2021	2020
Valuation assumptions			
Expected dividend yield			

	Year Ended December 31,		
	2023	2022	2021
Valuation assumptions			
Expected dividend yield			

Expected dividend yield	Expected dividend yield	— %	— %	— %		—	%	—	%	—	%			
Expected volatility	Expected volatility	57 %	59 %	60 %	Expected volatility	66	%	57	%	59	%			
Expected term (years)	Expected term (years)	4.78	4.66	4.49	Expected term (years)	4.92		4.78		4.66				
Risk-free interest rate	Risk-free interest rate	2.13 %	0.71 %	1.46 %	Risk-free interest rate	3.77	%	2.13	%	0.71	%			

Stock option activity was as follows:

	Number of shares	Weighted average exercise price	Weighted average remaining contractual term (years)	Aggregate intrinsic value
Beginning, January 1, 2022	7,680,341	$30.19		
Granted	4,060,060	27.48		
Exercised	(329,224)	6.41		
Forfeited	(450,653)	37.06		
Expired	(26,297)	74.68		
Balance, December 31, 2022	10,934,227	29.56	7.60	$37,823
Exercisable, December 31, 2022	5,210,425	23.39	6.40	$35,563

	Number of shares	Weighted average exercise price	Weighted average remaining contractual term (years)	Aggregate intrinsic value
Beginning, January 1, 2023				
Granted				
Exercised				
Forfeited				
Expired				
Balance, December 31, 2023				
Balance, December 31, 2023				
Balance, December 31, 2023				
Exercisable, December 31, 2023				

The weighted average grant date fair value per share of options granted during the years ended December 31, 2022 December 31, 2023, 2022, and 2021 was $15.79, $13.67, and 2020 was $13.67, $45.07, and $9.55, respectively. The intrinsic value of options exercised during the years ended December 31, 2022 December 31, 2023, 2022, and 2021 was $16,213, $6,548, and 2020 was $6,548, $71,308, and $87,946, respectively.

As of December 31, 2022 December 31, 2023, there was $86,628 $62,992 of unrecognized compensation cost related to unvested stock options granted under the Plans, which is expected to be recognized over a weighted average period of 2.54 2.10 years. The fair value of shares vested during the years ended December 31, 2022 December 31, 2023, 2022, and 2021 was $46,877, $43,559, and 2020 was $43,559, $19,080, and $3,153, respectively.

(11) Noncontrolling Interest

The Company reviews each legal entity formed by parties related to the Company to determine whether or not the Company has a variable interest in the entity and whether or not the entity would meet the definition of a variable interest entity ("VIE") in accordance with ASC Topic 810, *Consolidation*. If the entity is a VIE, the Company assesses whether or not the Company is the primary beneficiary of that VIE based on a number of factors, including (i) which party has the power to direct the activities that most significantly affect the VIE's economic performance, (ii) the parties' contractual rights and responsibilities pursuant to any contractual agreements and (iii) which party has the obligation to absorb losses or the right to receive benefits from the VIE. If the Company determines it is the primary beneficiary of a VIE, the Company consolidates the financial statements of the VIE into the Company's consolidated financial statements at the time that determination is made. The Company evaluates whether it continues to be the primary beneficiary of any consolidated VIEs on a quarterly basis. If the Company were to determine that it is no longer the primary beneficiary of a consolidated VIE, or no longer has a variable interest in the VIE, it would deconsolidate the VIE in the period that the determination is made.

If the Company determines it is the primary beneficiary of a VIE that meets the definition of a business, the Company measures the assets, liabilities and noncontrolling interests of the newly consolidated entity at fair value in accordance with Topic 805 at the date the reporting entity first becomes the primary beneficiary.

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In October 2018, Faxian Therapeutics, LLC ("Faxian") was formed in the United States. In April 2019, upon consummation of the joint venture, the Company and WuXi AppTech ("WuXi"), each received a 50% equity interest in the entity in exchange for their contributions to the entity. The Company determined that Faxian was a VIE and concluded that it is the primary beneficiary of the VIE. As such, the Company has consolidated Faxian's results into the consolidated financial statements, and eliminated WuXi's ownership as a non-controlling interest.

(12) Net Loss Income (Loss) per Share Attributable to Common and Limited Common Stockholders

The following table presents the calculation of basic and diluted net loss income (loss) per share attributable to common and limited common stockholders for the years presented (in thousands, except for share and per share data):

	Year Ended December 31,		
	2022	2021	2020
Numerator:			
Net loss attributable to Schrödinger common and limited common stockholders	$ (149,186)	$ (100,393)	$ (24,463)
Denominator:			
Weighted average shares used to compute net loss per share attributable to Schrödinger common and limited common stockholders, basic and diluted:	71,173,419	70,594,950	60,024,658
Net loss per share attributable to Schrödinger common and limited common stockholders, basic and diluted:	$ (2.10)	$ (1.42)	$ (0.41)

	Year Ended December 31,		
	2023	2022	2021
Numerator:			
Net income (loss) attributable to Schrödinger common and limited common stockholders	$ 40,720	$ (149,186)	$ (100,393)
Denominator:			
Weighted average shares used to compute net income (loss) per share attributable to Schrödinger common and limited common stockholders, basic:	71,776,301	71,173,419	70,594,950
Effect of the exercise of common stock options and vested RSUs on weighted average common and limited common shares	3,210,515	—	—
Weighted average shares used to compute net income (loss) per share attributable to Schrödinger common and limited common stockholders, diluted:	74,986,816	71,173,419	70,594,950
Net income (loss) per share attributable to Schrödinger common and limited common stockholders, basic:	$ 0.57	$ (2.10)	$ (1.42)

Net income (loss) per share attributable to Schrödinger common and limited common stockholders, diluted:	$ 0.54	$ (2.10)	$ (1.42)

For the year ended December 31, 2023, in order to calculate diluted net income per share, the weighted average shares used to compute net income is adjusted by the effect of dilutive securities, including awards under the Plans. Diluted net income per share is computed by dividing the resulting net income by the weighted average number of fully diluted common and limited shares outstanding.

Since the Company was in a loss position for all the years presented, ended December 31, 2022 and 2021, basic net loss per share is the same as diluted net loss per share as the inclusion of all potential common shares and limited common shares outstanding would have been anti-dilutive. Potentially dilutive securities that were not included in the diluted per share calculations because they would be anti-dilutive were as follows:

	Year Ended December 31,		
	2022	2021	2020
Shares subject to outstanding common stock options and RSUs	11,013,177	7,680,341	7,257,460
	11,013,177	7,680,341	7,257,460

	Year Ended December 31,		
	2023	2022	2021
Shares subject to outstanding common stock options and unvested RSUs	6,351,996	11,013,177	7,680,341

(13) Equity Investments

(a) Nimbus

The Company provides previously provided collaboration services for Nimbus under the terms of a master services agreement executed on May 18, 2010, as amended. Collaboration agreements are separate from the transaction that resulted in equity ownership and related fees are paid in cash to the Company. As Nimbus was previously recorded as an equity method investment under the HLBV method, as the entity is a limited liability company and the Company is not a passive investor was determined to have significant influence due to its the Company's collaboration with Nimbus on a number of drug discovery targets, as well as the Company's management determined level of ownership in Nimbus. During the period ended September 30, 2023, the Company's equity

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ownership in Nimbus was diluted to the point that it the Company no longer has significant influence over the entity and therefore accounts for entity. As the investment as an equity method investment.

The Company no longer has concluded that significant influence over Nimbus, after June 30, 2023, the carrying value of its equity investment in Nimbus should reflect its contractual rights to substantive profits. The Company further determined that the HLBV method for valuing contractual rights to substantive profits provides the best representation of its financial position in Nimbus.

The HLBV method is valued as a balance sheet-oriented approach to non-marketable equity method accounting. Under the HLBV method, the Company determines its share of earnings or losses by comparing its claim on the book value at the beginning and end of each reporting period. This claim is calculated as the amount that the Company would receive (or be obligated to pay) if the investee were to liquidate all of its assets at recorded amounts, determined as of the balance sheet date in accordance with U.S. GAAP, and distribute the resulting cash to creditors and investors in accordance with their respective priorities. security.

The carrying value of the Nimbus investment was $1,928 and zero as of December 31, 2022 December 31, 2023 and December 31, 2021. December 31, 2022, respectively. The Company has no obligation to fund Nimbus losses in excess of its initial investment. For the year ended December 31, 2023, the Company reported a realized gain of $147,213 on the Nimbus investment, which reflected the total cash distribution the Company was eligible to receive from Nimbus on account of Takeda's acquisition of Nimbus Lakshmi, Inc., a wholly-owned subsidiary of Nimbus, and its tyrosine kinase 2 inhibitor NDI-034858, as well as an unrealized gain of $1,928 due to the change in accounting method. The Company reported no gains or losses of zero, zero, and $2,977 on the Nimbus investment during the years ended December 31, 2022, 2021, December 2022 and 2020, respectively. 2021.

(b) Morphic

The Company accounts for its investment in Morphic Holding, Inc. (“Morphic”) at fair value based on the share price of Morphic’s common stock at the measurement date.

During the year ended December 31, 2023, the Company reported a mark-to-market gain of $1,778 on the Morphic investment. During the year ended December 31, 2022, the Company reported a loss of $17,226 on the Morphic investment. During the years year ended December 31, 2021 and 2020, , the Company reported gains a gain of $11,548 and $13,685 on the Morphic investment, respectively. investment. As of December 31, 2022 December 31, 2023 and December 31, 2021 December 31, 2022, the carrying value of the Company’s investment in Morphic was $22,335 $24,114 and $39,561, $22,335, respectively.

(c) Ravenna

In connection with the merger of Petra Pharma Corporation ("Petra") and a third party, the Company received 2,676,191 shares of common stock of Ravenna Pharmaceuticals, Inc. (“Ravenna”). The Company concluded that its equity investment in Ravenna should be valued as a non-marketable equity security as the Company does not

exercise significant influence over Ravenna. As of each of December 31, 2022 and December 31, 2021, the carrying value of the Company's investment in Ravenna was $19. The Company reported losses of zero, $75, and zero on the Ravenna investment during 2022, 2021, and 2020, respectively.

(d) Ajax

In May 2021, the Company purchased 631,377 shares of Series B preferred stock of Ajax Therapeutics, Inc. ("Ajax") for $1,700 in cash. The Company has concluded that its equity investment in Ajax should be valued as a non-marketable equity security as the Company does not exercise significant influence over Ajax. As of each of December 31, 2022 December 31, 2023 and December 31, 2021 December 31, 2022, the carrying value of the Company's investment in Ajax was $1,700.

(e)(d) Structure Therapeutics

In July 2021, the Company purchased 494,035 shares of Series B preferred stock of Structure Therapeutics for $2,000 in cash. In April 2022, the Company purchased an additional 148,210 shares of Series B preferred stock for $600 in cash.

As On February 7, 2023, Structure Therapeutics is structured as completed its IPO. Immediately upon the closing of Structure Therapeutics' IPO, all of the outstanding Series B preferred stock automatically converted into ordinary shares on a one-for-one basis. As of December 31, 2023, the Company owned 3,260,495 ordinary shares of Structure Therapeutics. The Company purchased 275,000 American Depository Shares ("ADS") at $15.00 per ADS in the IPO. Each ADS represents three ordinary shares.

Upon completion of Structure Therapeutics' IPO, the Company changed the valuation methodology used to value the Structure Therapeutics investment from an exempted company limited by shares, incorporated equity method investment under the laws of the Cayman Islands and HLBV method to an equity investment reported at fair value as the Company is not a passive investor due to its collaboration with Structure Therapeutics on a number of drug discovery targets, the Company's management determined that it has no longer exerts significant influence over Structure after the entity and therefore accounts IPO. As there is a readily available market price for Structure Therapeutics' ADSs, the Company values its investment based on the closing price of Structure Therapeutics' ADSs as an equity method investment. of the reporting date.

The Company has determined that the HLBV method for valuing contractual rights to substantive profits provides the best representation of its financial position in Structure Therapeutics. The carrying value of Structure Therapeutics was $1,629 $55,509 and $1,887 $1,629 as of December 31, 2022 December 31, 2023 and December 31, 2021 December 31, 2022, respectively. The For the year ended December 31, 2023, the Company has no obligation to fund recorded a mark-to-market gain of $49,755 on the Structure Therapeutics losses in excess of its initial investment. For the years ended December 31, 2022 and 2021, the Company recorded losses of $858 and $113 respectively, on the Structure Therapeutics investment.

(f) Eonix

On March 31, 2022, the Company received 4,000,000 membership interest units of Eonix in exchange for material science collaboration services investment under the terms of a master services agreement executed on March 31, 2022. As Eonix is a limited liability company and the Company is not a passive investor due to its collaboration with Eonix on a number of material science targets, the Company's management determined that it has significant influence over the entity and therefore accounts for the investment as an equity method investment.

The Company has determined that the HLBV method, for valuing contractual rights to substantive profits provides the best representation of its financial position in Eonix. The carrying value of Eonix was zero as of December 31, 2022. For the year ended December 31, 2022, there was no gain or loss on the Eonix investment. respectively.

(14) Employee Benefit Plan

The Company offers a 401(k) employee savings plan to its U.S.-based employees. The Company made discretionary matching contributions equal to 100% of the first 4% of compensation contributed by employees for the years ended December 31, 2022 December 31, 2023, 2021, 2022, and 2020. 2021. Matching contributions during 2023, 2022, and 2021 were $4,135, $3,243, and 2020 were $3,243, $2,592, and $1,748, respectively.

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(15) Related Party Transactions

(a) Board Member

For the years ended December 31, 2022 December 31, 2023, 2021, 2022, and 2020, 2021, the Company paid consulting fees of $420, $410, $390, and $364, $390, respectively, to a member of its board of directors.

(b) Bill and Melinda Gates Foundation

The Bill & Melinda Gates Foundation, an entity under common control with Bill and Melinda Gates Foundation Trust, a stockholder of the Company, issued a grant under which it agreed to pay the Company directly for certain licenses and services provided to a specified group of third-party organizations. Revenue recognized for services provided by the Company under this grant were $253, $387, $1,160, and $2,094 $1,160 for the years ended ended December 31, 2022 December 31, 2023, 2021, 2022, and 2020, 2021, respectively. As of December 31, 2022 December 31, 2023, the Company had no receivables due from the Bill and 2021, Melinda Gates Foundation. As of December 31, 2022, the Company had net receivables of $20 and $165, respectively, due from the Bill & Melinda Gates Foundation.

For the three months years ended December 31, 2023, 2022, and year ended December 31, 2022, 2021, the Company recognized $573 $2,822, $1,949, and $1,949, $111, respectively, in drug discovery contribution revenue related to funds received under an agreement agreements with the Bill & Melinda Gates Foundation, aimed at accelerating drug discovery in women's health. As of December 31, 2022, December 31, 2023 and 2022, the Company had no receivables due under this agreement these agreements from the Bill & Melinda Gates Foundation. As of December 31, 2022 December 31, 2023 and 2021, 2022, restricted cash on hand related to the arrangement was $1,742 $2,251 and $1,130, $1,742, respectively.

The Company received $1,000 in contribution revenue in connection with its entry into an agreement with Gates Ventures, LLC in the second quarter of 2020, $1,000 in contribution revenue in the second quarter of 2021 on the first anniversary of its entry into the agreement, and $1,000 in contribution revenue in the second quarter of 2022 on the second anniversary of its entry into the agreement. Gates Ventures, LLC is an entity under the control of William H. Gates III, who may be deemed to be the beneficial owner of more than 5% of the Company's voting securities. The Company received $1,000 in contribution revenue in connection with its entry into an agreement with Gates Ventures, LLC annually from June 2020 to June 2022. In August 2023, the Company renewed the agreement with Gates Ventures, LLC and recognized $1,800 in contribution revenue. As of December 31, 2022 December 31, 2023 and 2021, 2022, the Company had no net receivables due from Gates Ventures, LLC.

(c) Structure Therapeutics

During the year ended December 31, 2021, the Company entered into multiple software agreements with Structure Therapeutics and its subsidiary subsidiaries for approximately $650. The During the years ended December 31, 2023, 2022, and 2021, the Company recognized revenue of approximately $221, $297, and $129, respectively, in the aggregate related to these agreements during software agreements.

During the year ended December 31, 2022 December 31, 2023, the Company entered into a collaboration agreement with Structure Therapeutics and its subsidiaries to conduct certain drug discovery services as well as provide software access. Revenue recognized under this collaboration was $433 for the year ended December 31, 2023.As of December 31, 2023 and 2022, the Company had net receivables of $494 and zero, respectively, due from Structure Therapeutics.

(16) Segment Reporting

The Company has determined that its chief executive officer ("CEO") is its chief operating decision maker ("CODM"). The Company's CEO evaluates the financial performance of the Company based on two reportable segments: Software and Drug Discovery. The Software segment is focused on licensing the Company's software to transform molecular discovery. The Drug Discovery segment is focused on building a portfolio of preclinical and clinical drug programs, internally and through collaborations.

The CODM reviews segment performance and allocates resources based upon segment revenue and segment gross profit of the Software and Drug Discovery reportable segments. Segment gross profit is derived by deducting operational expenditures, with the exception of research and development, sales and marketing, and general and administrative activities from U.S. GAAP revenue. Operational expenditures are expenditures made that are directly attributable to the reportable segment. These expenditures are allocated to the segments based on headcount. The reportable segment expenditures include compensation, supplies, and services from contract research organizations.

Certain cost items are not allocated to the Company's reportable segments. These cost items primarily consist of non-drug discovery program related compensation and general operational expenses associated with the Company's research and development, sales and marketing, and general and administrative. These costs are incurred by both segments and due to the integrated nature of the Company's Software and Drug Discovery segments, any allocation methodology would be arbitrary and provide no meaningful analysis.

All segment

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Segment revenue is primarily earned in the United States and there are no intersegment revenues. Additionally, the Company reports assets on a consolidated basis and does not allocate assets to its reportable segments for purposes of assessing segment performance or allocating resources.

Presented below is financial information with respect to the Company's reportable segments for the years presented:

	Year Ended December 31,		
	2022	2021	2020
Year Ended December 31,			Year Ended December 31,
2023			2023 2022 2021
Segment revenues:	**Segment revenues:**		
Software			
Software			
Software	Software	$ 135,578	$ 113,236	$ 92,530
Drug discovery	Drug discovery	45,377	24,695	15,565
Total segment revenues	Total segment revenues	$ 180,955	$ 137,931	$108,095
Segment gross profit:	**Segment gross profit:**		
Software	Software	$ 106,002	$ 86,741	$ 74,527
Software			
Software			
Drug discovery	Drug discovery	(4,980)	(21,121)	(11,055)

Total segment gross profit	Total segment gross profit	101,022	65,620	63,472
Unallocated:				
Unallocated (expense) income:				
Research and development				
Research and development				
Research and development	Research and development	(126,372)	(90,904)	(64,695)
Sales and marketing	Sales and marketing	(30,642)	(22,150)	(17,795)
General and administrative	General and administrative	(90,825)	(64,009)	(41,898)
Gain (loss) on equity investments	Gain (loss) on equity investments	11,825	(1,781)	4,108
Change in fair value	Change in fair value	(18,084)	11,359	28,263
Other income	Other income	3,950	1,057	2,253
Income tax (expense) benefit		(63)	(411)	(345)
Consolidated net loss		$(149,189)	$(101,219)	$(26,637)
Income tax expense				
Consolidated net income (loss)				

Revenues by geographic area are determined based on the address provided by the Company's customers and partners. The following table sets forth revenues by geographic area for the years ended December 31, 2022 December 31, 2023, 2021, 2022, and 2020: 2021:

	Year Ended December 31,		
	2022	2021	2020
United States	$ 123,555	$ 90,398	$ 60,737
Europe	33,049	27,810	24,370
Japan	10,469	8,565	14,558
Rest of World	13,882	11,158	8,430
	$ 180,955	$ 137,931	$ 108,095

(17) Subsequent Events

On February 13, 2023, on account of its equity position in Nimbus, the Company reported the receipt of a $111,300 cash distribution from Nimbus following the closing of Takeda's acquisition of Nimbus Lakshmi, Inc., a wholly-owned subsidiary of Nimbus, and its tyrosine kinase 2 inhibitor NDI-034858. The Company expects to receive from Nimbus a second cash distribution of $36,000 in the second quarter of 2023, for a total cash distribution of $147,300. The Company will record a gain on this transaction in the first quarter of 2023.

	Year Ended December 31,		
	2023	2022	2021
United States	$ 161,961	$ 123,556	$ 90,398
APAC	24,569	21,680	17,778
EMEA	29,135	34,451	28,880
Rest of World	1,001	1,268	875

	$ 216,666	$ 180,955	$ 137,931

On February 7, 2023, Structure Therapeutics completed its initial public offering ("IPO"). The Company participated in the IPO and purchased 275,000 American Depository Shares ("ADS") at $15 per ADS in the IPO. Each ADS represents three ordinary shares. The Company also owns 3,260,495 ordinary shares in Structure Therapeutics.

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Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our principal executive officer and principal financial officer, has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, or the Exchange Act) as of December 31, 2022 December 31, 2023. The term “disclosure controls and procedures,” means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Securities and Exchange Commission’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company’s management, including its principal executive officer and principal financial officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Based on such evaluation of our disclosure controls and procedures as of December 31, 2023, our principal executive officer and principal financial officer have concluded that as of such date, our disclosure controls and procedures were not effective as of December 31, 2022 because of at the material weakness in our internal control over financial reporting described below. reasonable assurance level.

Management’s Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting for the company, as such term is defined in Rule 13a-15(f) and 15d-15(f) of the Exchange Act. Our internal control over financial reporting is a process designed by, or under the supervision of, our principal executive officer and principal financial officer and effected by our board of directors, management, and other personnel to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles.

Management assessed our internal control over financial reporting as of December 31, 2022 December 31, 2023, using the criteria established in *Internal Control - Integrated Framework (2013)* set forth by the Committee of Sponsoring Organizations of the Treadway Commission.

Based on the results of its evaluation, management has concluded that our internal control over financial reporting was not effective as of December 31, 2023. Our independent registered public accounting firm, KPMG LLP, has issued an attestation report on the effectiveness of our internal control over financial reporting, which is included in Item 8 of this Annual Report.

Changes in Internal Control Over Financial Reporting

As previously disclosed in our Annual Report on Form 10-K for the fiscal year ended December 31, 2022, due to filed with the SEC on February 28, 2023, we identified a material weakness in our internal control over financial reporting. The material weakness related to a deficiency in the design of our a control in our revenue process to determine whether performance milestones in a newly executed drug discovery arrangement were probable of achievement and the constraint on variable consideration in the form of milestone payments can be removed. The deficiency was a result of ineffective risk assessment, as our existing then-existing controls were designed insufficiently to identify a change in timing of performance milestones in the newly executed contract.

A This material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis.

The material weakness described above resulted in a $1.7 million understatement of drug discovery revenue and a related understatement of contract assets that were corrected prior to the issuance of our consolidated financial statements as of and for the year ended December 31, 2022.

Our independent registered public accounting firm, KPMG LLP, who audited During the consolidated financial statements included in this Annual Report on Form 10-K, issued an adverse opinion on the effectiveness of year ended December 31, 2023, we implemented measures designed to improve our internal control over financial reporting. KPMG LLP’s report is included in Item 8 of reporting to remediate this Annual Report.

Remediation Plan and Status

Our Board of Directors and management are committed to maintaining a strong internal control environment. We have developed a detailed remediation plan and are making progress in what will be a multi-step process to fully remediate the material weakness, described above. Specifically, as of December 31, 2022, we are in the process of implementing and expanding including redesigning our controls and procedures in our revenue process in order to timely identify changes to the timing of when a performance milestone becomes probable of achievement in drug discovery arrangements and to ensure such determinations are made through the end of the reporting

period. In addition, we will continue We have redesigned the existing control to assess risks on an ongoing basis to timely identify changes in our business that may create new exposures or risk categories, and we plan to conduct a comprehensive review and, as applicable, update our existing internal control framework adjust the timing of performance to ensure that we have identified, developed, all milestones in newly executed discovery arrangements are considered for their impact on revenue.

Based on the remediation actions taken and deployed completed during 2023, and our testing and evaluation of the appropriate business process controls to address the new exposures or risk categories that are identified.

The material weakness will not be considered remediated until the applicable controls operate for a sufficient period of time newly implemented control activities and management has concluded, through testing, that these controls are operating effectively. We believe the measures described above will remediate this material weakness and strengthen our internal control over financial reporting. As reporting, we continue to evaluate and work to remediate this have concluded that the material weakness we may determine has been remediated as of December 31, 2023.

Except with respect to take additional measures to address these deficiencies or determine to modify certain of the remediation measures described above.

Changes in Internal Control Over Financial Reporting

Other than the changes related to in connection with our implementation of the ongoing remediation efforts described above, there has been no change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the fourth quarter of 2022 2023 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations of Internal Controls

Our management, including our principal executive officer and principal financial officer, do not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent all errors and all fraud due to inherent limitations of internal controls. Because of such limitations, there is risk that material misstatements will not be prevented or detected on a timely basis by internal control over financial reporting or disclosure controls and procedures. However, these inherent limitations are known features of the disclosure and financial reporting process. Therefore, it is possible to design into the process safeguards to reduce, though not eliminate, this risk.

Item 9B. Other Information Information.

None. (b) Director and Officer Trading Arrangements

A significant portion of the compensation of our directors and officers (as defined in Rule 16a-1(f) under the Exchange Act) is in the form of equity awards and, from time to time, directors and officers engage in open-market transactions with respect to the securities acquired pursuant to such equity awards or our other securities, including to satisfy tax withholding obligations when equity awards vest or are exercised, and for diversification or other personal reasons.

Transactions in our securities by directors and officers are required to be made in accordance with our insider trading policy, which requires that the transactions be in accordance with applicable U.S. federal securities laws that prohibit trading while in possession of material nonpublic information. Rule 10b5-1 under the Exchange Act provides an affirmative defense that enables directors and officers to prearrange transactions in our securities in a manner that avoids concerns about initiating transactions while in possession of material nonpublic information.

The following table describes, for the fourth quarter of 2023, each trading arrangement for the sale or purchase of our securities adopted or terminated by our directors and officers that is either (1) a contract, instruction or written plan intended to satisfy the affirmative defense conditions of Rule 10b5-1(c), or a Rule 10b5-1 trading arrangement, or (2) a “non-Rule 10b5-1 trading arrangement” (as defined in Item 408(c) of Regulation S-K):

Name and Title	Action Taken (Date of Action)	Type of Trading Arrangement	Nature of Trading Arrangement	Duration of Trading Arrangement	Aggregate Number of Shares of Common Stock
Robert Abel Executive Vice President, Chief Science Officer, Platform	Adoption (November 6, 2023)	Rule 10b5-1 trading arrangement for exercise of stock options and sales of shares	Sale	Until December 31, 2024, or such earlier date upon which all transactions are completed or expire without execution	Up to 48,772 shares
Margaret Dugan, Chief Medical Officer	Adoption (November 13, 2023)	Durable Rule 10b5-1 trading arrangement for sell-to-cover transactions relating to all equity awards that have or may be granted	Sale	Until final settlement of any covered RSU	Indeterminable (1)
Geoffrey Porges, Executive Vice President, Chief Financial Officer	Adoption (November 28, 2023)	Rule 10b5-1 trading arrangement for exercise of stock options and sales of shares	Sale	Until December 6, 2024, or such earlier date upon which all transactions are completed or expire without execution	Up to 23,946 shares

(1) The number of shares subject to covered RSUs that will be sold to satisfy applicable tax withholding obligations upon vesting is unknown as the number will vary based on the extent to which vesting conditions are satisfied, the market price of our common stock at the time of settlement and the potential future grant of additional RSUs subject to this arrangement. This trading arrangement, which applies to RSUs whether vesting is based on the passage of time and/or the achievement of performance goals, provides for the automatic sale of shares that would otherwise be issuable on each settlement date of a covered RSU in an amount sufficient to satisfy the applicable withholding obligation, with the proceeds of the sale delivered to us in satisfaction of the applicable withholding obligation.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections Inspections.

Not Applicable.

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PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this Item 10 is incorporated herein by reference from the information that will be contained in our proxy statement related to the 2023 2024 Annual Meeting of Stockholders, which we intend to file with the Securities and Exchange Commission within 120 days of the end of our fiscal year ended December 31, 2022 December 31, 2023 pursuant to General Instruction G(3) of Form 10-K.

We have adopted a written code of business conduct and ethics that applies to our directors, officers, and employees, including our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. We have posted a current copy of the code on our website, www.schrodinger.com. In addition, we intend to post on our website all disclosures that are required by law or Nasdaq listing standards concerning any amendments to, or waivers from, any provision of the code. Our website is not incorporated by reference into this Annual Report and you should not consider any information contained in or accessible from our website to be a part of this Annual Report.

Item 11. Executive Compensation.

The information required by this Item 11 is incorporated herein by reference from the information that will be contained in our proxy statement related to the 2023 2024 Annual Meeting of Stockholders, which we intend to file with the Securities and Exchange Commission within 120 days of the end of our fiscal year ended December 31, 2022 December 31, 2023 pursuant to General Instruction G(3) of Form 10-K.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information required by this Item 12 is incorporated herein by reference from the information that will be contained in our proxy statement related to the 2023 2024 Annual Meeting of Stockholders, which we intend to file with the Securities and Exchange Commission within 120 days of the end of our fiscal year ended December 31, 2022 December 31, 2023 pursuant to General Instruction G(3) of Form 10-K.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by this Item 13 is incorporated herein by reference from the information that will be contained in our proxy statement related to the 2023 2024 Annual Meeting of Stockholders, which we intend to file with the Securities and Exchange Commission within 120 days of the end of our fiscal year ended December 31, 2022 December 31, 2023 pursuant to General Instruction G(3) of Form 10-K.

Item 14. Principal Accountant Fees and Services.

The information required by this Item 14 is incorporated herein by reference from the information that will be contained in our proxy statement related to the 2023 2024 Annual Meeting of Stockholders, which we intend to file with the Securities and Exchange Commission within 120 days of the end of our fiscal year ended December 31,

2022 December 31, 2023 pursuant to General Instruction G(3) of Form 10-K.

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PART IV

Item 15. Exhibits and Financial Statement Schedules.

(1) **Financial Statements**

The following documents are included on pages F-2 through F-11 attached hereto and are filed as part of this Annual Report.

(2) **Financial Statement Schedules**

All financial statement schedules have been omitted because they are not applicable, not required, or the information required is shown in the consolidated financial statements or the notes thereto.

(3) **Exhibits**

The exhibits filed as part of this Annual Report are listed below.

Exhibit Number	Exhibit Number	Description of Exhibit	Form	File No.	Exhibit	Filing Date	Filed Herewith	Exhibit Number	Description of Exhibit	Form	File No.	Exhibit	Filing Date	Filed Herewith
3.1	3.1	Restated Certificate of Incorporation	8-K	001-39206	3.1	2/10/2020								
3.2	3.2	Amended and Restated Bylaws	8-K	001-39206	3.2	2/10/2020								
3.2														
3.2														
4.1														
4.1														
4.1	4.1	Specimen Stock Certificate evidencing the shares of common stock	S-1/A	333-235890	4.1	1/27/2020								

4.2	4.2	Amended and Restated Share Exchange Agreement, dated January 24, 2020, by and between the Registrant and Bill & Melinda Gates Foundation Trust	S-1/A	333-235890	4.2	1/27/2020			
4.2									
4.2									
4.3	4.3	Description of Securities Registered Under Section 12 of the Exchange Act	10-K	001-39206	4.3	3/4/2021			
4.3									
4.3									
10.1									
10.1									
10.1	10.1	Amended and Restated Investors' Rights Agreement, dated as of November 9, 2018, by and among the Registrant and the other parties thereto, as amended	S-1/A	333-235890	10.1	1/27/2020		Amended and Restated Investors' Rights Agreement, dated as of November 9, 2018, by and among the Registrant and the other parties thereto, as amended	X
10.2+	10.2+	2010 Stock Plan, as amended	S-1	333-235890	10.2	1/10/2020			
10.3+	10.3+	Form of Notice of Stock Option Grant and Stock Option Agreement under 2010 Stock Plan	S-1	333-235890	10.3	1/10/2020			
10.3+									
10.3+									
10.4+									

10.4+							
10.4+	10.4+	2020 Equity Incentive Plan	S-1/A	333-235890	10.4	1/27/2020	
10.5+	10.5+	Form of Stock Option Agreement and Form of Restricted Stock Unit Agreement for U.S. Participants under the 2020 Equity Incentive Plan	10-K	001-39206	10.5	2/24/2022	
10.5+							
10.5+							

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10.6+	10.6+	Form of Stock Option Agreement for Non-U.S. Participants under the 2020 Equity Incentive Plan	10-Q	001-39206	10.2	11/12/2020
10.7+	10.7+	Form of Restricted Stock Unit Agreement for Non-U.S. Participants under the 2020 Equity Incentive Plan	10-K	001-39206	10.6	2/24/2022
10.7+						
10.7+						
10.8+						
10.8+						
10.8+	10.8+	2020 Employee Stock Purchase Plan	S-1/A	333-235890	10.6	1/27/2020
10.9+	10.9+	Third Amended and Restated Director Compensation Policy	10-Q	001-39206	10.3	5/4/2022
10.9+						
10.9+						
10.10+						
10.10+						

10.10+	10.10+	Senior Executive Incentive Compensation Plan	S-1	333-235890	10.8	1/10/2020	
10.11+	10.11+	Amended and Restated Executive Severance and Change in Control Benefits Plan, as amended	8-K	001-39206	10.2	8/18/2022	
10.11+							
10.11+							
10.12+							
10.12+							
10.12+	10.12+	Employment Agreement, dated May 11, 2010, by and between the Registrant and Ramy Farid	S-1	333-235890	10.10	1/10/2020	
10.13+	10.13+	Employment Agreement, dated August 16, 2022, by and between the Registrant and Geoffrey Porges	8-K	001-39206	10.1	8/18/2022	
10.13+							
10.13+							
10.14+							
10.14+							
10.14+	10.14+	Employment Agreement, dated November 14, 2018, by and between the Registrant and Joel Lebowitz	S-1	333-235890	10.11	1/10/2020	
10.15+	10.15+	Employment Agreement, dated March 17, 2003, by and between the Registrant and Jenny Herman					X
10.15+							
10.15+							
10.16+							
10.16+							

10.16+	10.16+	Transition, Separation and Release of Claims Agreement, dated as of February 28, 2022, by and between the Registrant and Joel Lebowitz	8-K	001-39206	10.1	3/2/2022		
10.17+	10.17+	Consulting Agreement, dated as of February 28, 2022, by and between the Registrant and Joel Lebowitz	8-K	001-39206	10.2	3/2/2022		
10.17+								
10.17+								
10.18+	10.18+	Employment Agreement, dated May 14, 2018, by and between the Registrant and Karen Akinsanya	S-1	333-235890	10.14	1/10/2020		
10.18+								
10.18+								
10.19+								
10.19+								
10.19+	10.19+	Employment Agreement, dated April 27, 2010, by and between the Registrant and Yvonne Tran	S-1	333-235890	10.16	1/10/2020	Employment Agreement, dated July 28, 2023, by and between the Registrant and Margaret Dugan	X
10.20+	10.20+	Employment Agreement, dated September 11, 2006, by and between the Registrant and Patrick Lorton	S-1	333-235890	10.17	1/10/2020		
10.21+	10.21+	Employment Agreement, dated March 9, 2009, by and between the Registrant and Robert Abel	S-1	333-235890	10.19	1/10/2020		

10.22+		Consultant Agreement, dated July 1, 1999, between the Registrant and Richard A. Friesner, as amended	10-Q	001-39206	10.1	11/3/2022
10.23+		Form of Indemnification Agreement between the Registrant and each of its Executive Officers and Directors	S-1	333-235890	10.21	1/10/2020
10.21+						
10.21+						
10.22						
10.22						
10.22						
10.23						
10.23						
10.23						
10.24						
10.24						
10.24	10.24	Office Lease Agreement, dated April 5, 2021, by and between the Registrant and SPUSV5 1540 Broadway, LLC	8-K	001-39206	10.1	4/8/2021
10.25	10.25	First Amendment to Lease, dated May 19, 2022, by and between the Registrant and SPUSV5 1540 Broadway, LLC	10-Q	001-39206	10.1	8/4/2022
10.26		Lease, dated August 6, 2008, between One Main Place Portland – Oregon, Inc., Landlord, and Registrant, Tenant, as amended	S-1	333-235890	10.23	1/10/2020

10.27	Office Lease Amendment, dated May 6, 2021, by and between Registrant and MADISON-OFC ONE MAIN PLACE OR LLC	10-Q	001-39206	10.2	8/12/2021
10.25					
10.25					
10.26†					
10.26†					
10.26†					
10.27†					
10.27†					
10.27†					

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10.28†		Agreement, dated as of May 5, 1994, between The Trustees of Columbia University in the City of New York and Registrant, as amended	S-1	333-235890	10.24	1/10/2020				
10.29†		Agreement, dated as of July 15, 1998, between The Trustees of Columbia University in the City of New York and Registrant, as amended	S-1	333-235890	10.25	1/10/2020				
10.30†		Agreement, dated as of September 2001, between The Trustees of Columbia University in the City of New York and Schrödinger, LLC, as amended	S-1	333-235890	10.26	1/10/2020				
10.31†	10.29†	Agreement, dated as of June 19, 2003, between The Trustees of Columbia University in the City of New York and Schrödinger, LLC	S-1	333-235890	10.27	1/10/2020				
10.32†	10.30†	Software and Patent License Agreement, dated May 27, 2008, between The Trustees of Columbia University in the City of New York and Schrödinger, LLC	S-1	333-235890	10.28	1/10/2020				
10.33†	10.31†	Services Royalty Amendment, dated November 1, 2008, by and between The Trustees of Columbia University in the City of New York and Schrödinger, LLC	S-1	333-235890	10.29	1/10/2020				
10.34†	10.32+	Services Agreement, dated June 25, 2013, between D.E. Shaw India Software Private Limited and Schrödinger, LLC, as amended	S-1	333-235890	10.30	1/10/2020				
10.35†		License and Software Development Agreement, dated March 14, 2013, by and between D. E. Shaw Research LLC and Schrödinger, LLC	S-1	333-235890	10.31	1/10/2020				
10.36†		Amended and Restated License and Software Development Agreement, dated May 20, 2014, by and between D. E. Shaw Research, LLC and Schrödinger, LLC	S-1	333-235890	10.32	1/10/2020				
10.37+		Global Bonus Plan	S-1/A	333-235890	10.33	1/27/2020				
10.38†	10.33†	Independent Contractor Agreement, dated June 23, 2020, by and between the Registrant and Gates Ventures, LLC	10-Q	001-39206	10.2	8/10/2020				
10.34†		10.39†Amendment #1 to the Independent Contractor Agreement, dated August 14, 2023, by and between the Registrant and Gates Ventures, LLC	10-Q	001-39206	10.1	11/1/2023				
10.35†		Collaboration and License Agreement, dated November 22, 2020, by and between the Registrant and Bristol-Myers Squibb Company	10-K	001-39206	10.37	3/4/2021				
10.40†	10.36†	First Amendment to Collaboration and License Agreement, dated December 21, 2022, by and between the Registrant and Bristol-Myers Squibb Company				10-K	X	001-39206	10.40	2/28/2023
10.41+	10.37+	2021 Inducement Equity Incentive Plan, as amended	10-Q	001-39206	10.4	11/3/2022				
10.42+	10.38+	Nonstatutory Stock Option Agreement under 2021 Inducement Equity Incentive Plan	10-K	001-39206	10.39	3/4/2021				
10.43+	10.39+	Form of Option Agreement for Non-U.S. Participants under the 2021 Inducement Equity Incentive Plan	10-Q	001-39206	10.3	8/4/2022				
10.44+	10.40+	Form of Restricted Stock Unit Agreement for U.S. Participants under 2021 Inducement Equity Incentive Plan	10-K	10-Q 001-39206	10.40	10.1	3/	5/4/2021		2023
10.45+	10.41+	Form of Restricted Stock Unit Agreement for Non-U.S. Participants under 2021 Inducement Equity Incentive Plan	10-K	10-Q 001-39206	10.41	10.2	3/	5/4/2021		2023

10.46+10.42+	Schrödinger, Inc. 2022 Equity Incentive Plan	8-K	001-39206	99.1	6/16/2022		
10.47+10.43+	Form of Option Agreement for U.S. Participants under the 2022 Equity Incentive Plan	10-Q	001-39206	10.4	8/4/2022		
10.48+10.44+	Form of Option Agreement for Non-U.S. Participants under the 2022 Equity Incentive Plan	10-Q	001-39206	10.5	8/4/2022		
10.49+10.45+	Form of Restricted Stock Unit Agreement for U.S. Participants under the 2022 Equity Incentive Plan	10-Q	001-39206	10.6	8/4/2022		
10.50+10.46+	Form of Restricted Stock Unit Agreement for Non-U.S. Participants under the 2022 Equity Incentive Plan	10-Q	001-39206	10.7	8/4/2022		
21.1 10.47+	Subsidiaries Sales Agreement, dated as of May 24, 2023, by and between the Registrant and SVB Securities LLC				8-K		X
23.1 001-39206	Consent of KPMG LLP, independent registered public accounting firm1.1						X
31.1 5/24/2023	Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002						X
31.2	Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002						X
32.1#	Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002						X
32.2#	Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002						X
101.INS	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.						X
101.SCH	Inline XBRL Taxonomy Extension Schema Document.						X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document						X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document.						X
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document.						X

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21.1	Subsidiaries of the Registrant	10-K	001-39206	21.1	2/28/2023		
23.1	Consent of KPMG LLP, independent registered public accounting firm						X
31.1	Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002						X
31.2	Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002						X
32.1#	Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002						X
32.2#	Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002						X
97.1+	Schrödinger, Inc. Clawback Policy						X
101.INS	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.						X
101.SCH	Inline XBRL Taxonomy Extension Schema Document.						X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document						X

101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document.	X
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document.	X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document	X
104	Cover page formatted as Inline XBRL and contained in Exhibit 101.	X

101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document	X
104	Cover page formatted as Inline XBRL and contained in Exhibit 101.	X

†	Portions of this exhibit have been omitted pursuant to Item 601(b)(10)(iv) of Regulation S-K.
#	The certifications attached as Exhibits 32.1 and 32.2 that accompany this Annual Report, are deemed furnished and not filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of Schrödinger, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Annual Report, irrespective of any general incorporation language contained in such filing.
+	Management contract or compensatory plan or arrangement filed in response to Item 15(a)(3) of the Instructions to the Annual Report on Form 10-K.

Item 16. Form 10-K Summary

None.

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized**.**

SCHRÖDINGER, INC.

Date: February 28, 2023 February 28, 2024

By: /s/ Ramy Farid

Ramy Farid, Ph.D.

President and Chief Executive Officer

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Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this report has been signed below by the following persons on behalf of the Registrant in the capacities and on the dates indicated.

Name	Title	Date
/s/ Ramy Farid Ramy Farid, Ph.D.	President and Chief Executive Officer, Director (Principal Executive Officer)	February 28, 2024
/s/ Geoffrey Porges, MBBS Geoffrey Porges	Executive Vice President and Chief Financial Officer (Principal Financial Officer)	February 28, 2024
/s/ Jenny Herman Jenny Herman	Senior Vice President, Finance and Corporate Controller (Principal Accounting Officer)	February 28, 2024
/s/ Michael Lynton Michael Lynton	Chairman of the Board	February 28, 2024
/s/ Jeffrey Chodakewitz Jeffrey Chodakewitz, M.D.	Director	February 28, 2024
/s/ Richard Friesner Richard Friesner, Ph.D.	Director	February 28, 2024
/s/ Gary Ginsberg Gary Ginsberg	Director	February 28, 2024
/s/ Rosana Kapeller-Libermann Rosana Kapeller-Libermann, M.D., Ph.D.	Director	February 28, 2024
/s/ Arun Oberoi Arun Oberoi	Director	February 28, 2024
/s/ Gary Sender Gary Sender	Director	February 28, 2024
/s/ Nancy Thornberry Nancy Thornberry	Director	February 28, 2024

Exhibit 10.1

SCHRÖDINGER, INC.
AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

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AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

THIS AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT (the "**Agreement**") is made as of the 9th day of November, 2018, by and among Schrödinger, Inc., a Delaware corporation (the "**Company**"), and each of the investors listed on Schedule A hereto, each of which is referred to in this Agreement as an "**Investor**" and any Additional Purchaser (as defined in the Purchase Agreement) that becomes party to this Agreement in accordance with Section 6.9 hereof.

RECITALS

WHEREAS, certain of the Investors (the "**Existing Investors**") hold shares of the Company's Preferred Stock and/or shares of Common Stock issued upon conversion thereof and possess registration rights, information rights, rights of first offer, and other rights pursuant to an Amended and Restated Investors' Rights Agreement dated as of June 15, 2015 between the Company and such Investors (as amended to date, the "**Prior Agreement**");

WHEREAS, the undersigned Existing Investors desire to amend and restate the Prior Agreement in its entirety and to accept the rights created pursuant to this Agreement in lieu of the rights granted to them in the Prior Agreement; and

WHEREAS, certain of the Investors and the Company are parties to a Series E Preferred Stock Purchase Agreement of even date herewith, and such agreement conditions such Investors' obligations upon the execution and delivery of this Agreement by such Investors, the Company and a group of Existing Investors that has the ability, when considered together with the Company, to amend and restate the Prior Agreement in the manner set forth herein;

NOW, THEREFORE, the Company, the undersigned Existing Investors, who represent a group of Existing Investors that, together with the Company, has the ability to amend and restate the Prior Agreement in the manner set forth herein, hereby agree that the Prior Agreement shall be amended and restated in its entirety by the execution of this Agreement, and the parties hereto further agree as follows:

1. Definitions. For purposes of this Agreement:

"**Affiliate**" means, with respect to any specified Person, any other Person who, directly or indirectly, controls, is controlled by, or is under common control with such Person, including any general partner, managing member, officer or director of such Person or any venture capital or other private investment fund now or hereafter existing that is controlled by one or more general partners or managing members of, or shares the same management company with, such Person. Notwithstanding the foregoing, (x) no DESCO Group Entity shall be deemed to be an Affiliate of David E. Shaw or D. E. Shaw Technology Development, LLC, and (y) for purposes of each of Sections 2.3(c), 6.1(b)(1), and 6.8 below, (1) neither D. E. Shaw & Co., L.P. nor D. E. Shaw Valence Portfolios, L.L.C. shall be deemed to be an Affiliate of either David E. Shaw or D. E. Shaw Technology Development, LLC, and (2) neither D. E. Shaw & Co., L.P. nor D. E. Shaw Valence Portfolios, L.L.C. shall be deemed to be an Affiliate of the other.

"**Cascade**" means Cascade Investment, L.L.C.

"**Common Stock**" means shares of the Company's common stock, par value $0.01 per share.

"**Damages**" means any loss, damage, or liability (joint or several) to which a party hereto becomes subject under the Securities Act, the Exchange Act, or other federal or state law, insofar as such loss, damage, or liability (or any action in respect thereof) arises out of or is based upon (i) any untrue statement or alleged untrue statement of a material fact contained in any registration statement of the Company, including any preliminary prospectus or final prospectus contained therein or any amendments or supplements thereto; (ii) an omission or alleged omission to state therein a material fact required to be stated therein, or necessary to make the statements therein not misleading; or (iii) any violation or alleged violation by the indemnifying party (or any of its agents or Affiliates) of the Securities Act, the Exchange Act, any state securities law, or any rule or regulation promulgated under the Securities Act, the Exchange Act, or any state securities law.

"**Derivative Securities**" means any securities or rights convertible into, or exercisable or exchangeable for (in each case, directly or indirectly), Common Stock, including options and warrants.

"**DESCO Group Entity**" means an investment fund (i) to which either D.E. Shaw & Co., L.P. or D.E. Shaw & Co., L.L.C. provides discretionary or non-discretionary investment advisory services, whether through a managing

member, a general partner, or an investment adviser, and (ii) that has investors that are not Affiliates of David E. Shaw.

"**Exchange Act**" means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

"**Excluded Registration**" means a registration of the securities of the Company and/or of a subsidiary of the Company (i) relating to the sale of such securities to employees of the Company and/or of a subsidiary of the Company pursuant to a stock option, stock purchase, or similar plan; (ii) relating to an SEC Rule 145 transaction; (iii) on any form that does not include substantially the same information as would be required to be included in a registration statement covering the sale of the Registrable Securities; or (iv) in which the only Common Stock being registered is Common Stock issuable upon conversion of debt securities that are also being registered.

"**Form S-1**" means such form under the Securities Act as in effect on the date hereof or any successor registration form under the Securities Act subsequently adopted by the SEC.

"**Form S-3**" means such form under the Securities Act as in effect on the date hereof or any registration form under the Securities Act subsequently adopted by the SEC that permits incorporation of substantial information by reference to other documents filed by the Company with the SEC.

"**GAAP**" means generally accepted accounting principles in the United States.

"**Governmental Authority**" means any domestic or foreign nation, government, state or other political subdivision thereof, any entity legally exercising executive, legislative, judicial, regulatory, or administrative functions of or pertaining to government, including any self-regulatory authority (such as a stock or option exchange or securities self-regulatory organization), governmental authority, agency, commission, department, board, or instrumentality, and any court or administrative tribunal of competent jurisdiction.

"**Holder**" means any holder of Registrable Securities who is a party to this Agreement.

"**Immediate Family Member**" means a child, stepchild, grandchild, parent, stepparent, grandparent, spouse, sibling, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law, or sister-in-law, including adoptive relationships, of a natural person referred to herein.

"**Initiating Holders**" means, collectively, Holders who properly initiate a registration request under this Agreement.

"**IPO**" means the Company's first underwritten public offering of its Common Stock under the Securities Act.

"**Key Employee**" means any executive-level employee of the Company (including division director and vice president-level positions).

"**Knowledge**," including the phrase "**to the Company's Knowledge**," shall mean the actual knowledge of each of Ramy Farid, Jenny Herman, Jennifer Daniel and Yvonne Tran (for so long as such named individuals are providing services to the Company), after having made reasonably diligent inquiries internal to the Company with respect to the matter at hand.

"**Major Investor**" means (i) any Investor that, individually or together with such Investor's Affiliates, holds at least 15,902,140 shares of Preferred Stock (as adjusted for any stock split, stock dividend, combination, or other recapitalization or reclassification effected after the date hereof); (ii) Deerfield Private Design Fund IV, L.P. ("**Deerfield**") for so long as Deerfield holds at least seventy percent (70%) of the shares of Series E Preferred Stock originally sold to it under the Purchase Agreement (as adjusted for any stock split, stock dividend, combination or other recapitalization or reclassification effected after the date hereof); (iii) WuXi PharmaTech Healthcare Fund I L.P. ("**WuXi**") for so long as WuXi holds all of the shares of Series E Preferred Stock originally sold to it under the Purchase Agreement (as adjusted for any stock split, stock dividend, combination or other recapitalization or reclassification effected after the date hereof); (iv) Qiming Venture Partners VI, L.P. and Qiming Managing Directors Fund VI, L.P. (collectively, "**Qiming**") for so long as Qiming holds all of the shares of Series E Preferred Stock originally sold to it under the Purchase Agreement (as adjusted for any stock split, stock dividend, combination or other recapitalization or reclassification effected after the date hereof); and (v) Baron Growth Fund ("**Baron**") for so long as Baron holds all of the shares of Series E Preferred Stock originally sold to it under the Purchase Agreement (as adjusted for any stock split, stock dividend, combination or other recapitalization or reclassification effected after the date hereof). For the avoidance of any doubt, in no event shall Scott Becker be deemed a Major Investor.

"**New Securities**" means, collectively, equity securities of the Company issued by the Company after the date hereof, whether or not currently authorized, as well as rights, options, or warrants to purchase such equity securities, or securities of any type whatsoever that are, or may become, convertible or exchangeable into or exercisable for such equity securities.

"**Non-Voting Common Stock**" means shares of the Company's non-voting common stock, par value $0.01 per share.

"**Person**" means any individual, corporation, partnership, trust, limited liability company, association or other entity.

"**Preferred Stock**" means, collectively, shares of the Company's Series A Preferred Stock, Series B Preferred Stock, Series C Preferred Stock, Series D Preferred Stock and Series E Preferred Stock**.**

"**Purchase Agreement**" means that certain Series E Preferred Stock Purchase Agreement by and among the Company and certain of the Investors, dated as of the date hereof.

"**Registrable Securities**" means (i) the Common Stock issuable or issued upon conversion of the Preferred Stock held by the Investors; (ii) any Common Stock, or any Common Stock issued or issuable (directly or indirectly) upon conversion and/or exercise of Non-Voting Common Stock or any other securities of the Company, acquired by the Investors after the date hereof and (iii) any Common Stock issued as (or issuable upon the conversion or exercise of any warrant, right, or other security that is issued as) a dividend or other distribution with respect to, or in exchange for or in replacement of, the shares referenced in clauses (i) and (ii) above; excluding in all cases, however, any such Common Stock that would otherwise constitute Registrable Securities but that is sold by a Person in a transaction in which the applicable rights under this Agreement are not assigned pursuant to Section 6.1, and excluding for purposes of Section 2 any shares for which registration rights have terminated pursuant to Section 2.13 of this Agreement. The number of Registrable Securities outstanding at any given time shall be determined by adding (x) the number of shares of Common Stock outstanding as of such time that are Registrable Securities and (y) the number of shares of Common Stock that are not outstanding as of such time but that are issuable (directly or indirectly) as of such time pursuant to then exercisable and/or convertible securities and that are Registrable Securities.

"**Restated Certificate**" means the Company's Amended and Restated Certificate of Incorporation, as amended and/or restated from time to time.

"**Restricted Securities**" means the securities of the Company required to bear the legend set forth in Section 2.12(b) hereof.

"**Requirement of Law**" means, with respect to any Person, any law, treaty, order, statute, ordinance, code, decree, rule, or regulation of a Governmental Authority, in each case legally binding on that Person or to which any of such Person's assets is legally subject.

"**SEC**" means the Securities and Exchange Commission.

"**SEC Rule 144**" means Rule 144 promulgated by the SEC under the Securities Act.

"**SEC Rule 144(b)(1)(i)**" means subsection (b)(1)(i) of SEC Rule 144, as it applies to persons who have held shares for more than one year.

"**SEC Rule 145**" means Rule 145 promulgated by the SEC under the Securities Act.

"**Securities Act**" means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

"**Selling Expenses**" means all underwriting discounts, selling commissions, and stock transfer taxes applicable to the sale of Registrable Securities, and fees and disbursements of counsel for any Holder, except for the fees and disbursements of the Selling Holder Counsel borne and paid by the Company as provided in Section 2.6.

"**Series A Preferred Stock**" means shares of the Company's Series A Preferred Stock, par value $0.01 per share.

"**Series B Preferred Stock**" means shares of the Company's Series B Preferred Stock, par value $0.01 per share.

"**Series B Purchase Agreement**" means that certain Series B Preferred Stock Purchase Agreement by and among the Company and the investors party thereto, dated as of April 27, 2010.

"**Series C Preferred Stock**" means shares of the Company's Series C Preferred Stock, par value $0.01 per share.

"**Series C Purchase Agreement**" means that certain Series C Preferred Stock Purchase Agreement by and among the Company and the investors party thereto, dated as of December 11, 2012.

"**Series D Preferred Stock**" means the shares of the Company's Series D Preferred Stock, par value $0.01 per share.

"**Series D Purchase Agreement**" means that certain Series D Preferred Stock Purchase Agreement by and among the Company and the Trust, dated as of June 15, 2015.

"**Series E Preferred Stock**" means the shares of the Company's Series E Preferred Stock, par value $0.01 per share.

"**Shaw**" means David E. Shaw.

"**Trust**" means the Bill & Melinda Gates Foundation Trust.

"**Trust-Controlled Entity**" means (a) any entity that is controlled, directly or indirectly, by the Trust or any of its trustees (such entities including, without limitation, Cascade) and (b) any publicly traded entity in which the Trust or any of its trustees holds, directly or indirectly, five percent (5%) or more of the voting interest in such entity.

2. Registration Rights. The Company covenants and agrees as follows:

2.1 Demand Registration.

(a) Form S-1 Demand. If at any time after five (5) years after the date of this Agreement the Company receives a request from Holders of at least thirty-three percent (33%) of the Registrable Securities then outstanding that the Company file a Form S-1 registration statement covering the registration of Registrable Securities with an anticipated aggregate offering price, net of Selling Expenses, of at least $10,000,000, then the Company shall (i) within ten (10) days after the date such request is received, give notice thereof (the "**S-1 Demand Registration Initiation Notice**") to all Holders other than the Initiating Holders; and (ii) use its best efforts to, as soon as practicable after the date such request is received from the Initiating Holders, file a Form S-1 registration statement under the Securities Act covering all Registrable Securities that the Initiating Holders requested to be registered and any additional Registrable Securities requested to be included in such registration by any other Holders, as specified by notice given by each such Holder to the Company within twenty (20) days of the date the S-1 Demand Registration Initiation Notice is given, and in each case, subject to the limitations set forth in Section 2.1(c), Section 2.1(d), and Section 2.3.

(b) Form S-3 Demand. If at any time when it is eligible to use a Form S-3 registration statement, the Company receives a request from Holders of at least ten percent (10%) of the Registrable Securities then outstanding that the Company file a Form S-3 registration statement with respect to outstanding Registrable Securities of such Holders having an anticipated aggregate offering price, net of Selling Expenses, of at least $1,000,000, then the Company shall (i) within ten (10) days after the date such request is received, give notice thereof (the "**S-3 Demand Registration Initiation Notice"**) to all Holders other than the Initiating Holders; and (ii) use its best efforts to, as soon as practicable, and in any event within sixty (60) days after the date such request is received from the Initiating Holders, file a Form S-3 registration statement under the Securities Act covering all Registrable Securities that the initiating Holders requested to be registered and any additional Registrable Securities requested to be included in such registration by any other Holders, as specified by notice given by each such Holder to the Company within twenty (20) days of the date the S-3 Demand Registration Initiation Notice is given, and in each case, subject to the limitations set forth in Section 2.1(c), Section 2.1(d), and Section 2.3.

(c) Notwithstanding the foregoing obligations, if the Company furnishes to Holders requesting a registration pursuant to this Section 2.1 a certificate signed by the Company's chief executive officer or president stating that in the good faith judgment of the Company's Board of Directors it would be materially detrimental to the Company and its stockholders for such registration statement either to become effective or to remain effective for as long as such registration statement otherwise would be required to remain effective, because such action would (i) materially interfere with a significant acquisition, corporate reorganization, or other similar transaction involving the Company; (ii) require premature disclosure of material information that the Company has a bona fide business purpose for preserving as confidential; (iii) render the Company unable to comply with requirements under the Securities Act or Exchange Act or (iv) otherwise not be in the best interest of the Company and its stockholders, then the Company shall have the right to defer taking action with respect to such requested registration pursuant to

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this Section 2.1, and any time periods with respect to filing or effectiveness thereof shall be tolled correspondingly, for a period of not more than ninety (90) days (in the case of a request for registration made pursuant to Section 2.1(a)) or one hundred twenty (120) days (in the case of a request for registration made pursuant to Section 2.1(b)) after the request of the Initiating Holders is received by the Company; provided, however, that the Company may not invoke this right more than once in any twelve (12) month period with respect to a request for registration made pursuant to Section 2.1(a) and once in any twelve (12) month period with respect to a request for registration made pursuant to Section 2.1(b).

(d) The Company shall not be obligated to effect, or to take any action to effect, any registration pursuant to Section 2.1(a) (i) during any period beginning ninety (90) days before the Company's good faith estimate of the date of filing of a registration statement for the Company's IPO or thirty (30) days before the Company's good faith estimate of the date of filing of a registration statement for a registration of the Company's securities other than the Company's IPO, provided, that the Company is actively employing its best efforts to cause such registration statement to become effective and the Holders are provided with written notice from the Company regarding such proposed registration within 30 days of the Company's receiving a given request for registration pursuant to Section 2.1(a); (ii) during the one hundred eighty (180) day period commencing with the effective date of the Company's IPO or the ninety (90) day period commencing with the effective date of a registration of the Company's securities other than the Company's IPO; (iii) after the Company has effected two registrations pursuant to Section 2.1(a); or (iv) if the Initiating Holders propose to dispose of shares of Registrable Securities that may be immediately registered on

Form S-3 pursuant to a request made pursuant to Section 2.1(b). The Company shall not be obligated to effect, or to take any action to effect, any registration pursuant to Section 2.1(b) (x) during any period beginning thirty (30) days before the Company's good faith estimate of the date of filing of a registration statement for a registration of the Company's securities, provided, that the Company is actively employing its best efforts to cause such registration statement to become effective and the Holders are provided with written notice from the Company regarding such proposed registration within 30 days of the Company's receiving a given request for registration pursuant to Section 2.1(b); (y) during the ninety (90) day period commencing with the effective date of a registration of the Company's securities; or (z) if the Company has effected a registration pursuant to Section 2.1(b) within the preceding twelve (12) months. A registration shall not be counted as "effected" for purposes of this Section 2.1(d) until such time as the applicable registration statement has been declared effective by the SEC; provided, however, that if the Initiating Holders withdraw their request for a given registration requested pursuant to Section 2.1(a) or Section 2.1(b), elect not to pay the registration expenses therefor, and, pursuant to Section 2.6, forfeit (I) in the case of a registration proceeding begun pursuant to Section 2.1(a), their right to one registration pursuant to Section 2.1**(**a) or (II) in the case of a registration proceeding begun pursuant to Section 2.1(b), their right to request a registration pursuant to Section 2.1(b) for a period of twelve (12) months, such withdrawn registration statement shall be counted as "effected" for purposes of this Section 2.1(d).

2.2 Company Registration. If, other than in an Excluded Registration, the Company proposes to register (for the benefit of the Company and/or for one or more stockholders other than the Holders) any of its Common Stock under the Securities Act in connection with the public offering of such securities solely for cash, the Company shall, at such time, promptly give each Holder notice of such proposed registration. Upon the request of any Holder received by the Company within twenty (20) days after such notice is given by the Company, the Company shall, subject to the provisions of Section 2.3, use its best efforts to cause to be registered all of the Registrable Securities that each such Holder has requested to be included in such registration. The Company shall have the right to terminate or withdraw any registration initiated by it under this Section 2.2 before the effective date of such registration, whether or not any Holder has requested to include Registrable Securities in such registration. The expenses of any such withdrawn registration shall be borne by the Company in accordance with Section 2.6.

2.3 Underwriting Requirements.

(a) If, pursuant to Section 2.1, the Initiating Holders intend to distribute the Registrable Securities covered by their request by means of an underwriting, they shall so advise the Company as a part of their request made pursuant to Section 2.1, and the Company shall include such information in the S-1 Demand Registration Initiation Notice or the S-3 Demand Registration Initiation Notice, as applicable. The underwriter(s) will be selected by the Company and shall be reasonably acceptable to a majority in interest of the Initiating Holders. The right of any Holder to include such Holder's Registrable Securities in such registration shall be conditioned upon such Holder's participation in such underwriting and the inclusion of such Holder's Registrable Securities in the underwriting to the extent provided herein. All Holders proposing to distribute their securities through such underwriting shall (together with the Company as provided in Section 2.4(e)) enter into an underwriting agreement in customary form with the underwriter(s) selected for such underwriting. Notwithstanding any other provision of this Section 2.3, if the managing underwriter(s) advise(s) the Company in writing that marketing factors and/or other market conditions require a limitation on the number of shares to be underwritten, then the Company shall so advise the Holders of all Registrable Securities that otherwise would be underwritten pursuant hereto, and the number of Registrable Securities to be included in the underwriting shall be allocated among such Holders, including the Initiating Holders, in proportion (as nearly as practicable) to the number of Registrable Securities owned by each Holder or in such other proportion as shall mutually be agreed to by the Company and all such selling Holders; provided, however,

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that the number of Registrable Securities to be included in such underwriting that are held by Holders shall not be reduced unless all other securities are first entirely excluded from the underwriting. To facilitate the allocation of shares in accordance with the above provisions, the Company or the underwriters may round the number of shares allocated to any Holder to the nearest 100 shares.

(b) In connection with any offering involving an underwriting of shares of the Company's capital stock pursuant to Section 2.2, the Company shall not be required to include any of the Holders' Registrable Securities in such underwriting unless the Holders accept the terms of the underwriting as agreed upon between the Company and its underwriters, and then only in such quantity as the underwriters in their sole discretion determine will not jeopardize the success of the offering by the Company. If the total number of securities, including Registrable Securities, requested by stockholders to be included in such offering exceeds the number of securities to be sold (other than by the Company) that the underwriters in their reasonable discretion determine is compatible with the success of the offering, then the Company shall be required to include in the offering only that number of such securities,
including Registrable Securities, which the underwriters in their sole discretion determine will not jeopardize the success of the offering. If the underwriters determine that less than all of the Registrable Securities requested to be registered can be included in such offering, then the number of Registrable Securities to be included in such offering shall be allocated among the Holders requesting to participate in such offering in proportion (as nearly as practicable) to the number of Registrable Securities owned by each selling Holder or in such other proportion as shall mutually be agreed to by the Company and all such selling Holders. To facilitate the allocation of shares in accordance with the above provisions, the Company or the underwriters may round the number of shares allocated to any Holder to the nearest 100 shares. Notwithstanding the foregoing, in no event shall (i) the number of Registrable Securities included in the offering be reduced unless all other securities (other than securities to be sold by the Company) are first entirely excluded from the offering and (ii) the number of Registrable Securities included in the offering be reduced below twenty-five percent (25%) of the total number of securities included in such offering, unless such offering is the IPO, in which case the number of Registrable Securities included in the offering may be reduced further (including to zero) if the underwriters make the determination described above and no other stockholder's securities are included in such offering.

(c) For purposes of the provisions in Section 2.3(a) and Section 2.3(b) concerning the allocation among Holders of the number of Registrable Securities to be included in an offering, for any selling Holder that is a partnership, limited liability company, or corporation, the partners, members, retired partners, retired members, stockholders, and Affiliates of such

Holder and the estates and Immediate Family Members of any such partners, retired partners, members, and retired members, and any trusts for the benefit of any of the foregoing Persons, shall be deemed, together with such Holder, to be a single "Aggregate Holder," and any pro rata reduction with respect to such Holder shall be based upon the aggregate number of Registrable Securities owned by all Persons included in such Aggregate Holder, as defined in this sentence.

2.4 Obligations of the Company. Whenever required under this Section 2 to effect the registration of any Registrable Securities, the Company shall use its best efforts to:

(a) prepare and file with the SEC a registration statement with respect to such Registrable Securities and cause such registration statement to become effective and, upon the request of the Holders of a majority of the Registrable Securities registered thereunder, keep such registration statement effective for a period of up to one hundred twenty (120) days or, if earlier, until the distribution contemplated in the registration statement has been completed; provided, however, that such one hundred twenty (120) day period shall be extended for a period of time equal to the period any Holder refrains, at the request of an underwriter of Common Stock (or other securities) of the Company, from selling any securities included in such registration;

(b) prepare and file with the SEC such amendments and supplements to such registration statement, and the prospectus used in connection with such registration statement, as may be necessary to comply with the Securities Act in order to enable the disposition of all securities covered by such registration statement;

(c) furnish to the selling Holders such numbers of copies of a prospectus, including a preliminary prospectus, as required by the Securities Act, and such other documents as the Holders may reasonably request in order to facilitate their disposition of their Registrable Securities;

(d) register and qualify the securities covered by such registration statement under such other securities or blue-sky laws of such jurisdictions as shall be reasonably requested by the selling Holders; provided that the Company shall not be required to qualify to do business or to file a general consent to service of process in any such states or jurisdictions, unless the Company is already subject to service in such jurisdiction and except as may be required by the Securities Act;

(e) in the event of any underwritten public offering, enter into and perform its obligations under an underwriting agreement, in usual and customary form, with the underwriter(s) of such offering;

(f) cause all such Registrable Securities covered by such registration statement to be listed on a national securities exchange or trading system and each securities exchange and trading system (if any) on which similar securities issued by the Company are then listed;

(g) provide a transfer agent and registrar for all Registrable Securities registered pursuant to this Agreement and provide a CUSIP number for all such Registrable Securities, in each case not later than the effective date of such registration;

(h) promptly make available for inspection by the selling Holders, any managing underwriter(s) participating in any disposition pursuant to such registration statement, and any attorney or accountant or other agent retained by any such underwriter or selected by the selling Holders, all financial and other records, pertinent corporate documents, and properties of the Company, and cause the Company's officers, directors, employees, and independent accountants to supply all information reasonably requested by any such seller, underwriter, attorney, accountant, or agent, in each case, as necessary or advisable to verify the accuracy of the information in such registration statement and to conduct appropriate due diligence in connection therewith;

(i) notify each selling Holder, promptly after the Company receives notice thereof, of the time when such registration statement has been declared effective or a supplement to any prospectus forming a part of such registration statement has been filed; and

(j) after such registration statement becomes effective, notify each selling Holder of any request by the SEC that the Company amend or supplement such registration statement or prospectus.

2.5 Furnish Information. It shall be a condition precedent to the obligations of the Company to take any action pursuant to this Section 2 with respect to the Registrable Securities of any selling Holder that such Holder shall furnish to the Company such information regarding itself, the Registrable Securities held by it, and the intended method of disposition of such securities as is reasonably required to effect the registration of such Holder's Registrable Securities.

2.6 Expenses of Registration. All expenses (other than Selling Expenses) incurred in connection with registrations, filings, or qualifications pursuant to Section 2, including all registration, filing, and qualification fees; printers' and accounting fees; fees and disbursements of counsel for the Company; and the reasonable fees and disbursements, not to exceed $30,000, of one counsel for the selling Holders ("**Selling Holder Counsel**"), shall be borne and paid by the Company; provided, however, that the Company shall not be required to pay for any expenses of any registration proceeding begun pursuant to Section 2.1 if the registration request is subsequently withdrawn at the request of the Holders of a majority of the Registrable Securities proposed to be registered (in which case all selling Holders shall bear such expenses pro rata based upon the number of Registrable Securities that were to be included in the withdrawn registration), unless the Holders of a majority of the Registrable Securities agree to forfeit (a) in the case of a registration proceeding begun pursuant to Section 2.1(a), their right to one registration pursuant to Section 2.1(a) or (b) in the case of a registration proceeding begun pursuant to Section 2.1(b), their right to request a registration pursuant to Section 2.1(b) for a period of twelve (12) months. All Selling Expenses relating to Registrable Securities registered pursuant to this Section 2 shall be borne and paid by the Holders pro rata on the basis of the number of Registrable Securities registered on their behalf.

2.7 Delay of Registration. No Holder shall have any right to obtain or seek an injunction restraining or otherwise delaying any registration pursuant to this Agreement as the result of any controversy that might arise with respect to the interpretation or implementation of this Section 2.

2.8 Indemnification. If any Registrable Securities are included in a registration statement under this Section 2:

(a) To the extent permitted by law, the Company will indemnify and hold harmless each selling Holder, and the partners, members, officers, directors, and stockholders of each such Holder; legal counsel and accountants for each such Holder; any underwriter (as defined in the Securities Act) for each such Holder; and each Person, if any, who controls such Holder or underwriter within the meaning of the Securities Act or the Exchange Act, against any Damages, and the Company will pay to each such Holder, underwriter, controlling Person, or other aforementioned Person any legal or other expenses reasonably incurred thereby in connection with investigating or defending any claim or proceeding from which Damages may result, as such expenses are incurred; provided, however, that the indemnity agreement contained in this Section 2.8(a) shall not apply to amounts paid in settlement of any such claim or proceeding if such settlement is effected without the consent of the Company, which consent shall not be unreasonably withheld, nor shall the Company be liable for any Damages to the extent that they arise out of or are based upon actions or omissions made in reliance upon and in conformity with written information furnished by or on behalf of any such Holder, underwriter, controlling Person, or other aforementioned Person expressly for use in connection with such registration.

(b) To the extent permitted by law, each selling Holder, severally and not jointly, will indemnify and hold harmless the Company, and each of its directors, each of its officers who has signed the registration statement, each Person (if any) who controls the Company within the meaning of the Securities Act, legal counsel and accountants for the Company and/or other aforementioned Person, any underwriter (as defined in the Securities Act) for the Company

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and/or other aforementioned Person, any other Holder selling securities in such registration statement, and any controlling Person of any such underwriter or other Holder, against any Damages, in each case only to the extent that such Damages arise out of or are based upon actions or omissions of, or made in reliance upon and in conformity with written information furnished by or on behalf of, such selling Holder expressly for use in connection with such registration; and each such selling Holder will pay to the Company and each other aforementioned Person any legal or other expenses reasonably incurred thereby in connection with investigating or defending any claim or proceeding from which Damages may result, as such expenses are incurred; provided, however, that the indemnity agreement contained in this Section 2.8(b) shall not apply to amounts paid in settlement of any such claim or proceeding if such settlement is effected without the consent of the Holder, which consent shall not be unreasonably withheld; and provided further that in no event shall the aggregate amounts payable by any Holder by way of indemnity or contribution under Sections 2.8(b) and 2.8(d) exceed the proceeds from the offering received by such Holder (net of any Selling Expenses paid by such Holder), except in the case of fraud or willful misconduct by such Holder.

(c) Promptly after receipt by an indemnified party under this Section 2.8 of notice of the commencement of any action (including any governmental action) for which a party may be entitled to indemnification hereunder, such indemnified party will, if a claim in respect thereof is to be made against any indemnifying party under this Section 2.8, give the indemnifying party notice of the commencement thereof. The indemnifying party shall have the right to participate in such action and, to the extent the indemnifying party so desires, participate jointly with any other indemnifying party to which notice has been given, and to assume the defense thereof with counsel mutually satisfactory to the parties; provided, however, that an indemnified party (together with all other indemnified parties that may be represented without conflict by one counsel) shall have the right to retain one separate counsel, with the fees and expenses to be paid by the indemnifying party, if representation of such indemnified party by the counsel retained by the indemnifying party would be inappropriate due to actual or potential differing interests between such indemnified party and any other party represented by such counsel in such action. The failure to give notice to the indemnifying party within a reasonable time of the commencement of any such action shall relieve such indemnifying party of any liability to the indemnified party under this Section 2.8, to the extent that such failure materially prejudices the indemnifying party's ability to defend such action. The failure to give notice to the indemnifying party will not relieve the indemnifying party of any liability that it may have to any indemnified party otherwise than under this Section 2.8.

(d) To provide for just and equitable contribution to joint liability under the Securities Act in any case in which either (i) any party otherwise entitled to indemnification hereunder makes a claim for indemnification pursuant to this Section 2.8 but it is judicially determined (by the entry of a final judgment or decree by a court of competent jurisdiction and the expiration of time to appeal or the denial of the last right of appeal) that such indemnification may not be enforced in such case, notwithstanding the fact that this Section 2.8 provides for indemnification in such case, or (ii) contribution under the Securities Act may be required on the part of any party hereto for which indemnification is provided under this Section 2.8, then, and in each such case, such parties will contribute to the aggregate losses, claims, damages, liabilities, or expenses to which they may be subject (after contribution from others) in such proportion as is appropriate to reflect the relative fault of each of the indemnifying party and the indemnified party in connection with the statements, omissions, or other actions that resulted in such loss, claim, damage, liability, or expense, as well as to reflect any other relevant equitable considerations. The relative fault of the indemnifying party and of the indemnified party shall be determined by reference to, among other things, whether the untrue or allegedly untrue statement of a material fact, or the omission or alleged omission of a material fact, relates to information supplied by the indemnifying party or by the indemnified party and the parties' relative intent, knowledge, access to information, and opportunity to correct or prevent such statement or omission; provided, however, that, in any such case, (x) no Holder will be required to contribute any amount in excess of the public offering price of all Registrable Securities offered and sold by such Holder pursuant to such registration statement, and (y) no Person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) will be entitled to contribution from any Person who was not guilty of such fraudulent misrepresentation; and provided further that in no event shall a Holder's liability pursuant to this Section 2.8(d), when combined with the amounts paid or payable by such Holder pursuant to Section 2.8(b), exceed the proceeds from the offering received by such Holder (net of any Selling Expenses paid by such Holder), except in the case of willful misconduct or fraud by such Holder.

(e) Notwithstanding the foregoing, to the extent that the provisions on indemnification and contribution contained in the underwriting agreement entered into in connection with the underwritten public offering are in conflict with the foregoing provisions, the provisions in the underwriting agreement shall control.

(f) Unless otherwise superseded by an underwriting agreement entered into in connection with the underwritten public offering, the obligations of the Company and Holders under this Section 2.8 shall survive the completion of any offering of Registrable Securities in a registration under this Section 2, and otherwise shall survive the termination of this Agreement.

2.9 Reports Under Exchange Act. With a view to making available to the Holders the benefits of SEC Rule 144 and any other rule or regulation of the SEC that may at any time permit a Holder to sell securities of the Company to the public without registration or pursuant to a registration on Form S-3, the Company shall:

(a) make and keep available adequate current public information, as those terms are understood and defined in SEC Rule 144, at all times after the effective date of the registration statement filed by the Company for the IPO;

(b) use its best efforts to file with the SEC in a timely manner all reports and other documents required of the Company under the Securities Act and the Exchange Act (at any time after the Company has become subject to such reporting requirements); and

(c) furnish to any Holder, so long as the Holder owns any Registrable Securities, forthwith upon request (i) to the extent accurate**,** a written statement by the Company that it has complied with the reporting requirements of SEC Rule 144 (at any time after ninety (90) days after the effective date of the registration statement filed by the Company for the IPO), the Securities Act, and the Exchange Act (at any time after the Company has become subject to such reporting requirements), or that it qualifies as a registrant whose securities may be resold pursuant to Form S-3 (at any time after the Company so qualifies); (ii) a copy of the most recent annual or quarterly report of the Company and such other reports and documents so filed by the Company; and (iii) such other information as may be reasonably requested in availing any Holder of any rule or regulation of the SEC that permits the selling of any such securities without registration (at any time after the Company has become subject to the reporting requirements under the Exchange Act) or pursuant to Form S-3 (at any time after the Company so qualifies to use such form).

2.10 Limitations on Subsequent Registration Rights. From and after the date of this Agreement, the Company shall not, without the prior written consent of the Holders of at least seventy percent (70%) of the Registrable Securities then outstanding, enter into any agreement with any holder or prospective holder of any securities of the Company that (i) would allow such holder or prospective holder to include such securities in any registration unless, under the terms of such agreement, such holder or prospective holder may include such securities in any such registration only to the extent that the inclusion of such securities will not reduce the number of the Registrable Securities of the Holders that are included or (ii) would allow such holder or prospective holder to initiate a demand for registration of any securities held by such holder or prospective holder.

2.11 "Market Stand off" Agreement. Each Holder hereby agrees that it will not, without the prior written consent of the managing underwriter, during the period commencing on the date of the final prospectus relating to the IPO, and ending on the date specified by the Company and the managing underwriter (such period not to exceed one hundred eighty (180) days, provided that such period may be extended upon the request of the managing underwriter, to the extent required to accommodate regulatory restrictions on (1) the publication or other distribution of research reports, and (2) analyst recommendations and opinions, including, but not limited to, the restrictions contained in FINRA Rule 2241 or any successor provisions or amendments thereto), (i) lend; offer; pledge; sell; contract to sell; sell any option or contract to purchase; purchase any option or contract to sell; grant any option, right, or warrant to purchase; or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into or exercisable or exchangeable (directly or indirectly) for Common Stock held immediately before the effective date of the registration statement for such IPO or (ii) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of such securities, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of Common Stock or other securities, in cash, or otherwise. The foregoing provisions of this Section 2.11 shall apply only to the IPO, and shall not apply to (x) the sale of any shares of Common Stock to an underwriter pursuant to an underwriting agreement, nor (y) any transaction involving any shares of Common Stock acquired in the IPO or in any after-market transaction. The terms and conditions of this Section 2.11 shall be applicable to any Holder only if all officers, directors and stockholders individually owning more than one percent (1%) of the Company's outstanding Common Stock (after giving effect to conversion into Common Stock of all outstanding Preferred Stock and all outstanding Non-Voting Common Stock) are subject to substantially similar restrictions. The underwriters in connection with such registration are intended third-party beneficiaries of this Section 2.11 and shall have the right, power, and authority to enforce the provisions hereof as though they were a party hereto. Each Holder further agrees to execute such agreements as may be reasonably requested by the underwriters in connection with such registration that are consistent with this Section 2.11 or that are necessary to give further effect thereto. Any discretionary waiver or termination of the restrictions of any or all of such agreements by the Company or the underwriters shall apply pro rata to all Holders subject to such agreements, based on the number of shares subject to such agreements.

2.12 Restrictions on Transfer.

(a) The Preferred Stock and the Registrable Securities shall not be sold, pledged, or otherwise transferred, and the Company shall not recognize and shall issue stop-transfer instructions to its transfer agent with respect to any such sale, pledge, or transfer, except upon the conditions specified in this Agreement, which conditions are intended to ensure compliance with the provisions of the Securities Act. A transferring Holder will cause any proposed purchaser, pledgee, or transferee of the Preferred Stock and/or the Registrable Securities held by such Holder to agree to take and hold such securities subject to the provisions and upon the conditions specified in this Agreement.

(b) Each certificate or instrument representing (i) the Preferred Stock, (ii) the Registrable Securities, and (iii) any other securities issued in respect of the securities referenced in clauses (i) and (ii), upon any stock split, stock dividend, recapitalization, merger, consolidation, or similar event, shall (unless otherwise permitted by the provisions of Section 2.12(c)) be stamped or otherwise imprinted with a legend substantially in the following form:

THE SECURITIES REPRESENTED HEREBY HAVE BEEN ACQUIRED FOR INVESTMENT AND HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933. SUCH SHARES MAY NOT BE SOLD, PLEDGED, OR TRANSFERRED IN THE ABSENCE OF SUCH REGISTRATION OR A VALID EXEMPTION FROM THE REGISTRATION AND PROSPECTUS DELIVERY REQUIREMENTS OF SAID ACT.

THE SECURITIES REPRESENTED HEREBY MAY BE TRANSFERRED ONLY IN ACCORDANCE WITH THE TERMS OF AN AGREEMENT BETWEEN THE COMPANY AND THE STOCKHOLDER, A COPY OF WHICH IS ON FILE WITH THE SECRETARY OF THE COMPANY.

The Holders consent to the Company making a notation in its records and giving instructions to any transfer agent of the Restricted Securities in order to implement the restrictions on transfer set forth in this Section 2.12.

(c) The holder of each certificate representing Restricted Securities, by acceptance thereof, agrees to comply in all respects with the provisions of this Section 2. Before any proposed sale, pledge, or transfer of any Restricted Securities, unless there is in effect a registration statement under the Securities Act covering the proposed transaction, the Holder thereof shall give notice to the Company of such Holder's intention to effect such sale, pledge, or transfer. Each such notice shall describe the manner and circumstances of the proposed sale, pledge, or transfer in sufficient detail and, if reasonably requested by the Company, shall be accompanied at such Holder's expense by either (i) a written opinion of legal counsel who shall, and whose legal opinion shall, be reasonably satisfactory to the Company, addressed to the Company, to the effect that the proposed transaction may be effected without registration under the Securities Act; (ii) a "no action" letter from the SEC to the effect that the proposed sale, pledge, or transfer of such Restricted Securities without registration will not result in a recommendation by the staff of the SEC that action be taken with respect thereto; or (iii) any other evidence reasonably satisfactory to counsel to the Company to the effect that the proposed sale, pledge, or transfer of the Restricted Securities may be effected without registration under the Securities Act, whereupon the Holder of such Restricted Securities shall be entitled to sell, pledge, or transfer such Restricted Securities in accordance with the terms of the notice given by the Holder to the Company, subject to the provisions of this Section 2. The Company will not require such a legal opinion or "no action" letter (x) in any transaction in compliance with SEC Rule 144 or (y) in any transaction in which such Holder distributes or transfers Restricted Securities to an Affiliate, subsidiary, parent, partner, limited partner, retired partner, member, retired member, stockholder, or Immediate Family Member of such Holder for no consideration; provided that each transferee agrees in writing to be subject to the terms of this Section 2.12. Each certificate or instrument evidencing the Restricted Securities transferred as above provided shall bear, except if such transfer is made pursuant to SEC Rule 144, the appropriate restrictive legend set forth in Section 2.12(b), except that such certificate shall not bear such restrictive legend if, in the opinion of counsel for such Holder and the Company, such legend is not required in order to establish compliance with any provisions of the Securities Act.

2.13 Termination of Registration Rights. The right of any Holder to request registration or inclusion of Registrable Securities in any registration pursuant to Section 2.1 or Section 2.2 shall terminate upon the earlier to occur of:

(a) when all of such Holder's Registrable Securities can be sold in any three (3) month period without registration in compliance with Rule 144; and

(b) the fifth anniversary of the IPO.

3. Information and Observer Rights.

3.1 Delivery of Financial Statements. The Company shall deliver to each Major Investor, provided that the Board of Directors has not reasonably determined that such Major Investor is directly or indirectly through an Affiliate a competitor of the Company:

(a) as soon as practicable, but in any event within one hundred eighty (180) days after the end of each fiscal year of the Company (i) a balance sheet as of the end of such year, (ii) statements of income and of cash flows for such year, and (iii) a statement of stockholders' equity as of the end of such year, all such financial statements audited and certified by independent public accountants of nationally recognized standing selected by the Company;

(b) as soon as practicable, but in any event within forty-five (45) days after the end of each of the first three (3) quarters of each fiscal year of the Company, unaudited statements of income and of cash flows for such fiscal quarter, and an unaudited balance sheet as of the end of such fiscal quarter, all prepared in accordance with GAAP (except that such financial statements may (i) be subject to normal year-end audit adjustments and (ii) not contain all notes thereto that may be required in accordance with GAAP);

(c) as soon as practicable, but in any event no less than thirty (30) days before the beginning of each fiscal year, an annual operating plan for such fiscal year and, promptly after prepared, any other budgets or revised budgets prepared by the Company;

If, for any period, the Company has any subsidiary whose accounts are consolidated with those of the Company, then in respect of such period the financial statements delivered pursuant to this Section 3.1 shall be the consolidated and consolidating financial statements of the Company and all such consolidated subsidiaries.

For purposes of this Section 3.1, none of D. E. Shaw Research LLC, D. E. Shaw Technology Development, LLC, Deerfield, WuXi or the Trust shall be deemed a competitor of the Company.

Notwithstanding anything else in this Section 3.1 to the contrary, the Company may cease providing the information set forth in this Section 3.1 during the period starting with the date sixty (60) days before the Company's good-faith estimate of the date of filing of a registration statement if it reasonably concludes it must do so to comply with the SEC rules applicable to such registration statement and related offering; provided that the Company's covenants under this Section 3.1 shall be reinstated at such time as the Company is no longer actively employing its best efforts to cause such registration statement to become effective.

3.2 Inspection. The Company shall permit each Major Investor (provided that the Board of Directors has not reasonably determined that such Major Investor is directly or indirectly through an Affiliate a competitor of the Company), at such Major Investor's expense, to visit and inspect the Company's properties; examine its books of account and records; and discuss the Company's affairs, finances, and accounts with its officers, during normal business hours of the Company as may be reasonably requested by the Major Investor; provided, however, that the Company shall not be obligated pursuant to this Section 3.2 to provide access to any information that it reasonably and in good faith considers to be a trade secret or confidential information (unless covered by an enforceable confidentiality agreement, in form acceptable to the Company) or the disclosure of which would adversely affect the attorney-client privilege between the Company and its counsel. For purposes of this Section 3.2, none of D. E. Shaw Research LLC, D. E. Shaw Technology Development, LLC, or the Trust shall be deemed a competitor of the Company.

3.3 Observer Rights; Board Materials.

(a) Trust Observer Rights. As long as the Trust owns not less than twenty-five percent (25%) of the aggregate of (i) the shares of the Series B Preferred Stock originally sold under the Series B Purchase Agreement (or an equivalent amount of Common Stock issued upon conversion thereof or Non-Voting Common Stock issued in connection with an exchange thereof), (ii) the shares of the Series C Preferred Stock originally sold under the Series C Purchase Agreement (or an equivalent amount of Common Stock issued upon conversion thereof or Non-Voting Common Stock issued in connection with an exchange thereof), (iii) the shares of the Series D Preferred Stock originally sold to the Trust under the Series D Purchase Agreement (or an equivalent amount of Common Stock issued upon conversion thereof or Non-Voting Common Stock issued in connection with an exchange thereof) and (iv) the shares of the Series E Preferred Stock originally sold to the Trust under the Purchase Agreement (or an equivalent amount of Common Stock issued upon conversion thereof or Non-Voting Common Stock issued in connection with an exchange thereof), the Company shall invite a representative of the Trust to attend all meetings of its Board of Directors in a nonvoting observer capacity and, in this respect, shall give such representative copies of all notices, minutes, consents, and other materials that it provides to its directors; provided, however, that such representative shall agree to hold in confidence and trust and to act in a fiduciary manner with respect to all information so provided and, if requested by the Company, enter into a confidentiality agreement with the Company in form prescribed by the Company; and provided further, that the Company reserves the right to withhold any information and to exclude such representative from any meeting or portion thereof if (a) access to such information or attendance at such meeting could adversely affect the attorney-client privilege between the Company and its counsel or create a conflict of interest, or (b) result in disclosure of trade secrets to a competitor of the Company.

(b) WuXi Board Materials. As along as WuXi, together with its Affiliates, owns not less than all of the shares of Series E Preferred Stock originally sold to WuXi under the Purchase Agreement (or an equivalent amount of Common Stock issued upon conversion thereof, and as adjusted for any stock split, stock dividend, combination or other recapitalization or reclassification effected after the date hereof), the Company shall provide WuXi copies of all notices, minutes, consents, and other materials that it provides to its Board of Directors; provided, however, that WuXi shall agree to hold in confidence and trust and to act in a fiduciary manner with respect to all information so provided and, if requested by the Company, enter into a confidentiality agreement with the Company in form prescribed by the Company; and provided further, that the Company reserves the right to withhold any information if access to such information could (a) adversely affect the attorney client privilege between the Company and its counsel or create a conflict of interest, or (b) result in disclosure of trade secrets to a competitor of the Company.

3.4 Termination of Information and Observer Rights. The covenants set forth in Section 3.1, Section 3.2, and Section 3.3 shall terminate and be of no further force or effect upon the consummation of a Qualified IPO (as such term is defined in the Restated Certificate).

3.5 Confidentiality. Each Investor agrees that such Investor will keep confidential and will not disclose, divulge, or use for any purpose (other than in connection with its investment in the Company) any confidential information obtained from the Company pursuant to the terms of this Agreement (including notice of the Company's intention to file a registration statement), unless such confidential information (a) is known or becomes known to the public (other than as a result of a breach of this Section 3.5 by such Investor), (b) is or has been independently developed or conceived by the Investor without use of the Company's confidential information, or (c) is or has been made known or disclosed to the Investor by a third party without a breach of any obligation of confidentiality known by the Investor to be owing by such third party to the Company; provided, however, that an Investor may disclose confidential information (i) to its attorneys, accountants, consultants, and other professionals to the extent necessary to obtain their services in connection with monitoring its investment in the Company; (ii) to any prospective purchaser of any Registrable Securities or Preferred Stock from such Investor, if such prospective purchaser agrees to be bound by the provisions of this Section 3.5; (iii) to any existing or prospective Affiliate, partner, member, stockholder, wholly owned subsidiary, or financing sources of such Investor, provided that such Investor informs such Person that such information is confidential and directs such Person to maintain the confidentiality of such information (and, in the case of a prospective Affiliate, partner, member, stockholder, wholly owned subsidiary, or financing source, is bound by a confidentiality agreement no less restrictive than this Section 3.5 with

respect to such information); or (iv) (A) as may otherwise be required by law or under the terms of a subpoena, order, or other document issued by a court, governmental body, or stock exchange, in each case based on the opinion of such Investor's counsel, or (B) in connection with any judicial or administrative proceeding (including in response to questions, interrogatories, and/or requests for information and/or documents) in which such Investor is involved, provided, in each case (A) and (B), that the Investor promptly notifies the Company of such disclosure. The Company acknowledges that (i) Deerfield and its Affiliates (which include, for purposes hereof, any professional investment funds managed by Deerfield or any of its Affiliates) are engaged in the business of public market and private equity investing and may from time to time invest in entities that develop and utilize technologies, products or services that are similar to or competitive with those of the Company, and (ii) except insofar as this Agreement restricts the disclosure of the confidential information, this Agreement shall not prevent Deerfield or its Affiliates from (a) engaging in or operating any business, (b) entering into any agreement or business relationship with any third party, or (c) evaluating or engaging in investment discussions with, or investing in, any third party, whether or not competitive with the Company or its Affiliates. The Company acknowledges that Deerfield's review of confidential information will inevitably enhance its knowledge and understanding of the business of the Company in a way that cannot be separated from Deerfield's other knowledge and Company agrees that this Agreement shall not restrict Deerfield in connection with the purchase, sale, consideration of, and decisions related to other investments and serving on the boards of such investments in such industries. The Company acknowledges that Deerfield or its Affiliates' directors, officers or employees may serve as directors of portfolio companies of investment funds managed by Deerfield, and the Company agrees that such portfolio companies will not be deemed to have received confidential information solely because any such individual serves on the board of such portfolio company, provided that (i) such individual or Deerfield or any Affiliate has not provided such portfolio company or any other director, officer, employee or other representative of such portfolio company with confidential information and (ii) such portfolio company does not act at the direction of or with encouragement from Deerfield. Furthermore, nothing in this Agreement will be construed as a representation or agreement that Deerfield or its Affiliates will not develop, receive or otherwise possess ideas, plans or other information which may be similar to that embodied in the confidential information, provided that such ideas, plans or other information has not been prepared in reliance upon or otherwise using the confidential information or otherwise in violation of this Section 3.5. The Company further acknowledges that Deerfield does not want to receive any material non-public information with respect to any publicly-traded company, and the Company agrees that it will use reasonable efforts not to disclose any such information to Deerfield.

4. Rights to Future Stock Issuances.

4.1 Right of First Offer. Subject to the terms and conditions of this Section 4.1 and applicable securities laws, if the Company proposes to offer or sell any New Securities, the Company shall first offer such New Securities to (i) each Investor holding shares of Series A Preferred Stock and (ii) each Major Investor (provided that the Board of Directors has not reasonably determined that such Major Investor is directly or indirectly through an Affiliate a competitor of the Company). An Investor shall be entitled to apportion the right of first offer hereby granted to it among itself and its Affiliates in such proportions as it deems appropriate. As used in this Section 4, the term "Investor" shall refer only to the Investors described in clauses (i) and (ii) of the first sentence of this Section 4.1.

(a) The Company shall give notice (the "**New Securities Offer Notice**") to each Investor, stating (i) its bona fide intention to offer such New Securities, (ii) the number of such New Securities to be offered, and (iii) the price and terms, if any, upon which it proposes to offer such New Securities.

(b) By notification to the Company within twenty (20) days after the New Securities Offer Notice is given, each Investor may elect to purchase or otherwise acquire, at the price and on the terms specified in the New Securities Offer Notice, up to that portion of such New Securities which equals the proportion that the Common Stock issued and held, or issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of the Preferred Stock, Non-Voting Common Stock and any other Derivative Securities then held, by such Investor bears to the total

Common Stock of the Company then outstanding (assuming full conversion and/or exercise, as applicable, of all Preferred Stock, Non-Voting Common Stock and other Derivative Securities). At the expiration of such twenty (20) day period, the Company shall promptly notify each Investor that elects to purchase or acquire all the shares available to it (each, a "**Fully Exercising Investor**") of any other Investor's failure to do likewise, including in such notice the total number of shares that Investors other than the Fully Exercising Investors failed to elect to purchase (the "**Remaining New Securities**"). During the ten (10) day period commencing when the Company has given such notice to the Fully Exercising Investors, each Fully Exercising Investor may, by giving notice to the Company, elect to purchase or acquire, in addition to the number of shares specified above, up to that portion of the Remaining New Securities which equals the proportion that the Common Stock issued and held, or issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of Preferred Stock, Non-Voting Common Stock and any other Derivative Securities then held, by such Fully Exercising Investor bears to the Common Stock issued and held, or issuable (directly or indirectly) upon conversion and/or exercise, as applicable, of the Preferred Stock, Non-Voting Common Stock and any other Derivative Securities then held, by all Fully Exercising Investors who wish to purchase any such Remaining New Securities. The closing of any sale pursuant to this Section 4.1(b) shall occur within the later of one hundred and twenty (120) days of the date that the New Securities Offer Notice is given and the date of initial sale of New Securities pursuant to Section 4.1(c).

(c) The Company may, during the one hundred and twenty (120) day period following the expiration of the periods provided in Section 4.1(b), offer and sell the remaining unsubscribed portion of such New Securities to any Person or Persons at a price not less than, and upon terms no more favorable to the offeree than, those specified in the New Securities Offer Notice. If the Company does not enter into an agreement for the sale of the New Securities within such period, or if such agreement is not consummated within sixty (60) days of the execution thereof, the Investors' right of first offer provided in this Section 4.1 shall be deemed to be revived and such New Securities shall not be offered or sold to any Person or Persons other than the Investors unless first reoffered to the Investors in accordance with this Section 4.1.

(d) The right of first offer in this Section 4.1 shall not be applicable to Exempted Securities (as defined in the Restated Certificate).

4.2 Termination. The covenants set forth in Section 4.1 shall terminate and be of no further force or effect (i) immediately before the consummation of a Qualified IPO or (ii) upon a Deemed Liquidation Event, as such term is defined in the Restated Certificate, whichever event occurs first.

5. Additional Covenants. For the purposes of this Section 5, the term "the Company" shall include Schrödinger, LLC (the "**LLC**") unless otherwise noted herein.

5.1 Employee Agreements. The Company will cause (i) each person now or hereafter employed by it or by any subsidiary (or engaged by the Company or by any subsidiary as a consultant or independent contractor) to enter into a nondisclosure and proprietary rights assignment agreement, which in the case of employees shall be in the form provided to the Trust or its counsel and (ii) each Key Employee to enter into a standard employment agreement, including, to the extent permitted by applicable law without the need for the Company to pay such employee additional consideration in excess of $10,000, noncompetition and nonsolicitation provisions substantially in the form attached hereto as Exhibit A.

5.2 Employee Stock. Unless otherwise approved by the Board of Directors, all employees, consultants, directors and other service providers of the Company who purchase, receive options to purchase, or receive awards of shares of the Company's capital stock after the date hereof shall be required to execute restricted stock or option agreements, as applicable, providing for (i) vesting of shares over a four (4) year period, with twenty-five percent (25%) of such shares vesting on each anniversary of the vesting commencement date for such option or shares, provided that such employee, consultant, director or other service provider has provided continued employment or service to the Company during such period, and (ii) a market stand-off provision substantially similar to that in Section 2.11. In addition, unless otherwise approved by the Board of Directors, with respect to all equity grants other than those made pursuant to the Company's 2002 Amended and Restated Stock Incentive Plan, the Company (A) shall retain (and not waive) a "right of first refusal" on employee, consultant, director and other service provider transfers of the Company's capital stock until the Company's IPO, (B) shall have the right to repurchase, at cost, unvested shares, if any, held by such employee, consultant, director or other service provider upon termination of employment or service, as applicable, of a recipient of a grant of restricted stock, and (C) shall have the right to repurchase, at cost, vested shares, if any, held by such employee, consultant, director or other service provider upon termination of employment or service, as applicable, for "Cause" (as defined in the applicable restricted stock agreement) of a recipient of a grant of restricted stock.

5.3 Matters Requiring Investor Director Approval. So long as the holders of Series B Preferred Stock, Series C Preferred Stock and Series D Preferred Stock are entitled to elect a Series B/C/D Director (as defined in the Restated Certificate), the Company hereby covenants and agrees with each of the Investors that it shall not, without approval of the Board of Directors, which approval must include the affirmative vote of the then-serving Series B/C/D Director:

(a) (i) enter into any joint venture or (ii) enter into any agreement in connection with sponsored research, collaboration, technology license, development, OEM, marketing or other similar agreements or strategic partnerships in which the aggregate value to or obligation of the Company is greater than $10,000,000, provided that the approval otherwise required pursuant to this Section 5.3 shall not be required with respect to any such joint venture, agreement, strategic partnership or other arrangement described in this Section 5.3(a) if (x) Deerfield Management Company, L.P. ("Deerfield"), any Affiliate of Deerfield or any entity in which either Deerfield or any of Affiliate of Deerfield (collectively, the "Deerfield-Related Entities"), directly or indirectly, holds a voting interest in, or is issued or holds stock of, a principal party to such transaction (other than the Company) that represents beneficial ownership of not less than 5% of the equity of such principal party, (y) such Deerfield-Related Entity either (A) controls (as defined in Rule 12b-2 of the Securities Exchange Act of 1934, as amended) a principal party to such transaction (other than the Company), or (B) is a "major investor," "major holder" or has comparable status with respect to a principal party to such transaction (other than the Company) as and to the extent that the term "major investor," "major holder" or any comparable term that conveys participation, information and co-sale rights, is understood or defined with respect to such party's governing corporate documents and (z) such transaction has been approved by the Board of Directors;

(b) authorize the acquisition of any other entity or business, which shall include, without limitation, financial investments of at least $5,000,000 in cash; or

(c) make any capital expenditures in a single transaction or series of related transactions in excess of $7,500,000.

5.4 Affirmative Obligations of the Company.

(a) At all times after the execution and delivery of the Agreement, the Company shall:

(i) acquire and maintain sufficient legal rights to use and to exploit, in the conduct of the Company's business, all Intellectual Property (as defined in the Purchase Agreement) that is necessary to the conduct of the Company's business or that otherwise is used or exploited in such business;

(ii) promptly following general commercial release of new versions, register with the United States Copyright Office the Company's material existing and newly developed original works of authorship to the extent such works are eligible for registration with the United States Copyright Office and not already so registered;

(iii) require each employee hired by the Company or by any subsidiary following the execution and delivery of this Agreement to execute and deliver to the Company a form of written employment agreement, which will provide that such employee will be required to assign to the Company all Intellectual Property he or she makes, creates, conceives or first reduces to practice in the course of his or her employment, whether or not such Intellectual Property is made, created, conceived or first reduced to practice by such employee alone or with others and whether made, created, conceived, or first reduced to practice during regular working hours or other hours, and all Intellectual Property he or she makes, creates, conceives or first reduces to practice during the period of his or her employment, whether or not in the course of such employment, to the extent the same is related to the Company's business or actual or demonstrably anticipated research or development or is made, created, conceived, or first reduced to practice with the time, private or proprietary information, or facilities of the Company; provided, however, this clause shall not apply to the employees of Schrödinger, GmbH except for those employees of Schrödinger, GmbH, if any, who are responsible for product development or quality assurance testing; and

(iv) continue the Company's practice of requiring each consultant involved in any material way in the conduct of the Company's business to assign to the Company all Intellectual Property he or she develops or creates that results from the work performed by such consultant for the Company.

5.5 Negative Obligations.

(a) At all times after the execution and delivery of the Agreement, the Company shall not, and shall not permit its subsidiaries to, market or sell any product or service or engage in any other activity which, to the Company's Knowledge, will violate any license or privacy or publicity rights (or the like), or infringe or misappropriate any Intellectual Property of any other party.

(b) None of the parties to this Agreement (except the Trust) shall use the Trust's name (or the name of any Affiliate of the Trust) in any press release, published notice or other publication relating to the Trust's investment in the Company without the prior written consent of the Trust, except as may be required to meet the obligations of Section 5.6. For the avoidance of doubt, the Company may, subject to a confidentiality agreement, advise other investors and prospective investors of the fact of the Trust's investment in the Company, including the transfer of Cascade's prior investment in the Company to the Trust (the "**Transfer**"), and may make any other disclosure regarding the Trust's investment in the Company, including the Transfer, required by law or legal process, provided that the Company provides the Trust reasonable advance notice of such disclosure and the Company may, without a confidentiality agreement, make disclosures regarding the Trust's investment in the Company, including the Transfer, to the extent such information in such disclosures is readily publicly available without restriction (except through violation of this

Agreement), whether through any previously approved press release or other proper disclosure in compliance with this Agreement, without obtaining the Trust's consent or providing advance notice of such disclosures.

5.6 Cooperation with the Trust. Prior to entering into a commercial agreement with any third party that will involve the payment of any consideration to or for the benefit of such third party in excess of US$100,000.00 in a single transaction (or a series of related transactions) (each such third party, an "Applicable Vendor", and each such potential commercial agreement, an "**Applicable Vendor Agreement**"), the Company will notify the Trust of the name and address of such Applicable Vendor (such notice, the "**Company Notice**"). The Trust will then make a determination as to whether William H. Gates, III ("**Gates**") holds, directly or indirectly, an ownership interest in such Applicable Vendor (each such ownership interest a "**Qualified Interest**"). The Trust shall notify the Company within ten (10) business days following the date of the Company Notice whether or not Gates holds a Qualified Interest (the "**Trust Notice**"). If the Trust Notice indicates that Gates holds a Qualified Interest, then the Company shall cooperate with the Trust in structuring such Applicable Vendor Agreement in a manner that will not give rise to potential adverse consequences to the Trust, Gates or the Company.

5.7 Termination of Covenants. The covenants set forth in this Section 5, shall terminate and be of no further force or effect (i) immediately before the consummation of the IPO, (ii) when the Company first becomes subject to the periodic reporting requirements of Section 12(g) or 15(d) of the Exchange Act, or (iii) upon a Deemed Liquidation Event, as such term is defined in the Restated Certificate, whichever event occurs first. Notwithstanding the foregoing, the covenant set forth in Section 5.6 shall terminate and be of no further force or effect upon the occurrence of any event set forth in clauses (i), (ii) or (iii) of the preceding sentence or (iv) upon the Trust no longer holding any equity securities of the Company, whichever event occurs first.

6. Miscellaneous.

6.1 Successors and Assigns.

(a) The rights under this Agreement may be assigned (but only with all related obligations) by a Holder to a transferee of Registrable Securities that (i) is an Affiliate, subsidiary, parent, partner, limited partner, retired partner, member, retired member, or a stockholder of a Holder; (ii) is a Holder's Immediate Family Member or a trust for the benefit of an individual Holder or one or more of such Holder's Immediate Family Members; (iii) after such transfer, holds at least 3,000,000 shares of Registrable Securities (subject to appropriate adjustment for stock splits, stock dividends, combinations, and other recapitalizations); or (iv) any charitable organization formed by a Holder, or by any of the entities listed in clauses (i)-(iii) above, provided, however, that (x) the Company is, within a reasonable time after such transfer, furnished with written notice of the name and address of such transferee and the Registrable Securities with respect to which such rights are being transferred; and (y) such transferee agrees in a written instrument delivered to the Company to be bound by and subject to the terms and conditions of this Agreement, including the provisions of Section 2.11. Notwithstanding the foregoing or anything to the contrary in this Agreement, Scott Becker may only transfer his rights under this Agreement to an Immediate Family Member or a trust for his benefit or the benefit of an Immediate Family Member.

(b) For the purposes of determining the number of shares of Registrable Securities held by a transferee, the holdings of a transferee (i) that is an Affiliate or stockholder of a Holder; (ii) who is a Holder's Immediate Family Member; or (iii) that is a trust for the benefit of an individual Holder or such Holder's Immediate Family Member shall be aggregated together and with those of the transferring Holder; provided further that all transferees who would not qualify individually for assignment of rights shall have a single attorney-in-fact for the purpose of exercising any rights, receiving notices, or taking any action under this Agreement.

(c) The terms and conditions of this Agreement inure to the benefit of and are binding upon the respective successors and assignees of the parties. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and permitted assignees any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided herein.

(d) Notwithstanding anything to the contrary in this Agreement, in the event that Shaw sells or transfers more than twenty-five percent (25%) of the shares of Series A Preferred Stock held by Shaw on the date of this Agreement to any corporation, partnership, association, limited liability company, joint venture, trust, unincorporated organization or organization similar to the foregoing that the Trust reasonably and in good faith determines is a competitor to any Trust-Controlled Entity, then the Trust shall have the right to sell or transfer all or any portion of the shares of Preferred Stock then held by the Trust and the provisions of Section 6.1(a) of this Agreement shall be inapplicable to such sale or transfer.

6.2 Governing Law. This Agreement shall be governed by, and construed in accordance with, the laws of the State of Delaware, regardless of the laws that might otherwise govern under applicable principles of conflicts of law.

6.3 Counterparts; Facsimile. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. This Agreement may also be executed and delivered by facsimile signature and in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Counterparts may be delivered via

facsimile, electronic mail (including pdf or any electronic signature complying with the U.S. federal ESIGN Act of 2000, e.g., www.docusign.com) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

6.4 Titles and Subtitles. The titles and subtitles used in this Agreement are for convenience only and are not to be considered in construing or interpreting this Agreement.

6.5 Notices. All notices and other communications given or made pursuant to this Agreement shall be in writing and shall be deemed effectively given upon the earlier of: (i) personal delivery to the party to be notified; (ii) when sent, if sent by electronic mail or facsimile during the recipient's normal business hours, and if not sent during normal business hours, then on the recipient's next business day; (iii) five (5) days after having been sent by registered or certified mail, return receipt requested, postage prepaid; or (iv) one (1) business day after the business day of deposit with a nationally recognized overnight courier, freight prepaid, specifying next-day delivery, with written verification of receipt. All communications shall be sent to the respective parties at their addresses as set forth on Schedule A hereto, or to the principal office of the Company and to the attention of the Chief Executive Officer, in the case of the Company, or to such email address, facsimile number, or address as subsequently modified by written notice given in accordance with this Section 6.5. If notice is given to the Company, a copy of such notice (which shall not constitute notice under this Agreement) shall also be sent to Wilmer Cutler Pickering Hale and Dorr LLP, 60 State Street, Boston, MA 02109, Attention: Cynthia T. Mazareas, Esq.

6.6 Amendments and Waivers. Any term of this Agreement may be amended and the observance of any term of this Agreement may be waived (either generally or in a particular instance, and either retroactively or prospectively) only with the written consent of the Company and the holders of at least seventy percent (70%) of the Registrable Securities then outstanding; provided that the Company may in its sole discretion waive compliance with Section 2.12(c); provided further that any provision hereof may be waived by any waiving party on such party's own behalf, without the consent of any other party; provided, further, that (A) romanette (ii) in the definition of "Major Investor" set forth in Section 1 of this Agreement and this proviso (A) may not be amended or waived without the consent of Deerfield; (B) romanette (iii) in the definition of "Major Investor" set forth in Section 1 of this Agreement, Section 3.3(b) of this Agreement and this proviso (B) may not be amended or waived without the consent of WuXi; (C) romanette (iv) in the definition of "Major Investor" set forth in Section 1 of this Agreement and this proviso (C) may not be amended or waived without the consent of Qiming; and (D) romanette (v) in the definition of "Major Investor" set forth in Section 1 of this Agreement and this proviso (D) may not be amended or waived without the consent of Baron. Notwithstanding the foregoing, (a) this Agreement may not be amended or terminated and the observance of any term hereof may not be waived with respect to any Investor without the written consent of such Investor, unless such amendment, termination, or waiver applies to all Investors in the same fashion (it being agreed that a waiver of the provisions of Section 4 with respect to a particular transaction shall be deemed to apply to all Investors in the same fashion if such waiver does so by its terms, notwithstanding the fact that certain Investors may nonetheless, by agreement with the Company, purchase securities in such transaction) and (b) Subsections 3.1 and 3.2, Section 4 and any other section of this Agreement applicable to the Major Investors (including this clause (b) of this Subsection 6.6) may not be amended, modified, terminated or waived without the written consent of the holders of at least a majority of the Registrable Securities then outstanding held by the Major Investors. The Company shall give prompt notice of any amendment or termination hereof or waiver hereunder to any party hereto that did not consent in writing to such amendment, termination, or waiver. Any amendment, termination, or waiver effected in accordance with this Section 6.6 shall be binding on all parties hereto, regardless of whether any such party has consented thereto. No waivers of or exceptions to any term, condition, or provision of this Agreement, in any one or more instances, shall be deemed to be or construed as a further or continuing waiver of any such term, condition, or provision.

6.7 Severability. In case any one or more of the provisions contained in this Agreement is for any reason held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision of this Agreement, and such invalid, illegal, or unenforceable provision shall be reformed and construed so that it will be valid, legal, and enforceable to the maximum extent permitted by law.

6.8 Aggregation of Stock. All shares of Registrable Securities held or acquired by Affiliates shall be aggregated together for the purpose of determining the availability of any rights under this Agreement, including whether an Investor is a "Major Investor", and such persons may apportion such rights as among themselves in any manner they deem appropriate.

6.9 Additional Investors. Notwithstanding anything to the contrary contained herein, if the Company issues additional shares of the Company's Series E Preferred Stock after the date hereof pursuant to the Purchase Agreement, as amended and/or restated from time to time, any purchaser of such shares of Series E Preferred Stock may become a party to this Agreement by executing and delivering an additional counterpart signature page to this Agreement, and thereafter shall be deemed an "Investor" for all purposes hereunder. No action or consent by the Investors shall be required for such joinder to this Agreement by such additional Investor, so long as such additional Investor has agreed in writing to be bound by all of the obligations of an "Investor" hereunder.

6.10 Entire Agreement. This Agreement (including any Schedules and Exhibits hereto) constitutes the full and entire understanding and agreement among the parties with respect to the subject matter hereof, and any other written or oral agreement relating to the subject matter hereof existing between the parties is expressly canceled. Upon the effectiveness of this Agreement, the Prior Agreement shall be deemed amended and restated and superseded and replaced in its entirety by this Agreement and shall be of no further force or effect.

6.11 Limited Permission for a Party to Seek Specific Performance.

(a) A Holder shall have the right to seek the remedy of specific performance in a Covered Dispute (as defined in Section 6.12 below) against another Holder ("**Other Holder**") in order to prevent a breach or a continuing breach, as applicable, by such Other Holder of express provisions of a covenant set forth in this Agreement (or exhibits thereto), subject to all of the limitations set forth in this Section 6.11 and Section 6.12 below.

(b) For the avoidance of doubt, (i) the Company shall not have the right to seek the remedy of specific performance in a Covered Dispute against any Holder (provided that, and not withstanding anything herein to the contrary, the Company shall retain any and all rights with respect to specific performance and/or other remedies pursuant to the Employment Agreement between it and Scott Becker dated as of January 11, 2012); (ii) nothing in this Section 6.11 implies a waiver of any defense to the remedy of specific performance, including the defense that a remedy of monetary damages would be adequate; (iii) any right provided to a party in Section 6.11(a) to seek specific performance shall be deemed to be subject to all limitations in this Agreement applicable to such right (including the limitations set forth in Section 6.12); and (iv) each party agrees that it shall not seek any remedy of specific performance, other than as expressly set forth in this Section 6.11.

(c) Notwithstanding anything to the contrary in this Agreement, no specific performance remedy may be granted against another party if it would require such party to breach or violate any Requirement of Law.

6.12 Dispute Resolution.

(a) Any and all disputes, claims, or controversies arising out of or relating to this Agreement, or the breach thereof, will be resolved in accordance with the procedures set forth in this Section 6.12 (each, a "**Covered Dispute**"), and these procedures will be the sole and exclusive process for the resolution of such Covered Disputes. Notwithstanding anything to the contrary in this Agreement and solely with respect to claims of a Holder against the Company that may arise out of or relating to this Agreement or the breach thereof, the Company (i) hereby irrevocably and unconditionally submits to the jurisdiction of the federal and state courts located within the geographic boundaries of the United States District Court for the District of Delaware for the purpose of any suit, action or other proceeding arising out of or based upon this Agreement, (ii) agrees not to commence any suit, action or other proceeding arising out of or based upon this Agreement against any Holder and/or its Affiliates or Cascade and/or its Affiliates, and (iii) hereby waives, and agrees not to assert, by way of motion, as a defense, or otherwise, in any such suit, action or proceeding, any claim that it is not subject personally to the jurisdiction of the above-named courts, that its property is exempt or immune from attachment or execution, that the suit, action or proceeding is brought in an inconvenient forum, that the venue of the suit, action or proceeding is improper or that this Agreement or the subject matter hereof may not be enforced in or by such court.

(b) Any Covered Dispute will be finally settled by arbitration administered by the American Arbitration Association in accordance with its Commercial Arbitration Rules then in effect, except as modified herein.

(c) The number of arbitrators will be three, one of whom will be appointed by each of the parties to the Covered Dispute, and the third of whom will be selected by mutual agreement of the parties to the Covered Dispute, if possible, within ten (10) business days after the selection of the second arbitrator and thereafter by the administering authority; *provided*, that in the event a given Covered Dispute shall have more than two disputing parties (counting as a single party for purposes of this sentence any parties whose interests are substantially identical), such Covered Dispute shall be separated into multiple separate Covered Disputes, each of which shall have only two parties. The place of arbitration will be New York, New York. The arbitrators shall be chosen from the American Arbitration Association's "National Panel" and shall have extensive commercial experience that the parties to the Covered Dispute believe in good faith is sufficient given the nature and complexity of this Agreement.

(d) The arbitrators will have no authority (i) to make any ruling, finding, or award that does not conform to the terms and conditions of this Agreement or (ii) to grant a remedy of specific performance other than as may be sought pursuant to and in accordance with this Section 6.12.

(e) The award of the arbitrators will be final and binding. Judgment on the award rendered by the arbitrators may be entered in any court having jurisdiction thereof, *provided* that any award of specific performance shall (i) be documented in a detailed written opinion containing findings of fact and law, subject to Section 6.12(h) below, and (ii) be subject to review by any court to which such award is submitted for entry to the same extent that a similar award by the New York Supreme Court would be subject to review by the Appellate Division of the New York Supreme Court.

(f) Notwithstanding anything to the contrary in this Section 6.12, any party may apply to a court of competent jurisdiction solely (i) to seek injunctive relief in order to maintain the status quo until such time as an arbitration award is rendered or the controversy is otherwise resolved and/or (ii) to enforce an arbitration award, and for no other purpose.

(g) The arbitral tribunal and the administrator shall agree to keep confidential and not disclose information concerning (i) the existence of an arbitration, (ii) any documentary or other evidence given by a party or witness in the arbitration, or (iii) the arbitration award, *provided* that a party may make such disclosures as are necessary to comply with any Requirement of Law or the request of any Governmental Authority after making good faith efforts under the circumstances to consult in advance with the other Parties.

(h) The right of the Holders to seek specific performance granted by Section 6.11 is subject to the following limitations:

(i) a Holder that intends to bring an action to seek specific performance (the "**Seeker**") against another Holder or against Cascade and/or its Affiliates (the "**Alleged Breaching Party**") shall give the Alleged Breaching Party notice of its intention to bring such action as promptly as reasonably practicable after the Seeker learns of the acts or omissions giving rise to the alleged breach;

(ii) the Seeker shall not seek an order the compliance with which is beyond the ability or outside the control of the Alleged Breaching Party;

(iii) the Seeker shall not be entitled to any relief or findings of fact made in connection with any remedy that could reasonably be expected to (A) require a Person to violate any applicable law, rule, or regulation; (B) result in a statutory disqualification of the Alleged Breaching Party or any of its Affiliates and, in the case where the Trust is the Alleged Breaching Party, any other Gates-Related Entity (as defined in Section 6.16(b) below), or result in similar disabilities imposed upon the Alleged Breaching Party or its Affiliates and, in the case where the Trust is the Alleged Breaching Party, any other Gates-Related Entity, under state or federal securities laws, ERISA, or similar statutes; or (C) result in the bankruptcy or insolvency of the Alleged Breaching Party;

(iv) to the fullest extent permitted by law, the Seeker waives any right to, and if practicable will oppose, (A) the penalty of incarceration and/or (B) the imposition of penalties for criminal or civil contempt, in each case (A) and (B), for any actual or alleged noncompliance with any order; and

(v) nothing in this Section 6.12(h) implies a waiver of any defense to the remedy of specific performance, including the defense that a remedy of monetary damages would be adequate.

6.13 Delays or Omissions. No delay or omission to exercise any right, power, or remedy accruing to any party under this Agreement, upon any breach or default of any other party under this Agreement, shall impair any such right, power, or remedy of the party to whom such right, power or remedy accrues, nor shall any such delay or omission be construed to be a waiver of or acquiescence to any such breach or default, or to any similar breach or default thereafter occurring, nor shall any waiver of any single breach or default be deemed a waiver of any other breach or default theretofore or thereafter occurring. All remedies, whether under this Agreement or by law or otherwise afforded to any party, shall be cumulative and not alternative.

6.14 Acknowledgment. The Company acknowledges with respect to each Investor other than Scott Becker that such Investors may be in the business of (i) venture capital investing and/or other forms of investing in private and/or public companies, (ii) conducting scientific and/or technology-related research and development and/or (iii) developing, marketing, licensing and/or selling computer software, computer hardware and/or other technology products and/or pharmaceutical products and therefore may independently develop and/or review business plans and proprietary information of many enterprises, including enterprises that may have products or services that compete directly or indirectly with those of the Company. Nothing in this Agreement shall preclude or in any way restrict any Investor other than Scott Becker from investing in and/or founding, developing, operating or otherwise participating in any other way in the business of any particular enterprise whether or not such enterprise has products or services which compete with those of the Company. For the avoidance of doubt, nothing contained in this paragraph shall be deemed to relieve any Investor of such Investor's obligations to comply with the terms and conditions of this Agreement, including Section 3.5 hereof, or, in the case of Scott Becker with the terms of any agreements concerning his employment with the Company.

6.15 No Implied Limitation. As used in this Agreement, the words "include" and "including," and variations thereof, shall not be deemed to be terms of limitation, but rather shall be deemed to be followed in each instance by the words "without limitation."

6.16 No Obligation to Cause Actions of Other Entities.

(a) Each of the Company and each Investor acknowledges and agrees that (a) David E. Shaw has no obligation to cause any Affiliate, any DESCO Group Entity, D. E. Shaw & Co., L.P., or D. E. Shaw Valence Portfolios, L.L.C. (collectively, the "**Other Shaw-Related Entities**") to take any action, or omit to take any action, under and/or in connection with this Agreement, (b) no personal liability whatsoever (of any type or nature) will attach to, or be

incurred by, David E. Shaw because of any incurring by any Other Shaw-Related Entity of any obligation set forth in this Agreement, and (c) any personal liability of David E. Shaw in respect of any such obligations of any type or nature, and any and all claims for any such liability against David E. Shaw, whether arising in common law or equity or created by rule of law, statute, constitution, or otherwise, are expressly released and waived by each of the Company and each Investor as a condition of, and as part of the consideration for, the execution and delivery of this Agreement by David E. Shaw.

(b) Each of the Company and each Investor acknowledges and agrees that (a) Gates has no obligation to cause any of the Trust, Cascade, the Bill & Melinda Gates Foundation or any other Affiliate (each, a "**Gates-Related Entity**") to take any action, or omit to take any action, under and/or in connection with this Agreement, (b) no personal liability whatsoever (of any type or nature) will attach to, or be incurred by, Gates because of any incurring by any Gates-Related Entity of any obligation set forth in this Agreement, and (c)

any personal liability of Gates in respect of any such obligations of any type or nature, and any and all claims for any such liability against Gates, whether arising in common law or equity or created by rule of law, statute, constitution, or otherwise, are expressly released and waived by each of the Company and each Investor as a condition of, and as part of the consideration for, the execution and delivery of this Agreement by the Trust. Each of the Company and each Investor further agrees that Gates is an intended third-party beneficiary of this Section 6.16(b).

(c) Each of the Company and each Investor acknowledges and agrees that Deerfield has no obligation to cause any Affiliate of Deerfield (collectively, the "**Deerfield-Related Entities**") to take any action, or omit to take any action, under and/or in connection with this Agreement.

(d) Each of the Company and each Investor acknowledges and agrees that WuXi has no obligation to cause any Affiliate of WuXi (collectively, the "**WuXi-Related Entities**") to take any action, or omit to take any action, under and/or in connection with this Agreement.

[*Remainder of page intentionally left blank*]

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

SCHRÖDINGER, INC.

By: /s/ Ramy Farid
Name: Ramy Farid
Title: President and Chief Executive Officer

Signature Page to Amended and Restated Investors' Rights Agreement

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IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTORS:

BILL & MELINDA GATES FOUNDATION TRUST

By: /s/ Alan Heuberger
Name: Alan Heuberger
Title: Authorized Representative

Signature Page to Amended and Restated Investors' Rights Agreement

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTORS:

/s/ David E. Shaw
David E. Shaw

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTORS:

/s/ Scott Becker
Scott Becker

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTORS:

WUXI PHARMATECH HEALTHCARE FUND I L.P.

By: /s/ Edward Hu
Name: Edward Hu
Title: Authorized Representative

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTORS:

BARON GROWTH FUND

By: /s/ Patrick M. Patalino

Name: Patrick M. Patalino

Title: General Counsel

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

INVESTORS:

Deerfield Private Design Fund IV, L.P.

By: Deerfield Mgmt IV, L.P., its General Partner

By: J. E. Flynn Capital IV, L.P., its General Partner

By: /s/ David J. Clark

Name: David J. Clark

Title: Authorized Signatory

IN WITNESS WHEREOF, the parties have executed this Amended and Restated Investors' Rights Agreement as of the date first written above.

Name Title Date

INVESTORS:

QIMING VENTURE PARTNERS VI, L.P.,
a Cayman Islands exempted limited
partnership

By QIMING GP VI, L.P. a Cayman Islands exempted limited partnership

Its General Partner

By QIMING CORPORATE GP VI, LTD. a Cayman Islands exempted company

Its General Partner

By /s/ Ryan Baker

Its Authorized Signatory

QIMING MANAGING DIRECTORS FUND VI, L.P., a Cayman Islands exempted limited partnership

By QIMING CORPORATE GP VI, LTD., a Cayman Islands exempted company

Its General Partner

By /s/ Ryan Baker

Its Authorized Signatory

Signing Location: Bellevue, WA USA

Signature of Witness:/s/ Jill Calvo

Name of Witness: Jill Calvo

SCHRÖDINGER, INC.

Counterpart Signature Page
to
Series E Preferred Stock Financing Documents

By executing and delivering this signature page, the undersigned hereby joins in, becomes a party to and agrees to be bound by the terms and conditions of:

/s/ Ramy Farid(i) that certain Series E Preferred Stock Purchase Agreement, dated as of November 9, 2018, by and among Schrödinger, Inc., a Delaware corporation (the "**Company**"), and the Purchasers named therein, as amended from time to time (the "**Purchase Agreement**"), as a "Purchaser" thereunder and acknowledges having read the representations in the Purchase Agreement section entitled "Representations and Warranties of the Purchasers," and hereby represents that the statements contained therein are complete and accurate with respect to the undersigned as a Purchaser;

President and Chief Executive Officer, Director

Ramy Farid, Ph.D. February 28, 2023

(ii) that certain Amended and Restated Voting Agreement, dated as of November 9, 2018, by and among the Company and the Stockholders (as defined therein), as amended from time to time (the "**Voting Agreement**"), as an "Investor" and a "Stockholder" thereunder;

(Principal Executive Officer)

iii) that certain Amended and Restated Investors' Rights Agreement, dated as of November 9, 2018, by and among the Company and the Investors (as defined therein), as amended by Amendment No. 1, dated as of the date hereof, and as further amended from time to time (the "**Rights Agreement**"), as an "Investor" thereunder; and

iv) that certain Amended and Restated Right of First Refusal and Co-Sale Agreement, dated as of November 9, 2018, by and among the Company, the Investors (as defined therein) and the Key Holders (as defined therein), as amended from time to time (the "**Co-Sale Agreement**"), as an "Investor" thereunder.

The undersigned hereby authorizes this signature page to be attached to the Purchase Agreement, the Voting Agreement, the Rights Agreement and the Co-Sale Agreement or counterparts thereof. The undersigned has carefully read each of the agreements listed above, including without limitation the representations and warranties of the Purchasers in Section 3 of the Purchase Agreement.

/s/ Geoffrey Porges, MBBS **INVESTOR:**

Executive Vice President and Chief Financial Officer February 28, 2023

Number of Shares 3,354,353

Geoffrey Porges (Principal Financial Officer)

GV 2019, L.P.

By: GV 2019 GP, L.P., its General Partner **Aggregate Purchase Price:** $4,999,998.59

By: GV 2019 GP, L.L.C., its General Partner

/s/ Jenny Herman By Senior Vice President, Finance and Corporate Controller /s/ Daphne M. Chang February 28, 2023

Jenny Herman (Principal Accounting Officer)

/s/ Michael Lynton Name: Daphne M. Chang Chairman

Address: Authorized Signatory

AGREED TO AND ACCEPTED:

SCHRÖDINGER, INC.

By /s/ Ramy Farid

Name: Ramy Farid
Title: President and Chief Executive Officer

Date: January 4, 2019

SCHRÖDINGER, INC.

Counterpart Signature Page
to
Series E Preferred Stock Financing Documents

By executing and delivering this signature page, the undersigned hereby joins in, becomes a party to and agrees to be bound by the terms and conditions of:

(i) that certain Series E Preferred Stock Purchase Agreement, dated as of November 9, 2018, by and among Schrödinger, Inc., a Delaware corporation (the "**Company**"), and the Purchasers named therein, as amended from time to time (the "**Purchase Agreement**"), as a "Purchaser" thereunder and acknowledges having read the representations in the Purchase Agreement section entitled "Representations and Warranties of the Board Purchasers," and hereby represents that the statements contained therein are complete and accurate with respect to the undersigned as a Purchaser;

February 28, 2023
Michael Lynton

(ii) that certain Amended and Restated Voting Agreement, dated as of November 9, 2018, by and among the Company and the Stockholders (as defined therein), as amended from time to time (the "**Voting Agreement**"), as an "Investor" and a "Stockholder" thereunder;

(iii) that certain Amended and Restated Investors' Rights Agreement, dated as of November 9, 2018, by and among the Company and the Investors (as defined therein), as amended by Amendment No. 1, dated January 4, 2019 and Amendment No. 2, dated as of the date hereof, and as further amended from time to time (the "**Rights Agreement**"), as an "Investor" thereunder; and

(iv) that certain Amended and Restated Right of First Refusal and Co-Sale Agreement, dated as of November 9, 2018, by and among the Company, the Investors (as defined therein) and the Key Holders (as defined therein), as amended by Amendment No. 1, dated as of the date hereof, and as further amended from time to time (the "**Co-Sale Agreement**"), as an "Investor" thereunder.

The undersigned hereby authorizes this signature page to be attached to the Purchase Agreement, the Voting Agreement, the Rights Agreement and the Co-Sale Agreement or counterparts thereof. The undersigned has carefully read each of the agreements listed above, including without limitation the representations and warranties of the Purchasers in Section 3 of the Purchase Agreement.

/s/ Jeffrey Chodakewitz**INVESTOR:**

Jeffrey Chodakewitz, M.D.
PAV INVESTMENTS PTE. LTD.

/s/ Richard Friesner

By: Director/s/ Lee Yann Fang

Director

February 28, 2023
Number of Shares3,354,353

Aggregate Purchase Price:$4,999,998.59

February 28, 2023

Richard Friesner, Ph.D.

/s/ Gary Ginsberg

Name: Gary Ginsberg

Address:

AGREED TO AND ACCEPTED:

SCHRÖDINGER, INC.

/s/ Rosana Kapeller-Libermann

By: /s/ Rosana Kapeller-Libermann

Name: Director

Title: Director

February 28, 2023

[**]

February 28, 2023

Rosana Kapeller-Libermann, M.D., Ph.D.

/s/ Arun Oberoi

Name: Ramy Farid

Title: President and Chief Executive Officer

Date: April 8, 2019

SCHRÖDINGER, INC.

Counterpart Signature Page
to
Series E Preferred Stock Financing Documents

By executing and delivering this signature page, the undersigned hereby joins in, becomes a party to and agrees to be bound by the terms and conditions of:

Arun Oberoi(i) that certain Series E Preferred Stock Purchase Agreement, dated as of November 9, 2018, by and among Schrödinger, Inc., a Delaware corporation (the "**Company**"), and the Purchasers named therein, as amended from time to time (the "**Purchase Agreement**"), as a "Purchaser" thereunder and acknowledges having read the representations in the Purchase Agreement section entitled "Representations and Warranties of the Purchasers," and hereby represents that the statements contained therein are complete and accurate with respect to the undersigned as a Purchaser;

(ii) that certain Amended and Restated Voting Agreement, dated as of November 9, 2018, by and among the Company and the Stockholders (as defined therein), as amended from time to time (the "**Voting Agreement**"), as an "Investor" and a "Stockholder" thereunder;

(iii) that certain Amended and Restated Investors' Rights Agreement, dated as of November 9, 2018, by and among the Company and the Investors (as defined therein), as amended by Amendment No. 1, dated January 4, 2019 and Amendment No. 2, dated as of the date hereof, and as further amended from time to time (the "**Rights Agreement**"), as an "Investor" thereunder; and

(iv) that certain Amended and Restated Right of First Refusal and Co-Sale Agreement, dated as of November 9, 2018, by and among the Company, the Investors (as defined therein) and the Key Holders (as defined therein), as amended by Amendment No. 1, dated as of the date hereof, and as further amended from time to time (the "**Co-Sale Agreement**"), as an "Investor" thereunder.

The undersigned hereby authorizes this signature page to be attached to the Purchase Agreement, the Voting Agreement, the Rights Agreement and the Co-Sale Agreement or counterparts thereof. The undersigned has carefully read each of the agreements listed above, including without limitation the representations and warranties of the Purchasers in Section 3 of the Purchase Agreement.

INVESTOR:

ADRIENNE PARDO

/s/ Adrienne Pardo

Adrienne Pardo

Address: [**]

Number of Shares335,435

Aggregate Purchase Price:$499,999.42

AGREED TO AND ACCEPTED:

SCHRÖDINGER, INC.

By: /s/ Ramy Farid

Name: Ramy Farid

Title: President and Chief Executive Officer

Date: April 8, 2019

SCHRÖDINGER, INC.

Counterpart Signature Page
to
Series E Preferred Stock Financing Documents

By executing and delivering this signature page, the undersigned hereby joins in, becomes a party to and agrees to be bound by the terms and conditions of:

(i) that certain Series E Preferred Stock Purchase Agreement, dated as of November 9, 2018, by and among Schrödinger, Inc., a Delaware corporation (the "**Company**"), and the Purchasers named therein, as amended by Amendment No. 1, dated as of the date hereof, and as further amended from time to time (the "**Purchase Agreement**"), as a "Purchaser" thereunder and acknowledges having read the representations in the Purchase Agreement section entitled "Representations and Warranties of the Purchasers," and hereby represents that the statements contained therein are complete and accurate with respect to the undersigned as a Purchaser;

(ii) that certain Amended and Restated Voting Agreement, dated as of November 9, 2018, by and among the Company and the Stockholders (as defined therein), as amended from time to time (the "**Voting Agreement**"), as an "Investor" and a "Stockholder" thereunder;

(iii) that certain Amended and Restated Investors' Rights Agreement, dated as of November 9, 2018, by and among the Company and the Investors (as defined therein), as amended by Amendment No. 1, dated January 4, 2019 and Amendment No. 2, dated April 8, 2019, and as further amended from time to time (the "**Rights Agreement**"), as an "Investor" thereunder; and

(iv) that certain Amended and Restated Right of First Refusal and Co-Sale Agreement, dated as of November 9, 2018, by and among the Company, the Investors (as defined therein) and the Key Holders (as defined therein), as amended by Amendment No. 1, dated April 8, 2019, and as further amended from time to time (the "**Co-Sale Agreement**"), as an "Investor" thereunder.

The undersigned hereby authorizes this signature page to be attached to the Purchase Agreement, the Voting Agreement, the Rights Agreement and the Co-Sale Agreement or counterparts thereof. The undersigned has carefully read each of the agreements listed above, including without limitation the representations and warranties of the Purchasers in Section 3 of the Purchase Agreement.

INVESTORS:

ARTAL INTERNATIONAL S.C.A

By: Artal International Management SA, Its Managing Partner

By: /s/ Anne Goffard
Name: Anne Goffard
Title: Managing Director
Address: [**]

Number of Shares 6,708,707

Aggregate Purchase Price: $9,999,998.66

AGREED TO AND ACCEPTED:

SCHRÖDINGER, INC.

By: /s/ Ramy Farid
Name: Ramy Farid
Title: President and Chief Executive Officer
Date: April 26, 2019

SCHRÖDINGER, INC.

Counterpart Signature Page
to
Series E Preferred Stock Financing Documents

By executing and delivering this signature page, the undersigned hereby joins in, becomes a party to and agrees to be bound by the terms and conditions of:

(i) that certain Series E Preferred Stock Purchase Agreement, dated as of November 9, 2018, by and among Schrödinger, Inc., a Delaware corporation (the "**Company**"), and the Purchasers named therein, as amended by Amendment No. 1, dated as of the date hereof, and as further amended from time to time (the "**Purchase Agreement**"), as a "Purchaser" thereunder and acknowledges having read the representations in the Purchase Agreement section entitled "Representations and Warranties of the Purchasers," and hereby represents that the statements contained therein are complete and accurate with respect to the undersigned as a Purchaser;

(ii) that certain Amended and Restated Voting Agreement, dated as of November 9, 2018, by and among the Company and the Stockholders (as defined therein), as amended from time to time (the "**Voting Agreement**"), as an "Investor" and a "Stockholder" thereunder;

(iii) that certain Amended and Restated Investors' Rights Agreement, dated as of November 9, 2018, by and among the Company and the Investors (as defined therein), as amended by Amendment No. 1, dated January 4, 2019 and Amendment No. 2, dated April 8, 2019, and as further amended from time to time (the "**Rights Agreement**"), as an "Investor" thereunder; and

(iv) that certain Amended and Restated Right of First Refusal and Co-Sale Agreement, dated as of November 9, 2018, by and among the Company, the Investors (as defined therein) and the Key Holders (as defined therein), as amended by Amendment No. 1, dated April 8, 2019, and as further amended from time to time (the "**Co-Sale Agreement**"), as an "Investor" thereunder.

The undersigned hereby authorizes this signature page to be attached to the Purchase Agreement, the Voting Agreement, the Rights Agreement and the Co-Sale Agreement or counterparts thereof. The undersigned has carefully read each of the agreements listed above, including without limitation the representations and warranties of the Purchasers in Section 3 of the Purchase Agreement.

INVESTOR:

/s/ Andrew E. Beck
Andrew E. Beck
Address: [**]

Number of Shares 218,033

Aggregate Purchase Price: $324,999,99

AGREED TO AND ACCEPTED:

SCHRÖDINGER, INC.

By: /s/ Ramy Farid
Name: Ramy Farid
Title: President and Chief Executive Officer

Date: April 26, 2019

SCHRÖDINGER, INC.

Counterpart Signature Page
to
Series E Preferred Stock Financing Documents

By executing and delivering this signature page, the undersigned hereby joins in, becomes a party to and agrees to be bound by the terms and conditions of:

(i) that certain Series E Preferred Stock Purchase Agreement, dated as of November 9, 2018, by and among Schrödinger, Inc., a Delaware corporation (the "**Company**"), and the Purchasers named therein, as amended by Amendment No. 1, dated as of the date hereof, and as further amended from time to time (the "**Purchase Agreement**"), as a "Purchaser" thereunder and acknowledges having read the representations in the Purchase Agreement section entitled "Representations and Warranties of the Purchasers," and hereby represents that the statements contained therein are complete and accurate with respect to the undersigned as a Purchaser;

(ii) that certain Amended and Restated Voting Agreement, dated as of November 9, 2018, by and among the Company and the Stockholders (as defined therein), as amended from time to time (the "**Voting Agreement**"), as an "Investor" and a "Stockholder" thereunder;

(iii) that certain Amended and Restated Investors' Rights Agreement, dated as of November 9, 2018, by and among the Company and the Investors (as defined therein), as amended by Amendment No. 1, dated January 4, 2019 and Amendment No. 2, dated April 8, 2019, and as further amended from time to time (the "**Rights Agreement**"), as an "Investor" thereunder; and

(iv) that certain Amended and Restated Right of First Refusal and Co-Sale Agreement, dated as of November 9, 2018, by and among the Company, the Investors (as defined therein) and the Key Holders (as defined therein), as amended by Amendment No. 1, dated April 8, 2019, and as further amended from time to time (the "**Co-Sale Agreement**"), as an "Investor" thereunder.

The undersigned hereby authorizes this signature page to be attached to the Purchase Agreement, the Voting Agreement, the Rights Agreement and the Co-Sale Agreement or counterparts thereof. The undersigned has carefully read each of the agreements listed above, including without limitation the representations and warranties of the Purchasers in Section 3 of the Purchase Agreement.

INVESTOR:

TUBUS, LLC

By: /s/ Michael Antonov
Name: Michael Antonov
Title: Manager
Address: [**]

Number of Shares1,341,741

Aggregate Purchase Price:$1,999,999.14

AGREED TO AND ACCEPTED:

SCHRÖDINGER, INC.

By: /s/ Ramy Farid
Name: Ramy Farid
Title: President and Chief Executive Officer

Date: April 26, 2019

SCHRÖDINGER, INC.

Counterpart Signature Page
to
Series E Preferred Stock Financing Documents

By executing and delivering this signature page, the undersigned hereby joins in, becomes a party to and agrees to be bound by the terms and conditions of:

(i) that certain Series E Preferred Stock Purchase Agreement, dated as of November 9, 2018, by and among Schrödinger, Inc., a Delaware corporation (the "**Company**"), and the Purchasers named therein, as amended by Amendment No. 1, dated as of April 26, 2019, and as further amended from time to time (the "**Purchase Agreement**"), as a "Purchaser" thereunder and acknowledges having read the representations in the Purchase Agreement section entitled "Representations and Warranties of the Purchasers," and hereby represents that the statements contained therein are complete and accurate with respect to the undersigned as a Purchaser;

(ii) that certain Amended and Restated Voting Agreement, dated as of November 9, 2018, by and among the Company and the Stockholders (as defined therein), as amended from time to time (the "**Voting Agreement**"), as an "Investor" and a "Stockholder" thereunder;

(iii) that certain Amended and Restated Investors' Rights Agreement, dated as of November 9, 2018, by and among the Company and the Investors (as defined therein), as amended by Amendment No. 1, dated January 4, 2019 and Amendment No. 2, dated April 8, 2019, and as further amended from time to time (the "**Rights Agreement**"), as an "Investor" thereunder; and

(iv) that certain Amended and Restated Right of First Refusal and Co-Sale Agreement, dated as of November 9, 2018, by and among the Company, the Investors (as defined therein) and the Key Holders (as defined therein), as amended by Amendment No. 1, dated April 8, 2019, and as further amended from time to time (the "**Co-Sale Agreement**"), as an "Investor" thereunder.

The undersigned hereby authorizes this signature page to be attached to the Purchase Agreement, the Voting Agreement, the Rights Agreement and the Co-Sale Agreement or counterparts thereof. The undersigned has carefully read each of the agreements listed above, including without limitation the representations and warranties of the Purchasers in Section 3 of the Purchase Agreement.

INVESTOR:

QUANTUM DISCOVERY LP

By: /s/ Jian Guo /s/ Feng Zu

Number of Shares3,354,353

Aggregate Purchase Price:$4,999,998.59

Name: Jian Guo Feng Zu
Title: President Secretary
Address: [**]

AGREED TO AND ACCEPTED:

SCHRÖDINGER, INC.

By: /s/ Ramy Farid
Name: Ramy Farid
Title: President and Chief Executive Officer

Date: May 6, 2019

SCHRÖDINGER, INC.

Counterpart Signature Page
to
Series E Preferred Stock Financing Documents

By executing and delivering this signature page, the undersigned hereby joins in, becomes a party to and agrees to be bound by the terms and conditions of:

(i) that certain Series E Preferred Stock Purchase Agreement, dated as of November 9, 2018, by and among Schrödinger, Inc., a Delaware corporation (the "**Company**"), and the Purchasers named therein, as amended by Amendment No. 1, dated as of April 26, 2019 and Amendment No. 2, dated as of the date hereof, and as further amended from time to time (the "**Purchase Agreement**"), as a "Purchaser" thereunder and acknowledges having read the representations in the Purchase Agreement section entitled "Representations and Warranties of the Purchasers," and hereby represents that the statements contained therein are complete and accurate with respect to the undersigned as a Purchaser;

(ii) that certain Amended and Restated Voting Agreement, dated as of November 9, 2018, by and among the Company and the Stockholders (as defined therein), as amended from time to time (the "**Voting Agreement**"), as an "Investor" and a "Stockholder" thereunder;

(iii) that certain Amended and Restated Investors' Rights Agreement, dated as of November 9, 2018, by and among the Company and the Investors (as defined therein), as amended by Amendment No. 1, dated January 4, 2019 and Amendment No. 2, dated April 8, 2019, and as further amended from time to time (the "**Rights Agreement**"), as an "Investor" thereunder; and

(iv) that certain Amended and Restated Right of First Refusal and Co-Sale Agreement, dated as of November 9, 2018, by and among the Company, the Investors (as defined therein) and the Key Holders (as defined therein), as amended by Amendment No. 1, dated April 8, 2019, and as further amended from time to time (the "**Co-Sale Agreement**"), as an "Investor" thereunder.

The undersigned hereby authorizes this signature page to be attached to the Purchase Agreement, the Voting Agreement, the Rights Agreement and the Co-Sale Agreement or counterparts thereof. The undersigned has carefully read each of the agreements listed above, including without limitation the representations and warranties of the Purchasers in Section 3 of the Purchase Agreement.

INVESTOR:

LAURION CAPITAL MASTER FUND LTD

Number of Shares1,459,143

Aggregate Purchase Price:$2,174,998.56

By: /s/ Jason Riesel /s/ Mosih Mohebbi

Name: Jason Riesel Mosih Mohebbi
Title: GC and CCO CFO
Address: [**]

AGREED TO AND ACCEPTED:

SCHRÖDINGER, INC.

By: /s/ Ramy Farid
Name: Ramy Farid
Title: President and Chief Executive Officer

Date: May 14, 2019

SCHEDULE A

Investors

David E. Shaw
D.E. Shaw & Co., L.P.
D.E. Shaw Valence Portfolios, LLC
D.E. Shaw Technology Development, LLC
The Bill and Melinda Gates Foundation Trust
Scott Becker
Trustees of the University of Columbia
Benjamin Appen
Richard E. Appen
Louis Salkind
Andrew E. Trey Beck III
Erick Wepsic
Eric S. Robinson
Julius Gaudio
Yuan Chang and Mary H. Chang Family Irrevocable Trust
Martin Fleisher
Stuart Steckler
Suzanne L. Telsey
Deerfield Private Design Fund IV, L.P.
WuXi PharmaTech Healthcare Fund I L.P.
Baron Growth Fund
Qiming Venture Partners VI, L.P.
Qiming Managing Directors Fund VI, L.P.
GV 2019, L.P.

Pav Investments Pte. Ltd.
Adrienne Pardo
Artal International S.C.A
Tubus, LLC
Quantum Discovery LP
Laurion Capital Master Fund Ltd.

SCHRÖDINGER, INC.

AMENDMENT NO. 1

TO

AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

This AMENDMENT NO. 1 TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT (this "Amendment"), effective as of January 4, 2019, amends that certain Amended and Restated Investors' Rights Agreement, dated as of November 9, 2018, by and among Schrödinger, Inc. (the "Company") and the Investors identified therein (the "IRA"). Capitalized terms used and not defined herein shall have the meanings set forth in the IRA.

WHEREAS, pursuant to Section 1.3 of the Series E Preferred Stock Purchase Agreement, dated November 9, 2018, by and among the Company and the parties named therein, the Company intends to sell and GV 2019, L.P. ("GV") intends to purchase 3,354,353 shares of Series E Preferred Stock (the "Shares") of the Company in an additional closing (the "Additional Closing");

WHEREAS, in connection with GV's purchase of the Shares in the Additional Closing, GV desires to have all of the same benefits and rights as a "Major Investor" under the IRA so long as GV, collectively with its Affiliates, holds all of the Shares purchased by GV at the Additional Closing;

WHEREAS, the Company and the Investors desire to amend the IRA to reflect the foregoing; and

WHEREAS, Section 6.6 of the IRA provides in part that any term of the IRA may be amended with the written consent of (i) the Company and (ii) the holders of 70% of the Registrable Securities then outstanding; provided further that any section of the IRA applicable to Major Investors may not be amended without the written consent of the holders of a majority of the Registrable Securities then held by the Major Investors (collectively, the "Requisite Parties");

NOW, THEREFORE, in consideration of the mutual covenants contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Company and the undersigned, who constitute the Requisite Parties, hereby agree as follows:

1. Amendment to Definitions. The definition of "Major Investor" in Section 1 of the IRA is hereby deleted in its entirety, and the following is inserted in lieu thereof:

""**Major Investor**" means (i) any Investor that, individually or together with such Investor's Affiliates, holds at least 15,902,140 shares of Preferred Stock (as adjusted for any stock split, stock dividend, combination, or other recapitalization or reclassification effected after the date hereof); (ii) Deerfield Private Design Fund IV, L.P. ("**Deerfield**") for so long as Deerfield holds at least seventy percent (70%) of the shares of Series E Preferred Stock originally sold to it under the Purchase Agreement (as adjusted for any stock split, stock dividend, combination or other recapitalization or reclassification effected after the date hereof); (iii) WuXi PharmaTech Healthcare Fund I L.P. ("**WuXi**") for so long as WuXi holds all of the shares of Series E Preferred Stock originally sold to it under the Purchase Agreement (as adjusted for any stock split, stock dividend, combination or other recapitalization or reclassification effected after the date hereof); (iv) Qiming Venture Partners VI, L.P. and Qiming Managing Directors Fund VI, L.P. (collectively, "**Qiming**") for so long as Qiming holds all of the shares of Series E Preferred Stock originally sold to it under the Purchase Agreement (as adjusted for any stock split, stock dividend, combination or other recapitalization or reclassification effected after the date hereof); (v) Baron Growth Fund ("**Baron**") for so long as Baron holds all of the shares of Series E Preferred Stock originally sold to it under the Purchase Agreement (as adjusted for any stock split, stock dividend, combination or other recapitalization or reclassification effected after the date hereof); and (vi) GV 2019, L.P. ("**GV**") for so long as GV, collectively with its Affiliates, holds all of the shares of Series E Preferred Stock originally sold to it under the Purchase Agreement (as adjusted for any stock split, stock dividend, combination or other recapitalization or reclassification effected after the date hereof). For the avoidance of any doubt, in no event shall Scott Becker be deemed a Major Investor."

2. Amendment to Section 6.6. The first sentence of Section 6.6 of the IRA is hereby deleted in its entirety, and the following is inserted in lieu thereof.

"6.6 Amendments and Waivers. Any term of this Agreement may be amended and the observance of any term of this Agreement may be waived (either generally or in a particular instance, and either retroactively or prospectively) only with the written consent of the Company and the holders of at least seventy percent (70%) of the Registrable Securities then outstanding; provided that the Company may in its sole discretion waive compliance with Section

2.12(c); provided further that any provision hereof may be waived by any waiving party on such party's own behalf, without the consent of any other party; provided, further, that (A) romanette (ii) in the definition of "Major Investor" set forth in Section 1 of this Agreement and this proviso (A) may not be amended or waived without the consent of Deerfield; (B) romanette (iii) in the definition of "Major Investor" set forth in Section 1 of this Agreement, Section 3.3(b) of this Agreement and this proviso (B) may not be amended or waived without the consent of WuXi; (C) romanette (iv) in the definition of "Major Investor" set forth in Section 1 of this Agreement and this proviso (C) may not be amended or waived without the consent of Qiming; (D) romanette (v) in the definition of "Major Investor" set forth in Section 1 of this Agreement and this proviso (D) may not be amended or waived without the consent of Baron; and (E) romanette (vi) in the definition of "Major Investor" set forth in Section 1 of this Agreement and this proviso (E) may not be amended or waived without the consent of GV.

3. Entire Agreement. The IRA, as amended by this Amendment, contains the entire agreement among the parties with respect to the subject matter thereof and amends, restates and supersedes all prior and contemporaneous arrangements or understandings with respect thereto.

4. Effectiveness. This Amendment shall be effective upon the Additional Closing. Upon the effectiveness of this Amendment, on and after the date hereof, each reference in the IRA to "this Agreement," "hereunder," "hereof," "herein" or words of like import, and each reference in the other documents entered into in connection with the IRA, shall mean and be a reference to the IRA, as amended hereby. All terms in the IRA that are not explicitly amended by this Amendment shall remain in full force and effect and are hereby ratified and confirmed.

5. Governing Law. This Amendment shall be governed by, and construed in accordance with, the laws of the State of Delaware, regardless of the laws that might otherwise govern under applicable principles of conflicts of law.

6. Counterpart Signature Pages. This Amendment may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Counterparts may be delivered via facsimile, electronic mail (including pdf or any electronic signatures complying with the U.S. federal ESIGN Act of 2000, *e.g.*, www.docusign.com) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, this Amendment has been executed by the parties hereto as of the day and year first above written.

SCHRÖDINGER, INC.

By: /s/ Ramy Farid
Name: Ramy Farid
Title: President and Chief Executive Officer

INVESTORS:

BILL & MELINDA GATES FOUNDATION TRUST

By: /s/ Alan Heuberger
Name: Alan Heuberger
Title: Authorized Representative

/s/ David E. Shaw
David E. Shaw

IN WITNESS WHEREOF, this Amendment has been executed by the parties hereto as of the day and year first above written.

WUXI PHARMATECH HEALTHCARE FUND I L.P.

By: /s/ Edward Hu
Name: Edward Hu
Title: Authorized Representative

BARON GROWTH FUND

By: /s/ Patrick M. Patalino
Name: Patrick M. Patalino
Title: General Counsel

DEERFIELD PRIVATE DESIGN FUND IV, L.P.

By: Deerfield Mgmt IV, L.P., its General Partner

By: J.E. Flynn Capital IV, L.P., its General Partner

By: _____
Name:
Title: Authorized Signatory

IN WITNESS WHEREOF, this Amendment has been executed by the parties hereto as of the day and year first above written.

/s/ Gary Sender

Director

February 28, 2023

Gary Sender

QIMING VENTURE PARTNERS VI, L.P.,

a Cayman Islands exempted limited partnership

By: QIMING GP VI, L.P. a Cayman Islands exempted limited partnership

Its: General Partner

By: QIMING CORPORATE GP VI, LTD. a Cayman Islands exempted company

Its: General Partner

By: /s/ Robert Headley

Its: Authorized Signatory

QIMING MANAGING DIRECTORS FUND VI, L.P., a Cayman Islands exempted limited partnership

By: QIMING CORPORATE GP VI, LTD., a Cayman Islands exempted company

Its: General Partner

By: /s/ Robert Headley

Its: Authorized Signatory

Signing Location: Bellevue, WA USA

Signature of Witness:/s/ Laura Brakus

Name of Witness: Laura Brakus

[Signature Page to Amendment No. 1 to Amended and Restated Investors' Rights Agreement]

SCHRÖDINGER, INC.

AMENDMENT NO. 2

TO

This AMENDMENT NO. 2 TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT (this "Amendment"), effective as of April 8, 2019, amends that certain Amended and Restated Investors' Rights Agreement, dated as of November 9, 2018, by and among Schrödinger, Inc. (the "Company") and the Investors identified therein, as amended by Amendment No. 1 to the Amended and Restated Investor's Rights Agreement, dated January 4, 2019 (as so amended, the "IRA"). Capitalized terms used and not defined herein shall have the meanings set forth in the IRA.

WHEREAS, pursuant to Section 1.3 of the Series E Preferred Stock Purchase Agreement, dated November 9, 2018, by and among the Company and the parties named therein, the Company intends to sell and Pav Investments Pte. Ltd. ("Pavilion") intends to purchase 3,354,353 shares of Series E Preferred Stock (the "Shares") of the Company in an additional closing (the "Additional Closing");

WHEREAS, in connection with Pavilion's purchase of the Shares in the Additional Closing, Pavilion desires to have all of the same benefits and rights as a "Major Investor" under the IRA so long as Pavilion, collectively with its Affiliates, holds all of the Shares purchased by Pavilion at the Additional Closing;

WHEREAS, the Company and the Investors desire to amend the IRA to reflect the foregoing; and

WHEREAS, Section 6.6 of the IRA provides in part that any term of the IRA may be amended with the written consent of (i) the Company and (ii) the holders of 70% of the Registrable Securities then outstanding; provided further that any section of the IRA applicable to Major Investors may not be amended without the written consent of the holders of a majority of the Registrable Securities then held by the Major Investors (collectively, the "Requisite Parties");

NOW, THEREFORE, in consideration of the mutual covenants contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Company and the undersigned, who constitute the Requisite Parties, hereby agree as follows:

1. Amendment to Definitions. The definition of "Major Investor" in Section 1 of the IRA is hereby deleted in its entirety, and the following is inserted in lieu thereof:

""**Major Investor**" means (i) any Investor that, individually or together with such Investor's Affiliates, holds at least 15,902,140 shares of Preferred Stock (as adjusted for any stock split, stock dividend, combination, or other recapitalization or reclassification effected after the date hereof); (ii) Deerfield Private Design Fund IV, L.P. ("**Deerfield**") for so long as Deerfield holds at least seventy percent (70%) of the shares of Series E Preferred Stock originally sold to it under the Purchase Agreement (as adjusted for any stock split, stock dividend, combination or other recapitalization or reclassification effected after the date hereof); (iii) WuXi PharmaTech Healthcare Fund I L.P. ("**WuXi**") for so long as WuXi holds all of the shares of Series E Preferred Stock originally sold to it under the Purchase Agreement (as adjusted for any stock split, stock dividend, combination or other recapitalization or reclassification effected after the date hereof); (iv) Qiming Venture Partners VI, L.P. and Qiming Managing Directors Fund VI, L.P. (collectively, "**Qiming**") for so long as Qiming holds all of the shares of Series E Preferred Stock originally sold to it under the Purchase Agreement (as adjusted for any stock split, stock dividend, combination or other recapitalization or reclassification effected after the date hereof); (v) Baron Growth Fund ("**Baron**") for so long as Baron holds all of the shares of Series E Preferred Stock originally sold to it under the Purchase Agreement (as adjusted for any stock split, stock dividend, combination or other recapitalization or reclassification effected after the date hereof); (vi) GV 2019, L.P. ("**GV**") for so long as GV, collectively with its Affiliates, holds all of the shares of Series E Preferred Stock originally sold to it under the Purchase Agreement (as adjusted for any stock split, stock dividend, combination or other recapitalization or reclassification effected after the date hereof); and (vii) Pav Investments Pte. Ltd. ("**Pavilion**") for so long as Pavilion holds all of the shares of Series E Preferred Stock originally sold to it under the Purchase Agreement (as adjusted for any stock split, stock dividend, combination or other recapitalization or reclassification effected after the date hereof). For the avoidance of any doubt, in no event shall Scott Becker be deemed a Major Investor."

2. Amendment to Section 6.6. The first sentence of Section 6.6 of the IRA is hereby deleted in its entirety, and the following is inserted in lieu thereof:

"6.6 Amendments and Waivers. Any term of this Agreement may be amended and the observance of any term of this Agreement may be waived (either generally or in a particular instance, and either retroactively or prospectively) only with the written consent of the Company and the holders of at least seventy percent (70%) of the Registrable Securities then outstanding; provided that the Company may in its sole discretion waive compliance with Section 2.12(c); provided further that any provision hereof may be waived by any waiving party on such party's own behalf, without the consent of any other party; provided, further, that (A) romanette (ii) in the definition of "Major Investor" set forth in Section 1 of this Agreement and this proviso (A) may not be amended or waived without the consent of Deerfield; (B) romanette (iii) in the definition of "Major Investor" set forth in Section 1 of this Agreement, Section 3.3(b) of this Agreement and this proviso (B) may not be amended or waived without the consent of WuXi; (C) romanette (iv) in the definition of "Major Investor" set forth in Section 1 of this Agreement and this proviso (C) may not be amended or waived without the consent of Qiming; (D) romanette (v) in the definition of "Major Investor" set forth in Section 1 of this Agreement and this proviso (D) may not be amended or waived without the consent of Baron; (E) romanette (vi) in the definition of "Major Investor" set forth in Section 1 of this Agreement and this proviso (E) may not be amended or waived without the consent of GV; and (F) romanette (vii) in the definition of "Major Investor" set forth in Section 1 of this Agreement and this proviso (F) may not be amended or waived without the consent of Pavilion.

3. Entire Agreement. The IRA, as amended by this Amendment, contains the entire agreement among the parties with respect to the subject matter thereof and amends, restates and supersedes all prior and contemporaneous arrangements or understandings with respect thereto.

4. Effectiveness. This Amendment shall be effective upon the Additional Closing. Upon the effectiveness of this Amendment, on and after the date hereof, each reference in the IRA to "this Agreement," "hereunder," "hereof," "herein" or words of like import, and each reference in the other documents entered into in connection with the IRA, shall mean and be a

reference to the IRA, as amended hereby. All terms in the IRA that are not explicitly amended by this Amendment shall remain in full force and effect and are hereby ratified and confirmed.

5. Governing Law. This Amendment shall be governed by, and construed in accordance with, the laws of the State of Delaware, regardless of the laws that might otherwise govern under applicable principles of conflicts of law.

6. Counterpart Signature Pages. This Amendment may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Counterparts may be delivered via facsimile, electronic mail (including pdf or any electronic signatures complying with the U.S. federal ESIGN Act of 2000, *e.g.*, www.docusign.com) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

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IN WITNESS WHEREOF, this Amendment has been executed by the parties hereto as of the day and year first above written.

SCHRÖDINGER, INC.

/s/ Nancy Thornberry	By:
Director	Name:
/s/ Ramy Farid	February 28, 2023
Ramy Farid	Nancy Thornberry
President and Chief Executive Officer	Title:

INVESTORS

BILL & MELINDA GATES FOUNDATION TRUST

By:	/s/ Alan Heuberger
Name:	Alan Heuberger
Title:	Authorized Representative

/s/ David E. Shaw

David E. Shaw

IN WITNESS WHEREOF, this Amendment has been executed by the parties hereto as of the day and year first above written.

WUXI PHARMATECH HEALTHCARE FUND I L.P.

By: /s/ Edward Hu
Name: Edward Hu
Title: Authorized Signatory

BARON GROWTH FUND

By: /s/ Patrick M. Patalino
Name: Patrick M. Patalino
Title: General Counsel

DEERFIELD PRIVATE DESIGN FUND IV, L.P.

By: Deerfield Mgmt IV, L.P., its General Partner

By: J. E. Flynn Capital IV, L.P., its General Partner

By:
Name:
Title: Authorized Signatory

IN WITNESS WHEREOF, this Amendment has been executed by the parties hereto as of the day and year first above written.

GV 2019, L.P.

By: GV 2019 GP, L.P., its General Partner
By: GV 2019 GP, L.L.C., its General Partner

By: /s/ Daphne M. Chang
Name: Daphne M. Chang
Title: Authorized Signatory

SCHRÖDINGER, INC.

AMENDMENT NO. 3

TO

This AMENDMENT NO. 3 TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT (this "Amendment"), dated as of January 24, 2020, amends that certain Amended and Restated Investors' Rights Agreement, dated as of November 9, 2018, by and among Schrödinger, Inc. (the "Company") and the Investors identified therein, as amended by Amendment No. 1 to the Amended and Restated Investors' Rights Agreement, dated January 4, 2019 and Amendment No. 2 to the Amended and Restated Investors' Rights Agreement, dated April 8, 2019 (as so amended, the "IRA"). Capitalized terms used and not defined herein shall have the meanings set forth in the IRA.

WHEREAS, the Company and the Investors desire to amend the IRA to replace all references in the IRA to "Non-Voting Common Stock" with references to "Limited Common Stock"; and

WHEREAS, Section 6.6 of the IRA provides in part that any term of the IRA may be amended with the written consent of (i) the Company and (ii) the holders of 70% of the Registrable Securities then outstanding; provided further that any section of the IRA applicable to Major Investors, including Section 4 of the IRA, may not be amended without the written consent of the holders of a majority of the Registrable Securities then held by the Major Investors (collectively, the "Requisite Parties");

NOW, THEREFORE, in consideration of the mutual covenants contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Company and the undersigned, who constitute the Requisite Parties, hereby agree as follows:

1. Amendment to Terminology. All references throughout the IRA to "Non-Voting Common Stock" are hereby deleted and replaced by references to "Limited Common Stock".

2. Entire Agreement. The IRA, as amended by this Amendment, contains the entire agreement among the parties with respect to the subject matter thereof and amends, restates and supersedes all prior and contemporaneous arrangements or understandings with respect thereto.

3. Effectiveness. This Amendment shall be effective upon the effectiveness of the Certificate of Amendment to the Amended and Restated Certificate of Incorporation of the Company, as amended, in the form attached hereto as Exhibit A. Upon the effectiveness of this Amendment, on and after the date hereof, each reference in the IRA to "this Agreement," "hereunder," "hereof," "herein" or words of like import, and each reference in the other documents entered into in connection with the IRA, shall mean and be a reference to the IRA, as amended hereby. All terms in the IRA that are not explicitly amended by this Amendment shall remain in full force and effect and are hereby ratified and confirmed.

4. Governing Law. This Amendment shall be governed by, and construed in accordance with, the laws of the State of Delaware, regardless of the laws that might otherwise govern under applicable principles of conflicts of law.

5. Counterpart Signature Pages. This Amendment may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Counterparts may be delivered via facsimile, electronic mail (including pdf or any electronic signatures complying with the U.S. federal ESIGN Act of 2000, *e.g.*, www.docusign.com) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

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IN WITNESS WHEREOF, this Amendment has been executed by the parties hereto as of the day and year first above written.

SCHRÖDINGER, INC.

By: /s/ Ramy Farid

Name: Ramy Farid

Title: President and Chief Executive Officer

[Signature Page to Amendment No. 3 to Amended and Restated Investors' Rights Agreement]

IN WITNESS WHEREOF, this Amendment has been executed by the parties hereto as of the day and year first above written.

BILL & MELINDA GATES FOUNDATION TRUST

By: /s/ Alan Heuberger
Name: Alan Heuberger
Title: Authorized Signatory

[Signature Page to Amendment No. 3 to Amended and Restated Investors' Rights Agreement]

IN WITNESS WHEREOF, this Amendment has been executed by the parties hereto as of the day and year first above written.

SCHRODINGER EQUITY HOLDINGS, LLC

By: /s/ Charles Ardai
Name: Charles Ardai
Title: Distribution Manager

[Signature Page to Amendment No. 3 to Amended and Restated Investors' Rights Agreement]

EXHIBIT A

CERTIFICATE OF AMENDMENT

CERTIFICATE OF AMENDMENT
OF
AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF
SCHRÖDINGER, INC.

Pursuant to Section 242 of the
General Corporation Law of the State of Delaware

Schrödinger, Inc. (the "**Corporation**"),a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the "**DGCL**"),does hereby certify as follows:

Resolutions were duly adopted by the Board of Directors of the Corporation pursuant to Section 141(f) and Section 242 of the DGCL setting forth an amendment to the Amended and Restated Certificate of Incorporation of the Corporation, as amended (the "**Charter**") of the Corporation,and declaring such amendment to be advisable. The stockholders of the Corporation duly approved said proposed amendment by written consent in accordance with Sections 228 and 242 of the DGCL. The resolutions setting forth the amendment are as follows:

RESOLVED: That the first paragraph of Article FOURTH of the Charter be and hereby is deleted in its entirety and the following is inserted in lieu thereof:

"That, effective on the filing of this Certificate of Amendment to the Amended and Restated Certificate of Incorporation with the Secretary of State of the State of Delaware (the "**Effective Time**"), a one-for-7.47534 reverse stock split of the Corporation's Common Stock, par value $0.01 per share (the "**Common Stock**"), shall become effective, pursuant to which each 7.47534 shares of Common Stock outstanding and held of record by each stockholder of the Corporation (including treasury shares) immediately prior to the Effective Time shall be reclassified and combined into one (1) validly issued, fully paid and nonassessable share of Common Stock automatically and without any action by the holder thereof upon the Effective Time and shall represent one (1) share of Common Stock from and after the Effective Time (such reclassification and combination of shares, the "**Reverse Stock Split**"). The par value of the Common Stock following the Reverse Stock Split shall remain at $0.01 per share. No fractional shares of Common Stock shall be issued as a result of the Reverse Stock Split and, in lieu thereof, upon surrender after the Effective Time of a certificate which formerly represented shares of Common Stock that were issued and outstanding immediately prior to the Effective Time, any person who would otherwise be entitled to a fractional share of Common Stock as a result of the Reverse Stock Split, following the Effective Time, shall be entitled to receive a cash payment equal to the fraction of a share of Common Stock to which such holder would otherwise be entitled multiplied by the fair value per share of the Common Stock immediately prior to the Effective Time as determined by the Board

of Directors of the Corporation. Each stock certificate that, immediately prior to the Effective Time, represented shares of Common Stock that were issued and outstanding immediately prior to the Effective Time shall, from and after the Effective Time, automatically and without the necessity of presenting the same for exchange, represent that number of whole shares of Common Stock after the Effective Time into which the shares formerly represented by such certificate have been reclassified (as well as the right to receive cash in lieu of fractional shares of Common Stock after the Effective Time); provided, however, that each person of record holding a certificate that represented shares of Common Stock that were issued and outstanding immediately prior to the Effective Time shall receive, upon surrender of such certificate, a new certificate evidencing and representing the number of whole shares of Common Stock after the Effective Time into which the shares of Common Stock formerly represented by such certificate shall have been reclassified.

The total number of shares of all classes of stock which the Corporation shall have authority to issue is (i) 425,000,000 shares of Common Stock, (ii) 146,199,885 shares of Limited Common Stock, $0.01 par value per share ("**Limited Common Stock**" and, together with the Common Stock, the "**Combined Common Stock**"), and (iii) 328,105,864 shares of Preferred Stock, $0.01 par value per share ("**Preferred Stock**")."

FURTHER RESOLVED: All references to "Non-Voting Common Stock" be and hereby are deleted and replaced by references to "Limited Common Stock".

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment to be signed by its Chief Executive Officer and President this [●] day of [●], [●].

SCHRÖDINGER, INC.

By: _____
Ramy Farid
Chief Executive Officer and President

SCHRÖDINGER, INC.
AMENDMENT NO. 4

TO

AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT

This AMENDMENT NO. 4 TO AMENDED AND RESTATED INVESTORS' RIGHTS AGREEMENT (this "Amendment"), dated as of February 26, 2024, amends that certain Amended and Restated Investors' Rights Agreement, dated as of November 9, 2018, by and among Schrödinger, Inc. (the "Company") and the Investors identified therein, as amended by Amendment No. 1 to the Amended and Restated Investors' Rights Agreement, dated January 4, 2019, Amendment No. 2 to the Amended and Restated Investors' Rights Agreement, dated April 8, 2019 and Amendment No. 3 to the Amended and Restated Investors' Rights Agreement, dated January 24, 2020 (as so amended, the "IRA"). Capitalized terms used and not defined herein shall have the meanings set forth in the IRA.

WHEREAS, the Company and the Investors desire to amend the IRA to extend the period during which Holders of Registrable Securities may request registration or inclusion of Registrable Securities in a registration pursuant to the IRA; and

WHEREAS, Section 6.6 of the IRA provides in part that any term of the IRA may be amended with the written consent of (i) the Company and (ii) the holders of 70% of the Registrable Securities then outstanding (collectively, the "Requisite Parties");

NOW, THEREFORE, in consideration of the mutual covenants contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Company and the undersigned, who constitute the Requisite Parties, hereby agree as follows:

1. Amendment. Section 2.13(b) of the IRA is hereby deleted in its entirety, and the following is inserted in lieu thereof:

"(b) the eighth anniversary of the IPO."

2. Entire Agreement. The IRA, as amended by this Amendment, contains the entire agreement among the parties with respect to the subject matter thereof and amends, restates and supersedes all prior and contemporaneous arrangements or understandings with respect thereto.

3. Effectiveness. This Amendment shall be effective immediately. Upon the effectiveness of this Amendment, on and after the date hereof, each reference in the IRA to "this Agreement," "hereunder," "hereof," "herein" or words of like import, and each reference in the other documents entered into in connection with the IRA, shall mean and be a reference to the IRA, as amended hereby.

4. Governing Law. This Amendment shall be governed by, and construed in accordance with, the laws of the State of Delaware, regardless of the laws that might otherwise govern under applicable principles of conflicts of law.

5. Counterpart Signature Pages. This Amendment may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Counterparts may be delivered via facsimile, electronic mail (including pdf or any electronic signatures complying with the U.S. federal ESIGN Act of 2000, *e.g.*, www.docusign.com) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

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IN WITNESS WHEREOF, this Amendment has been executed by the parties hereto as of the day and year first above written.

SCHRÖDINGER, INC.

By: /s/ Ramy Farid
Name: Ramy Farid
Title: President and Chief Executive Officer

IN WITNESS WHEREOF, this Amendment has been executed by the parties hereto as of the day and year first above written.

BILL & MELINDA GATES FOUNDATION TRUST

By: /s/ Alan Heuberger
Name: Alan Heuberger
Title: Authorized Representative

Exhibit 10.15

10.19

Schrödinger, Inc.

Employment Agreement

1540 Broadway, 24th Floor
New York, NY 10036

This Employment Agreement ("Agreement"

EMPLOYMENT AGREEMENT

THIS EMPLOYMENT AGREEMENT (the "Agreement") is dated March 17, 2003 and effective made as of the Employment Commencement Date set forth in Section 1 below ("Effective Date") July 27, 2023 by and between Schrödinger, Inc. (the "Company," and, together with its subsidiaries and Affiliates (as hereinafter defined), the "Schrödinger Companies") and Margaret Dugan (the "Executive") (together, the "Parties").

RECITALS

WHEREAS, the Company desires to employ the Executive as its Chief Medical Officer; and

WHEREAS, the Executive has agreed to accept employment on the terms and conditions set forth in this Agreement;

NOW, THEREFORE, in consideration of the foregoing and of the respective covenants and agreements of the Parties herein contained, the Parties hereto agree as follows:

1. ***Agreement***. This Agreement shall be effective as of July 31, 2023 or such other date as the Parties may agree (the "Effective Date"). On and following the Effective Date, the Executive shall be an employee of the Company until such employment relationship is terminated in accordance with Section 8 hereof ("Term of Employment").

2. ***Position***. During the Term of Employment, the Executive shall serve as the Chief Medical Officer of the Company, working out of the Company's office in New York, New York, and traveling as reasonably required by the Executive's job duties.

3. ***Scope of Employment***. During the Term of Employment, the Executive shall be responsible for the performance of those duties consistent with the Executive's position as Chief Medical Officer, in addition to such other duties as may from time to time be assigned to the Executive by the Company. The Executive shall report to the Chief Executive Officer of the Company and shall perform and discharge the Executive's duties and responsibilities hereunder faithfully, diligently, and to the best of the Executive's ability. The Executive shall devote the Executive's full business time, loyalty, attention and efforts to the business and affairs of the Company and its affiliates; provided, however, that the Executive may engage in charitable, educational, religious, civic and similar types of activities to the extent that such activities are not competitive with the business of the Company, do not individually or in the aggregate inhibit, interfere with, or prohibit the timely performance of the Executive's duties hereunder, and do not create a Delaware corporation ("Company" potential business or fiduciary conflict. Notwithstanding anything to the contrary in the Agreement or exhibits thereto, and subject to the time commitments and duration represented to the Company by the Executive, the Company consents to the Executive's continuation of: (a) her position as a consultant for Dracen Pharmaceuticals, Inc.; (b) her position as a member of the board of directors for BeiGene; (c) her position as a consultant for Salarius Pharmaceuticals, LLC; and (d) such other consulting and board of directors positions as are consented to in writing by the Company (the "Outside Company[ies]") during the Executive's employment with the Company. In the event any conflict of interest arises between Executive's obligations to the Company and her obligations to the Outside Companies, Executive shall promptly recuse herself or resign, as appropriate, from the Outside Company to which the conflict is applicable. The Executive agrees to abide by the rules, regulations, instructions, personnel practices and policies of the Company and any changes therein that may be adopted from time to time by the Company.

4. ***Compensation***. As full compensation for all services rendered by the Executive to the Company and any of the other Schrödinger Companies during the Term of Employment, the Company will provide to the Executive the following:

(a) ***Base Salary***. Effective as of the Effective Date, the Executive shall receive a base salary at the annualized rate of **Five Hundred and Twenty Thousand Dollars and Zero Cents ($520,000.00)** (the "Base Salary"). The Executive's Base Salary shall be paid in equal installments in accordance with the Company's regularly established payroll procedures. The Executive's Base Salary will be reviewed on an annual or more

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frequent basis by the Company's Board of Directors or the compensation committee thereof (the "Board") and is subject to change in the discretion of the Board.

(b) ***Annual Discretionary Bonus***. The Executive will be eligible to participate in the Company's Senior Executive Incentive Compensation Plan (the "Incentive Plan") in accordance with the terms and conditions thereof. For 2023 only, subject to and in accordance with the terms of the Incentive Plan, the Executive shall be eligible for a target bonus of up to 40% of the Executive's Base Salary (the "Target Bonus"), prorated for the period beginning on the Effective Date and ending on December 31, 2023.

(c) ***Equity Award***. Subject to approval by the compensation committee of the Board or a majority of the Company's Independent Directors as defined in Nasdaq Listing Rule 5605(a)(2), and Jenny Herman ("Employee" as a material inducement to the Executive entering into employment with the Company and serving as Chief Medical Officer of the Company, on or about the Effective Date, the Company shall grant the Executive:

(i) A nonstatutory stock option (the "Option") to purchase **NinetyThousand (90,000)** shares of common stock, $0.01 par value per share, of the Company (the "Common Stock"), such Option to (1) have an exercise price per share equal to the closing price per share of the Common Stock on the Nasdaq Global Select Market on the date of grant, (2) vest and become exercisable, subject to the Executive's continued service on each applicable vesting date, at a rate of 25% of the total shares underlying the Option on the first anniversary of the Effective Date and, following that, as to an additional 1/48 of the total shares underlying the Option upon the Executive's completion of each additional month of service over the 36-month period measured from the first anniversary of the Effective Date, and (3) be subject to the terms and conditions of the Company's 2021 Inducement Equity Incentive Plan and a nonstatutory stock option agreement between the Executive and the Company; and

(ii) **Fifteen Thousand (15,000)** restricted stock units (the "RSUs" and, together with the Option, the "Equity Awards"), which RSUs shall (1) entitle the Executive to receive one share of Common Stock for each RSU that vests, (2) be subject to vesting set forth in the Restricted Stock Unit Agreement (the "RSU Agreement"), to be provided following the Effective Date, in each case subject to the Executive's continued employment on the applicable vesting date, and (3) be subject to the terms and conditions of the Company's 2021 Inducement Equity Incentive Plan and the RSU Agreement.

(iii) The Equity Awards shall be awarded outside of the Company's equity incentive plans as "inducement grants" within the meaning of Nasdaq Listing Rule 5635(c)(4). The Equity Awards are subject to adjustment for stock splits, combinations or other recapitalizations. The Executive's rights in, and eligibility for, future equity awards will be determined by the Board or the compensation committee of the Board in its discretion.

(d) ***Sign-On Bonus***. The Company will pay the Executive a gross sign-on bonus of **One Hundred Thousand Dollars and Zero Cents ($100,000.00)**, less applicable taxes and withholdings, within two pay periods after the Effective Date (the "Sign-On Bonus"). The Executive understands and agrees that (i) if, within twelve (12) months following the Effective Date, the Executive resigns for any reason or the Executive's employment is terminated by the Company for "Cause" (as defined in the Company's Executive

Severance and Change in Control Benefits Plan (the "Executive Severance Plan"), the Executive shall repay one hundred percent (100%) of the gross amount of the Sign-On Bonus, and (ii) if, between twelve (12) months and twenty-four (24) months following the Effective Date, the Executive resigns for any reason or the Executive's employment is terminated for "Cause" (as defined in the Executive Severance Plan), the Executive shall repay fifty percent (50%) of the gross amount of the Sign-On Bonus. If repayment of the Sign-On Bonus is required under this Section, the Executive agrees to repay in full the applicable amount within fifteen (15) days following the Executive's last day of employment.

(e) ***Paid Time Off***. The Executive will be eligible for a maximum of twenty (20) days of paid time off ("PTO") per calendar year. PTO days shall accrue on a monthly pro-rata basis for each month that the Executive is employed during the calendar year, subject to any requirements of the Company's policies. In addition, the Executive will receive paid holidays as determined annually according to the Company calendar. The use of PTO and other time off is governed by applicable law and the Company's PTO policies, which may be modified at any time and without advance notice, to the extent permissible under applicable law.

(f) ***Benefits***. The Executive will be eligible to participate in any and all benefits programs that the Company establishes and makes available to its senior executive employees from time to time, provided that the Executive is eligible under (and subject to all provisions of) the plan documents governing those programs. The benefits programs made available by the Company, and the rules, terms and conditions for participation in such benefit programs, may be changed by the Company at any time without advance notice (other than as required by such programs or under law).

(g) ***Withholdings***. All compensation payable to the Executive shall be subject to applicable taxes and withholdings.

(h) ***Indemnification and Liability Insurance***. The Executive shall be treated in a manner comparable to that of the Company's other senior executives with respect to indemnification and liability insurance.

5. ***Expenses***. The Executive will be reimbursed for the Executive's actual, necessary and reasonable business expenses pursuant to Company policy, subject to the following provisions: all reimbursements and in-kind benefits provided under the Agreement shall be made or provided in accordance with the requirements of Section 409A to the extent that such reimbursements or in-kind benefits are subject to Section 409A of the Internal Revenue Code ("Section 409A"), including, where applicable, the requirements that (i) any reimbursement is for expenses incurred during the Executive's lifetime (or during a shorter period of time specified in the Agreement), (ii) the amount of expenses eligible for reimbursement during a calendar year may not affect the expenses eligible for reimbursement in any other calendar year, (iii) the reimbursement of an eligible expense will be made on or before the last day of the calendar year following the year in which the expense is incurred, and (iv) the right to reimbursement is not subject to set off or liquidation or exchange for any other benefit.

6. ***Restrictive Covenants Agreement***. As a condition of the Executive's employment with the Company, the Executive will be required to sign the Confidentiality, Inventions, Non-Competition and Non-Solicitation Agreement attached hereto as Exhibit A.

7. ***Employment Termination; Other Positions***. This Agreement and the employment of the Executive shall terminate upon the occurrence of any of the following:

(a) Upon the death or "Disability" (as defined in the Executive Severance Plan) of the Executive.

(b) At the election of the Company, with or without "Cause" (as defined in the Executive Severance Plan), immediately upon written notice by the Company to the Executive.

(c) At the election of the Executive, with or without "Good Reason" (as defined in the Executive Severance Plan), upon written notice, and subject to, if with Good Reason within one (1) year following the closing of a Change in Control (as defined in the Executive Severance Plan), any timing and other provisions set forth in the Executive Severance Plan, and otherwise subject to the Executive providing thirty (30) days' written notice to the Company (the "Notice Requirement). Notwithstanding the foregoing, should the Executive provide notice pursuant to the Notice Requirement, the Company retains the right, in its sole discretion, to unilaterally accelerate the date of termination set forth in such notice and provide to the Executive (in addition to the Accrued Obligations (as defined below)) a payment equal to thirty (30) days of the Executive's Base Salary less the amount of Base Salary the Executive received between the date of the written notice provided to the Company and the date of termination. For the avoidance of doubt, any such acceleration of the date of termination shall not result in or be deemed a termination by the Company for purposes of this Agreement or the Executive Severance Plan.

If, as of the date the Executive's employment terminates for any reason, the Executive is a member of the Board (or the board of directors of any entity affiliated with the Company), or holds any other offices or positions with the Company (or any of the Schrödinger Companies), the Executive shall, unless otherwise requested by the Company, immediately relinquish and/or resign from any such board memberships, offices and positions as of the date her employment with the Company terminates. Executive agrees to execute such documents and take such other actions as the Company may request to reflect such relinquishments and/or resignation(s).

8. ***Effect of Termination***. If the Executive's employment is terminated under any circumstances, the Company's obligations under this Agreement shall immediately cease and the Executive shall only be entitled to receive (i) any accrued but unpaid Base Salary, to be paid in accordance with the Company's established payroll procedure and applicable law, (ii) any unreimbursed business expenses for which expenses the Executive has timely submitted appropriate documentation in accordance with Section 5 hereof, and (iii) any vested employee benefits, each as determined as of the date of termination (the "Accrued Obligations"). The Executive's eligibility for and/or entitlement to any additional payments or benefits in connection with a termination of employment shall be governed exclusively by and subject to all terms and conditions of the Executive Severance Plan.

9. ***Absence of Restrictions***. By signing this Agreement, the Executive represents and warrants that by accepting employment with and performing services for the Company, the Executive has not breached or violated and will not breach or violate any contract or legal obligation that the Executive may owe to any third party (including, without limitation, any current or former employer) that may restrict the Executive's ability to perform services for the Company, or which are in any way inconsistent with any of the terms of this Agreement. The Executive further represents and warrants that, in connection with the Executive's employment hereunder, the Executive shall not use or disclose any trade secrets or other proprietary information or intellectual property in which the Executive or any other person or entity has any right, title or interest, and that the Executive has returned all property and confidential information belonging to any prior employer.

10. ***Notice***. Any notice delivered under this Agreement shall be deemed duly delivered three (3) business days after it is sent by registered or certified mail, return receipt requested, postage prepaid, one (1) business day after it is sent for next-business day delivery via a reputable nationwide overnight courier service, or immediately upon hand delivery, in each case to the address of the recipient set forth below.

To the Executive:

At the address set forth in the Executive's personnel file

To the Company:

Schrödinger, Inc.
1540 Broadway
24th Floor
New York, NY 10036
Attention: Chief Executive Officer
With a copy to: Chief Legal Officer

Either Party may change the address to which notices are to be delivered by giving notice of such change to the other Party in the manner set forth in this Section 10.

11. ***Employment Conditions***. The Executive's employment with the Company is contingent upon (a) the Executive providing to the Company, within three (3) business days following the Executive's start date, documentation proving the Executive's eligibility to work in the United States, as required by the Immigration Reform and Control Act of 1986, and (b) the Executive's satisfactory completion of a criminal background check.

12. ***Applicable Law; Arbitration***. This Agreement shall be governed by and construed in accordance with the laws of the State of New York (without reference to the conflict of laws provisions thereof). As a condition of the Executive's employment with the Company, the Executive will be required to sign the Mutual Arbitration Agreement attached hereto as Exhibit B.

13. ***Successors and Assigns***. This Agreement shall be binding upon and inure to the benefit of both Parties and their respective successors and assigns, including any corporation with which or into which the Company may be merged or which may succeed to its assets or business; provided, however, that the obligations of the Executive are personal and shall not be assigned by the Executive.

14. ***At-Will Employment***. During the Term of Employment, the Executive will be an at-will employee of the Company, which means that, notwithstanding any provision set forth herein, the employment relationship can be terminated by either Party for any reason, at any time, with or without prior notice and with or without Cause (provided that the Executive agrees to comply with the notice provision set forth in Section 7(c) above).

15. ***Acknowledgment***. The Executive states and represents that the Executive has had an opportunity to fully discuss and review the terms of this Agreement with an attorney. The Executive further states and represents that the Executive has carefully read this Agreement, understands the contents herein, freely and voluntarily assents to all of the terms and conditions hereof, and signs the Executive's name of the Executive's own free act.

16. ***Company Premises and Property***. The Company's premises, including all workspaces, furniture, documents, and other tangible materials, and all information technology resources of the Company (including computers, data and other electronic files, and all internet and email) are subject to oversight and inspection by the Company at any time. Company employees should have no expectation of privacy with regard to any Company premises, materials, resources, or information. By signing this Agreement, the Executive acknowledges that any and all telephone conversations or transmissions, electronic mail or transmissions, or internet access or usage by Company employees by any electronic device or system, including but not limited to the use of a computer, telephone, wire, radio or electromagnetic, photoelectric or photo-optical systems may be subject to monitoring at any and all times and by any lawful means.

17. ***Data Privacy***. The Executive acknowledges and agrees that the Company has the right to collect, use and disclose the Executive's personal information for purposes relating to the administration of the Executive's employment with the Company, including administering the Executive's compensation and benefits and compliance with any regulatory, reporting and withholding requirements. The Executive acknowledges and agrees that the Executive's personal information may be disclosed by the Company to any of the Schrödinger Companies, as appropriate and necessary for such purposes. The Company will take reasonable steps to maintain physical, technical and procedural safeguards regarding the Executive's personal information. The Executive consents to the transmission, processing, and storage of the Executive's personal information in the United States and, as needed, at international service centers outside the United States.

18. ***No Oral Modification, Waiver, Cancellation or Discharge***. This Agreement may be amended or modified only by a written instrument executed by both the Company and the Executive. No delay or omission by the Company in exercising any right under this Agreement shall operate as a waiver of that or any other right. A waiver or consent given by the Company on any one occasion shall be effective only in that instance and shall not be construed as a bar to or waiver of any right on any other occasion.

19. ***Captions and Pronouns***. The captions of the sections of this Agreement are for convenience of reference only and in no way define, limit or affect the scope or substance of any section of this Agreement. Whenever the context may require, any pronouns used in this Agreement shall include the corresponding masculine, feminine or neuter forms, and the singular forms of nouns and pronouns shall include the plural, and vice versa.

20. ***Interpretation***. The Parties agree that this Agreement will be construed without regard to any presumption or rule requiring construction or interpretation against the drafting Party. References in this Agreement to "include" or "including" should be read as though they said "without limitation" or equivalent forms. References in this Agreement to the "Board" shall include any authorized committee thereof.

21. ***Severability***. Each provision of this Agreement must be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Agreement is held to be prohibited by or invalid under applicable law, such provision will be ineffective only to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or the remaining provisions of this Agreement. Moreover, if a court of competent jurisdiction determines any of the provisions contained in this Agreement to be unenforceable because the provision is excessively broad in scope, whether as to duration, activity, geographic application, subject or otherwise, it will be construed, by limiting or reducing it to the extent legally permitted, so as to be enforceable to the extent compatible with then applicable law to achieve the intent of the Parties.

22. ***Entire Agreement***. This Agreement constitutes the entire agreement between the Parties and supersedes all prior agreements and understandings, whether written or oral, relating to the subject matter of this Agreement, including without limitation any prior offer letter, draft employment agreement, or discussions relating to the Executive's employment with the Company.

23. ***Definition of Affiliate***. For purposes of this Agreement, the term "Affiliate" shall mean any entity in which a party holds a 50% or greater equity interest or any entity controlling, controlled by or under common control with such party, directly or indirectly by or through one or more intermediaries.

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement as of the day and year set forth below.

WHEREAS Schrödinger, Inc, .the Company is currently in the business of (i) designing, developing, distributing, selling, licensing, leasing and servicing computer software programs for use principally in the fields of quantum chemistry, computational chemistry, molecular mechanics/dynamics, protein structure prediction, computational ligand docking, and other science and technology fields, and (ii) providing services and performing research involving the use of such software in connection with various biological, chemical, and materials science applications, and may engage in other activities in the future (such current and future activities collectively, the "Company's Business");

By: /s/ Yvonne Tran

Name: Yvonne Tran

Title: Chief Legal Officer & Corporate Secretary

Date: July 28, 2023

WHEREAS, Employee Executive

Signature: /s/ Margaret Dugan

Date: July 27, 2023

EXHIBIT A

Confidentiality, Inventions, Non-Competition, and Non-Solicitation Agreement

This Confidentiality, Inventions, Non-Competition, and Non-Solicitation Agreement ("Agreement") is engaged made by the and between Schrödinger, Inc. ("Company") and Margaret Dugan ("Employee").

In consideration of Employee's employment by Company to perform certain services for Company and/or one or more subsidiaries of and/or other Affiliates (as hereinafter defined) of the Company (collectively, the Company, its subsidiaries, and its other Affiliates shall be referred to as the "Schrödinger Companies");

WHEREAS, in connection with such duties, Employee may have access to certain confidential information and trade secrets of one or more "Schrödinger Companies and/or, as the case may be, the D. E. Shaw Group"), Company's agreement to provide Employee with Confidential Information (as hereinafter herein defined), and may in for other valuable consideration, the course receipt and sufficiency of Employee's employment with the Company discover or conceive one or more inventions; and

WHEREAS, the Company and which is hereby acknowledged, Employee desire to define the rights and obligations between them with respect to the subject matter hereto.

NOW THEREFORE, in consideration of the promises and covenants set forth below, the parties agree agrees as follows:

1. Employment. Employment commenced on May 1, 2002 ("Employment Commencement Date") and may be terminated by either party at any time, for any reason, upon 30 days' notice (the "Notice Period"), which notice may be given either verbally or in writing. Notwithstanding the foregoing, the Company may elect to terminate employment immediately upon notice, except that in this event, the compensation and benefits set forth in Section 2 shall be continued for the duration of the Notice Period, provided that the foregoing shall not modify the terms and conditions of any Company stock option plan. The Employee acknowledges and agrees that the Employee is an employee at will, and that just as the Employee is free to resign at any time, the Company has the right to terminate the employment relationship at any time for any lawful reason. The Employee acknowledges and agrees that no representative of the Company may verbally change the at will employment relationship between the Employee and the Company. References to time periods in this Agreement shall not be construed or interpreted as promising or guaranteeing employment for any specific duration or until any specific date.

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2. Compensation.

a. Base Salary During the CompensationPeriod. As compensationfor the Employee'sservicesduringtheperiodbeginningMarch1,2003andendingonMarch1,2004 (the "CompensationPeriod"),the Companyshallpay the Employeea base salary computedat an annualrateof$48,000peryear,proratedto correspondtothatportionoftheCompensation PeriodduringwhichtheEmployeeisactuallyemployedwiththeCompany,suchbasesalaryto bepaidmonthly. If Employeeisacommission-eligible memberofthesalesteam,Employee shallbe eligibleto receivecommissionsunderthe Company'sstandardsales commissionplan, whichmaybemodifiedbythe Companyatanytime inthe Company'ssolediscretion.

b. Base Salary After the Compensation Period. As of the end of the Compensation Period, the Employee's base salary may be increased or decreased, or the manner in which the Employee is compensated may be changed, in the sole discretion of the Company. Any such change in compensation shall be deemed to modify only this Section 2 of this Agreement, and all other provisions of this Agreement shall remain in effect following such change in compensation. In the absence of any such change, the Employee's base salary shall remain the same as it was during the Compensation Period.

c. Standard Company Benefits. In addition to the compensation outlined elsewhere in this Section 2, the Company shall provide to the Employee all of the benefits included in the Company's standard benefit package, which currently include medical (hospitalization and major medical), dental, disability, life, and accidental death and dismemberment insurance. Most of the cost of such benefits shall be borne by the Company. However, in the case of coverage for the Employee himself or for one or more of Employee's beneficiaries, the Employee makes a pre-tax contribution to the cost of the medical and dental insurance. Individual and dependent medical and dental insurance contribution amounts are determined on a set scale, based on the actual cost of the insurance. For additional levels of life insurance beyond the Company's basic benefit, the required contribution will be borne by the Employee by means of a voluntary salary reduction in the amount of the contribution implemented by Company at the request of the Employee.

The standard benefit package also currently includes a flexible spending account plan, a transit reimbursement plan, and a 401(k) retirement plan, available to all qualified full- time employees. Enrollment in the 401(k) retirement plan will be allowed for all employees who work 25 or more hours per week at any time. Company does not contribute to the flexible spending account plan, the transit reimbursement plan, or the 401(k) retirement plan, but the Employee may contribute pre-tax dollars. The Employee agrees that the composition, providers, and all other aspects of Company's standard benefit package may be changed from time to time in the sole discretion of the Company.

d. Stock Option Plan. The Employee may be eligible to receive stock options under the Company's standard stock option plan, which may be modified by the Company at any time, in the sole discretion of the Company.

e. Exclusive Compensation. The compensation and benefits described in this Section 2 shall be the exclusive compensation due to the Employee from the Company or any of its Affiliates during or on account of the services of the Employee. If directed by the Company, the Employee shall provide the services described in this Agreement to one or more Affiliates of the Company without additional compensation.

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3. Duties. The Employee will devote Employee's full time, skill, efforts, and attention to the Company's Business, and shall perform such duties at such locations and on behalf of such Schrödinger Companies as may be assigned by the officers or directors of the Company from time to time. The Employee agrees to abide by all applicable laws and regulations in connection with the Employee's employment.

4. Confidentiality.

4.1 1.1 Definition. Definition. For the purposes of this agreement, "Confidential Information" Agreement, "Confidential Information" shall mean any information, whether or not in writing, of a private, secret or confidential nature concerning Schrödinger Companies' business or financial affairs, including but not limited to:

a. (a) any inventions, trade secrets, discoveries, know-how, research, improvements, concepts, ideas, and principles whether or not patentable or copyrightable (including without limitation processes, methods, formulas, formulae, techniques, devices, designs, software, computer processing systems and techniques, algorithms, flow charts, specifications, computer graphics, data, apparatus, products, biological targets, and molecular structures), relating to past, present, or contemplated future activities of one or more Schrödinger Companies;

b. (b) price lists, customer lists, supplier lists, business plans, marketing plans, financial and payroll information, as well as any information contained in documents whether or not marked "Confidential," "Confidential," which relates to the business of one or more Schrödinger Companies and which Employee may prepare, use, or have access to during in the term course of the Employee's employment;

c. (c) the fact that one or more Schrödinger Companies uses, has used, or has evaluated for potential use any inventions, discoveries, know-how, research, improvements, concepts, ideas, or principles whether or not patentable or copyrightable (including without limitation processes, methods, formulas, techniques, devices, designs, software, computer processing systems and techniques, algorithms, flow charts, specifications, computer graphics, data, apparatus, products, biological targets and molecular structures), whether developed by such Schrödinger Companies or by any other party;

d. (d) the results of any marketing, advertising, joint venture, business, financial, or other analysis conducted by (or on behalf of) one or more Schrödinger Companies for the internal use of one or more Schrödinger Companies or for other non-public use (and not approved by Company for general dissemination to the public);

e. (e) any information that would typically be included in Company's a company's income statements, statement, including but not limited to the amount of Company's such company's revenues, expenses, or net income;

f. (f) any plans for the business of one or more Schrödinger Companies (whether or not such plans have been reduced to writing), financial information concerning such plans (including without limitation projected revenues, projected expenses, and projected net income), descriptions of such business and technical aspects of or relating to the operation of such business, and products and services that one or more Schrödinger Companies is considering exploring, developing, and/or researching;

g. (g) any other information gained in the course of the Employee's employment with the Company that could reasonably be expected to prove deleterious to any Schrödinger Company or to any entity within the D. E. Shaw Group if disclosed to third parties,

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including without limitation any information that could reasonably be

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expected to aid a competitor of any Schrödinger Company or the D. E. Shaw Group in making inferences regarding the nature of the any Schrödinger Companies' or D. E. Shaw Group's Company's activities, where such inferences could reasonably be expected to adversely affect the competitive position of any Schrödinger Company or the D. E. Shaw Group relative to that of such a competitor;

h. (h) any other information gained in the course of or incident to the Employee's employment that a Schrödinger Company has received from a third party and is required to hold confidential; and

i. (i) any other information gained in the course of or incident to the Employee's employment that one or more Schrödinger Companies or the D. E. Shaw Group treats or designates as Confidential Information and that is not publicly available. available; and

(j) personally identifiable information of other employees, job applicants, vendors, consultants, or any other third parties, including without limitation name, address, telephone or facsimile number, Social Security Number ("SSN") or other government identification number, financial information, health information, or other information entrusted to a Schrödinger Company that identifies an individual or relates to an identifiable individual under applicable law (collectively, "Personal Information").

" "Confidential Information" Information" shall not include information which Employee can show (x) is or becomes part of the public domain through no fault of Employee; (y) is already known to Employee and has been identified in writing prior to the date of this Agreement; or (z) is subsequently received by Employee from a third party who has no obligation of confidentiality to one or more Schrödinger Companies or the D. E. Shaw Group.

Companies.

4.2 1.2 Acknowledgment of Proprietary Interest. Interest. Employee acknowledges that the Confidential Information described above is proprietary to one or more Schrödinger Companies and may contain one or as the case may be, the D. E. Shaw Group and contains more valuable trade secrets of one or more Schrödinger Companies or, as the case may be, the D. E. Shaw Group. Companies.

4.3 1.3 Covenant Not to Disclose Confidential Information. Information During the term of . Employee shall not, during Employee's employment and or at any time thereafter, Employee agrees not to disclose or use, directly or indirectly, except in pursuit of the Employee's duties to one or more Schrödinger Companies, any Confidential Information, unless Employee shall first secure written consent of the Company to such disclosure or use, or unless Employee is compelled to do so by court order or applicable law and Employee provides prior written notice of such disclosure to the Company. Company (except as set forth below). Without limiting the foregoing, Employee agrees not to publish, or cause or authorize to be published, any document containing Confidential Information or related to the Company's Company's Business (as defined herein), without the Company's Company's prior written approval (which may be granted or withheld in Company's Company's sole discretion). "Company's Business" includes, collectively: (i) designing, developing, distributing, selling, licensing, leasing and servicing computer software programs for use principally in the fields of quantum chemistry, computational chemistry, molecular mechanics/dynamics, protein structure prediction, computational ligand docking, and other science and technology fields; (ii) providing services and performing research involving the use of such software in connection with various biological, chemical, and materials science applications; (iii) multidisciplinary approaches to medical advancement of innovative medicines, including one or more of target identification, drug discovery, chemistry, pharmacology, nonclinical safety testing, manufacturing, clinical trials, and regulatory submissions for human or non-human animal therapy; and (iv) other activities in which the Company may engage in the future.

Employee further acknowledges that there are laws in the United States and other countries that protect Personal Information and that, pursuant to such laws, Employee must not use such information other than for the purpose for which it was originally used or make any disclosures of such Personal Information to any third party or from one country to another in a manner inconsistent with applicable laws and any Company policies relating to the use of Personal Information.

Notwithstanding anything to the contrary stated above, this Agreement does not prohibit Employee from reporting possible violations of any applicable law or regulation to any governmental agency or self-regulatory organization, or making one or more other disclosures, which are protected under whistleblower provisions of an applicable law or

regulation. Employee does not need the Company's prior authorization to make any such report or disclosure, nor is Employee required to notify the Company that Employee has made any such report or disclosure. Also, notwithstanding anything to the contrary set forth above or elsewhere in this Agreement, Employee will not be held criminally or civilly liable under any federal or state trade secret law for any disclosure of a trade secret that is made: (i) in confidence to a federal, state, or local government official, either directly or indirectly, or to an attorney; and (ii) solely for the purpose of reporting or investigating a suspected violation of law, or is made in a complaint or

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other document that is filed under seal in a lawsuit or other proceeding. Finally, if Employee commences a legal proceeding for retaliation by the Company for reporting a suspected violation of law, Employee may disclose the Company's trade secrets to Employee's attorney and use the trade secret information in the legal proceeding if Employee: (i) files any document containing the trade secret under seal; and (ii) does not disclose the trade secret, except pursuant to an order issued by a court or an arbitrator of competent jurisdiction.

4.4 1.4 Acknowledgment of Reasonableness. Reasonableness. The Company and Employee hereby acknowledge that (a) the Company's Company's market for its products is unlimited geographically and the foregoing non-disclosure requirements shall apply to Employee on a worldwide basis, and (b) the geographical and durational limitations imposed with respect to the Confidential Information are fair and reasonable, and are reasonably necessary to protect the Confidential Information of the Company. In the event that any provision relating to the geographical, durational, or other restrictions on Employee are declared by a court of competent jurisdiction to exceed the maximum time period, area, or other measure such court deems reasonable and enforceable, said time period, area, or other measure shall be deemed to become and thereafter be the maximum amount for which such court deems reasonable and enforceable.

4.5 1.5 Return of Materials at Termination. Termination In the event of any . Promptly upon termination of his Employee's employment whether with or without cause and regardless for any reason (or earlier, upon the request of the reason for such termination,

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Company), Employee will promptly return to the Company all written materials, computer software programs, or other materials containing Confidential Information and all other materials or documents, including without limitation, notebooks or other scientific record, whether electronic or handwritten, capturing innovative research or development information, contract research contacts, mailing lists, rolodexes, computer print-outs, printouts, and computer disks and tapes, belonging to one or more Schrödinger Companies which contain information pertaining to the Company's Company's Business, including all scientific and development materials, code, methods, clients, potential clients, customers, potential customers, funding providers, potential funding providers, or employees, unless the Company consents in writing to the Employee's Employee's retention thereof.

Except in connection with the performance of Employee's duties hereunder, Employee agrees not to make or retain copies or excerpts or electronically transmit any Confidential Information.

4.6 1.6 Remedies upon Breach. Breach. Employee recognizes that the disclosure or use of any Confidential Information would cause the Company irreparable injury, which may not be adequately compensated by damages. Accordingly, in the event Employee breaches or threatens to breach any provision of this Agreement, the Company or, as the case may be, the D. E. Shaw Group, shall be entitled to an injunction restraining Employee from disclosing or using, in whole or in part, any Confidential Information, or from rendering any services to any person, firm, corporation, or other entity to whom such Confidential Information, in whole or in part, has been, is threatened to be, or would necessarily be disclosed or used by Employee. Nothing herein shall be construed as prohibiting the Company or, as the case may be, the D. E. Shaw Group, from pursuing any other remedies available to it for such breach or threatened breach, including the recovery of damages from Employee or any third party. The right of the Company and/or the D. E. Shaw Group to seek equitable relief under this Agreement shall be in addition to (and not in derogation of) the requirement imposed on each party hereto to arbitrate disputes as provided in Section 7.1 below. the Arbitration Agreement between Employee and Company.

4.7 1.7 Ownership of Confidential Information. Information. All Confidential Information and all right, title and interest in and to patents, patent rights, copyright rights, mask work rights, trade secret rights, and all other intellectual property and proprietary rights anywhere in the world (collectively, "Rights" "Rights") in connection therewith shall be the sole property of the relevant Schrödinger Company, which, if other than Schrödinger, Inc., shall be a third-party beneficiary of this Agreement. Employee hereby assigns and agrees to assign to the Company any Rights Employee may have or acquire in such Confidential Information.

4.8 1.8 Confidential Information of Others. Others The . Employee agrees not to disclose to any Schrödinger Company any confidential or proprietary information belonging to any of the Employee's previous employers, or belonging to any other party, without first securing the written permission of such previous employers or other parties. In addition, Employee agrees represents and warrants that Employee (i) has not brought and will not bring with Employee any confidential or proprietary information belonging to any of Employee's previous employers or to any other person, that Employee person; (ii) will refrain from using while employed by the Company any such confidential or proprietary information, information; (iii) is not subject to any written non-compete or any other agreement which will affect or limit Employee's employment with the Company; and that Employee (iv) has complied and will comply with the non-disclosure, non-compete, and other provisions of Employee's agreements with Employee's prior employers and with other persons. The Employee agrees to indemnify each Schrödinger Company for any expense, claim, or damages (including without limitation attorneys' attorneys' fees, costs of investigation, and costs of collection) suffered by such entity relating to a breach of the terms of this paragraph Section by the Employee.

5. Inventions.

5.1 1.9 Protection of Personal Information. Employee agrees to properly safeguard Personal Information, regardless of its form (*e.g.*, paper and electronic records containing Personal Information), including after termination of employment, and acknowledges that improperly using or disclosing Personal Information may subject Employee to disciplinary action, up to and including termination of employment. Employee's obligations include, but is not limited to:

(a) preventing unauthorized access to, and protecting the security and confidentiality of, Personal Information;

(b) only collecting, accessing, using, maintaining, transporting or disclosing the minimum amount of Personal Information that is necessary and relevant to perform Employee's work responsibilities;

(c) only disclosing Personal Information to individuals who are authorized to access (and need such access to) Personal Information to perform their job responsibilities, and only where such disclosure is permitted by applicable law;

(d) holding Personal Information in strict confidence, both during and after employment with a Schrödinger Company;

(e) only removing Personal Information from Company premises when necessary and relevant to perform Employee's work responsibilities;

(f) not using Personal Information for unauthorized purposes and not permitting Personal Information to be used for unauthorized purposes (e.g., for Employee's own benefit or for the benefit of any third party);

(g) properly disposing of Personal Information in a manner that is commensurate with the degree of risk posed by such Information (*e.g.*, ensuring that SSNs or other government identification numbers are disposed of so as to make them unreadable, such as by shredding paper documents that contain SSNs or wiping or destroying electronic media that contains SSNs); and

(h) notifying Company in the event of actual or suspected unauthorized access to Personal Information.

2. Inventions.

2.1 (a) Proprietary Rights; Assignment. Assignment. All right, title and interest, and all proprietary claims to all data and other information, patentable inventions non-patentable (whether or not patentable), works of authorship, processes or know-how, designs, and/or ideas for formulae, including but not limited to methodology,

computer programs, systems, materials and manuals conceived, developed, made that Employee, alone or produced by Employee (alone with others, makes, creates, develops, conceives, or in conjunction with others) reduces to practice (a) in the course of Employee's Employee's employment with the Company, whether during regular working hours or other hours; or (b) during the period of Employee's employment, whether or not in the course of such employment, to the extent the same is related to Company's business or actual or demonstrably anticipated research or development or is made, created, developed, conceived, or first reduced to practice with the time, private or proprietary information, or facilities of one or more Schrödinger Companies (collectively, the materials described in Subsections 5.l(a) 2.1(a) and 5.l(b) 2.1(b) heretofore shall be referred to as the "Developments" "Developments"), including without limitation all rights under applicable copyright, patent or trade secret laws, shall reside with Company (or such Schrödinger Company designated by Company) and, where applicable, shall be considered "works made for hire" hire"; provided, however, that such ownership may be subject to the rights, if any, of the United States government and agencies thereof arising from Federal grants to the Company. Employee hereby assigns and agrees to assign to the Company (or such Schrödinger Company designated by the Company) all right, title, and interest Employee has or may have in the Developments. Employee agrees that neither Employee nor Employee's Employee's successors or assigns shall have any rights in the Developments.

(b) Employee Pre-Existing Work. As used herein, "Employee Pre-Existing Work" is defined as data, information, inventions (whether or not patentable), works of authorship, process, know-how, designs and/or ideas for formulae that were made, created, developed, conceived or reduced to practice by Employee, alone or with others, prior to Employee's commencement of employment with Company. Employee shall

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retain all of Employee's ownership rights, title and interests, if any, in and to any Employee Pre-Existing Work. Notwithstanding the preceding sentence, if any Development cannot be fully made, used, reproduced or otherwise exploited without infringing any of Employee's rights to any Pre-Existing Work, or if Employee uses or discloses any Employee Pre-Existing Work in the course of Employee's employment with the Company, Employee hereby grants Company a perpetual, irrevocable, worldwide, royalty-free, non-exclusive, sublicensable right and license to exploit and exercise such Pre-Existing Work (including all intellectual property rights embodied therein). Employee shall not use or disclose any Employee Pre-Existing Work for which Employee is not fully authorized to grant the foregoing license.

5.2 2.2 Disclosure; Disclosure; Attorney-in-Fact. During Employee's employment with Company, Employee shall disclose promptly to the Company all Developments during the term of Employee's employment with the Company. Developments. Any information required to be disclosed under this Section 5.2 2.2 that has not yet been disclosed by the Employee to the Company at the time of the termination of the Employee's employment with the Company, without regard to when or for what reason, if any, such employment shall terminate, shall be disclosed to the Company in writing, or in such form and manner as the Company may reasonably require, within 10 days of the termination of the Employee's employment with the Company. Employee hereby irrevocably appoints the Company (or such Schrödinger Company designated by the Company), and the Company's Company's duly authorized officers and agents, as Employee's Employee's agent and attorney-in-fact to act for and on behalf of Employee in filing all patent applications, applications for copyright protection and registration amendments, renewals, and all other appropriate documents in any way related to the Developments. Employee agrees to

assist the Company (or such Schrödinger Company designated by the Company) in any way such Schrödinger Company deems necessary or appropriate (at such Schrödinger Company's expense) from time to time to apply for, obtain and enforce patents on, and to apply for, obtain, and enforce copyright protection and registration of, the Developments in any and all countries. To that end, Employee shall (at the request of one or more Schrödinger Companies), without limitation, testify in any suit or other proceeding involving any of the Developments, execute all documents which the relevant Schrödinger Company reasonably determines to be necessary or convenient for use in applying for and obtaining patents or copyright protection and registration thereon and enforcing the same, and execute all necessary assignments thereof to the Company (or such Schrödinger Company designated by the Company).

The power of attorney is coupled with an interest and shall not be affected by the Employee's subsequent incapacity.

5.3 California Labor Code Section 2870(a). For the avoidance of doubt, Developments do not include any invention covered by California Labor Code Section 2870(a). Section 2870(a) provides:

ANY PROVISION IN AN EMPLOYMENT AGREEMENT WHICH PROVIDES THAT AN EMPLOYEE SHALL ASSIGN, OR OFFER TO ASSIGN, ANY OF HIS OR HER RIGHTS IN AN INVENTION TO HIS OR HER EMPLOYER SHALL NOT APPLY TO AN INVENTION THAT THE EMPLOYEE DEVELOPED ENTIRELY ON HIS OR HER OWN TIME WITHOUT USING THE EMPLOYER'S EQUIPMENT, SUPPLIES, FACILITIES, OR TRADE SECRET INFORMATION EXCEPT FOR THOSE INVENTIONS THAT EITHER:

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1. **RELATE AT THE TIME OF CONCEPTION OR REDUCTION TO PRACTICE OF THE INVENTION TO THE EMPLOYER'S BUSINESS, OR ACTUAL OR DEMONSTRABLY ANTICIPATED RESEARCH OR DEVELOPMENT OF THE EMPLOYER;OR**

2. **RESULT FROM ANY WORK PERFORMED BY THE EMPLOYEE FOR THE EMPLOYER.**

6. 3. Non-Competition; Non-Solicitation.

6.1 3.1 Covenant not to Compete During Term of Employment. Employment During the term of his employment with the . While employed by Company, the Employee will not, directly or indirectly, without the written consent of the Company, and whether or not for compensation, either for his Employee's own account or as an employee, officer, agent, consultant, director, owner, partner, joint venturer, shareholder, investor, or in any other capacity (except in the capacity of an employee or officer of the Company acting for the benefit of the Schrödinger Companies), knowingly engage in any activity or business which is the same nature as, or substantively similar to, the Company's Company's Business or an activity or business which one or more Schrödinger Company is developing and of which the Employee has knowledge.

6.2 3.2 Non-Solicitation of Customers. Customers, Vendors or Business Partners. Partners During the term of Employee's employment . While employed by Company and for a period of at least one (1) calendar year thereafter, Employee shall not, directly or indirectly, solicit or encourage any customer, prospective customer, vendor, strategic partner or business associate of a Schrödinger Company to cease doing business with a Schrödinger Company, reduce its relationship with a Schrödinger Company, or refrain from establishing or expanding a relationship with a Schrödinger Company. For the purposes of this section, "prospective customer" Section, "prospective customer" shall mean any individual, business, firm or organization whom Employee or a Schrödinger Company has contacted during the term course of the Employee's Employee's employment or who has been made known to Employee by a Schrödinger Company for the purpose of soliciting business.

6.3 3.3 Non-Solicitation of Employees. Employees During the term of Employee's employment . While employed by Company and for a period of at least one (1) calendar year thereafter, Employee shall not directly or indirectly, without the prior written consent of the Company, Company: (a) solicit or induce any employee of a Schrödinger Company or the D. E. Shaw Group (or any consultant, sales agent, contract researcher, contract programmer, or other independent agent who is retained by a Schrödinger Company or the D. E. Shaw Group) Company) to cease his their employment or retention engagement by a Schrödinger Company or the D. E. Shaw Group, Company; or (b) hire, retain, employ, or engage for any purpose any employee of a Schrödinger Company or the D. E. Shaw Group. Company.

6.4 3.4 Conflicts of Interest. Interest During the term of Employee's employment, . While employed by Company, Employee shall not engage in any activity or business, which impairs or hinders the Employee's job duties and responsibilities for Company.

Employee shall report to the Company any possible conflicts of interest on the basis of existing or planned activities of the Employee or members of Employee's immediate family. A conflict of interest shall be deemed to arise when the Employee or a member of Employee's immediate family: (a) accepts any interest, services, products, commissions, share in profits or other payments, gifts or remuneration from any organization which transacts or is seeking to transact business

with one or more Schrödinger Companies or which competes with the Company's Business, Business; or (b) serves as director, partner, employee or consultant, or becomes a

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shareholder of any organization doing business with or seeking to do business with or competitive with one or more Schrödinger Companies.

7. 4. General Provisions.

7.1 CooperationMandatory Arbitration. The. While employed by Company and at all times thereafter, Employee and the shall cooperate with Company agree that any claim, controversy, or dispute between the Employee and the Company (including without limitation Company's Affiliates, officers, employees, representatives, or agents) arising out of or relating to this Agreement, the employment of the Employee, the cessation of employment of the Employee, or any matter relating to the foregoing shall be submitted to and settled by arbitration before a single arbitrator in the forum of the American Arbitration Association ("AAA")located in New York County in the State of New York and conducted in accordance with the National Rules for the Resolution of Employment Disputes. In such arbitration, (a) the arbitrator shall agree to treat as confidential evidence and other information presented by the parties to the same extent as Confidential Information under this Agreement must be held confidential by the Employee, (b) the arbitrator shall have no authority to amend or modify any of the terms of this Agreement, and (c) the arbitrator shall have ten business days from the closing statements Schrödinger Companies, as reasonably requested by Company in connection with Company's or submission of post-hearing briefs by the parties to render his decision. Any arbitration award (regardless any of the forum) shall be final and binding upon Schrödinger Companies' business, including but not limited to, any litigation in which Company or any of the parties, and any court, state Schrödinger Companies has or federal, having jurisdiction may enter a judgment on the award. The foregoing requirement to arbitrate claims, controversies, and disputes applies to all claims or demands by the Employee, including without limitation any rights or claims the Employee may have under an interest. Employee shall also cooperate with Company or the Age Discrimination Schrödinger Companies in Employment Act connection with any investigation, review or hearing of 1967 (which prohibits age discrimination in employment), Title VII of the Civil Rights Act of 1964 (which prohibits discrimination in employment based on race, color, national origin, religion, sex, or pregnancy), the Equal Pay Act (which prohibits paying men and women unequal pay for equal work) or any other federal, state, or local laws governmental authority as any such investigation, review or regulations pertaining hearing relates to the Employee's employment events or the termination of the Employee's employment. All costs of said arbitration, including the arbitrator's fees, if any, shall be borne equally occurrences that happened while Employee was employed by the parties, unless the arbitration decision and award provides otherwise. All legal fees incurred by each party Company. Employee's cooperation in connection with said arbitration such claims or actions shall include, but not be borne limited to, being available to meet with counsel to prepare for governmental inquiries, discovery or trial, acting as a witness on behalf of Company or any of the Schrödinger Companies and treating all communications with Company's or the Schrödinger Companies' counsel as confidential. Employee acknowledges that in any legal action, investigation, hearing or review covered by this Section, Company expects Employee to provide only accurate and truthful information or testimony. Provided that, when itemized receipts are submitted, Company will reimburse Employee for all reasonable, necessary, and pre-approved out-of-pocket expenses incurred in fulfilling Employee's obligations under this Section.

5. No Disparagement. While employed by Company and at all times thereafter, Employee shall not, except in connection with a legal proceeding or order (including a proceeding relating to this Agreement) or as otherwise required by law or permitted by the party who incurs them, unless applicable statutory authority exists providing for last paragraph of Section 1.3, criticize, ridicule, or make any statement that disparages or is derogatory of Company or any of the award Schrödinger Companies, or any of attorneys' fees to a prevailing party and the arbitration decision and award provides for the award their respective officers, directors, agents or employees, or any of their products or services, whether or not such fees. disparaging or derogatory statements are true.

6. General Provisions.

7.2 6.1 Choice of Law; Jurisdiction. Forum. This Agreement shall be governed by and construed in accordance with the laws of the State of New York, without regard to conflicts-of-law principles. Each Any action, suit, or other legal proceeding which is commenced to resolve a claim hereunder that is not arbitrable under the Arbitration Agreement shall be commenced only in a court of the State of New York (or, if appropriate, a federal court located within the State of New York), and each party submits to the jurisdiction of the courts, state and federal, and arbitration forum (set forth in Section 7.1) located in the State of New York. York and irrevocably waives any right to a trial by jury.

7.3 6.2 No Coercion or Duress. Duress The . Employee enters into this Agreement with full understanding of the nature and extent of the restrictive covenants contained herein and acknowledges that because of the nature of the Company's Company's business, this Agreement would not be entered into without Employee's employment is conditioned on the restrictive covenants contained herein. The herein and Employee's acceptance thereof. Employee acknowledges and agrees that the Employee is entering into this Agreement voluntarily and of his Employee's own free will in order to obtain the benefits of employment, continued employment, and additional compensation by the Company. The Employee acknowledges and agrees that he Employee has not been coerced or suffered any duress in order to induce him Employee to enter into this Agreement.

7.4 6.3 Relationship of the Parties. Parties. The relationship between the Company and the Employee hereunder is agreed to be solely that of employee and employer. Nothing contained herein and no modification of responsibility or compensation made hereafter shall be construed so as to constitute the parties as partners or joint venturers.

7.5 6.4 Entire Agreement. Agreement. This Agreement shall constitute the entire agreement between the Company and Employee relating to the subject matter hereof, and supersedes all prior representations, promises or agreements, either oral or written, with regard to the subject matter hereof. No modification or amendments amendment of this Agreement shall be of any effect unless signed in writing by

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the President of Chief Executive Officer ("CEO") or Chief People Officer the Company (or such other officer of the Company authorized by the President or Board of Directors of the Company) CEO) and Employee. The failure of the Company to terminate this Agreement for any breaches by Employee shall not affect the Company's right to terminate this Agreement for subsequent breaches of the same or other provisions thereof.

7.6 6.5 Severability; No Waiver. Waiver. The holding of any provision of this Agreement to be illegal, invalid, or unenforceable by a court of competent jurisdiction shall not affect any other provision of this Agreement, which shall remain in full force and effect. The failure of the Company to enforce any of the provisions of this Agreement for any period of time shall not be construed as a waiver of such provisions or of the right of the Company to enforce each and every provision in the future.

7.7 6.6 Amendments. Amendments. No amendment or alteration of the terms of this Agreement shall be valid unless made in writing and signed by both of the parties hereto. This Agreement may not be amended by email.

7.8 6.7 Successors and Assigns; Assignment. Assignment Except as otherwise provided in this paragraph, . Employee's obligations under this Agreement are personal and shall inure to the benefit of and not be binding upon the parties hereto and their respective heirs, representatives, successors, and assigns. Neither this Agreement nor any right or interest hereunder shall be assignable assigned by the Employee, Employee's beneficiaries, or Employee's legal representatives without Company's prior written consent; provided, however, that nothing in this paragraph shall preclude the Employee from designating a beneficiary to receive any benefit payable hereunder upon his death, or the executors, administrators, or other legal representatives of the Employee or his estate from assigning any rights hereunder to the person or persons entitled thereunto. Employee. This Agreement shall be assignable by Company to to: (a) another Schrödinger Company, Company; (b) any corporation, partnership, or other entity that may be organized by Company as a separate business unit in connection with the business activities of Company, Company; or (c) any corporation, partnership, or other entity resulting from the reorganization, merger, or consolidation of Company with any other corporation, partnership, or other entity, or any corporation, partnership, or other entity to or with which all or any portion of Company's business or assets may be sold, exchanged, or transferred.

7.9 No Attachment. Except as required Employee expressly consents to be bound by law, no right to receive payments under the provisions of this Agreement for the benefit of any successor or assign of Company without the necessity that this Agreement be re-signed, in which event Company shall be subject interpreted to anticipation, commutation, alienation, sale, assignment, encumbrance, charge, pledge, include any successor or hypothecation, or to execution, attachment, levy, or similar process or assignment by operation assign of law, and any attempt, voluntary or involuntary, to effect any such action shall be null, void, and of no effect. the Company.

7.10 6.8 Headings. Headings. The section headings appearing in this Agreement are used for convenience of reference only and shall not be considered a part of this Agreement or in any way modify, amend, or affect the meaning of any of its provisions.

6.9 Construction. Whenever the context so requires, the use of the masculine gender shall be deemed to include the feminine and vice versa, and the use of the singular shall be deemed to include the plural and vice versa. That this Agreement was drafted by Company shall not be taken into account in interpreting or construing any provision of this Agreement.

6.10 Definition of Affiliate. For purposes of this Agreement, the term "Affiliate" shall mean any entity in which a party holds a 50% or greater equity interest or any entity controlling, controlled by or under common control with such party, directly or indirectly by or through one or more intermediaries.

IN WITNESS WHEREOF, each of the undersigned has caused this Agreement to be duly executed on its behalf as of the date set forth below.

Employee

By: /s/ Margaret Dugan

Margaret Dugan

Date: July 27, 2023

Schrödinger, Inc.

By: /s/ Yvonne Tran

Yvonne Tran, Chief People Officer

Date: July 28, 2023

EXHIBIT B

Mutual Arbitration Agreement

This Mutual Arbitration Agreement ("Agreement") is made by and between Schrödinger, Inc. ("Company"), and you, Margaret Dugan, on behalf of you, your heirs, administrators, executors, successors, and assigns (together referred to as "Employee" or "you" or "your").

In consideration of Employee's employment by Company to perform certain services for Company and/or one or more subsidiaries of and/or other Affiliates (as hereinafter defined) of Company (collectively, Company, its subsidiaries, and its other Affiliates shall be referred to as the "Schrödinger Companies"), Company's agreement to provide Employee with Confidential Information (as herein defined), and for other valuable consideration, the receipt and sufficiency of which is hereby acknowledged, you and the Company agree as follows:

1. Mutual Agreement to Arbitrate. Except as noted below, you agree to arbitrate any and all claims against Schrödinger that could be brought in a court including, without limitation, all claims arising directly or indirectly out of, or relating to, the employment agreement ("Employment Agreement") to which this Agreement is attached as Exhibit B, the employment of Employee, the cessation of employment of Employee, or any matter relating to any of the foregoing from your employment or termination ("Covered Disputes"). This

Agreement includes, without limitation, claims under federal, state, and/or local statutes, regulations, ordinances, and/or common law. Except as otherwise provided herein, Schrödinger agrees to arbitrate any and all claims against you.

2. Claims Not Covered by this Agreement. This Agreement does not cover: (i) claims for workers' compensation or unemployment insurance benefits; (ii) claims based on equity plans, employee pension plans, or welfare benefit plans *if and only if* those plans contain a complete dispute resolution process; (iii) claims for sexual harassment or abuse, or claims of discrimination that are based on the same facts and circumstances or otherwise related to excluded sexual harassment or abuse claims, if any applicable federal, state, or local law prohibits mandatory arbitration of those claims; and (iv) claims that by federal law are not subject to mandatory binding pre-dispute arbitration. Further, this Agreement does not prohibit the filing of an administrative charge with a federal, state, or local administrative agency such as the National Labor Relations Board or the Equal Employment Opportunity Commission.

3. Waiver of Class, Collective, and Representative Claims. The parties agree that all claims must be pursued on an individual basis only. By signing this Agreement, you waive your right to commence, or be a party to, any class, collective, or representative actions or to bring jointly any claim against Schrödinger with any other person. The parties agree that any claim can be pursued, but only on an individual basis. If you bring any claims under the California Labor Code Private Attorneys General Act ("PAGA") that under then-current law are not subject to mandatory arbitration, you agree to hold all such claims in abeyance and to arbitrate to final resolution any and all of your individual claims before proceeding in court with any PAGA claims. Disputes concerning the interpretation, applicability, enforceability, or formation of this class action waiver shall not be deemed a Covered Dispute and shall instead be brought only in a court of competent jurisdiction. In the event this class action waiver is found unlawful or unenforceable, any class, collective, or other representative based claim must be brought in a court or other forum of competent jurisdiction and may not be brought in arbitration. The arbitrator shall have no power under this Agreement to consolidate claims, to certify a collective or class action, or to issue an order providing relief inconsistent with this Agreement.

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4. Waiver of Jury Trial. If any court determines for any reason that this Agreement is not binding, or otherwise allows any litigation in court regarding a claim covered by this Agreement, you and Schrödinger expressly waive any and all rights to a trial by jury.

5. Commitment to Non-Retaliation. Nothing in this Agreement limits your right to challenge its enforceability. While the Company will assert that you have agreed to pursue all claims individually in the arbitral forum and may ask a court to compel arbitration of each individual's claims, your decision to challenge the Agreement will not result in threats, discipline, or discharge.

6. Threshold Issues. Any dispute concerning the scope and enforceability of this Agreement shall be resolved exclusively in a court of competent jurisdiction. All issues between the parties that this Agreement does not specifically permit to be presented to a court are for the arbitrator to resolve.

7. Resort to Court for Early Injunctive Relief. The parties may seek a temporary restraining order, a preliminary injunction, or other similar relief in court when the nature of the rights asserted requires immediate action and the arbitrator is not yet in a position to afford appropriate relief. Such limited resort to court will not constitute a waiver of the right to arbitrate a claim, and the remainder of the dispute will proceed in arbitration.

8. Severability; No Waiver. If the prohibition against class, collective, or representative actions is held to be invalid, then any such action shall proceed in court. If a court or an arbitrator finds any other provision of this Agreement unenforceable, a court or arbitrator shall interpret or modify this Agreement, to the extent necessary, for it to be enforceable to the maximum extent possible. This Agreement shall be self-amending; meaning, if by law a provision is deemed unlawful or unenforceable, that provision and the Arbitration Agreement automatically, immediately, and retroactively shall be amended, modified, and/or altered to be enforceable to the maximum extent possible. The failure of the Company to enforce any of the provisions of this Agreement for any period of time shall not be construed as a waiver of such provisions or of the right of the Company to enforce each and every provision in the future.

9. The Arbitration Process.

(a) The arbitration shall be conducted before a single arbitrator in accordance with the Employment Arbitration Rules and Mediation Procedures of the American Arbitration Association ("AAA") in effect at the time any party submits any claims covered by this Agreement. The arbitrator must be a member of the bar in good standing in the state in which the dispute arose. If AAA declines the matter or if the parties agree otherwise, the parties shall use the employment arbitration forum and rules of JAMS.

(b) Any authorized decision or award of the arbitrator shall be final and binding upon the parties. The arbitrator shall have the power to award any type of legal or equitable relief available in a court of competent jurisdiction including, but not limited to, attorney's fees, to the extent such damages are available under law.

(c) All orders of the arbitrator (except evidentiary rulings at the arbitration) shall be in writing and subject to review pursuant to the Federal Arbitration Act.

(d) Any claim for arbitration will be timely only if brought within the time in which an administrative charge or complaint could have been filed if the claim is one that could be filed with an administrative agency. Schrödinger agrees not to require you to proceed before an administrative agency before commencing arbitration. If, however, you elect to

proceed before an administrative agency, then your claim for arbitration will be timely if brought within the time allowed by the applicable statute of limitations for filing a lawsuit after proceeding before

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the agency. Any claim for arbitration that could not have been filed with an administrative agency must be filed within the time set by the applicable statute of limitations.

(e) The arbitrator shall agree to treat as confidential evidence and other information presented by the parties to the same extent as Confidential Information under Exhibit A to the Employment Agreement must be held confidential by Employee.

(f) The arbitrator shall have no authority to amend or modify any of the terms of the Employment Agreement.

(g) The arbitrator shall have thirty (30) business days from the closing statements or submission of post-hearing briefs by the parties to render a decision

(h) Employee shall have available the same statutory remedies as would be available in a judicial forum.

(i) This Agreement expressly authorizes any party to submit a motion for summary judgment. If a summary judgment motion is made, the arbitrator must render a written and detailed opinion on that motion within forty-five (45) business days of submission of all supporting and opposition papers.

(j) Each party shall be responsible for his or her own attorney's fees in the arbitration, except as allowed by applicable law.

(k) The terms of this Agreement control over any contrary provisions in the AAA arbitration rules.

7.11 10. Construction. No Modification of At-Will Status. This Agreement does not create a contract of employment for any duration of time. Employment with Schrödinger is voluntarily entered into, and you are free to resign at any time. Similarly, Schrödinger may terminate the employment relationship with you at any time for any reason, with or without prior notice.

11. Governing Law. This Agreement is governed by the Federal Arbitration Act. The terms and conditions of your employment shall be governed by and shall be interpreted in accordance with federal law and the laws of the state in which you were employed by Schrödinger at the time the claim(s) presented in the arbitration arose.

12. No Coercion or Duress. Employee enters into this Agreement with full understanding of the nature and extent of the agreement to arbitrate contained herein and agrees that Employee is entering into this Agreement voluntarily and of Employee's own free will. You acknowledge and agree that you have not been coerced or suffered any duress in order to induce you to enter into this Agreement.

13. Entire Agreement. This Agreement shall constitute the entire agreement between the Company and Employee relating to the subject matter hereof, and supersedes all prior representations, promises or agreements, either oral or written, with regard to the subject matter hereof. No modification or amendment of this Agreement shall be of any effect unless signed in writing by the Chief Executive Officer or Chief People Officer of the Company.

14. Amendments. No amendment or alteration of the terms of this Agreement shall be valid unless made in writing and signed by both of the parties hereto. This Agreement may not be amended by email.

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15. Successors and Assigns; Assignment. This Agreement shall inure to the benefit of and be binding upon the parties hereto and their respective heirs, representatives, successors, and assigns.

16. Headings. The section headings appearing in this Agreement are used for convenience of reference only and shall not be considered a part of this Agreement or in any way modify, amend, or affect the meaning of any of its provisions.

17. Construction. Whenever the context so requires, the use of the masculine gender shall be deemed to include the feminine and vice versa, and the use of the singular shall be deemed to include the plural and vice versa. That this Agreement was drafted by the Company shall not be taken into account in interpreting or construing any provision of this Agreement.

7.12 18. Certain Definitions.

a. Definition of Affiliate. For purposes of this Agreement, the term "Affiliate" "Affiliate" shall mean any entity in which a party holds a 50% or greater equity interest or any entity controlling, controlled by or under common control with such party, directly or indirectly by or through one or more intermediaries.

b. For purposes of this Agreement, the term "D. E. Shaw Group" shall include, individually and/or collectively: (i) D. E. Shaw & Co., L.P., D. E. Shaw & Co., Inc., and D. E. Shaw & Co. II, Inc., and D. E. Shaw Development, L.L.C., or any Affiliate of any of the foregoing; (ii) any partnership, other entity or account that D. E. Shaw & Co., L.P., D. E. Shaw & Co., Inc., D. E. Shaw & Co. II, Inc., or D. E. Shaw Development, L.L.C. owns, in whole or in part, or for which they act, directly or indirectly, as general partner, investment manager, or management company, along with their respective subsidiaries; and (iii) any predecessor or successor entity to any partnership, entity, or account described in Subsection 7.12(b)(ii) above. The D. E. Shaw Group is a third-party beneficiary of this Agreement.

IN WITNESS WHEREOF, each of the undersigned has has caused this Agreement to be duly executed on its its behalf as of the Effective Date.date set forth below.

Employee

Employee

By: /s/ Jenny Herman

Jenny Herman

Schrödinger, Inc.

/s/ Jennifer Mayer

Jennifer Mayer

Vice President, Strategic Growth

By: /s/ Margaret Dugan

Margaret Dugan

Exhibit 10.40

Execution Version

Certain identified information has been excluded from the exhibit because it is both (i) not material and (ii) is the type of information that the registrant treats as private or confidential. Triple asterisks denote omissions.

FIRST AMENDMENT TO
COLLABORATION AND LICENSE AGREEMENT Date: July 27, 2023

This First Amendment (this "First Amendment") effective as of December 21, 2022 (the "**First Amendment Effective Date**"), is entered into between **SCHRÖDINGER, INC.**, a company incorporated under the laws of Delaware having its principal place of business at 120 West 45th Street, 17th Floor, New York, New York, 10036 ("**Schrödinger**") and **BRISTOL-MYERS SQUIBB COMPANY**, a Delaware corporation headquartered at 430 East 29th Street, 14th Floor, New York, New York, USA 10016 ("**BMS**"). Schrödinger, and BMS are sometimes referred to herein individually as a "**Party**" and collectively as the "**Parties**". Inc.

RECITALS By: /s/ Yvonne Tran

WHEREAS, the Parties entered into that certain Collaboration and License Agreement, dated as of November 22, 2020, pursuant to which the Parties collaborate in the performance a Research Program for the purpose of discovery and preclinical development of Licensed Collaboration Compounds for the Designated Targets suitable for development for human therapeutic uses, with the objective of identifying one or more Licensed Collaboration Compounds or Licensed Collaboration Products for the Designated Targets for BMS to advance into human clinical trials (the "**Agreement**"); and**Yvonne Tran, Chief People Officer**

WHEREAS, the Parties wish to amend the Agreement to confirm the termination of the Initial Collaboration Target [***] and add a new Target as a Designated Target, along with adding certain economic terms associated with such new Designated Target, as set forth herein.

NOW, THEREFORE, in consideration of the foregoing premises and the mutual promises, covenants and conditions contained in this First Amendment and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. DEFINITIONS

Capitalized terms used but not defined herein shall have the respective meanings ascribed to such terms in the Agreement.

2. CONFIRMATION OF TERMINATED TARGET

Pursuant to that certain notice from BMS to Schrödinger, dated as of September 28, 2022, BMS exercised its right under Section 13.2(a) of the Agreement to terminate the Initial Collaboration Target [***]. Pursuant to the terms of such notice, the Parties hereby acknowledge and agree that, effective as of September 28, 2022, the Initial Collaboration Target [***] is a Terminated Target under the Agreement. As such, all provisions in the Agreement that are specific to the Initial Collaboration Target [***] are of no further force and effect. For the avoidance of doubt, the Parties acknowledge and agree that the First Amendment Designated Target (as defined below) is not intended to be a Substitute Target for the Initial Collaboration Target [***].

3. ADDITION OF TARGET

3.1. **General**. Subject to the terms of this First Amendment, the Parties desire to add the Target set forth on **Attachment A** as a Designated Target, Initial Collaboration Target and Neurology Target under the Agreement (such Target, the "**First Amendment Designated Target**"). As of the First Amendment Effective Date, Schrödinger has completed enablement activities with respect to the First

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Amendment Designated Target and has identified [***] with respect to potential Target Compounds for the First Amendment Designated Target.

3.2. **Research Plan**. With respect to the First Amendment Designated Target, following the First Amendment Effective Date, Schrödinger shall prepare in consultation with BMS, for review, revision and approval by the JSC, an initial draft of a Research Plan (including the Primary Activity, LO Criteria, LO Timeline and DC Criteria) for such First Amendment Designated Target. Such Research Plan is expected to be similar in scope and effort as specified for each of the Initial Collaboration Targets under the initial Research Plans. Each Party shall ensure that the JSC meets as promptly as reasonably practicable (and no later than within [***]) after the First Amendment Effective Date in order to develop, discuss and approve the Research Plan with respect to the First Amendment Designated Target. From and after the date on which the initial Research Plan for the First Amendment Designated Target is approved by the JSC hereunder, the First Amendment Designated Target shall become a "Designated Target" under the Agreement. The JSC shall record the date of approval of the Research Plan for the First Amendment Designated Target in minutes of the JSC (such date, the "**First Amendment Designated Target Effective Date**").

3.3. **Consideration**. BMS shall pay Schrödinger a signing payment of [***] Dollars ($[***]) within [***] after the First Amendment Effective Date (the "**First Amendment Designated Target Upfront Payment**"). The First Amendment Designated Target Upfront Payment shall be noncreditable, nonrefundable and not subject to set off. As partial consideration for the First Amendment Designated Target Upfront Payment, through a separate written agreement [***] executed by the Parties simultaneously with execution of this First Amendment, [***].

4. AMENDMENTS

Effective as of the First Amendment Designated Target Effective Date, the following amendments shall be made to the Agreement:

4.1. **Collaboration Target**. Section 1.27 of the Agreement is hereby deleted in its entirety and replaced with the following:

"**Collaboration Target**" means the (a) Initial Collaboration Targets set forth on **Exhibit A,** (b) any Substitute Target that is selected as a Designated Target in accordance with Section 3.4(c) of this Agreement, (c) any Reserved Target, (d) the First Amendment Designated Target and (e) [***], in each case ((a), (b), (c), (d) and (e)) for so long as any such Target remains an Initial Collaboration Target, Designated Target, Substitute Target or Reserved Target.

4.2. **Designated Target**. Section 1.46 of the Agreement is hereby deleted in its entirety and replaced with the following:

"**Designated Target**" means (a) each Initial Collaboration Target, (b) each Substitute Target that is selected as a Designated Target in accordance with Section 3.4(c), (c) the First Amendment Designated Target and (d) [***], in each case ((a), (b), (c) and (d)) for so long as any such Target remains an Initial Collaboration Target, Substitute Target (including any Substitute Target that is selected as a Designated Target) or the First Amendment Designated Target.

For clarity, any Designated Target that is substituted pursuant to Section 3.4(c) shall no longer be a Designated Target or a Collaboration Target and shall be a Terminated Target from and after the date on which the new Research Plan (including the DC Criteria) for such new Designated Target is approved by the JSC hereunder.

4.3. **Neurology Targets**. Section 1.111 of the Agreement is hereby deleted in its entirety and replaced with the following:

"**Neurology Targets**" means (a) the Initial Collaboration Targets designated as "Neurology Targets" on **Exhibit A** hereto, (b) any Substitute Targets designated by the JSC as "Neurology Targets" and (c) the First Amendment Designated Target.

4.4. **Substitution Period**. Section 1.180 of the Agreement is hereby deleted in its entirety and replaced with the following:

"**Substitution Period**" means, for a given Designated Target, the earlier of (a) the date on which the JSC or the R&D Expert determines that a Licensed Collaboration Compound for such Designated Target meets the LO Criteria and (b) (i) with respect to each Designated Target other than the First Designated Target, [***], or (ii) solely with respect to the First Amendment Designated Target, [***].

4.5. **Research Term**. Section 3.2(a) of the Agreement is hereby deleted in its entirety and replaced with the following:

(a) The Research Program will be carried out during the period commencing on the Effective Date and ending on the earlier of (i) the date that is the fourth (4th) anniversary of the Effective Date and (ii) the date of delivery by Schrödinger of one (1) DC Candidate for each Designated Target for a total of five (5) DC Candidates, unless (in each case) this Agreement (in its entirety or with respect to a Collaboration Target or Designated Target) is terminated in accordance with Article 13, in which case [***], Schrödinger may elect, in its sole discretion, to provide written notice to BMS to extend the Research Term for such Designated Target for an additional period of time that [***], and (C) the Parties may mutually agree to extend the Research Term, including with respect to the Research Term for the First Amendment Designated Target as provided in clause (A) of this Section 3.2(a), for up to one (1) additional one (1)-year period (such period, as may be extended pursuant to this Section 3.2(a), being the "**Research Term**").

4.6. **Substitute Targets**. Section 3.4(c)(i) is hereby deleted in its entirety and replaced with the following:

(i) During the Substitution Period, BMS (through the JSC) shall have the right to substitute and replace each [***] Target with a Reserved Target (such new Target, a "**Substitute Target**"); provided that (A) such right may be exercised no more than [***] with respect to any given Designated Target, (B) subject to Section [***], unless the Parties otherwise mutually agree, a given Designated Target that is an [***] Target, [***] Target or [***] Target may only be substituted for a Reserved Target that is also designated as an [***] Target, [***] Target or [***] Target (e.g., a Designated Target that is an [***] Target can only be substituted for a Reserved Target that is designated as an [***] Target). Any such replacement of a Designated Target must be based on one of the following reasons: [***].

4.7. **First Amendment Designated Target**. A new Section 3.4(d), as follows, is hereby added following Section 3.4(c) in the Agreement:

3.4(d) *First Amendment Designated Target*. As of the First Amendment Designated Target Effective Date (as such term is defined in the First Amendment to this Agreement), the First Amendment Designated Target (as such term is defined in the First Amendment to this Agreement) shall be a Designated Target, Collaboration Target and [***] Target under this Agreement.

4.8. **Payments**. A new Section 8.2(e), as follows, is hereby added following Section 8.2(d) in the Agreement:

8.2(e) *Additional Milestone Payment for the First Amendment Designated Target*. In addition to the Development Milestones set forth herein, solely with respect to the First Amendment Designated Target, BMS shall pay to Schrödinger a one-time milestone payment of [***] Dollars ($[***]) within [***] after the [***] in accordance with Section 3.5 to achieve the LO Criteria for such First Amendment Designated Target (the "**First Amendment Designated Target LO Payment**"). Notwithstanding the foregoing, if the lead optimization portion of the Research Plan for the First Amendment Designated Target is initiated for a Licensed Collaboration Compound for the First Amendment Designated Target, such Licensed Collaboration Compound shall be deemed to have achieved the LO Criteria for the First Amendment Designated Target (regardless of whether such Licensed Collaboration Compound for the First Amendment Designated Target is determined to achieve the LO Criteria in accordance with Section 3.5) and the First Amendment Designated Target LO Payment shall be due, subject to this Section 8.2(e). The First Amendment Designated Target LO Payment set forth in this Section 8.2(e) shall be payable only once for the First Amendment Designated Target. For the avoidance of doubt, no First Amendment Designated Target LO Payment shall become due with respect to any Target Compound that is not a Licensed Collaboration Compound or Licensed Collaboration Product for the First Amendment Designated Target, and, other than as set forth in this Section 8.2(e), no First Amendment Designated Target LO Payment shall become due with respect to any Licensed Collaboration Compound that was not identified and delivered to BMS by Schrödinger pursuant to this Agreement or that is not determined to have achieved the LO Criteria for the First Amendment Designated Target in accordance with Section 3.5. The First Amendment Designated Target LO Payment will be noncreditable, nonrefundable and not subject to set off.

5. MISCELLANEOUS

5.1. **Scope**. Except as expressly amended hereby, the binding provisions of the Agreement shall remain in full force and effect. This First Amendment is limited precisely as written and shall not be deemed to be an amendment to any other term or condition of the provisions of the Agreement or any of the documents referred to therein.

5.2. **Governing Law**. This First Amendment shall be governed by and construed and enforced under the substantive laws of the State of New York, excluding any conflicts or choice of law rule or principle that might otherwise make this First Amendment subject to the substantive law of another jurisdiction.

5.3. **Entire Agreement; Amendments**. This First Amendment, including the Attachments hereto (which are incorporated into and made a part of this First Amendment), sets forth the complete, final and exclusive agreement and all the covenants, promises, agreements, warranties, representations, conditions and understandings between the Parties hereto with respect to the subject matter hereof and supersedes, as of the First Amendment Effective Date, all prior agreements and understandings between the Parties with respect to the subject matter hereof. There are no covenants, promises, agreements, warranties, representations, conditions or understandings, either oral or written, between the Parties with respect to the subject matter hereof other than as are set forth herein. No subsequent alteration, amendment, change or addition to this First Amendment shall be binding upon the Parties unless reduced to writing and signed by an authorized representative of each Party. Notwithstanding anything herein to the contrary, this First Amendment does not amend, supersede or replace any software license entered into, or contemplated to be entered into, by the Parties or any of their Affiliates on Schrödinger's form End User License Agreement.

5.4. **Counterparts**. This First Amendment may be executed in counterparts with the same effect as if both Parties had signed the same document, each of which shall be deemed an original, shall be construed together and shall constitute one and the same instrument. This First Amendment may be executed and delivered through the email of pdf copies of the executed First Amendment.

Signature page follows

Execution Version

IN WITNESS WHEREOF, the Parties hereto have caused this First Amendment to be executed by their duly authorized officers effective as of the First Amendment Effective Date.

BRISTOL-MYERS SQUIBB COMPANY	**SCHRÖDINGER, INC.**
By: /s/ Janeen Doyle	By: /s/ Ramy Farid
Name: Janeen Doyle	Name: Ramy Farid
Title: SVP, Global Alliances Strategy & Business Development	Title: President & CEO
Date: December 21, 2022	Date: December 21, 2022

Execution Version

Attachment A

First Amendment Designated Target

[***]

Exhibit 21.1

List of Subsidiaries

Name	Jurisdiction of Incorporation
Schrödinger, LLC	Delaware
Schrödinger GmbH	Germany
Synaptic Science LLC	Delaware
Schrödinger, KK	Japan
Reo Discovery Limited	Ireland
Faxian Therapeutics, LLC	Delaware
Schrödinger Technologies Ltd	United Kingdom
Schrödinger India Private Limited	India
Schrodinger Korea LLC	South Korea
XTAL BioStructures, Inc.	Massachusetts

Date: July 28, 2023

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the registration statements (Nos. 333-236297, 333-253864, 333-262982, 333-265696, 333-266533, 333-268131, and 333-236297) 333-268131) on Form S-8 and in the registration statement (No. 333-253865) on Form S-3 of our reports dated February 28, 2023 February 28, 2024, with respect to the consolidated financial statements of Schrödinger, Inc. and the effectiveness of internal control over financial reporting.

/s/ KPMG LLP

Portland, Oregon
February 28, 2023 2024

EXHIBIT 31.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES
EXCHANGE ACT OF 1934, AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Ramy Farid, certify that:

1. I have reviewed this Annual Report on Form 10-K of Schrödinger, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably

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likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 28, 2023 February 28, 2024

/s/ Ramy Farid

Ramy Farid

President and Chief Executive Officer

(Principal Executive Officer)

EXHIBIT 31.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES
EXCHANGE ACT OF 1934, AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Geoffrey Porges, certify that:

1. I have reviewed this Annual Report on Form 10-K of Schrödinger, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

    a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably

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likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 28, 2023 February 28, 2024

/s/ Geoffrey Porges

Geoffrey Porges
Executive Vice President and Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned officer of Schrödinger, Inc. (the "Company") hereby certifies, to his knowledge, that:

(i) the accompanying Annual Report on Form 10-K of the Company for the fiscal year ended December 31, 2022 December 31, 2023 (the "Report") fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and

(ii) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 28, 2023 February 28, 2024

/s/ Ramy Farid

Ramy Farid

President and Chief Executive Officer

(Principal Executive Officer)

Exhibit 32.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned officer of Schrödinger, Inc. (the "Company") hereby certifies, to his knowledge, that:

(i) the accompanying Annual Report on Form 10-K of the Company for the fiscal year ended December 31, 2022 December 31, 2023 (the "Report") fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and

(ii) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 28, 2023 February 28, 2024

/s/ Geoffrey Porges

Geoffrey Porges

Executive Vice President and Chief Financial Officer

(Principal Financial Officer)

Exhibit 97.1

APPROVED BY THE BOARD NOVEMBER 10, 2023

SCHRÖDINGER, INC.

Clawback Policy

This Clawback Policy (this "Policy"), adopted by Schrödinger, Inc. (the "Company"), relates to the Company's right to recover compensation previously paid to specified employees in certain circumstances, including the recovery of Erroneously Awarded Compensation (as defined below) in accordance with Nasdaq Listing Rule 5608 ("Rule 5608"), which implements Rule 10D-1 under the Securities Exchange Act of 1934, as amended (the "Exchange Act") (as promulgated pursuant to Section 954 of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010). This Policy is effective as of October 2, 2023 (the "Effective Date").

1. Definitions

(a) **"Accounting Restatement"** means a requirement that the Company prepare an accounting restatement due to the material noncompliance of the Company with any financial reporting requirement under the U.S. federal securities laws, including any required accounting restatement to correct an error in previously issued financial statements that is material to the previously issued financial statements, or that would result in a material misstatement if the error were corrected in the current period or left uncorrected in the current period. Changes to the Company's financial statements that do not represent error corrections are not an Accounting Restatement, including: (A) retrospective application of a change in accounting principle; (B) retrospective revision to reportable segment information due to a change in the structure of the Company's internal

organization; (C) retrospective reclassification due to a discontinued operation; (D) retrospective application of a change in reporting entity, such as from a reorganization of entities under common control; and (E) retrospective revision for stock splits, reverse stock splits, stock dividends or other changes in capital structure.

(b) **"Committee"** means the Compensation Committee of the Company's Board of Directors (the "Board").

(c) **"Covered Person"** means a person who served as an Executive Officer at any time during the performance period for the applicable Incentive-Based Compensation.

(d) **"Erroneously Awarded Compensation"** means the amount of Incentive-Based Compensation that was Received that exceeds the amount of Incentive-Based Compensation that otherwise would have been Received had the amount of Incentive-Based Compensation been determined based on the restated amounts, computed without regard to any taxes paid by the Covered Person or by the Company on the Covered Person's behalf. For Incentive-Based Compensation based on stock price or total shareholder return, where the amount of Erroneously Awarded Compensation is not subject to mathematical recalculation directly from the information in an Accounting Restatement, the amount of Erroneously Awarded Compensation will be based on a reasonable estimate by the Committee of the effect of the Accounting Restatement on the stock price or total shareholder return upon which the Incentive-Based Compensation was Received. The Company will maintain documentation of the determination of that reasonable estimate and provide such documentation to Nasdaq.

(e) **"Executive Officer"** meansthe Company's officers as defined in Rule 16a-1(f) under the Exchange Act.

Exhibit 97.1

(f) **"Financial Reporting Measures"** means (A) measures that are determined and presented in accordance with the accounting principles used in preparing the Company's financial statements, and any measures that are derived wholly or in part from such measures (whether or not such measures are presented within the Company's financial statements or included in a filing made with the U.S. Securities and Exchange Commission), (B) stock price and (C) total shareholder return.

(g) **"Incentive-Based Compensation"** means any compensation that is granted, earned, or vested based wholly or in part upon the attainment of a Financial Reporting Measure.

(h) Incentive-Based Compensation is deemed to be **"Received"** in the Company's fiscal period during which the Financial Reporting Measure specified in the applicable Incentive-Based Compensation award is attained, even if the payment or grant of the Incentive-Based Compensation occurs after the end of that period or is subject to additional time-based vesting requirements. Compensation subject to this Policy that is not Incentive-Based Compensation is deemed to be "**Received**" upon the earlier of when such compensation was granted or paid.

(i) **"Recovery Period"** means the three completed fiscal years immediately preceding the earlier of: (A) the date the Board, a committee of the Board, or the officer or officers of the Company authorized to take such action if Board action is not required, concludes, or reasonably should have concluded, that the Company is required to prepare an Accounting Restatement; or (B) the date a court, regulator, or other legally authorized body directs the Company to prepare an Accounting Restatement. In addition, if there is a change in the Company's fiscal year end, the Recovery Period will also include any transition period to the extent required by Rule 5608.

2. Clawback Provisions

(a) Recovery of Erroneously Awarded Compensation Upon an Accounting Restatement. Subject to the terms of this Policy and the requirements of Rule 5608, if, on or after the Effective Date, the Company is required to prepare an Accounting Restatement, the Company will attempt to recover, reasonably promptly from each Covered Person, any Erroneously Awarded Compensation that was Received by such Covered Person during the Recovery Period pursuant to Incentive-Based Compensation that is subject to this Policy.

(b) Potential Recovery of Additional Amounts Upon an Accounting Restatement. In addition to (and without limiting) the provisions of Section 2(a) of this Policy, in the event that the Committee, in its discretion, determines that a Covered Person's acts or omissions that contributed to the circumstances requiring an Accounting Restatement that is subject to Section 2(a) of this Policy involved either: (i) intentional misconduct or an intentional violation of any of the Company's rules or any applicable legal or regulatory requirements in the course of the Covered Person's

employment by the Company or (ii) fraud in the course of the Covered Person's employment by the Company, then in each such case, the Company may attempt to recover from such Covered Person up to 100% (as determined by the Committee in its discretion based on such considerations as the Committee deems appropriate) of the Covered Person's compensation other than base salary that was Received by such Covered Person since the beginning of the Recovery Period.

3. Interpretation and Administration

(a) Role of the Committee. Section 2(a) of this Policy will be interpreted by the Committee in a manner that is consistent with Rule 5608 and any other applicable law and this Policy will otherwise be interpreted in the business judgment of the Committee. All decisions

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and interpretations of the Committee will be final and binding; provided that, with respect to Section 2(a), such decisions must be consistent with Rule 5608.

(b) Compensation Not Subject to this Policy. This Policy does not apply to compensation that was Received before the Effective Date. With respect to any Covered Person, this Policy does not apply to compensation that was Received by such Covered Person before beginning service as an Executive Officer.

(c) Determination of Means of Recovery. Subject to the requirement that recovery under Section 2(a) be made reasonably promptly, the Committee will determine the appropriate means of any recovery under this Policy, which may vary between Covered Persons or based on the nature of the applicable compensation, and which may involve, without limitation, establishing a deferred repayment plan or setting off against current or future compensation otherwise payable to the Covered Person. Recovery of Erroneously Awarded Compensation under Section 2(a) of this Policy will be made without regard to income taxes paid by the Covered Person or by the Company on the Covered Person's behalf in connection with such Erroneously Awarded Compensation.

(d) Determination That Recovery is Impracticable. The Company is not required to recover Erroneously Awarded Compensation under Section 2(a) of this Policy if a determination is made by the Committee that either (A) after the Company has made and documented a reasonable attempt to recover such Erroneously Awarded Compensation, the direct expense paid to a third party to assist in enforcing this Policy would exceed the amount to be recovered or (B) recovery of such Erroneously Awarded Compensation would likely cause an otherwise tax-qualified retirement plan, under which benefits are broadly available to employees of the Company, to fail to meet the requirements of Section 401(a)(13) or 411(a) of the Internal Revenue Code and regulations thereunder.

(e) No Indemnification or Company-Paid Insurance. The Company will not indemnify any Covered Person against the loss of Erroneously Awarded Compensation or any other amounts that may be recovered by the Company in accordance with this Policy and will not pay or reimburse any Covered Person for the purchase of a third-party insurance policy to fund potential recovery obligations.

(f) Interaction with Other Clawback Provisions. The Company will be deemed to have recovered Erroneously Awarded Compensation in accordance with Section 2(a) of this Policy to the extent the Company actually receives such amounts pursuant to any other Company policy, program or agreement, pursuant to Section 304 of the Sarbanes-Oxley Act or otherwise.

(g) No Limitation on Other Remedies. Nothing in this Policy will be deemed to limit the Company's right to terminate employment of any Covered Person, to seek recovery of other compensation paid to a Covered Person, or to pursue other rights or remedies available to the Company under applicable law.

Adopted by the Board on November 10, 2023.

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