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# UNITED STATES
# SECURITIES AND EXCHANGE COMMISSION
**WASHINGTON, DC 20549**

# FORM 10-Q

**(Mark One)**

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

**For the quarterly period ended June 30, 2022**

**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: 001-40097**

# GINKGO BIOWORKS HOLDINGS, INC.
**(Exact Name of Registrant as Specified in its Charter)**

| **Delaware** | **87-2652913** |
|---|---|
| **( State or other jurisdiction of incorporation or organization)** | **(I.R.S. Employer Identification No.)** |
| **27 Drydock Avenue<br>8th Floor<br>Boston, MA** | **02210** |
| **(Address of principal executive offices)** | **(Zip Code)** |

**Registrant's telephone number, including area code: (877) 422-5362**

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

| Title of each class | Trading Symbol(s) | Name of each exchange on which registered |
|---|---|---|
| Class A common stock, par value $0.0001 per share | DNA | NYSE |
| Warrants to purchase one share of Class A common stock, each at an exercise price of $11.50 per share | DNA.WS | NYSE |

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 ☒ 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 ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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 | ☐ | Accelerated filer | ☐ |
| Non-accelerated filer | ☒ | Smaller reporting company | ☐ |
| | ☐ | Emerging growth company | ☒ |

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 is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of August 8, 2022, the registrant had 1,099,693,341 shares of Class A common stock, 397,139,476 shares of Class B common stock and 288,000,000 shares of non-voting Class C common stock outstanding.

**Cautionary Note Regarding Forward Looking Statements**

This report includes forward-looking statements regarding, among other things, the plans, strategies and prospects, both business and financial, of Ginkgo Bioworks Holdings, Inc. ("Ginkgo"). These statements are based on the beliefs and assumptions of the management of Ginkgo. Although Ginkgo believes that its plans, intentions and expectations reflected in or suggested by these forward-looking statements are reasonable, Ginkgo cannot assure you that it will achieve or realize these plans, intentions or expectations. Forward-looking statements are inherently subject to risks, uncertainties and assumptions. Generally, statements that are not historical facts, including statements concerning possible or assumed future actions, business strategies, events or results of operations, are forward-looking statements. These statements may be preceded by, followed by or include the words "believes", "estimates", "expects", "projects", "forecasts", "may", "will", "should", "seeks", "plans", "scheduled", "anticipates" or "intends" or similar expressions. Forward-looking statements contained in this Quarterly Report on Form 10-Q include, but are not limited to, statements about:

- Ginkgo's ability to raise financing in the future and to comply with restrictive covenants related to long-term indebtedness;
- Ginkgo's ability to retain or recruit, or adapt to changes required in, its founders, senior executives, key personnel or directors;
- factors relating to the business, operations and financial performance of Ginkgo, including:
    - Ginkgo's ability to effectively manage its growth;
    - Ginkgo's exposure to the volatility and liquidity risks inherent in holding equity interests in certain of its customers;
    - rapidly changing technology and extensive competition in the synthetic biology industry that could make the products and processes Ginkgo is developing obsolete or non-competitive unless it continues to collaborate on the development of new and improved products and processes and pursue new market opportunities;
    - Ginkgo's reliance on its customers to develop, produce and manufacture products using the engineered cells and/or biomanufacturing processes that Ginkgo develops;
    - Ginkgo's ability to comply with laws and regulations applicable to its business; and
    - market conditions and global and economic factors beyond Ginkgo's control;
- intense competition and competitive pressures from other companies worldwide in the industries in which Ginkgo operates;
- litigation and the ability to adequately protect Ginkgo's intellectual property rights;
- the success of Ginkgo's programs and their potential to contribute revenue;
- Ginkgo's ability to close and realize the benefits of pending merger and acquisition transactions; and
- other factors detailed under the section entitled "Risk Factors."

These and other factors that could cause actual results to differ from those implied by the forward-looking statements in this Quarterly Report on Form 10-Q are more fully described under the heading "Risk Factors" and elsewhere in this report. The risks described under the heading "Risk Factors" are not exhaustive. Other sections of this Quarterly Report on Form 10-Q describe additional factors that could adversely affect the business, financial condition or results of Ginkgo. New risk factors emerge from time to time and it is not possible to predict all such risk factors, nor can Ginkgo assess the impact of all such risk factors on the business of Ginkgo, or the extent to which any factor or combination of factors may cause actual results to differ materially from those contained in any forward-looking statements. Forward-looking statements are not guarantees of performance. You should not put undue reliance on these statements, which speak only as of the date hereof. All forward-looking statements attributable to Ginkgo or persons acting on its behalf are expressly qualified in their entirety by the foregoing cautionary statements. Ginkgo undertakes no obligation to update or revise publicly any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

**Risk Factors Summary**

Investing in our securities involves risks. You should carefully consider the risks described under the heading "Risk Factors" before making a decision to invest in our Class A common stock. If any of these risks actually occur, our business, financial condition and

results of operations would likely be materially adversely affected. Some of the risks related to Ginkgo's business and industry are summarized below. References in the summary below to "we," "us," "our" and "the Company" generally refer to Ginkgo.

- We have a history of net losses. We expect to continue to incur losses for the foreseeable future, and we may never achieve or maintain profitability.
- We are not, and do not intend to become, regulated as an "investment company" under the Investment Company Act of 1940, as amended ("Investment Company Act"), and if we were deemed an "investment company" under the Investment Company Act, applicable restrictions could make it impractical for us to continue our business as contemplated and could have a material adverse effect on our business.
- Only our employees and directors are entitled to hold shares of Class B common stock (including shares of Class B common stock granted or otherwise issued to our employees and directors in the future), which have ten votes per share. This limits or precludes other stockholders' ability to influence the outcome of matters submitted to stockholders for approval, including the election of directors, the approval of certain employee compensation plans, the adoption of certain amendments to our organizational documents and the approval of any merger, consolidation, sale of all or substantially all of our assets, or other major corporate transaction requiring stockholder approval.
- Outstanding Class C common stock may have the effect of extending voting power in Class B common stock, and may discourage potential acquisitions of our business and could have an adverse effect on the trading price of Class A common stock.
- We may need substantial additional capital in the future in order to fund our business.
- We have experienced rapid growth and expect our growth to continue, and if we fail to effectively manage our growth, then our business, results of operations, and financial condition could be adversely affected.
- Our limited operating history makes it difficult to evaluate our current business and future prospects.
- We currently own and may in the future own equity interests in other operating companies, including certain of our customers; consequently, we have exposure to the volatility and liquidity risks inherent in holding their equity and overall operational and financial performance of these businesses.
- We may pursue strategic acquisitions and investments that are dilutive to our stockholders and that could have an adverse impact on our business if they are unsuccessful.
- We must continue to secure and maintain sufficient and stable supplies of laboratory reagents, consumables, equipment, and laboratory services. We depend on a limited number of suppliers, some of which are single-source suppliers, and contract manufacturers for critical supplies, equipment, and services for research, development, and manufacturing of our products and processes. Our reliance on these third parties exposes us to risks relating to costs, contractual terms, supply, and logistics, and the loss of any one or more of these suppliers or contract manufacturers or their failure to supply us with the necessary supplies, equipment, or services on a timely basis, could cause delays in our research, development, or production capacity and adversely affect our business.
- We use biological, hazardous, flammable and/or regulated materials that require considerable training, expertise and expense for handling, storage and disposal and may result in claims against us.
- Third parties may use our engineered cells, materials, and organisms and accompanying production processes in ways that could damage our reputation.
- If our customers discontinue their development, production and manufacturing efforts using our engineered cells and/or biomanufacturing processes, our future financial position may be adversely impacted.
- Our revenue is concentrated in a limited number of customers, some of which are related parties, and our revenue, results of operations, cash flows and reputation in the marketplace may suffer upon the loss of a significant customer.
- In certain cases, our business partners may have discretion in determining when and whether to make announcements about the status of our collaborations, including about developments and timelines for advancing programs, and the price of our common stock may decline as a result of announcements of unexpected results or developments.

- Uncertainty regarding the ongoing demand and/or capacity (including capacity at third party clinical testing laboratories) of our COVID-19 individual and pooled sample tests could materially adversely affect our business.
- Uncertainty regarding the sales and delivery of our COVID-19 individual and pooled sample tests could materially adversely affect our business.
- We may be subject to tort liability if the COVID-19 tests we utilize in our testing programs provide inaccurate results.
- Rapidly changing technology and emerging competition in the synthetic biology industry could make the platform, programs, and products we and our customers are developing obsolete or non-competitive unless we continue to develop our platform and pursue new market opportunities.
- Ethical, legal and social concerns about GMOs and Genetically Modified Materials and their resulting products could limit or prevent the use of products or processes using our technologies, limit public acceptance of such products or processes and limit our revenues.
- If we are unable to obtain, maintain and defend patents protecting our intellectual property, our competitive position will be harmed.
- Under certain circumstances, we may share or lose rights to intellectual property developed under U.S. federally funded research grants and contracts.
- The use of digital genetic sequence information may be subject to the Nagoya Protocol, which could increase our costs and adversely affect our business.
- We rely on our customers, joint venturers, equity investees and other third parties to deliver timely and accurate information in order to accurately report our financial results in the time frame and manner required by law.
- Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.
- Failure to comply with federal, state, local and international laws and regulations could adversely affect our business and our financial condition.
- We may incur significant costs complying with environmental, health and safety laws and regulations, and failure to comply with these laws and regulations could expose us to significant liabilities.
- We may become subject to the comprehensive laws and rules governing billing and payment, noncompliance with which could result in non-payment or recoupment of overpayments for our services or other sanctions.
- We and our laboratory partners are subject to a variety of laboratory testing standards, compliance with which is an expensive and time-consuming process, and any failure to comply could result in substantial penalties and disruptions to our business.
- If we fail to comply with healthcare and other governmental regulations, we could face substantial penalties and our business, financial condition and results of operations could be adversely affected.
- We are engaged in certain research activities involving controlled substances, including cannabinoids and other chemical intermediates, the making, use, sale, importation, exportation, and distribution of which may be subject to significant regulation by the DEA and other regulatory agencies.
- Significant disruptions to our and our service providers' information technology systems or data security incidents could result in significant financial, legal, regulatory, business and reputational harm to us.
- Our business could be adversely affected by legal challenges to our telehealth partner's business model.

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## PART I—FINANCIAL INFORMATION

### Item 1. Financial Statements.

Ginkgo Bioworks Holdings, Inc.
Condensed Consolidated Balance Sheets
(unaudited)
(in thousands, except share and per share data)

| | As of June 30, 2022 | As of December 31, 2021 |
|---|---|---|
| **Assets** | | |
| Current assets: | | |
| Cash and cash equivalents | $ 1,377,152 | $ 1,550,004 |
| Accounts receivable, net | 171,624 | 131,544 |
| Accounts receivable - related parties | 3,253 | 4,598 |
| Inventory, net | 8,102 | 3,362 |
| Prepaid expenses and other current assets ($6,500 and $0 from related party) | 38,717 | 33,537 |
| Total current assets | 1,598,848 | 1,723,045 |
| Property and equipment, net | 176,221 | 145,770 |
| Investments | 89,068 | 102,037 |
| Equity method investments | 6,914 | 13,194 |
| Intangible assets, net | 39,180 | 21,642 |
| Goodwill | 30,973 | 21,312 |
| Other non-current assets | 53,015 | 43,990 |
| Total assets | $ 1,994,219 | $ 2,070,990 |
| **Liabilities and Stockholders' Equity** | | |
| Current liabilities: | | |
| Accounts payable | $ 19,459 | $ 8,189 |
| Deferred revenue ($13,089 and $12,502 from related parties) | 45,504 | 33,240 |
| Accrued expenses and other current liabilities | 70,059 | 93,332 |
| Total current liabilities | 135,022 | 134,761 |
| Non-current liabilities: | | |
| Deferred rent, net of current portion | 20,214 | 18,746 |
| Deferred revenue, net of current portion ($133,006 and $148,319 from related parties) | 156,981 | 155,991 |
| Lease financing obligation | 51,545 | 22,283 |
| Warrant liabilities | 27,294 | 135,838 |
| Other non-current liabilities | 36,107 | 35,992 |
| Total liabilities | 427,163 | 503,611 |
| Commitments and contingencies (Note 8) | | |
| Stockholders' equity: | | |
| Preferred stock, $0.0001 par value; 200,000,000 shares authorized; none issued | — | — |
| Common stock, $0.0001 par value (Note 6) | 164 | 161 |
| Additional paid-in capital | 5,098,018 | 3,804,844 |
| Accumulated deficit | (3,557,255) | (2,297,925) |
| Accumulated other comprehensive loss | (5,496) | (1,715) |
| Total Ginkgo Bioworks Holdings, Inc. stockholders' equity | 1,535,431 | 1,505,365 |
| Non-controlling interest | 31,625 | 62,014 |
| Total stockholders' equity | 1,567,056 | 1,567,379 |
| Total liabilities and stockholders' equity | $ 1,994,219 | $ 2,070,990 |

*The accompanying notes are an integral part of these condensed consolidated financial statements.*

Ginkgo Bioworks Holdings, Inc.
Condensed Consolidated Statements of Operations and Comprehensive Loss
(unaudited)
(in thousands, except share and per share data)

| | Three Months Ended June 30, | | Six Months Ended June 30, | |
|---|---|---|---|---|
| | 2022 | 2021 | 2022 | 2021 |
| Foundry revenue [1] | $ 44,242 | $ 21,592 | $ 65,730 | $ 44,096 |
| Biosecurity revenue: | | | | |
| Product | 3,887 | 355 | 17,834 | 6,130 |
| Service | 96,489 | 21,689 | 229,459 | 37,507 |
| Total revenue | 144,618 | 43,636 | 313,023 | 87,733 |
| Costs and operating expenses: | | | | |
| Cost of Biosecurity product revenue | 2,444 | 1,820 | 10,539 | 11,755 |
| Cost of Biosecurity service revenue | 61,467 | 15,290 | 138,804 | 29,055 |
| Research and development | 289,188 | 52,031 | 611,908 | 111,616 |
| General and administrative | 438,427 | 34,440 | 873,195 | 52,367 |
| Total operating expenses | 791,526 | 103,581 | 1,634,446 | 204,793 |
| Loss from operations | (646,908) | (59,945) | (1,321,423) | (117,060) |
| Other (expense) income: | | | | |
| Interest income (expense), net | 1,674 | (478) | 1,277 | (953) |
| Loss on equity method investments | (10,166) | (4,346) | (31,053) | (32,970) |
| (Loss) gain on investments | (38,673) | 2,755 | (38,223) | 15,377 |
| Change in fair value of warrant liabilities | 23,509 | — | 108,544 | — |
| Gain on deconsolidation of subsidiary | — | — | 15,900 | — |
| Other (expense) income, net | (51) | 7,119 | 1,586 | 5,774 |
| Total other (expense) income, net | (23,707) | 5,050 | 58,031 | (12,772) |
| Loss before income taxes | (670,615) | (54,895) | (1,263,392) | (129,832) |
| Income tax benefit | (45) | (431) | (229) | (590) |
| Net loss | (670,570) | (54,464) | (1,263,163) | (129,242) |
| Net loss attributable to non-controlling interest | (1,745) | (523) | (3,833) | (1,732) |
| Net loss attributable to Ginkgo Bioworks Holdings, Inc. stockholders | $ (668,825) | $ (53,941) | $ (1,259,330) | $ (127,510) |
| Net loss per share attributable to Ginkgo Bioworks Holdings, Inc. common stockholders, basic and diluted [2] | $ (0.41) | $ (0.04) | $ (0.78) | $ (0.10) |
| Weighted average common shares outstanding, basic and diluted [2] | 1,620,703,542 | 1,292,538,294 | 1,614,138,189 | 1,291,416,874 |
| Comprehensive loss: | | | | |
| Net loss | $ (670,570) | $ (54,464) | $ (1,263,163) | $ (129,242) |
| Other comprehensive loss: | | | | |
| Foreign currency translation adjustment | (3,141) | — | (3,781) | — |
| Total other comprehensive loss | (3,141) | — | (3,781) | — |
| Comprehensive loss | $ (673,711) | $ (54,464) | $ (1,266,944) | $ (129,242) |

(1) Includes related party revenue of $7,973 and $10,962 for the three months ended June 30, 2022 and 2021, respectively, and $21,501 and $23,622 for the six months ended June 30, 2022 and 2021, respectively.

(2) Amounts for the three and six months ended June 30, 2021 have been retroactively restated for the reverse recapitalization as described in Note 1.

*The accompanying notes are an integral part of these condensed consolidated financial statements.*

Ginkgo Bioworks Holdings, Inc.
Condensed Consolidated Statements of Stockholders' Equity
(unaudited)
(in thousands, except share data)

| | Three Months Ended June 30, 2022 | | | | | | |
|---|---|---|---|---|---|---|---|
| | Common Stock | | | | | | |
| | Shares | Amount | Additional Paid-In Capital | Accumulated Deficit | Accumulated Other Comprehensive Loss | Non-Controlling Interest | Total Stockholders' Equity |
| **Balance as of March 31, 2022** | 1,622,054,156 | $ 162 | $ 4,471,418 | $ (2,888,430) | $ (2,355) | $ 33,253 | $ 1,614,048 |
| Issuance of common stock upon exercise or vesting of equity awards | 8,025,753 | 1 | 1 | — | — | — | 2 |
| Issuance of common stock for business acquisitions | 5,554,360 | 1 | 20,127 | — | — | — | 20,128 |
| Stock-based compensation expense | — | — | 606,472 | — | — | 117 | 606,589 |
| Foreign currency translation | — | — | — | — | (3,141) | — | (3,141) |
| Net loss | — | — | — | (668,825) | — | (1,745) | (670,570) |
| **Balance as of June 30, 2022** | 1,635,634,269 | $ 164 | $ 5,098,018 | $ (3,557,255) | $ (5,496) | $ 31,625 | $ 1,567,056 |

| | Six Months Ended June 30, 2022 | | | | | | |
|---|---|---|---|---|---|---|---|
| | Common Stock | | | | | | |
| | Shares | Amount | Additional Paid-In Capital | Accumulated Deficit | Accumulated Other Comprehensive Loss | Non-Controlling Interest | Total Stockholders' Equity |
| **Balance as of December 31, 2021** | 1,611,392,152 | $ 161 | $ 3,804,844 | $ (2,297,925) | $ (1,715) | $ 62,014 | $ 1,567,379 |
| Issuance of common stock upon exercise or vesting of equity awards | 18,983,348 | 2 | 76 | — | — | — | 78 |
| Tax withholdings related to net share settlement of equity awards | (295,621) | — | (981) | — | — | — | (981) |
| Issuance of common stock upon exercise of Public Warrants | 30 | — | — | — | — | — | — |
| Issuance of common stock for business acquisitions | 5,554,360 | 1 | 20,127 | — | — | — | 20,128 |
| Deconsolidation of subsidiary | — | — | — | — | — | (28,783) | (28,783) |
| Stock-based compensation expense | — | — | 1,273,952 | — | — | 2,227 | 1,276,179 |
| Foreign currency translation | — | — | — | — | (3,781) | — | (3,781) |
| Net loss | — | — | — | (1,259,330) | — | (3,833) | (1,263,163) |
| **Balance as of June 30, 2022** | 1,635,634,269 | $ 164 | $ 5,098,018 | $ (3,557,255) | $ (5,496) | $ 31,625 | $ 1,567,056 |

*The accompanying notes are an integral part of these condensed consolidated financial statements.*

Ginkgo Bioworks Holdings, Inc.
Condensed Consolidated Statements of Stockholders' Equity
(unaudited)
(in thousands, except share data)

| | Three Months Ended June 30, 2021 | | | | | | |
|---|---|---|---|---|---|---|---|
| | Common Stock [1] | | | | | | |
| | Shares | Amount | Additional Paid-In Capital [1] | Accumulated Deficit | Accumulated Other Comprehensive Loss | Non-Controlling Interest | Total Stockholders' Equity |
| **Balance as of March 31, 2021** | 1,291,413,193 | $ 129 | $ 929,420 | $ (541,447) | $ — | $ 7,467 | $ 395,569 |
| Issuance of common stock upon exercise or vesting of equity awards | 1,280,607 | — | 12 | — | — | — | 12 |
| Issuance of warrants to purchase Series D convertible preferred stock | — | — | 150 | — | — | — | 150 |
| Issuance of Series D convertible preferred stock upon exercise of warrants | 771,545 | — | — | — | — | — | — |
| Stock-based compensation expense | — | — | 14,519 | — | — | — | 14,519 |
| Net loss | — | — | — | (53,941) | — | (523) | (54,464) |
| **Balance as of June 30, 2021** | 1,293,465,345 | $ 129 | $ 944,101 | $ (595,388) | $ — | $ 6,944 | $ 355,786 |

| | Six Months Ended June 30, 2021 | | | | | | |
|---|---|---|---|---|---|---|---|
| | Common Stock [1] | | | | | | |
| | Shares | Amount | Additional Paid-In Capital [1] | Accumulated Deficit | Accumulated Other Comprehensive Loss | Non-Controlling Interest | Total Stockholders' Equity |
| **Balance as of December 31, 2020** | 1,288,595,876 | $ 129 | $ 929,125 | $ (467,878) | $ — | $ 8,676 | $ 470,052 |
| Issuance of common stock upon exercise or vesting of equity awards | 4,097,924 | — | 39 | — | — | — | 39 |
| Issuance of warrants to purchase Series D convertible preferred stock | — | — | 300 | — | — | — | 300 |
| Issuance of Series D convertible preferred stock upon exercise of warrants | 771,545 | — | — | — | — | — | — |
| Stock-based compensation expense | — | — | 14,637 | — | — | — | 14,637 |
| Net loss | — | — | — | (127,510) | — | (1,732) | (129,242) |
| **Balance as of June 30, 2021** | 1,293,465,345 | $ 129 | $ 944,101 | $ (595,388) | $ — | $ 6,944 | $ 355,786 |

(1) Balances presented were retroactively restated for the reverse recapitalization as described in Note 1.

*The accompanying notes are an integral part of these condensed consolidated financial statements.*

Ginkgo Bioworks Holdings, Inc.
Condensed Consolidated Statements of Cash Flows
(unaudited)
(in thousands)

| | Six Months Ended June 30, | |
|---|---|---|
| | 2022 | 2021 |
| **Cash flows from operating activities:** | | |
| Net loss | $ (1,263,163) | $ (129,242) |
| Adjustments to reconcile net loss to net cash used in operating activities: | | |
| Depreciation and amortization | 19,096 | 12,794 |
| Stock-based compensation | 1,259,336 | 14,637 |
| Loss on equity method investments | 31,053 | 32,970 |
| Loss (gain) on investments | 38,223 | (15,377) |
| Non-cash customer consideration | (18,139) | — |
| Change in fair value of loans receivable | 292 | (4,384) |
| Change in fair value of warrant liabilities | (108,544) | — |
| Gain on deconsolidation of subsidiary (Note 5) | (15,900) | — |
| In-process research and development | 1,162 | — |
| Other non-cash activity | 510 | — |
| **Changes in operating assets and liabilities:** | | |
| Accounts receivable ($1,345 and $(3,590) from related parties) | (38,598) | (6,479) |
| Prepaid expenses and other current assets | 4,973 | 4,854 |
| Inventory | (4,740) | 20 |
| Other non-current assets | (419) | (55) |
| Accounts payable | 10,650 | (7,321) |
| Accrued expenses and other current liabilities | (12,758) | 19,139 |
| Deferred revenue, current and non-current ($(14,667) and $(9,995) from related parties) | (19,708) | (6,067) |
| Deferred rent, non-current | 1,468 | 914 |
| Other non-current liabilities | (3,989) | 555 |
| Net cash used in operating activities | (119,195) | (83,042) |
| **Cash flows from investing activities:** | | |
| Cash acquired in acquisition | 1,440 | — |
| Purchase of convertible note (related party) | (6,500) | — |
| Purchases of property and equipment | (13,153) | (45,969) |
| Purchase of marketable equity securities | (3,691) | — |
| Deconsolidation of subsidiary - cash | (28,772) | — |
| Prepayment for business acquisition | — | (1,210) |
| Other | 28 | 202 |
| Net cash used in investing activities | (50,648) | (46,977) |
| **Cash flows from financing activities:** | | |
| Proceeds from exercise of stock options | 76 | 39 |
| Taxes paid related to net share settlement of equity awards | (981) | — |
| Principal payments on capital leases and lease financing obligation | (720) | (448) |
| Contingent consideration payment | (521) | — |
| Payment of deferred offering costs | — | (2,147) |
| Net cash used in financing activities | (2,146) | (2,556) |
| Effect of foreign exchange rates on cash and cash equivalents | (104) | — |
| Net decrease in cash, cash equivalents and restricted cash | (172,093) | (132,575) |
| | | |
| Cash and cash equivalents, beginning of period | 1,550,004 | 380,801 |
| Restricted cash, beginning of period | 42,924 | 5,076 |
| Cash, cash equivalents and restricted cash, beginning of period | 1,592,928 | 385,877 |
| | | |
| Cash and cash equivalents, end of period | 1,377,152 | 235,893 |
| Restricted cash, end of period | 43,683 | 17,409 |
| Cash, cash equivalents and restricted cash, end of period | $ 1,420,835 | $ 253,302 |
| | | |
| **Supplemental disclosure of non-cash investing and financing activities:** | | |
| Purchases of equipment through capital leases | $ 1,012 | $ 1,981 |
| Purchases of property and equipment included in accounts payable and accrued expenses | $ 6,741 | $ 3,477 |
| Equity received in related parties | $ 8,873 | $ 24,595 |
| Convertible financial instruments received for Foundry services | $ 11,939 | $ — |
| Equity securities and warrants received for Foundry services | $ 3,423 | $ — |
| Lease financing obligation for build-to-suit lease | $ 29,482 | $ — |
| Common stock issued for business acquisition | $ 17,015 | $ — |
| Contingent consideration for business acquisition | $ 12,306 | $ — |
| Deferred offering costs in accounts payable and accrued expenses | $ — | $ 4,091 |

*The accompanying notes are an integral part of these condensed consolidated financial statements.*

Ginkgo Bioworks Holdings, Inc.
Notes to Condensed Consolidated Financial Statements
(unaudited)

**1. Basis of Presentation and Summary of Significant Accounting Policies**

***Basis of Presentation***

The accompanying condensed consolidated financial statements have been prepared in conformity with the rules and regulations of the Securities and Exchange Commission and generally accepted accounting principles in the United States ("GAAP") for interim financial reporting. Accordingly, certain detailed footnote disclosures which would normally be included with complete financial statements have been omitted. In the opinion of management, all normal recurring adjustments necessary for a fair presentation have been made. These condensed consolidated financial statements should be read in conjunction with the Company's 2021 Annual Report on Form 10-K. Interim results are not necessarily indicative of results for a full year.

On September 16, 2021, Soaring Eagle Acquisition Corp. ("SRNG") consummated the merger transaction contemplated by the agreement and plan of merger, dated as of May 11, 2021, and amended on May 14, 2021 (the "Merger Agreement"), by and among SRNG, SEAC Merger Sub Inc., a Delaware corporation ("Merger Sub"), and Ginkgo Bioworks, Inc., a Delaware corporation ("Old Ginkgo"), whereby Merger Sub merged with and into Old Ginkgo, the separate corporate existence of Merger Sub ceased and Old Ginkgo survived the merger as a wholly owned subsidiary of SRNG (the "Business Combination"). In connection with the consummation of the Business Combination, SRNG changed its name to "Ginkgo Bioworks Holdings, Inc." and, among other transactions contemplated by the Merger Agreement, the existing equity holders of Old Ginkgo exchanged their equity interests of Old Ginkgo for equity interests of Ginkgo Bioworks Holdings, Inc.

The Business Combination was accounted for as a reverse recapitalization, in accordance with GAAP (the "Reverse Recapitalization"). Under this method of accounting, SRNG was treated as the "acquired" company for financial reporting purposes. Accordingly, for accounting purposes, the Reverse Recapitalization was treated as the equivalent of Old Ginkgo issuing stock for the net assets of SRNG, accompanied by a recapitalization. The net assets of SRNG are stated at historical cost, with no goodwill or other intangible assets recorded. The consolidated assets, liabilities and results of operations prior to the Reverse Recapitalization are those of Old Ginkgo. The shares and corresponding capital amounts and loss per share related to Old Ginkgo's outstanding convertible preferred stock and common stock prior to the Reverse Recapitalization have been retroactively restated to reflect the Exchange Ratio established in the Merger Agreement.

***Principles of Consolidation***

The accompanying condensed consolidated financial statements include the accounts of the Company, its wholly owned subsidiaries, majority owned subsidiaries and variable interest entities if the Company is the primary beneficiary. All intercompany accounts and transactions have been eliminated.

***Reclassifications***

Certain prior year amounts have been reclassified for consistency with the current year presentation. These reclassifications had no effect on the reported results of operations.

***Use of Estimates***

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, revenues and expenses, and the disclosure of contingent liabilities in the condensed consolidated financial statements. Estimates used in the preparation of these condensed consolidated financial statements include, among others, revenue recognition, stock-based compensation, the fair value of assets acquired and liabilities assumed in a business combination, the fair value of non-cash consideration received from customers, the fair value of loans receivable, the fair value of certain investments including equity method investments, the fair value of warrant liabilities, the allocation of equity method investment losses under the hypothetical liquidation at book value ("HLBV") method, accrued expenses and income taxes. Actual results could differ materially from those estimates.

***Significant Accounting Policies***

There have been no new or material changes to the Company's significant accounting policies during the six months ended June 30, 2022 as compared to the significant accounting policies described in Note 2 to the Company's 2021 consolidated financial statements included in the 2021 Annual Report on Form 10-K.

***Recently Adopted Accounting Pronouncements***

The Company is an emerging growth company as defined in the Jumpstart Our Business Startups Act of 2012, under which it may take advantage of an extended transition period for complying with new or revised accounting standards until such time as those

standards apply to private companies. The Company has elected not to opt out of this extended transition period and, as a result, these condensed consolidated financial statements may not be comparable to companies that comply with new or revised accounting pronouncements as of public company effective dates.

In October 2021, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2021-08, *Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers*, which requires an acquirer to recognize and measure contract assets and contract liabilities acquired in a business combination in accordance with ASC 606, *Revenue from Contracts with Customers,* as if the acquirer had originated the contracts. ASU 2021-08 generally should result in an acquirer recognizing and measuring the acquired contract assets and contract liabilities consistent with how they were recognized and measured in the acquiree's financial statements. Prior to this update, such amounts were recognized by the acquirer at fair value on the acquisition date. The Company early adopted the requirements of ASU 2021-08 to apply the amendments prospectively to all business combinations that occurred on or after April 1, 2022.

***Recently Issued Accounting Pronouncements***

In June 2022, the FASB issued ASU 2022-03, *Fair Value Measurement of Equity Securities Subject to Contractual Sale Restrictions*. This standard clarifies that a contractual restriction on the sale of an equity security is not considered part of the unit of account of the equity security and, therefore, is not considered in measuring fair value. It also introduces required disclosures for equity securities subject to contractual sale restrictions. This standard becomes effective for the Company on January 1, 2024, with early adoption permitted. The Company is considering the impact of this pronouncement on the financial statements.

In February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842): Amendments to the FASB Accounting Standards Codification* (“ASC 842”), which has been clarified and amended by various subsequent updates. ASC 842 requires lessees to record a right-of-use ("ROU") asset and a lease liability on the balance sheet for all leases with a lease term of more than 12 months. ASC 842 also requires additional disclosures about the amount, timing and uncertainty of cash flows arising from leases. The Company plans to adopt ASC 842 for the fiscal year ending December 31, 2022, and for interim periods within the fiscal year beginning on January 1, 2023. In connection with the adoption of ASC 842, the Company will apply the modified retrospective approach and recognize a cumulative-effect adjustment to the opening balance of accumulated deficit in the period of adoption. The Company has elected to apply the package of practical expedients that allows for not reassessing (i) whether any expired or existing contracts are or contain leases, (ii) the lease classification of any expired or existing leases, and (iii) the accounting for initial direct costs for any existing leases. The Company has also elected, by class of underlying asset, not to apply the recognition requirements of ASC 842 to short-term leases. While the Company continues to assess the various impacts of adoption, the most significant effects will primarily relate to (1) the recognition of an ROU asset and lease liability on the balance sheet for the Company’s existing operating leases; and (2) providing significant new disclosures about leasing activities. The Company does not anticipate that the adoption of ASC 842 will have a material impact on its results of operations and cash flows.

**2. Acquisitions**

On April 1, 2022, the Company acquired all of the outstanding equity interests of FGen AG (“FGen”), a company organized under the laws of Switzerland that specializes in strain development and optimization. FGen has developed an ultra-high-throughput screening platform built on nanoliter reactor technology which the Company believes will enhance its cell screening capabilities and potentially increase the likelihood of finding enzymes, pathways, and strains or cell lines that perform to diverse cell program specifications.

The Company accounted for the transaction as a business combination under ASC 805, *Business Combinations*. Accordingly, the assets and liabilities acquired were recorded at their estimated fair value on the date of acquisition. FGen's results of operations have been included in the condensed consolidated statements of operations and comprehensive loss since the date of acquisition and were not material to the Company’s results of operations for the three and six months ended June 30, 2022. The FGen acquisition does not represent a material business combination and, therefore, pro forma financial information is not provided.

The consideration paid was comprised of common stock and contingent consideration as follows (in thousands):

| | | |
|---|---|---|
| Fair value of Class A common stock | $ | 17,015 |
| Contingent consideration - restricted stock | | 3,842 |
| Contingent consideration - milestones | | 8,464 |
| Total FGen consideration | $ | 29,321 |

Ginkgo Bioworks Holdings, Inc.
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The Company issued 5,749,957 shares of its Class A common stock on the acquisition date comprised of 4,051,107 unrestricted shares valued at $17.0 million based on the closing market price of $4.20 and 1,698,850 restricted shares classified as contingent consideration and subject to vesting conditions. The contingent consideration in the form of restricted stock was valued at $3.8 million as of the acquisition date based on management's estimate of the number of shares expected to vest and the closing market price of $4.20. The restricted shares were issued in three tranches with separate vesting conditions. Tranches 1 and 2 vest based on the price difference between the 15-day volume weighted average price ("VWAP") of Ginkgo's Class A common stock calculated on the date immediately prior to closing and the 15-day VWAP calculated on the date immediately prior to Ginkgo's filing of the registration statement to register the unrestricted shares. The contingency was resolved on April 4, 2022 when the Company filed its Form S-1 registration statement and a total of 461,200 shares vested and 584,246 shares were forfeited related to tranches 1 and 2. The remaining 653,404 tranche 3 restricted shares will vest on the 24-month anniversary of the closing, provided, however, that the number of shares that vest will be reduced by any post-closing purchase price adjustments and indemnity claims. The estimated fair value of tranche 1 and 2 shares was $1.9 million as of the registration statement date, which was reclassified from a liability into stockholders' equity upon the determination of the number of shares that vested. The Company recorded a $0.8 million loss on the change in fair value of the contingent consideration, which is included in general and administrative expenses in the condensed consolidated statements of operations and comprehensive loss.

The Company is also required to make milestone payments up to a maximum of $25.0 million primarily related to the successful integration and deployment of the FGen technology across the Company's programs over a 36-month period. The milestones are payable in cash or Class A common stock at the election of the Company. The fair value of the contingent consideration on the acquisition date was determined using a scenario-based method. The significant assumptions used include the expected time of achievement and probability of success related to each milestone and a discount rate.

The Company allocated the purchase price to the tangible and identifiable intangible assets acquired and liabilities assumed based on their respective estimated fair values on the acquisition date. The fair value estimates for the purchase price allocation are considered preliminary and subject to adjustment during the measurement period, not to exceed one year after the date of acquisition. The intangible assets acquired consist of FGen's developed technology which was measured at fair value using the multi-period excess earnings method under the income approach. Under this method, an intangible asset's fair value is equal to the present value of the incremental after-tax cash flows attributable only to the intangible asset after deducting charges representing the contribution of other assets to those cash flows. The significant assumptions used include the estimated annual net cash flows (including revenue growth rates, EBITDA and EBIT margins, applicable tax rate, and contributory asset charges), a discount rate, and the tax amortization benefit. Goodwill represents the amount by which the purchase price exceeds the estimated fair value of the net assets acquired and primarily reflects the value of future programs expected to arise after the acquisition. The Company incurred $1.7 million of acquisition-related costs which were included in general and administrative expenses in the condensed consolidated statements of operations and comprehensive loss.

The following table summarizes the preliminary acquisition date fair values of assets acquired and liabilities assumed as of the acquisition date (in thousands):

| | | |
|---|---|---|
| Cash and cash equivalents | $ | 1,430 |
| Accounts receivable | | 144 |
| Other non-current assets | | 10 |
| Property and equipment | | 146 |
| Intangible assets [1] | | 21,100 |
| Goodwill [2] | | 11,001 |
| Accounts payable and accrued expenses | | (29) |
| Deferred revenue | | (104) |
| Deferred tax liability | | (4,377) |
| Net assets acquired | $ | 29,321 |

(1) Estimated useful life of 15 years.
(2) Non-deductible for tax purposes.

In June 2022, the Company acquired substantially all of the assets of Bitome, Inc. ("Bitome"), a privately-held company with an integrated metabolite monitoring platform that is expected to support accelerated product development timelines across Ginkgo's portfolio of cell programs. The Company accounted for the transaction as an asset acquisition as substantially all of the value received

was concentrated in the intellectual property acquired. The consideration for the transaction was structured as (i) a repayment of Bitome's outstanding convertible debt pursuant to the issuance of 388,649 shares of Class A common stock (valued at approximately $1.2 million as of the acquisition date), (ii) a repayment of a portion of Bitome's outstanding convertible debt in cash in the amount of $0.1 million and (iii) assumption of certain of Bitome's liabilities and wind-down expenses up to a maximum cap of $0.4 million. The total purchase consideration was expensed as in-process research and development expense in the condensed consolidated statements of operations and comprehensive loss for the three months ended June 30, 2022.

### 3. Fair Value Measurements

The following tables present information about the Company's financial assets and liabilities measured at fair value on a recurring basis (in thousands):

| | | As of June 30, 2022 | | | |
|---|---|---|---|---|---|
| | Classification | Total | Level 1 | Level 2 | Level 3 |
| Assets: | | | | | |
| Money market funds | Cash and cash equivalents | $ 1,335,351 | $ 1,335,351 | $ — | $ — |
| Synlogic, Inc. warrants [1] | Investments | 2,930 | — | 2,930 | — |
| Marketable equity securities [2] | Investments | 23,515 | 18,012 | 5,503 | — |
| Loans receivable | Prepaid expenses and other current assets | 11,267 | — | — | 11,267 |
| Total assets | | $ 1,373,063 | $ 1,353,363 | $ 8,433 | $ 11,267 |
| Liabilities: | | | | | |
| Public Warrants | Warrant liabilities | $ 18,285 | $ 18,285 | $ — | $ — |
| Private Placement Warrants | Warrant liabilities | 9,009 | — | — | 9,009 |
| Contingent consideration | Accrued Expenses and Other Current Liabilities | 5,051 | — | — | 5,051 |
| Contingent consideration | Other non-current liabilities | 13,378 | — | — | 13,378 |
| Total liabilities | | $ 45,723 | $ 18,285 | $ — | $ 27,438 |

| | | As of December 31, 2021 | | | |
|---|---|---|---|---|---|
| | Classification | Total | Level 1 | Level 2 | Level 3 |
| Assets: | | | | | |
| Money market funds | Cash and cash equivalents | $ 1,482,063 | $ 1,482,063 | $ — | $ — |
| Synlogic, Inc. warrants [1] | Investments | 6,166 | — | 6,166 | — |
| Marketable equity securities [2] | Investments | 25,676 | 15,345 | 10,331 | — |
| Loans receivable | Prepaid expenses and other current assets | 11,559 | — | — | 11,559 |
| Total assets | | $ 1,525,464 | $ 1,497,408 | $ 16,497 | $ 11,559 |
| Liabilities: | | | | | |
| Public Warrants | Warrant liabilities | $ 77,280 | $ 77,280 | $ — | $ — |
| Private Placement Warrants | Warrant liabilities | 58,558 | — | — | 58,558 |
| Contingent consideration | Other non-current liabilities | 8,467 | — | — | 8,467 |
| Total liabilities | | $ 144,305 | $ 77,280 | $ — | $ 67,025 |

(1) The fair value of Synlogic, Inc. warrants is calculated as the quoted price of the underlying common stock, less the unpaid exercise price of the warrants.

(2) Marketable equity securities classified as Level 2 reflect a discount for lack of marketability due to regulatory sales restrictions, which lapsed on a portion of the shares held during the six months ended June 30, 2022 and were reclassified as Level 1.

There were no transfers into or out of Level 3 during the three and six months ended June 30, 2022 and 2021.

***Loans Receivable***

Loans receivable measured at fair value on a recurring basis consists of a revolving promissory note with Glycosyn, LLC ("Glycosyn", and such promissory note, the "Glycosyn Promissory Note") and a series of convertible notes with Access Bio, Inc. ("Access Bio Convertible Notes"). The fair value of the Glycosyn Promissory Note and Access Bio Convertible Notes were determined based on significant inputs not observable in the market, which represent a Level 3 measurement within the fair value

hierarchy. Significant changes in these unobservable inputs in isolation could have resulted in a significantly lower or higher fair value measurement. Changes in fair value of loans receivable are recorded as a component of other (expense) income, net in the condensed consolidated statements of operations and comprehensive loss.

The Company estimated the fair value of the Glycosyn Promissory Note using a probability-weighted discounted cash flow model under a dissolution scenario with partial recovery and no recovery. The significant assumptions used in valuing the Glycosyn Promissory Note as of June 30, 2022 and December 31, 2021 were scenario probabilities of 50%, a recovery rate on first lien debt of 63% and a discount rate of 15%. As of June 30, 2022 and December 31, 2021, the Glycosyn Promissory Note had an unpaid principal balance of $5.4 million and a fair value of $1.8 million.

The Company estimated the fair value of the Access Bio Convertible Notes using a binomial lattice model. Key assumptions used as of June 30, 2022 included 72.2% equity volatility, 0.38 years to maturity, 2.1% risk-free rate, 33.9% risk-adjusted rate and 0% dividend yield. Key assumptions used as of December 31, 2021 included 85.5% equity volatility, 0.88 years to maturity, 0.3% risk-free rate, 30.9% risk-adjusted rate and 0% dividend yield. As of June 30, 2022 and December 31, 2021, the Access Bio Convertible Notes had an unpaid principal balance of $10.0 million. The Access Bio Convertible Notes had a fair value of $9.5 million as of June 30, 2022 and $9.8 million as of December 31, 2021.

The following table provides a reconciliation of loans receivable measured at fair value using Level 3 significant unobservable inputs (in thousands):

| | 2022 | 2021 |
|---|---|---|
| Balance at January 1 | $ 11,559 | $ 15,566 |
| Proceeds from loans receivable | — | (202) |
| Change in fair value | (292) | 4,384 |
| Balance at June 30 | $ 11,267 | $ 19,748 |

***Warrant Liabilities***

Upon the closing of the Business Combination, the Company assumed 34,499,925 publicly-traded warrants (“Public Warrants”) and 17,325,000 private placement warrants (the "Private Placement Warrants") previously issued in connection with SRNG’s initial public offering. The fair value of the Public Warrants has been measured based on the quoted price of such warrants on the New York Stock Exchange. The fair value of the Private Placement Warrants has been estimated utilizing Level 3 inputs, including expected stock-price volatility, expected life, risk-free interest rate and dividend yield. Material increases (or decreases) in any of those inputs may result in a significantly higher (or lower) fair value measurement. The Company estimates the volatility of its Private Placement Warrants based on implied volatility from the Company’s Public Warrants and from historical volatility of select peer company’s common stock that matches the expected remaining life of the warrants. The risk-free interest rate is based on the U.S. Treasury zero-coupon yield curve for a maturity similar to the expected remaining life of the warrants. The expected life of the warrants is assumed to be equivalent to their remaining contractual term. The dividend yield is based on the historical rate, which the Company anticipates remaining at zero.

The following table provides quantitative information regarding Level 3 inputs used in the recurring valuation of the Private Placement Warrants as of their measurement date:

| | June 30, 2022 | December 31, 2021 |
|---|---|---|
| Exercise price | $ 11.50 | $ 11.50 |
| Stock price | $ 2.38 | $ 8.31 |
| Volatility | 71.7% | 58.7% |
| Term (in years) | 4.21 | 4.71 |
| Risk-free interest rate | 2.97% | 1.25% |

The following table provides a reconciliation of the Private Placement Warrants measured at fair value using Level 3 significant unobservable inputs (in thousands):

| | 2022 |
|---|---|
| Balance at January 1 | $ 58,558 |
| Change in fair value | (49,549) |
| Balance at June 30 | $ 9,009 |

***Contingent Consideration***

In connection with the acquisition of FGen (Note 2), the Company is required to make contingent earnout payments up to a maximum of $25.0 million primarily related to the successful integration and deployment of the FGen technology across the Company's programs. The Company also issued restricted stock that is subject to vesting conditions and is classified as contingent consideration. A portion of the restricted shares vested during the three months ended June 30, 2022 and $1.9 million of the liability was settled as discussed in Note 2.

In connection with the acquisition of Dutch DNA Biotech B.V. ("Dutch DNA") on July 1, 2021, the Company is required to make contingent earnout payments up to a maximum of $20.0 million payable to the seller upon the achievement of certain technical and commercial milestones by Dutch DNA pursuant to a Technical Development Agreement executed between the Company and Dutch DNA prior to the close of the acquisition. In the second quarter of 2022, the Company made a payment of $0.7 million upon the achievement of a technical development milestone and recorded a corresponding $0.7 million decrease in the fair value of the contingent consideration liability.

The fair value of contingent consideration related to restricted stock was estimated using the quoted price of Ginkgo's Class A common stock, an estimate of the number of shares expected to vest, probability of vesting, and a discount rate, which represent Level 3 inputs. The fair value of contingent consideration related to earnout payments was estimated using unobservable (Level 3) inputs as illustrated in the table below. Material increases or decreases in these inputs could result in a higher or lower fair value measurement. Changes in the fair value of contingent consideration are recorded through operating expenses in the condensed consolidated statements of operations and comprehensive loss. The recurring Level 3 fair value measurements of contingent consideration liabilities included the following significant unobservable inputs as of the periods presented:

| Contingent Consideration Liability | Valuation Technique | Unobservable Input | June 30, 2022 Range | December 31, 2021 Range |
|---|---|---|---|---|
| Earnout payments (FGen and Dutch DNA acquisitions) | Probability-weighted present value | Probability of payment | 2% - 95% | 10% - 80% |
| | | Discount rate | 14.36% - 15.40% | 10.7% - 11.3% |
| Earnout payments (Dutch DNA acquisition) | Discounted cash flow | Projected years of payments | 2022 - 2028 | 2022 - 2037 |
| | | Discount rate | 12% | 9% |

The following table provides a reconciliation of the contingent consideration measured at fair value using Level 3 significant unobservable inputs (in thousands):

| | 2022 |
|---|---|
| Balance at January 1 | $ 8,467 |
| Additions | 12,306 |
| Change in fair value | 300 |
| Settlements and payments | (2,644) |
| Balance at June 30 | $ 18,429 |

***Nonrecurring Fair Value Measurements***

The Company measures the fair value of certain assets, including investments in privately held companies without readily determinable fair values, on a nonrecurring basis when events or changes in circumstances indicate that the carrying amount of the asset may not be recoverable. During the three months ended June 30, 2022, the Company recorded a $10.1 million impairment

charge, included as a component of (loss) gain on investments in the condensed consolidated statements of operations and comprehensive loss, due to the decline in the fair value of the Company's investment in Genomatica preferred stock. The fair value estimates used to determine the impairment charge were determined using enterprise value analyses which include an equal weighing between discounted cash flow analyses and guideline public company and involve significant unobservable (Level 3) inputs. The significant unobservable inputs include the estimated annual net cash flows (including revenue and expense growth rates and capitalization rates), the weighted-average cost of capital used to discount the future cash flows, and the selection of guideline public company multiples for revenue and EBITDA. Material increases or decreases in these inputs could result in a higher or lower fair value measurement.

**4. Investments and Equity Method Investments**

The Company partners with other investors to form business ventures, including Joyn Bio, LLC (“Joyn”), Motif FoodWorks, Inc. (“Motif”), Allonnia, LLC (“Allonnia”), Arcaea, LLC (“Arcaea”), Verb Biotics, LLC (“Verb”), subsequent to the deconsolidation of Verb as discussed in Note 5, and BiomEdit, LLC ("BiomEdit") (collectively "Platform Ventures"). The Company also partners with existing entities, including Genomatica, Inc. (“Genomatica”) and Synlogic, Inc. (“Synlogic”) (collectively, “Structured Partnerships”) with complementary assets for high potential synthetic biology applications. The Company holds equity interests in these Platform Ventures and Structured Partnerships. The Company also holds equity interests in other public and private companies as a result of entering into collaboration and license revenue arrangements with these entities.

The Company accounts for its investments in Platform Ventures under the equity method. The Company's marketable equity securities consist of Synlogic common stock, Synlogic warrants and the shares of common stock of other publicly-traded companies. Marketable equity securities are measured at fair value with changes in fair value recorded in other income (expense) in the condensed consolidated statements of operations and comprehensive loss. Prior to the third quarter of 2021, the Company's investment in Synlogic common stock was classified as an equity method investment based on the Company’s ownership interest in Synlogic and accounted for under the fair value option. Due to a decrease in the level of ownership interest during the third quarter of 2021, the investment was reclassified from equity method investments to investments on the condensed consolidated balance sheet, and from loss on equity method investments to (loss) gain on investments on the condensed consolidated statements of operations and comprehensive loss for all periods presented. However, the Company continues to account for its investments in Synlogic at fair value.

The Company’s non-marketable equity securities consist of preferred stock of Genomatica and other privately-held companies without readily determinable fair values. Non-marketable equity securities are initially recorded using the measurement alternative at cost and subsequently adjusted for any impairment and observable price changes in orderly transactions for the identical or a similar security of the same issuer. During the three months ended June 30, 2022, the Company recorded a $10.1 million impairment charge, included as a component of (loss) gain on investments in the condensed consolidated statements of operations and comprehensive loss, due to the decline in the fair value of the Company's investment in Genomatica preferred stock. There were no impairments recorded during the three or six months ended June 30, 2021 and no adjustment from observable price changes has been recognized during any of the periods presented.

Investments and equity method investments consisted of the following (in thousands):

| | As of June 30, 2022 | As of December 31, 2021 |
|---|---|---|
| **Investments:** | | |
| Genomatica, Inc. preferred stock | $ 44,885 | $ 55,000 |
| Synlogic, Inc. common stock | 7,292 | 15,345 |
| Synlogic, Inc. warrants | 2,930 | 6,166 |
| Marketable equity securities | 16,223 | 10,331 |
| Non-marketable equity securities | 17,738 | 15,195 |
| Total | $ 89,068 | $ 102,037 |
| **Equity method investments [(1)]:** | | |
| Joyn Bio, LLC | $ 1,283 | $ 11,694 |
| BiomEdit, LLC | 4,321 | — |
| Other | 1,310 | 1,500 |
| Total | $ 6,914 | $ 13,194 |

(1) Equity method investments in Platform Ventures with a carrying value of zero as of June 30, 2022 and December 31, 2021 were excluded from the table.

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(Losses) gains on investments and equity method investments consisted of the following (in thousands):

| | Three Months Ended June 30, | | Six Months Ended June 30, | |
|---|---|---|---|---|
| | 2022 | 2021 | 2022 | 2021 |
| **(Loss) gain on investments:** | | | | |
| Synlogic, Inc. common stock | $ (7,926) | $ 1,965 | $ (8,053) | $ 10,969 |
| Synlogic, Inc. warrants | (3,185) | 790 | (3,236) | 4,408 |
| Genomatica | (10,115) | — | (10,115) | — |
| Marketable equity securities | (17,447) | — | (16,819) | — |
| Total | $ (38,673) | $ 2,755 | $ (38,223) | $ 15,377 |
| **Loss on equity method investments:** | | | | |
| Joyn Bio, LLC | $ (5,424) | $ (4,346) | $ (10,411) | $ (8,375) |
| Allonnia, LLC | — | — | — | (12,698) |
| Arcaea, LLC | — | — | — | (11,897) |
| Verb Biotics, LLC | — | — | (15,900) | — |
| BiomEdit, LLC | (4,552) | — | (4,552) | — |
| Other | (190) | — | (190) | — |
| Total | $ (10,166) | $ (4,346) | $ (31,053) | $ (32,970) |

## 5. Variable Interest Entities

***Consolidated Variable Interest Entities***

As of December 31, 2021, the Company had consolidated three variable interest entities ("VIEs"): Cooksonia, LLC ("Cooksonia"), Verb and Ayana Bio, LLC ("Ayana"), as the Company holds variable interests in and was deemed to be the primary beneficiary of the VIEs. The other investors' equity interests in the consolidated VIEs are presented as non-controlling interests in the accompanying condensed consolidated financial statements.

The Company holds a 70% equity interest in Cooksonia, which was formed by the Company and certain other investors for the purposes of holding the Company's investment in Joyn. The Company concluded that it holds a variable interest in and is the primary beneficiary of Cooksonia as it controls the most significant activities of Cooksonia by controlling 100% of the board of directors of Cooksonia and holds a controlling financial interest in Cooksonia. As a result, the Company has consolidated the financial statements of Cooksonia in accordance with ASC 810, *Consolidation* ("ASC 810") into its financial statements and has recognized a non-controlling interest associated with the minority equity interest held by other investors of Cooksonia, which together hold the remaining 30% equity interest in Cooksonia.

As of December 31, 2021, the Company held an interest in 9,000,000 common units (representing 100% of common units at inception) in each of Ayana and Verb, two Platform Ventures formed in September 2021 by the Company and certain of its investors. The Company has agreed to provide Ayana and Verb with certain licenses to intellectual property for use in the development or production of products that the parties agree to research and develop under technical development plans ("TDPs"). Additionally, in September 2021, Ayana and Verb entered into a Series A Preferred Unit Purchase Agreement under which each entity sold 9,000,000 Series A preferred units to certain of the Company's investors for aggregate proceeds of approximately $30.0 million each. During 2021, the Company concluded that it held a variable interest in and was the primary beneficiary of Ayana and Verb as it controlled the most significant activities of these entities. These conclusions were reached because, as of the primary beneficiary assessment dates in 2021, for both Verb and Ayana: (i) the Company had substantive control of the board of directors; (ii) all capital contributions were made by related parties of Ginkgo; and (iii) Ginkgo or its related parties comprised the entirety of the Joint Steering Committee, the governing body which holds significant oversight with respect to the entities' research and development programs.

As of June 30, 2022, there has been no change in the consolidation status of Cooksonia and Ayana. During the first quarter of 2022, Verb hired a new chief executive officer who was not an affiliate, related party or agent of Ginkgo. The chief executive officer was also appointed to Verb's Joint Steering Committee and board of directors. As a result, the Company concluded it no longer had substantive control of the board of directors or the Joint Steering Committee. Accordingly, the Company concluded that it was no longer the primary beneficiary of Verb as it no longer controlled the most significant activities of the entity. As a result of this change in the primary beneficiary determination, the Company deconsolidated the entity in the first quarter of 2022 and recorded a gain on deconsolidation of $15.9 million in the condensed consolidated statements of operations and comprehensive loss equal to the fair value of the retained interest as of the deconsolidation date. The fair value of the retained interest was determined using the option

pricing method. The option pricing method used a back-solve methodology to infer the total equity value based on the pricing of the Series A preferred unit financing given the proximity of the deconsolidation event to the financing.

Subsequent to the deconsolidation, Verb and Ginkgo jointly agree on TDPs, through equal representation on the Joint Steering Committee, under which the Company will perform agreed-upon research and development services in return for consideration on a cost-plus basis for all services provided. Ginkgo has agreed to provide Verb with licenses to certain of its intellectual property for use in the development, production and commercialization of Verb's products under the TDPs. The Company's common unit investment in Verb is accounted for as an equity method investment, and accordingly, Verb is a related party of Ginkgo. The initial carrying value of the equity method investment in Verb was equal to the fair value of the retained interest of $15.9 million as of the deconsolidation date. The Series A preferred units issued by Verb receive a liquidation preference prior to common units. As such, the Company concluded that this represents a substantive profit-sharing arrangement, and the Company is recognizing earnings and losses on the equity method investment using the HLBV method. The Company recorded a $15.9 million loss on its equity method investment in Verb in the first quarter of 2022 due to a basis difference associated with in-process research and development identified as part of the initial accounting for the equity method investment. This loss reduced the carrying value of the equity method investment in Verb to zero. There is no commitment for the Company to provide further financial support to Verb, and therefore the carrying value of the equity method investment will not be reduced below zero.

The following table presents the carrying amounts and classification of the VIEs' assets and liabilities included in the condensed consolidated balance sheet (in thousands):

| | As of June 30, 2022 | As of December 31, 2021 |
|---|---|---|
| Cash and cash equivalents | $ 26,950 | $ 58,025 |
| Prepaid expenses and other current assets | 6,642 | 737 |
| Equity method investments | 1,283 | 11,694 |
| Property and equipment, net | 130 | — |
| Other non-current assets | 3 | — |
| Total assets | $ 35,008 | $ 70,456 |
| | | |
| Accounts payable | $ 62 | $ 188 |
| Accrued expenses and other current liabilities | 85 | 440 |
| Total liabilities | $ 147 | $ 628 |

***Unconsolidated Variable Interest Entities***

With respect to the Company's investments in Motif, Allonnia, Genomatica, Arcaea, Verb (subsequent to the deconsolidation) and BiomEdit (collectively "Unconsolidated VIEs"), the Company has concluded these entities represent VIEs. However, although the Company may have board representation and is involved in the ongoing development activities of the entities via its participation on joint steering committees, the Company has concluded that it is not the primary beneficiary of these entities. This conclusion is supported by the fact that: (i) it does not control the board of directors of any of the Unconsolidated VIEs, and no voting or consent agreements exist between the Company and other members of each respective board of directors or other investors, (ii) the holders of preferred security interests in the Unconsolidated VIEs hold certain rights that require their consent prior to the taking of certain actions, which include certain significant operating and financing decisions, and (iii) the Company's representation on the joint steering committee of each respective entity does not give it control over the development activities of any of the Unconsolidated VIEs, as all votes must pass by consensus and there are no agreements in place that would require any of the entities to vote in alignment with the Company. As the Company's involvement in the Unconsolidated VIEs does not give it the power to control the decisions with respect to their development or other activities, which are their most significant activities, the Company has concluded that it is not the primary beneficiary of the Unconsolidated VIEs.

With respect to Cooksonia's investment in Joyn, as Cooksonia does not control Joyn's board of directors, it does not have the power to control the decisions related to the development activities of Joyn, which are its most significant activities. Accordingly, the Company has concluded that Cooksonia is not the primary beneficiary of Joyn. The Company has provided financial support to Joyn in the amount of $6.5 million during the three months ended June 30, 2022 in the form of convertible promissory notes (see Note 14), which was deemed necessary to fund Joyn's operations. The Company has a remaining funding commitment of $3.5 million to Joyn as of June 30, 2022 under the convertible note agreement. The Company's financial exposure to Joyn consists of the carrying value of its

equity method investment in Joyn, the unpaid principal balance plus accrued interest of the convertible notes and future financial commitments of $3.5 million.

Additionally, the Company holds equity interests in certain privately-held entities that are not consolidated as the Company is not the primary beneficiary. As of June 30, 2022 and December 31, 2021, the maximum risk of loss related to the Company's unconsolidated VIEs was limited to the carrying value of its investment in such entities.

Refer to Notes 4 and 12 for additional details on the Company's investments and equity method investments.

## 6. Supplemental Balance Sheet Information

### Cash, Cash Equivalents and Restricted Cash

The reconciliation of cash, cash equivalents and restricted cash reported within the condensed consolidated balance sheet to the totals shown within the condensed consolidated statements of cash flows is as follows (in thousands):

| | As of June 30, | |
|---|---|---|
| | 2022 | 2021 |
| Cash and cash equivalents | $ 1,377,152 | $ 235,893 |
| Restricted cash included in prepaid expenses and other current assets [(1)] | 4,239 | — |
| Restricted cash included in other non-current assets [(1)] | 39,444 | 17,409 |
| Total cash, cash equivalents and restricted cash | $ 1,420,835 | $ 253,302 |

(1) Includes cash balances collateralizing letters of credit associated with the Company's facility leases and a customer prepayment requiring segregation and restrictions in its use in accordance with the customer agreement.

### Inventory, net

Inventory, net consisted of the following (in thousands):

| | As of June 30, | As of December 31, |
|---|---|---|
| | 2022 | 2021 |
| Finished goods | $ 7,524 | $ 3,264 |
| Raw materials | 863 | 64 |
| Work in process | — | 50 |
| Less: inventory reserve | (285) | (16) |
| Inventory, net | $ 8,102 | $ 3,362 |

### Property and Equipment, net

Property and equipment, net consisted of the following (in thousands):

| | As of June 30, | As of December 31, |
|---|---|---|
| | 2022 | 2021 |
| Facilities | $ 12,762 | $ 12,762 |
| Furniture and fixtures | 4,661 | 4,617 |
| Lab equipment | 122,209 | 113,963 |
| Computer equipment and software | 12,279 | 10,129 |
| Leasehold improvements | 55,705 | 55,033 |
| Construction in progress | 46,780 | 10,278 |
| Vehicles | 37 | 40 |
| Total property and equipment | 254,433 | 206,822 |
| Less: Accumulated depreciation | (78,212) | (61,052) |
| Property and equipment, net | $ 176,221 | $ 145,770 |

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**Capitalization**

The following table presents the Company's authorized, issued, and outstanding common stock as of the dates indicated:

| | Authorized | Issued | Outstanding |
|---|---|---|---|
| Common stock as of June 30, 2022: | | | |
| Class A | 10,500,000,000 | 1,095,736,657 | 1,000,569,264 |
| Class B | 4,500,000,000 | 396,077,560 | 347,065,005 |
| Class C | 800,000,000 | 288,000,000 | 288,000,000 |
| | 15,800,000,000 | 1,779,814,217 | 1,635,634,269 |
| Common stock as of December 31, 2021: | | | |
| Class A | 10,500,000,000 | 1,326,146,808 | 1,273,976,963 |
| Class B | 4,500,000,000 | 364,844,007 | 337,415,189 |
| Class C | 800,000,000 | — | — |
| | 15,800,000,000 | 1,690,990,815 | 1,611,392,152 |

During the six months ended June 30, 2022, the Company issued 288,000,000 shares of Class C common stock to a stockholder in exchange for the same number of shares of Class A common stock pursuant to the stockholder exchange agreement.

During the three months ended June 30, 2022, the Company issued 5,554,360 shares of Class A common stock for acquisitions (see Note 2).

Refer to Note 9, Stock-Based Compensation, for shares of common stock issued in relation to the Company's equity incentive plans.

**7. Goodwill and Intangible Assets, net**

All goodwill is allocated to the Foundry reporting unit and segment identified in Note 11. Changes in the carrying amount of goodwill consisted of the following (in thousands):

| | | |
|---|---|---|
| **Balance as of December 31, 2021** | $ | 21,312 |
| Goodwill acquired in FGen acquisition | | 11,001 |
| Impact of foreign currency translation | | (1,389) |
| Measurement period adjustment [(1)] | | 49 |
| **Balance as of June 30, 2022** | $ | 30,973 |

(1) Reflects the final determination of net-working capital adjustments as of the acquisition date related to the Dutch DNA acquisition.

Intangible assets, net consisted of the following (in thousands):

| | Weighted Average Amortization Period | Gross Carrying Amount [(1)] | Accumulated Amortization [(1)] | Net |
|---|---|---|---|---|
| **Balances as of June 30, 2022** | | | | |
| Acquired technology | 13.9 | $ 43,806 | $ (4,626) | $ 39,180 |
| **Balances as of December 31, 2021** | | | | |
| Acquired technology | 13.3 | $ 25,038 | $ (3,396) | $ 21,642 |

(1) Gross carrying amount and accumulated amortization include the impact of cumulative foreign currency translation adjustments.

Amortization expense was $0.8 million and $0.2 million for the three months ended June 30, 2022 and 2021, respectively, and $1.3 and $0.3 million for the six months ended June 30, 2022 and 2021, respectively. Future amortization expense will be approximately $1.7 million for the remainder of 2022 and $3.4 million for each of the years ending December 31, 2023 to 2026.

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## 8. Commitments and Contingencies

### *Lease Obligations*

In June 2022, the Company entered into an amendment to its corporate headquarters lease at 27 Drydock in Boston, Massachusetts, expanding the leased premises by approximately 18,170 square feet. The lease commencement date for the expansion premises is expected to be April 2023 and will expire in January 2036 co-terminus with the existing lease. Total base rent payments over the life of the lease are estimated to increase by approximately $23.1 million as a result of the amendment. The amendment contains periods of free rent, annual rent increases and aggregate tenant improvement allowances of up to $2.2 million.

### *Purchase Obligations*

On March 31, 2022, the Company entered into a four-year supply agreement with Twist Bioscience Corporation for the purchase of diverse products including synthetic DNA. The agreement is effective as of April 1, 2022 and obligates the Company to spend a minimum of $58.0 million over the four-year term with the following minimum annual commitments (each annual year is defined as April 1 to March 31): year 1 $10.0 million; year 2 $13.0 million; year 3 $16.0 million; and year 4 $19.0 million.

### *Legal Proceedings*

The Company is not currently party to any material legal proceedings. As of each reporting date, the Company evaluates whether or not a potential loss amount or range of loss amounts is reasonably estimable and probable of being incurred and whether such amounts meet the requirements to be accrued or disclosed pursuant to ASC 450, *Contingencies*. The Company expenses costs related to such legal proceedings as incurred.

## 9. Stock-Based Compensation

The following table summarizes stock-based compensation expense by financial statement line item in the Company's condensed consolidated statements of operations and comprehensive loss for the periods presented (in thousands):

| | Three Months Ended June 30, | | Six Months Ended June 30, | |
|---|---|---|---|---|
| | 2022 | 2021 | 2022 | 2021 |
| Research and development | $ 216,838 | $ 22 | $ 477,846 | $ 40 |
| General and administrative | 389,677 | 14,497 | 781,490 | 14,597 |
| Total | $ 606,515 | $ 14,519 | $ 1,259,336 | $ 14,637 |

The Company currently grants stock-based incentive awards pursuant to the 2021 Incentive Award Plan (the "2021 Plan"). As of June 30, 2022, there were 206,218,238 shares available for future issuance under the 2021 Plan.

### *Stock Options*

A summary of stock option activity for the six months ended June 30, 2022 is presented below:

| | Number of Shares | Weighted Average Exercise Price per Share | Weighted Average Remaining Contractual Term | Aggregate Intrinsic Value [1] |
|---|---|---|---|---|
| | | | (in years) | (in thousands) |
| Outstanding as of December 31, 2021 | 22,454,663 | $ 0.05 | | |
| Granted | 651,096 | $ 2.82 | | |
| Exercised | (3,872,794) | $ 0.02 | | |
| Outstanding as of June 30, 2022 | 19,232,965 | $ 0.15 | 2.09 | $ 43,731 |
| Exercisable as of June 30, 2022 | 18,530,087 | $ 0.03 | 1.80 | $ 43,731 |

(1) The aggregate intrinsic value is calculated as the difference between the Company's closing stock price on the last trading day of the quarter and the exercise prices, multiplied by the number of in-the-money stock options.

The aggregate intrinsic value of stock options exercised during the six months ended June 30, 2022 and 2021 was $9.1 million and $20.3 million, respectively. During the six months ended June 30, 2022, the Company granted options with an aggregate fair value of $1.2 million. No stock options were granted during the six months ended June 30, 2021. The weighted-average fair value of options granted during the six months ended June 30, 2022 was $1.84 per share and was calculated using the following key input assumptions in the Black-Scholes option-pricing model:

| | |
|---|---|
| Risk -free interest rate | 3.25 % |
| Expected dividend yield | 0 % |
| Expected volatility | 75 % |
| Expected term | 5.5 years |

As of June 30, 2022, there was $1.4 million of unrecognized compensation expense related to stock options to be recognized over a weighted-average period of 1.3 years.

***Restricted Stock and Restricted Stock Units***

In addition to a service-based vesting condition, the restricted stock units ("RSUs") granted under the 2014 Stock Incentive Plan (the "2014 Plan") were subject to a performance-based vesting condition that was met through a liquidity event in the form of either a change of control or an initial public offering ("the performance condition"). Prior to the Business Combination, no stock-based compensation expense had been recognized related to RSUs granted under the 2014 Plan as the performance condition was not probable of being met and the Business Combination did not meet the definition of a liquidity event as defined in the 2014 Plan. As a result of the Business Combination, in the fourth quarter of 2021, the board of directors modified the vesting terms of RSUs to allow all RSUs granted under the 2014 Plan to vest in full with respect to the performance condition on or before March 15, 2022 (the original service-based vesting condition is still applicable). As a result of these modifications, the performance condition for all RSUs granted under the 2014 Plan became probable of being met in the fourth quarter of 2021 and the awards were remeasured using the price of $13.59 per share as of the modification date. Subsequent to the modification, compensation expense for RSUs is recognized using an accelerated attribution method over the requisite service period for each employee award. The Company recognized $533.2 million and $1,115.0 million of compensation expense related to the modified RSUs in the three and six months ended June 30, 2022, respectively.

During the six months ended June 30, 2022, the Company cash settled approximately 3.2 million RSUs granted to non-employee directors for a total cash payment of $9.8 million.

A summary of the RSU and restricted stock award ("RSA") activity for the six months ended June 30, 2022 is presented below:

| | Restricted Stock Units | | Restricted Stock Awards | |
|---|---|---|---|---|
| | Number of Shares | Weighted Average Grant Date Fair Value [1] | Number of Shares | Weighted Average Grant Date Fair Value |
| Nonvested as of December 31, 2021 | 168,321,952 | $ 13.58 | 182,622 | $ 1.99 |
| Granted | 64,269,271 | $ 3.79 | | |
| Vested | (15,560,621) | $ 12.81 | (89,264) | $ 1.99 |
| Forfeited | (2,759,099) | $ 9.21 | | |
| Nonvested as of June 30, 2022 | 214,271,503 | $ 10.75 | 93,358 | $ 1.99 |

(1) The weighted average grant date fair value of awards granted prior to the modification date reflect the modification-date fair value and not the original grant date fair value.

The weighted average grant date fair value of RSUs granted during the six months ended June 30, 2022 and 2021 was $3.79 and $6.92, respectively. The weighted average grant date fair value of RSUs granted during the six months ended June 30, 2021 is no longer relevant for expense recognition due to the modification in the fourth quarter of 2021. No RSAs were granted during the six months ended June 30, 2022 and 2021.

The aggregate fair value of the RSUs that vested during the six months ended June 30, 2022 was $199.3 million. No RSUs vested during the six months ended June 30, 2021 as the performance condition was not probable of being met. The aggregate fair value of the RSAs that vested during the six months ended June 30, 2022 and 2021 was $0.2 million.

As of June 30, 2022, there was $1,008.4 million of unrecognized compensation expense related to RSUs to be recognized over a weighted-average period of 2.1 years and $0.2 million of unrecognized compensation expense related to RSAs to be recognized over a weighted-average period of 0.5 years.

***Earnouts***

In connection with the Business Combination, holders of Old Ginkgo rollover equity awards (i.e., RSUs, RSAs and options) granted under the Company's stock incentive plans (together the "Rollover Equity Awards") received earnout shares, which are divided into four equal tranches subject to forfeiture to the extent that the vesting conditions described below are not satisfied on or before the fifth anniversary of the closing of the Business Combination (the "Earnout Period"). The earnout shares in respect of the Rollover Equity Awards are subject to the same terms and conditions as the underlying Rollover Equity Awards (including with respect to vesting and termination-related provisions). Additionally, the earnout shares in respect of the Rollover Equity Awards are subject to a market condition that will be met when the trading price of the Company's common stock is greater than or equal to $12.50, $15.00, $17.50 and $20.00 for any 20 trading days within any period of 30 consecutive trading days during the Earnout Period (collectively, the "Earnout Targets"). The first Earnout Target of $12.50 per share was met on November 15, 2021.

The earnout shares related to Old Ginkgo RSUs ("Earnout RSUs") were subject to the same performance condition as the underlying RSUs. As a result of the modification of the RSUs described above, the performance condition became probable of being met in the fourth quarter of 2021 and compensation expense for Earnout RSUs began to be recognized in the same manner as the modified RSUs based on the modification-date fair value of the Earnouts RSUs. The Company recognized $60.8 million and $129.1 million of compensation expense related to the modified Earnout RSUs in the three and six months ended June 30, 2022, respectively.

A summary of activity during the six months ended June 30, 2022 for the Earnout RSUs and the earnout shares underlying Old Ginkgo RSAs ("Earnout RSAs") is presented below:

| | Number of Shares | Weighted Average Grant Date Fair Value |
|---|---|---|
| Nonvested as of December 31, 2021 | 27,863,125 | $ 12.87 |
| Vested | (433,160) | $ 13.33 |
| Forfeited | (169,894) | $ 12.92 |
| Nonvested as of June 30, 2022 | 27,260,071 | $ 12.86 |

The aggregate fair value of the Earnout RSUs and Earnout RSAs that vested during the six months ended June 30, 2022 was $5.8 million.

As of June 30, 2022, there was $89.0 million of unrecognized compensation expense related to earnout shares to be recognized over a weighted-average period of 1.3 years.

**10. Revenue Recognition**

***Disaggregation of Revenue***

The following table sets forth the percentage of Foundry revenues by industry based on total Foundry revenue:

| | Three Months Ended June 30, | | Six Months Ended June 30, | |
|---|---|---|---|---|
| | 2022 | 2021 | 2022 | 2021 |
| Consumer and technology | 61% | 24% | 52% | 19% |
| Pharma and biotech | 15% | 14% | 16% | 13% |
| Food and nutrition | 9% | 22% | 9% | 25% |
| Industrial and environment | 8% | 19% | 16% | 22% |
| Agriculture | 4% | 8% | 4% | 10% |
| Government and defense | 3% | 13% | 3% | 11% |
| Total Foundry revenue | 100% | 100% | 100% | 100% |

The Company's revenue is derived from customers located primarily in the United States. For the three months ended June 30, 2022 and 2021, the Company's revenue from customers within the United States comprised 82% and 89%, respectively, of total revenue. For the six months ended June 30, 2022 and 2021, the Company's revenue from customers within the United States comprised 91% and 90%, respectively, of total revenue.

***Contract Balances***

The Company recognizes a contract asset when the Company transfers goods or services to a customer before the customer pays consideration or before payment is due, excluding any amounts presented as accounts receivable. The Company had no contract asset balances as of June 30, 2022 and December 31, 2021.

Contract liabilities, or deferred revenue, primarily consist of payments received in advance of performance under the contract or when the Company has an unconditional right to consideration under the terms of the contract before it transfers goods or services to the customer. The Company's collaborative arrangements with its investees and related parties typically include upfront payments consisting of cash or non-cash consideration for future research and development services and non-cash consideration in the form of equity securities for licenses that will be transferred in the future. The Company records the upfront cash payments and fair value of the equity securities as deferred revenue.

The Company also invoices customers based on contractual billing schedules, which results in the recording of deferred revenue to the extent payment is received prior to the Company's performance of the related services. Contract liabilities are recognized as revenue as (or when) the Company performs under the contract.

During the six months ended June 30, 2022, the Company recognized $25.2 million of revenue that was included in the contract liabilities balance of $189.2 million as of December 31, 2021. During the six months ended June 30, 2021, the Company recognized $18.5 million of revenue that was included in the contract liabilities balance of $128.5 million as of December 31, 2020.

***Performance Obligations***

The aggregate amount of the transaction price that was allocated to performance obligations that have not yet been satisfied or are partially satisfied as of June 30, 2022 and December 31, 2021 was $53.8 million and $21.1 million, respectively. The Company has elected the practical expedient not to provide the remaining performance obligation disclosures related to contracts for which the Company recognizes revenue on a cost-plus basis in the amount to which it has the right to invoice and for contracts with a term of one year or less. As of June 30, 2022, of the performance obligations not yet satisfied or partially satisfied, nearly all is expected to be recognized as revenue during the years 2022 to 2026.

**11. Segment Information**

Prior to 2022, the Company operated as a single reportable segment. In the first quarter of 2022, the Company reorganized its operations into two operating and reportable segments: Foundry and Biosecurity. The reorganization reflects changes made to the Company's internal management structure and how the Company's chief operating decision makers ("CODMs") evaluate operating results and make decisions on how to allocate resources. All prior-period comparative segment information was recast to reflect the current reportable segments in accordance with ASC 280, *Segment Reporting*. The Company's reportable segments are described as follows:

- Foundry consists of research and development services performed under collaboration and license agreements relating to the Company's cell programming platform. The Company's cell programming platform includes two core assets: the Foundry, highly efficient biology lab facilities, enabled by investment in proprietary workflows, custom software, robotic automation, and data science and analytics, which is paired with the Company's Codebase, a collection of biological "parts" and a database of biological data used to program cells. The Foundry segment includes costs incurred for the development, operation, expansion and enhancement of the Foundry and Codebase. Foundry revenue is derived from Foundry usage fees and downstream value share in the form of milestone payments, royalties or equity interests.
- Biosecurity consists of COVID-19 testing products and services primarily provided to public health authorities. Biosecurity revenue is derived from sales of test kits and testing and reporting services fees.

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The reportable segments are the segments of the Company for which discrete financial information is available and for which segment results are regularly reviewed by the Company's CODMs, comprised of the Chief Executive Officer and the Chief Operating Officer, for purposes of allocating resources and assessing financial performance. The Company's CODMs evaluate the financial performance of the Company's segments based upon segment revenues and operating income. The Company's measure of segment operating income for management reporting purposes excludes the impact of stock-based compensation expense, depreciation and amortization and changes in fair value of certain contingent liabilities. The Company's CODMs do not evaluate operating segments using asset information. The accounting policies used in the preparation of reportable segments financial information are the same as those used in the preparation of the Company's consolidated financial statements.

The following table presents summary results of the Company's reportable segments for the periods indicated (in thousands):

| | Three Months Ended June 30, | | Six Months Ended June 30, | |
|---|---|---|---|---|
| | 2022 | 2021 | 2022 | 2021 |
| **Revenue:** | | | | |
| Foundry | $ 44,242 | $ 21,592 | $ 65,730 | $ 44,096 |
| Biosecurity | 100,376 | 22,044 | 247,293 | 43,637 |
| Total revenue | 144,618 | 43,636 | 313,023 | 87,733 |
| **Segment cost of revenue:** | | | | |
| Biosecurity | 63,911 | 17,110 | 149,343 | 40,810 |
| **Segment research and development expense:** | | | | |
| Foundry | 62,779 | 40,828 | 110,068 | 71,722 |
| Biosecurity | 443 | 4,374 | 960 | 27,777 |
| Total segment research and development expense | 63,222 | 45,202 | 111,028 | 99,499 |
| **Segment general and administrative expense:** | | | | |
| Foundry | 36,601 | 14,722 | 63,294 | 27,877 |
| Biosecurity | 12,409 | 5,084 | 25,644 | 9,619 |
| Total segment general and administrative expense | 49,010 | 19,806 | 88,938 | 37,496 |
| **Segment operating income (loss):** | | | | |
| Foundry | (55,138) | (33,958) | (107,632) | (55,503) |
| Biosecurity | 23,613 | (4,524) | 71,346 | (34,569) |
| Total segment operating income (loss) | (31,525) | (38,482) | (36,286) | (90,072) |
| **Operating expenses not allocated to segments:** | | | | |
| Stock-based compensation [(1)] | 607,270 | 14,519 | 1,266,305 | 14,637 |
| Depreciation and amortization | 9,326 | 6,944 | 18,532 | 12,351 |
| Change in fair value of contingent consideration liability | (1,213) | — | 300 | — |
| Loss from operations | $ (646,908) | $ (59,945) | $ (1,321,423) | $ (117,060) |

(1) Includes $0.8 million and $7.0 million in employer payroll taxes for the three and six months ended June 30, 2022, respectively. Employer payroll taxes for the three and six months ended June 30, 2021 were not material.

**12. Significant Collaboration Transactions**

The Company has entered into several collaboration, license and similar arrangements under which it provides research and development services to its Platform Ventures and Structured Partnerships. Other than as described below and in Note 5 related to the deconsolidation of Verb, during the three and six months ended June 30, 2022 and 2021, there were no material changes to the Company's arrangements with its Platform Ventures and Structured Partnerships. For a description of these arrangements and the related accounting conclusions, refer to Note 20 to the audited consolidated financial statements included in the Company's 2021 Annual Report on Form 10-K. Refer to Notes 4 and 5 for additional details on the Company's investments and Note 14 for a summary of transactions with related parties.

***BiomEdit, LLC***

In April 2022, the Company, along with one of its investors and third-party investors, including Elanco Animal Health Inc. ("Elanco"), launched BiomEdit, LLC ("BiomEdit"), a microbiome innovation company that intends to discover, design and develop novel probiotics, microbiome derived bioactives and engineered microbial medicines in the field of animal health. Concurrently with the launch, the Company entered into (i) an Intellectual Property Contribution Agreement ("BiomEdit IP Agreement") that granted BiomEdit a license to certain of the Company's intellectual property, (ii) a Technical Development Agreement ("BiomEdit TDA")

that establishes the terms under which the Company will provide technical research and development services, and (iii) a Common Unit Issuance Agreement ("BiomEdit CUIA") which compensates the Company for its intellectual property contribution. Contemporaneous with these agreements, BiomEdit entered into a Series A Preferred Unit Purchase Agreement under which it sold 6,662,500 Series A preferred units to one of the Company's investors and a third-party investor, for aggregate proceeds of approximately $32.5 million. BiomEdit also agreed to issue an additional 1,537,500 Series A preferred units to one or more purchasers reasonably acceptable to the existing holders of Series A preferred units provided that such subsequent sale occurs on or prior to December 31, 2022.

Under the BiomEdit IP Agreement, the Company licensed certain intellectual property to BiomEdit for use in the development or production of BiomEdit's products that the parties will subsequently agree to research and develop under technical development plans ("TDP"). The license rights provide BiomEdit with the ability to commercialize the specified products from the corresponding TDP under the BiomEdit TDA. In return for the license to the intellectual property, BiomEdit issued the Company 3,900,000 common units upon execution of the BiomEdit CUIA. In the event BiomEdit does not sell all of the additional Series A preferred units available for sale prior to December 31, 2022, up to 731,250 common units held by Ginkgo will be forfeited. Under the BiomEdit TDA, the parties jointly agree on TDPs, through equal representation on a joint steering committee, under which the Company will perform agreed-upon research and development services in return for consideration on a fixed fee or cost-plus basis for all services provided.

*Accounting Analysis*

The common unit investment in BiomEdit is considered an equity method investment as a result of the Company's ability to exercise significant influence over BiomEdit's financial and operating policies through its ownership of common units. The initial carrying value of the equity method investment in BiomEdit is the fair value of the nonforfeitable common units of $8.9 million received in exchange for the BiomEdit IP Agreement which, as discussed below, was recorded as other non-current liability at inception. The Company determined that the 731,250 common units held by Ginkgo subject to forfeiture are considered variable consideration that is fully constrained at contract inception until the contingencies related to the issuance of the additional shares are resolved. The fair value of BiomEdit's common units was determined at inception of the agreements using the option pricing method. The option pricing method used a back-solve methodology to infer the total equity value based on the pricing of the Series A preferred unit financing, which was contemporaneous with the BiomEdit IP Agreement.

The Series A preferred units issued by BiomEdit receive a liquidation preference prior to common units. As such, the Company concluded that this represents a substantive profit-sharing arrangement, and the Company is recognizing earnings and losses on the equity method investment using the HLBV method. The Company recorded a $4.6 million loss on its equity method investment in BiomEdit during the three months ended June 30, 2022. As of June 30, 2022, the carrying value of the equity method investment in BiomEdit is $4.3 million.

The relationship with BiomEdit is a vendor-customer relationship and is within the scope of ASC 606, as the provision of services and corresponding license rights are considered a part of the Company's ordinary activities. The common units issued to the Company represent non-cash consideration. While the BiomEdit TDA has been executed by the parties and provides the payment terms for future services, the BiomEdit TDA does not provide for any transfer of goods or services between the parties. However, the Company will provide licenses and services upon execution of the contemplated TDPs. Accordingly, the Company concluded that the BiomEdit TDA, in combination with the BiomEdit CUIA, met the definition of a contract under ASC 606. Each TDP executed under the BiomEdit TDA will be accounted for in accordance with ASC 606. As of June 30, 2022, the Company had not executed any TDPs with BiomEdit. Therefore, the fair value of the fixed non-cash consideration of $8.9 million is recorded in other non-current liabilities on the condensed consolidated balance sheet.

The Company's performance obligations under the BiomEdit TDA consist of four material rights to future technical research and development services and commercial licenses under individual TDPs that the Company expects to execute. The material rights represent an advance payment for the license rights, which will be granted upon the execution of future TDPs. As there is no additional payment for these license rights when future TDPs are executed, the Company has determined that there is a material right associated with each of the contemplated TDPs under the BiomEdit TDA. The Company has allocated approximately $2.2 million of the upfront non-cash consideration to each of the four material rights based on the estimated standalone selling price of the performance obligations.

Upon the execution of a TDP underlying a material right, the Company is obligated to provide technical research and development services under the TDP and a license to applicable patents and other intellectual property designed and developed under the TDP. The technical research and development services and license provided under a TDP are highly interdependent and interrelated with one

another. Without the Company's knowledge, expertise, and platform, there would not be a licensable strain or other commercializable product to transfer to BiomEdit. Further, BiomEdit has rights to intellectual property created as part of each TDP, irrespective of the result of the development. Therefore, each executed TDP underlying a material right consists of one combined performance obligation for the technical research and development services and license to be provided by the Company.

For each TDP underlying a material right, the transaction price consists of (i) either a fixed fee or, if a cost-plus arrangement, variable consideration for the most likely amount of estimated consideration to be received and (ii) non-cash consideration allocated to the material rights. As the services performed by the Company under a TDP create or enhance an asset that BiomEdit controls as the asset is created or enhanced, the Company satisfies the performance obligation and recognizes revenue over time. The Company uses an input method that compares total costs incurred relative to total estimated cost to complete to estimate progress under the contract. Any revisions to the estimated total budgeted costs to complete, and the resulting impact to revenue recognition, are reflected in the period of the change through a cumulative catch-up adjustment.

***Arcaea, LLC (FKA Kalo Ingredients, LLC)***

*Summary of Arrangement*

Arcaea was formed in March 2021 to focus on the application of synthetic biology in the personal care products industry. In March 2021, the Company entered into (i) an Intellectual Property Contribution Agreement ("Arcaea IP Agreement") that granted Arcaea a license to certain of the Company's intellectual property, (ii) a Technical Development Agreement ("Arcaea TDA") that establishes the terms under which the Company will provide technical research and development services, and (iii) a Common Unit Issuance Agreement ("Arcaea CUIA") which compensates the Company for its intellectual property contribution. Contemporaneous with these transactions, Arcaea entered into a Series A Preferred Unit Purchase Agreement under which it sold 1,755,000 Series A preferred units to certain of the Company's investors, for aggregate proceeds of approximately $19.5 million. The Series A Preferred Unit Purchase Agreement provided for the sale and issuance of up to an additional 7,245,000 Series A preferred units subsequent to the initial closing. In subsequent closings during 2021, Arcaea issued an additional 5,139,900 Series A preferred units to existing and third-party investors for aggregate proceeds of approximately $57.1 million and closed its Series A preferred unit financing. As a result, the Company received an additional 5,229,900 common units in Arcaea for total consideration of $35.5 million.

Under the Arcaea IP Agreement, the Company licensed certain intellectual property to Arcaea for use in the development or the production of Arcaea's products that the parties will subsequently agree to research and develop under technical development plans ("TDP"). The license rights provide Arcaea with the ability to commercialize the specified products from the corresponding TDP under the Arcaea TDA. In return for the license to the intellectual property, Arcaea has agreed to issue the Company up to 9,000,000 common units in accordance with certain terms and conditions set forth within the agreements. The Company received 1,755,000 common units upon execution of the Arcaea CUIA and an additional 5,229,900 common units upon closing of the Series A preferred unit financing in 2021 (as discussed above). No additional common units are expected to be issued to the Company.

Under the Arcaea TDA, the parties jointly agree on TDPs, through equal representation on a joint steering committee, under which the Company will perform agreed-upon research and development services in return for consideration on a cost-plus basis for all services provided.

*Accounting Analysis*

The common unit investment in Arcaea is considered an equity method investment as a result of the Company's ability to exercise significant influence over Arcaea's financial and operating policies through its ownership of common units. The initial carrying value of the equity method investment in Arcaea is the fair value of the common units of $11.9 million received in exchange for the Arcaea IP Agreement which, as discussed below, was accounted for as deferred revenue at inception. The fair value of Arcaea's common units was determined at inception of the agreements using the option pricing method. The option pricing method used a back-solve methodology to infer the total equity value based on the pricing of the Series A preferred unit financing, which was contemporaneous with the Arcaea IP Agreement. Further, the Company determined the rights to up to an additional 7,245,000 common units did not meet the definition of a freestanding financial instrument and are not representative of a derivative. The right to the additional common units is considered variable consideration that is fully constrained at inception and until the contingencies related to the issuance of the additional shares are resolved.

The Series A preferred units issued by Arcaea receive a liquidation preference prior to common units. As such, the Company concluded that this represents a substantive profit-sharing arrangement, and the Company is recognizing earnings and losses on the equity method investment using the HLBV method. The Company recorded a $11.9 million loss on its equity method investment in

Arcaea during the first quarter of 2021. The loss allocated to the Company primarily relates to Arcaea's accounting for the non-cash consideration related to the Arcaea IP Agreement as in-process research and development, which resulted in the full value of the Company's intellectual property contribution being expensed in the first quarter of 2021, at which time the carrying value of the equity method investment in Arcaea had been reduced to zero. There is no commitment for the Company to provide further financial support to Arcaea, and therefore the carrying value of the equity method investment will not be reduced below zero.

The relationship with Arcaea is a vendor-customer relationship and is within the scope of ASC 606, as the provision of services and corresponding license rights are considered a part of the Company's ordinary activities. The common units issued to the Company represent non-cash consideration. While the Arcaea TDA has been executed by the parties and provides the payment terms for future services, the Arcaea TDA does not provide for any transfer of goods or services between the parties. However, the Company will provide licenses and services upon execution of the contemplated TDPs. Accordingly, the Company concluded that the Arcaea TDA, in combination with the Arcaea CUIA, met the definition of a contract under ASC 606. Each TDP executed under the Arcaea TDA will be accounted for in accordance with ASC 606.

The Company's performance obligations under the contract consist of ten material rights to future technical research and development services and commercial licenses under individual TDPs that the Company expects to execute under the Arcaea TDA. The material rights represent an advance payment for the license rights, which will be granted upon the execution of future TDPs. As there is no additional payment for these license rights when future TDPs are executed, the Company has determined that there is a material right associated with each of the contemplated additional TDPs under the Arcaea TDA. The Company has allocated approximately $1.2 million of the upfront non-cash consideration to each of the ten material rights based on the estimated standalone selling price of the performance obligations. During 2021, the additional non-cash consideration received of $35.5 million, which is representative of previously constrained variable consideration, was allocated to each of the ten performance obligations under the arrangement with Arcaea of $3.6 million each consistent with the initial relative selling price allocation. Unexercised material rights are recorded as non-current deferred revenue until such time as the parties execute a TDP conveying a commercial license.

Upon the execution of a TDP underlying a material right, the Company is obligated to provide technical research and development services under the TDP and a license to applicable patents and other intellectual property designed and developed under the TDP. The technical research and development services and license provided under a TDP are highly interdependent and interrelated with one another. Without the Company's knowledge, expertise, and platform, there would not be a licensable strain or other commercializable product to transfer to Arcaea. Further, Arcaea has rights to intellectual property created as part of each TDP, irrespective of the result of the development. Therefore, each executed TDP underlying a material right consists of one combined performance obligation for the technical research and development services and license to be provided by the Company.

For each TDP underlying a material right, the transaction price consists of variable consideration for the most likely amount of estimated consideration to be received under the cost-plus arrangement and non-cash consideration allocated to the material rights. As the services performed by the Company under a TDP create or enhance an asset that Arcaea controls as the asset is created or enhanced, the Company satisfies the performance obligation and recognizes revenue over time. The Company uses an input method that compares total costs incurred relative to total estimated cost to complete to estimate progress under the contract. Any revisions to the estimated total budgeted costs to complete, and the resulting impact to revenue recognition, are reflected in the period of the change through a cumulative catch-up adjustment.

As of June 30, 2022 and December 31, 2021, the Company had a deferred revenue balance of $43.8 million and $47.4 million, respectively, with Arcaea. During the three months ended June 30, 2022 and 2021, the Company recognized revenue of $2.4 million and $1.2 million, respectively, from services provided to Arcaea. During the six months ended June 30, 2022 and 2021 the Company recognized revenue of $6.3 million and $1.2 million from services provided to Arcaea.

***Allonnia, LLC***

*Summary of Arrangement*

In December 2019, the Company entered into (i) an Intellectual Property Contribution Agreement ("Allonnia IP Agreement") that granted Allonnia a license to certain of the Company's intellectual property, (ii) a Technical Development Agreement ("Allonnia TDA") that establishes the terms under which the Company is providing technical development services, and (iii) a Common Unit Issuance Agreement, which provides for the issuance of common units of Allonnia to the Company in exchange for the license rights granted under the Allonnia IP Agreement. Contemporaneous with these agreements, Allonnia entered into a Series A Preferred Unit Purchase Agreement under which Allonnia sold 2,970,000 Series A preferred units to certain of the Company's investors, as well as a third-party investor, for aggregate proceeds of approximately $33.0 million. Allonnia also agreed to issue an additional 630,000 Series

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A preferred units to a strategic partner as compensation for the delivery of future services to Allonnia. The Series A Preferred Unit Purchase Agreement also provided for the sale and issuance of up to an additional 5,400,000 Series A preferred units subsequent to the initial closing. In 2020, Allonnia issued an additional 1,844,911 Series A preferred units, 1,664,911 of which were sold for aggregate proceeds of $18.5 million and 180,000 of which were issued in exchange for the rights to certain intellectual property which will vest based on the achievement of milestones associated with the development of the intellectual property received. In 2021, Allonnia issued an additional 22,500 Series A Preferred Units for aggregate proceeds of $0.2 million and closed their Series A Preferred Unit financing.

Under the Allonnia IP Agreement, the Company licensed intellectual property to Allonnia for use in the development or the production of its products that the parties will subsequently agree to develop under TDPs. The license rights provide Allonnia with the ability to commercialize the specified products from the corresponding strain or enzyme, which can only be developed by the Company under the Allonnia TDA. The Company received 3,600,000 common units as consideration for the license upon execution of the Allonnia IP Agreement and an additional 1,867,411 common units in 2021 in connection with the closing of the Series A preferred unit financing.

Under the Allonnia TDA, the parties jointly agree, through equal representation on a joint steering committee, on TDPs for specific strains and enzymes, in which the Company will perform agreed upon development services in return for consideration on a cost-plus basis for all services provided.

*Accounting Analysis*

The common unit investment in Allonnia is considered an equity method investment as a result of the Company’s ability to exercise significant influence over Allonnia's financial and operating policies through its ownership of common units. The initial carrying value of the equity method investment in Allonnia is the fair value of the common units of $24.5 million received in exchange for the Allonnia IP Agreement which, as discussed below, was accounted for as deferred revenue at inception. The fair value of Allonnia’s common units was determined at inception of the agreements using the option pricing method. The option pricing method used a back-solve methodology to infer the total equity value based on the pricing of the Series A Preferred Unit financing, which was contemporaneous with the Allonnia IP Agreement. Further, the Company determined the rights to up to an additional 5,400,000 common units did not meet the definition of a freestanding financial instrument and are not representative of a derivative. The right to the additional common units is considered variable consideration that is fully constrained at inception and until the contingencies related to the issuance of the additional shares are resolved. This contingency was resolved in the first quarter of 2021 when the Company received an additional 1,867,411 common units in connection with the closing of the Series A preferred unit financing.

The Series A Preferred Units issued by Allonnia receive a liquidation preference prior to common units. As such, the Company concluded that this represents a substantive profit-sharing arrangement and the Company is recognizing earnings and losses on the equity method investment using the HLBV method. The Company recorded a loss on equity method investment of $24.5 million in 2019 and $12.7 million in the first quarter of 2021 as a result of the application of the HLBV method. The loss allocated to the Company primarily relates to Allonnia’s accounting for the non-cash consideration related to the Allonnia IP Agreement as in-process research and development, which resulted in the full value of the Company’s intellectual property contribution being expensed in the year that the shares were issued. As of June 30, 2022 and December 31, 2021, the carrying value of the equity method investment in Allonnia is zero. There is no commitment for the Company to provide further financial support to Allonnia and therefore the carrying value of the equity method investment will not be reduced below zero.

The relationship with Allonnia is a vendor-customer relationship and is within the scope of ASC 606 as the provision of services and corresponding license rights are considered a part of the Company’s ordinary activities and the common units represent non-cash consideration. While the Allonnia TDA has been executed by the parties and provides the payment terms for future services, the Allonnia TDA does not provide for any transfer of goods or services between the parties. However, the Company will provide licenses and services upon execution of the contemplated TDPs. Accordingly, the Company concluded that the Allonnia TDA met the definition of a contract under ASC 606 and each TDP executed under the Allonnia TDA will be accounted for in accordance with ASC 606.

The Company’s performance obligations under the contract consist of ten material rights related to the estimated number of TDPs the parties expect to execute under the Allonnia TDA. The material rights represent an advance payment for the license rights which will be granted upon the execution of each TDP. As there is no additional payment for these license rights upon execution of a TDP, the Company has determined that there is a material right associated with each of the contemplated future TDPs. The Company has allocated $2.5 million of the upfront non-cash consideration to each of the ten performance obligations under the contract based on the

estimated standalone selling price of the performance obligations. Unexercised material rights are recorded as non-current deferred revenue until such time as the parties execute a TDP.

Upon the execution of each TDP, the Company is obligated to provide development services under the TDP and a license to applicable patents and other intellectual property to the ingredient developed under the plan. The license and research and development services under a TDP are highly interdependent and interrelated with one another. Without the Company's knowledge, expertise, and platform, there would not be a licensable strain or other commercializable product to transfer to Allonnia. Further, Allonnia has rights to all development intellectual property created as part of each TDP, irrespective of the result of the development. Therefore, each executed TDP consists of one combined performance obligation for the license and research and development services to be performed by the Company.

For each TDP, the transaction price consists of variable consideration for the most likely amount of estimated consideration to be received under the cost-plus arrangement and the $2.5 million allocation of the fixed non-cash consideration. As the services performed by the Company create or enhance an asset that Allonnia controls as the asset is created or enhanced, the Company satisfies the performance obligation and recognizes revenue over time. The Company uses an input method that compares total costs incurred relative to total estimated cost to complete to estimate progress under the contract. Any revisions to the estimated total budgeted costs to complete, and the resulting impact to revenue recognition, are reflected in the period of the change through a cumulative catch-up adjustment. In the first quarter of 2021, the additional non-cash consideration of $12.7 million, which represents previously constrained variable consideration, was allocated to all of the performance obligations consistent with the initial relative selling price allocation and a cumulative catch up was recognized for the TDPs in process.

As of June 30, 2022 and December 31, 2021, the Company had a deferred revenue balance of $35.9 million and $38.0 million, respectively, with Allonnia. During the three months ended June 30, 2022 and 2021, the Company recognized revenue of $0.4 million and $1.1 million, respectively, from services provided to Allonnia. During the six months ended June 30, 2022 and 2021, the Company recognized revenue of $3.7 million and $3.4 million, respectively, from services provided to Allonnia.

**13. Net Loss per Share**

As a result of the Business Combination, the Company has retroactively restated the weighted average shares outstanding for the three and six months ended June 30, 2021 to give effect to the Exchange Ratio.

The Company computes net loss per share using the two-class method required for participating securities. Basic and diluted loss per share was the same for each period presented as the inclusion of all potential common stock equivalents would have been antidilutive. The earnings per share amounts are the same for the different classes of common stock because the holders of each class are legally entitled to equal per share distributions whether through dividends or liquidation.

The following potential common shares, presented based on amounts outstanding at each period end, were excluded from the calculation of diluted net loss per share attributable to Ginkgo Bioworks Holdings, Inc. common stockholders for the periods presented because including them would have been anti-dilutive:

| | As of June 30, | |
|---|---|---|
| | 2022 | 2021 |
| Warrants to purchase Class A common stock | 51,824,895 | 657,138 |
| Outstanding stock options | 21,453,295 | 29,375,092 |
| Unvested RSUs | 214,271,503 | 151,855,752 |
| Unvested RSAs | 93,358 | 300,912 |
| Earnout shares [(1)] | 160,520,784 | — |
| | 448,163,835 | 182,188,894 |

(1) Represents earnout shares for which the service-based vesting conditions and/or market conditions have not been met.

**14. Related Parties**

The Company's significant transactions with its related parties are primarily comprised of revenue generating activities under collaboration and license agreements.

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Significant related party transactions included in the condensed consolidated balance sheet are summarized below (in thousands):

| | As of June 30, 2022 | As of December 31, 2021 |
|---|---|---|
| **Accounts receivable:** | | |
| Joyn | $ 2 | $ 5 |
| Motif | 235 | 3,020 |
| Allonnia | 499 | 849 |
| Arcaea | 2,050 | 724 |
| Verb | 467 | — |
| | $ 3,253 | $ 4,598 |
| **Deferred revenue, current and non-current:** | | |
| Joyn | $ 2,478 | $ 4,608 |
| Motif | 51,933 | 52,171 |
| Genomatica | 11,349 | 17,111 |
| Allonnia | 35,876 | 38,016 |
| Arcaea | 43,831 | 47,356 |
| Other equity investees | 628 | 1,559 |
| | $ 146,095 | $ 160,821 |

Significant related party transactions included in the condensed consolidated statements of operations and comprehensive loss are summarized below (in thousands):

| | Three Months Ended June 30, | | Six Months Ended June 30, | |
|---|---|---|---|---|
| | 2022 | 2021 | 2022 | 2021 |
| **Foundry revenue:** | | | | |
| Joyn | $ 947 | $ 1,154 | $ 2,129 | $ 2,752 |
| Motif | 507 | 4,612 | 1,852 | 10,104 |
| Genomatica | 2,405 | 2,903 | 5,763 | 6,201 |
| Allonnia | 439 | 1,098 | 3,660 | 3,364 |
| Arcaea | 2,363 | 1,191 | 6,287 | 1,191 |
| Verb | 639 | — | 938 | — |
| Other equity investees | 673 | 4 | 872 | 10 |
| | $ 7,973 | $ 10,962 | $ 21,501 | $ 23,622 |

In April 2022, the Company provided convertible note financing to its equity method investee, Joyn, in the principal amount of $3.0 million for general working capital purposes. In June 2022, the Company agreed to invest up to an additional $7.0 million in Joyn pursuant to one or more additional notes on substantially the same terms as the April note. As of June 30, 2022, the Company has funded $3.5 million of its $7.0 million commitment to Joyn. Each convertible promissory note is unsecured, matures on March 31, 2023 and bears interest at 4.5% per annum. The notes are automatically convertible into equity at a 20% discount upon a qualifying equity financing. Additionally, the Company can elect to convert the notes into equity at a 20% discount upon a non-qualifying equity financing, at maturity, or elect to be repaid in cash upon a change in control or initial public offering. The Company evaluated the notes' conversion and redemption features for embedded derivatives and determined that there is no embedded derivative to record. The Company also determined that the convertible notes are not in-substance common stock and therefore are not considered an additional investment in the equity method investee. The convertible notes are accounted for as notes receivable, measured at amortized cost and evaluated for impairment at each reporting date. The carrying value of the notes receivable was $6.5 million as of June 30, 2022 and is included in prepaid expenses and other current assets on the condensed consolidated balance sheet.

Refer to Notes 4 and 12 for additional details on the Company's investments and equity method investments held in its related parties.

## 15. Subsequent Events

### *Agreement and Plan of Merger*

On July 24, 2022, Ginkgo entered into an Agreement and Plan of Merger (the "Merger Agreement") with Zymergen Inc., a Delaware public benefit corporation ("Zymergen"), and Pepper Merger Subsidiary Inc., a Delaware corporation and an indirect wholly owned

subsidiary of Ginkgo ("Merger Sub"), providing for the merger of Merger Sub with and into Zymergen (the "Merger"), with Zymergen surviving the Merger as wholly owned subsidiary of Ginkgo.

Under the Merger Agreement, at the effective time of the Merger (the "Effective Time"), each share of common stock, par value $0.001 per share, of Zymergen that is issued and outstanding as of immediately prior to the Effective Time (other than certain excluded shares specified in the Merger Agreement) will be automatically cancelled, extinguished and converted into the right to receive 0.9179 of a share of Ginkgo's Class A common stock (the "Merger Consideration"), and cash in lieu of any fractional shares of Ginkgo's Class A common stock, without interest. It is expected that Zymergen stockholders will own approximately 5.25% of the pro forma combined company following the transaction.

The Merger Agreement has been unanimously approved by the boards of directors of both companies. The transaction is expected to be completed by the first quarter of 2023 and is subject to certain closing conditions, including, among others, (i) approval of the Merger by the stockholders of Zymergen, (ii) the expiration or termination of the waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, and, if a merger control inquiry is initiated or commenced by a governmental authority outside of the United States, approval in that jurisdiction, (iii) the absence of any law or order restraining, enjoining or otherwise prohibiting the Merger and (iv) no material adverse effect has occurred on the other party since the signing of the Merger Agreement that is continuing.

Ginkgo's obligation to consummate the Merger is also subject to the satisfaction or waiver of the condition that (i) Zymergen has not incurred or otherwise become liable for additional costs, expenses or liabilities to Zymergen or its subsidiaries with respect to its leased real property not contemplated under a specified schedule outlining its real estate plans and (ii) certain specified litigation matters are not reasonably expected to result in future money damages payable by Zymergen or its subsidiaries (in excess of any applicable insurance deductible and coverage amounts), where, the aggregate of clauses (i) and (ii), exceed $25.0 million.

The Merger Agreement contains certain termination rights for each of Ginkgo and Zymergen, and further provides that, upon termination of the Merger Agreement under specified circumstances, Ginkgo may be required to pay Zymergen a termination fee of $10.0 million and Zymergen may be required to pay Ginkgo a termination fee of $10.0 million.

***Asset Purchase Agreement***

On July 24, 2022, Ginkgo Acquisition Sub, Inc., a Delaware corporation ("Ginkgo Acquisition") and an indirect, wholly-owned subsidiary of the Company entered into an Asset Purchase Agreement (the "APA"), pursuant to which it will acquire certain assets and liabilities of Bayer CropScience LP ("Bayer"), a Delaware limited partnership, which are expected to expand the Company's platform capabilities in agricultural biologicals. Under the APA, the Company will acquire Bayer's 175,000-square-foot West Sacramento Biologics Research & Development site, team, and internal discovery and lead optimization platform as well as integrate the research and development platform assets from Joyn. As consideration for the assets acquired in the transaction and subject to the terms and conditions of the APA, the Company has agreed to pay approximately $83.0 million, which it may satisfy, at its discretion, in shares of Ginkgo Class A common stock and/or cash. The transaction is expected to close in the fourth quarter of 2022, subject to regulatory approvals and the satisfaction of customary closing conditions.

**Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations.**

*The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the unaudited condensed consolidated financial statements and related notes thereto included elsewhere in this Quarterly Report on Form 10-Q. This discussion contains forward-looking statements that reflect our plans, estimates and beliefs that involve risks and uncertainties. Actual results may differ materially from those anticipated in these forward-looking statements as a result of many factors, including those discussed in Item 1A "Risk Factors" and "Cautionary Note Regarding Forward-Looking Statements" elsewhere in this Quarterly Report on Form 10-Q.*

**Overview**

Our mission is to make biology easier to engineer.

Ginkgo is building the industry-standard horizontal platform for cell programming. We use our platform to program cells on behalf of our customers. These "cell programs" are designed to enable biological production of products as diverse as novel therapeutics, key food ingredients, and chemicals currently derived from petroleum. We have worked on cell programs in end markets as diverse as specialty chemicals, agriculture, food, consumer products, and pharmaceuticals. Biology did not evolve by end market. All of these applications run on cells which have a common code—DNA—and a common programming platform can enable all of them. Because of this shared platform, we are able to drive scale and learning efficiencies while maintaining flexibility and diversity in our program areas. Ultimately, customers come to us because they believe we maximize the probability of successfully developing their products.

The foundation of our platform includes two core assets that execute a wide variety of cell programs for customers according to their specifications: our Foundry and our Codebase.

- Our Foundry wraps proprietary software and automation around core cell engineering workflows— designing DNA, writing DNA, inserting that DNA into cells, testing to measure cell performance—and leverages data analytics and data science to inform each iteration of design. The software, automation and data analysis pipelines we leverage in the Foundry drive a strong scale economic: we have scaled the output of the Foundry by roughly 3X annually since we started measuring it around 2015 (with the exception of 2020 during the COVID-19 pandemic) and over that time, the average cost per unit operation has fallen by approximately 50% every year. We expect to be able to pass some of these savings along to our customers, allowing them to take more "shots on goal" with their programs.
- Our Codebase includes both our physical (engineered cells and genetic parts) and digital (genetic sequences and performance data) biological assets, and accumulates as we execute more cell programs on the platform. Every program, whether successful or not, generates valuable Codebase and helps inform future experimental designs and provides reusable genetic parts, making our cell program designs more efficient.

As the platform scales, we have observed a virtuous cycle between our Foundry, our Codebase, and the value we deliver to customers. We believe this virtuous cycle sustains Ginkgo's growth and differentiated value proposition.

- Foundry: As we take on more work in the Foundry, we benefit from scale economics, which over time may lead to lower program costs. We expect that these lower costs, in turn, will drive additional demand for our cell programming capabilities.
- Codebase: Cell programs also generate Codebase, which can drive better experimental direction and improve the odds of technical success, further increasing our customer value proposition, which we believe will result in additional demand.

Put simply: we believe that as the platform improves with scale, it drives more scale, which drives further platform improvements, and so on. We believe this positive feedback loop has the potential to drive compounding value creation in the future as every new program we add contributes to both near-term revenues and has the potential to add significant downstream economics.

Our business model mirrors the structure of our platform and we are compensated in two primary ways. First, we charge usage fees for Foundry services, in much the same way that cloud computing companies charge usage fees for utilization of computing capacity or contract research organizations charge for services. Additionally, we negotiate a value share with our customers (typically in the form of royalties, milestones, and/or equity interests) in order to align our economics with the

success of the programs enabled by our platform. As we add new programs, our portfolio of programs with this "downstream" value potential grows.

With a mission to make biology easier to engineer, we have always recognized the imperative to invest in biosecurity as a key component of our platform. We care how our platform is used, and biosecurity is a necessary complement to synthetic biology that helps us ensure our cell programming work is conducted and deployed responsibly. The near-term growth of the biosecurity sector is highly dependent on domestic and international government initiatives and investment and Ginkgo has been supporting and engaging with domestic and international organizations and governments to help shape the understanding of a robust biosecurity program.

In the second quarter of 2020, in response to the COVID-19 pandemic, we launched our commercial offering of COVID-19 testing products and services for businesses, academic institutions, and other organizations in which we generate product and service revenue. Beginning in the first quarter of 2021, we launched our pooled testing initiative which focuses on providing end-to-end COVID-19 testing and reporting services to public health authorities. We are currently offering pooled testing and reporting services for K-12 schools across the United States, at airports through our partnership with XpresCheck and the CDC, as well as through other congregate settings such as our partnership with Eurofins. In the future, we believe that testing services may have a value proposition internationally and in other use cases including wastewater monitoring and air monitoring.

Prior to 2022, we operated as a single reportable segment. In the first quarter of 2022, we reorganized our operations into two operating and reportable segments: Foundry and Biosecurity. The reorganization reflects changes made to our internal management structure and how our chief operating decision makers evaluate operating results and make decisions on how to allocate resources. Our two operating and reportable segments are described below:

- Foundry consists of research and development services performed under collaboration and license agreements relating to our cell programming platform. Our cell programming platform includes two core assets: the Foundry, highly efficient biology lab facilities, enabled by investment in proprietary workflows, custom software, robotic automation, and data science and analytics, which is paired with our Codebase, a collection of biological "parts" and a database of biological data used to program cells. The Foundry segment includes costs incurred for the development, operation, expansion and enhancement of the Foundry and Codebase. Foundry revenue is derived from Foundry usage fees and downstream value share in the form of milestone payments, royalties or equity interests.
- Biosecurity consists of COVID-19 testing products and services primarily provided to public health authorities. Biosecurity revenue is derived from sales of test kits and testing and reporting services fees.

**Generating Economic Value Through Cell Programs**

Our cell programming platform is a key enabling technology and source of intellectual property for our customers' products. We earn Foundry revenue for our research and development ("R&D") services as well as through a share of the value of products created using our platform.

We structure Foundry revenue to include some combination of the following:

- Foundry usage fees in the form of:
  - upfront payments upon consummation of an agreement or other fixed payments that are generally recognized over our period of performance;
  - reimbursement for costs incurred for R&D services;
  - milestone payments upon the achievement of specified technical criteria;

plus,

- downstream value share payments in the form of:
  - milestone payments upon the achievement of specified commercial criteria;
  - royalties on sales of products from or comprising engineered organisms;
  - royalties related to cost of goods sold reductions realized by our customers;

or,

- downstream value share in the form of equity interests in our customer.
    - downstream value share in the form of equity interest appreciation is not recognized as revenue but is expected to contribute to future cash flows upon liquidation, the amount and timing of which is inherently unpredictable.

Downstream value share arrangements which involve equity interests generally fall into two categories: Platform Ventures and Structured Partnerships.

***Platform Ventures***

Platform Ventures allow Ginkgo to partner with leading multinationals and financial investors to form new ventures in identified market segments with potential to benefit from synthetic biology. In exchange for an equity position in the venture, we contribute license rights to our proprietary cell programming technology and intellectual property, while our partners contribute relevant industry expertise, other resources and venture funding. We also provide R&D services for which we receive cash payments for our costs incurred, plus a margin. Platform Ventures include:

*Joyn Bio, LLC*

Founded in 2017, Joyn Bio, LLC ("Joyn") was formed to focus on engineered microbes for use in agricultural applications. Along with certain of our investors, we formed Cooksonia, LLC ("Cooksonia") which holds a 50% equity interest in Joyn. Bayer CropScience LP ("Bayer") contributed cash of $80 million plus intellectual property and holds the remaining 50% equity interest in Joyn. We provided license rights to our intellectual property and platform at inception in return for our equity interest in Joyn, which was recorded at an initial fair value of $97.9 million. The carrying value of our equity method investment in Joyn was $1.3 million as of June 30, 2022. Ginkgo also entered into a Foundry Services Agreement ("Joyn FSA") with Joyn under which we provide R&D services. Joyn paid us a total of $35.0 million in non-refundable prepayments for services to be provided under the Joyn FSA. In July 2022, we entered into an APA with Bayer to integrate certain R&D platform assets of Joyn. Refer to the section entitled "Pending Acquisition" below for additional discussion.

*Motif FoodWorks, Inc.*

Founded in 2018, Motif FoodWorks, Inc. ("Motif") was formed to focus on the application of synthetic biology to reduce the reliance on animal products in the food industry. We entered into an intellectual property contribution agreement that granted Motif rights to our intellectual property, subject to mutually agreed upon technical development plans. In return for our contribution of intellectual property and access to our platform, we received shares of common stock in Motif. The initial fair value of our common stock investment in Motif was $65.1 million which has subsequently been reduced to a carrying value of zero as a result of the allocation of losses under our accounting for equity method investments. Motif was capitalized through Series A preferred stock financings that raised approximately $119 million in gross proceeds from an investor group which included certain of our investors, Louis Dreyfus Company and Fonterra Co-operative Group Limited. In June 2021, Motif raised an additional $226 million through a Series B preferred stock financing. Ginkgo also entered into a Technical Development Agreement with Motif under which we provide R&D services in return for cash consideration on a cost-plus fixed margin basis. Motif launched its first product, HEMAMI, in 2021.

*Allonnia, LLC*

Founded in 2019, Allonnia, LLC ("Allonnia") was formed to focus on the application of synthetic biology in the waste bioremediation and biorecovery industries. We entered into an intellectual property contribution agreement that granted Allonnia rights to our intellectual property, subject to mutually agreed upon technical development plans. In return for our contribution of intellectual property and access to our platform, we received common units in Allonnia with a right to additional units subject to additional closings of Allonnia's Series A preferred units. The initial fair value of our common units received in Allonnia was $24.5 million, subsequently increased by $12.7 million in 2021, all of which has been reduced to a carrying value of zero as a result of the allocation of losses under our accounting for equity method investments. Allonnia was capitalized through Series A preferred unit financings that raised approximately $52 million in gross proceeds from an investor group which included certain of our investors and Battelle Memorial Institute. Ginkgo also entered into a Technical Development Agreement with Allonnia under which we provide R&D services in return for cash consideration on a cost-plus fixed margin basis.

*Arcaea, LLC (FKA Kalo Ingredients, LLC)*

Founded in 2021, Arcaea, LLC ("Arcaea") was formed to focus on the application of synthetic biology in the beauty and personal care products industry. In March 2021, we entered into an intellectual property contribution agreement that granted Arcaea rights to our intellectual property, subject to mutually agreed upon technical development plans. In return for our contribution of intellectual property and access to our platform, we received common units in Arcaea with a right to additional units subject to additional closings of Arcaea's Series A preferred units. The initial fair value of our common units received in Arcaea was $11.9 million which has subsequently been reduced to a carrying value of zero as a result of the allocation of losses under our accounting for equity method investments. Arcaea was capitalized through a Series A preferred unit financing that raised approximately $77 million in gross proceeds from an investor group which included certain of our investors, CHANEL and Givaudan. Upon the closing of the Series A preferred unit financing in July 2021, we received an additional 5,229,900 common units in Arcaea. The fair value of our Arcaea common units received in July 2021 of $35.5 million has subsequently been reduced to a carrying value of zero as a result of the allocation of losses under our accounting for equity method investments. Ginkgo also entered into a Technical Development Agreement with Arcaea under which we provide R&D services in return for cash consideration on a cost-plus fixed margin basis.

*Ayana Bio, LLC*

Founded in September 2021, Ayana Bio, LLC ("Ayana") was formed to identify and design new bioactive compounds for use as complementary medicine to support human health and wellness. Ayana was capitalized through a Series A funding that raised $30 million in gross proceeds from an investor group comprising certain of our investors. We hold an interest in 9,000,000 common units (representing 100% of common units at inception) of Ayana and have also provided Ayana with certain licenses to our intellectual property for use in the development or production of products that we have agreed to research and develop under technical development plans. We concluded that we hold a variable interest in and are the primary beneficiary of Ayana, and as a result, we have consolidated the financial statements of Ayana into our consolidated financial statements.

*Verb Biotics, LLC*

Founded in September 2021, Verb Biotics, LLC ("Verb") was formed to identify and design new strains of probiotic bacteria with advanced properties for human nutrition, health, and wellness. Verb was capitalized through a Series A funding that raised $30 million in gross proceeds from an investor group comprising certain of our investors. We hold an interest in 9,000,000 common units (representing 100% of common units at inception) of Verb and have also provided Verb with certain licenses to our intellectual property for use in the development or production of products that we have agreed to research and develop under technical development plans. Prior to the first quarter of 2022, we consolidated Verb as a variable interest entity. In the first quarter of 2022, we deconsolidated Verb and began accounting for our retained investment in Verb as an equity method investment. The initial carrying value of the equity method investment in Verb was equal to the fair value of our retained interest of $15.9 million as of the deconsolidation date which has been subsequently reduced to a carrying value of zero due to a basis difference associated with in-process research and development identified as part of the initial accounting for the equity method investment.

*BiomEdit, LLC*

Founded in April 2022, BiomEdit, LLC (BiomEdit") was formed to discover, design and develop novel probiotics, microbiome derived bioactives and engineered microbial medicines in the animal health industry. BiomEdit was capitalized through a Series A preferred unit financing that raised approximately $32.5 million in gross proceeds from an investor group which included one of our investors. In April 2022, we entered into an intellectual property contribution agreement that granted BiomEdit rights to our intellectual property, subject to mutually agreed upon technical development plans and, in return, we received 3.9 million voting common units in BiomEdit. In addition, Elanco also contributed intellectual property in exchange for 3.9 million non-voting common units in BiomEdit. The initial fair value of our common units received in BiomEdit was $8.9 million which has subsequently been reduced to a carrying value of $4.3 million as a result of the allocation of losses under our accounting for equity method investments. Ginkgo also entered into a Technical Development Agreement with BiomEdit under which we will provide R&D services in return for cash consideration on a fixed fee or cost-plus basis.

***Structured Partnerships***

Structured Partnerships allow Ginkgo to: (i) partner with early stage synthetic biology product companies to adopt our Foundry as their cell programming R&D platform, in which we offer flexible commercial terms on the Foundry usage fees

including the ability to pay a portion or all of such upfront fees in the form of equity, in addition to downstream value share consideration ("Startup Structured Partnership"); and (ii) partner with existing entities with complementary assets for high potential synthetic biology applications in a large-scale, multi-program collaboration ("Legacy Structured Partnership"). In the three and six months ended June 30, 2022, we entered into five and seven, respectively, Startup Structured Partnerships, which provided for payments of Foundry usage fees with convertible financial instruments and equity securities in the aggregate amount of $18.1 million, which will be recognized as revenue over our period of performance. Prior to 2022, we entered into five Startup Structured Partnerships in which we received $16.5 million in upfront consideration in the form of equity interests that is recognized as revenue over our period of performance. Our Legacy Structured Partnerships are described below:

*Genomatica, Inc.*

Genomatica, Inc. ("Genomatica") is a biotechnology company specializing in the development and manufacturing of intermediate and specialty chemicals from both sugar and alternative feedstocks. In 2016 and 2018, we entered into separate preferred stock purchase agreements in which we offered cash and R&D services to Genomatica in exchange for its preferred shares. The initial cost of the investment in Genomatica's preferred stock was $55.0 million. As of June 30, 2022, the carrying value of the investment is $44.9 million and reflects the historical cost less an impairment loss recognized in the second quarter of 2022.

*Synlogic, Inc.*

Synlogic, Inc. ("Synlogic") is a publicly traded clinical-stage biopharmaceutical company focused on advancing drug discovery and development for synthetic biology-derived medicines. In 2019, we entered into several agreements with Synlogic whereby we purchased Synlogic common stock and warrants to purchase Synlogic common stock and agreed to provide R&D services to Synlogic. At inception, the fair value of Synlogic common stock and warrants was recorded at $35.8 million and $14.4 million, respectively. As of June 30, 2022, the fair value of Synlogic common stock and warrants was $7.3 million and $2.9 million, respectively.

See Notes 4 and 12 of our condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q for further details of our investments in and the material terms of our agreements with our Platform Ventures and Structured Partnerships.

**Key Business Metrics**

A cell program (or "program") is the work we do for our customers to enable their product(s) of interest. Programs are defined by a technical development plan. We generally exclude proof-of-concept projects and other exploratory work undertaken on a customer's behalf from the program count. In the near-term, programs deliver multi-year revenue from platform usage fees. Over the long-term, program growth drives a physical infrastructure scale economic through our Foundry, a data and learning scale economic through our Codebase and accumulation of downstream value share. Our key business metrics comprise New Programs, Current Active Programs, and Cumulative Programs.

| | Three Months Ended June 30, | | Six Months Ended June 30, | | LTM[1] June 30, |
|---|---|---|---|---|---|
| | 2022 | 2021 | 2022 | 2021 | 2022 |
| New Programs | 13 | 7 | 24 | 11 | 44 |
| Current Active Programs | 73 | 46 | 77 | 51 | 88 |
| Cumulative Programs | 129 | 85 | 129 | 85 | 129 |

(1) Last 12 months

*New Programs*

New Programs represent the number of unique programs commenced within the reporting period. As new programs have multi-year durations, we view this metric as an indication of future Foundry revenue growth.

*Current Active Programs*

Current Active Programs represent the number of unique programs for which we performed R&D services in the reporting period. We view this metric as an indication of current period and future Foundry revenue.

*Cumulative Programs*

Cumulative Programs represent the cumulative number of unique programs Ginkgo has commenced. We view this metric as an indication of our competitive advantage and as a leading indicator of the mid- to long-term potential economic value derived from downstream value share arrangements. The cumulative number of programs also contributes to Codebase, which accumulates with each additional program we conduct over time and drives better experimental direction and improves the odds of technical success in current and future programs.

We believe the preceding metrics are important to understand our current business. These metrics may change or be substituted for additional or different metrics as our business develops. For example, as our program mix changes, our data gathering abilities expand or our understanding of key business drivers develops, we anticipate updating these metrics or their definitions to reflect such changes.

**Pending Merger**

On July 24, 2022, we entered into an Agreement and Plan of Merger (the "Merger Agreement") with Zymergen Inc. ("Zymergen"), and Pepper Merger Subsidiary Inc., an indirect wholly owned subsidiary of Ginkgo ("Merger Sub"), providing for the merger of Merger Sub with and into Zymergen (the "Merger"), with Zymergen surviving the Merger as a wholly owned subsidiary of Ginkgo. Under the Merger Agreement, at the effective time of the Merger, each outstanding share of common stock of Zymergen (other than excluded shares specified in the Merger Agreement) will be canceled and converted into the right to receive 0.9179 of a share of Class A common stock of Ginkgo. The transaction is expected to be completed by the first quarter of 2023 subject to approval by the stockholders of Zymergen, receipt of regulatory approvals and satisfaction or waiver of other closing conditions.

For a summary of the transaction, see Note 15, Subsequent Events, to our condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q or reference our Form 8-K filed with the SEC on July 25, 2022.

**Pending Acquisition**

On July 24, 2022, we entered into the APA, pursuant to which we will acquire certain assets and liabilities of Bayer, which are expected to expand our platform capabilities in agricultural biologicals. Under the APA, we will acquire Bayer's 175,000-square-foot West Sacramento Biologics Research & Development site, team, and internal discovery and lead optimization platform as well as integrate certain R&D platform assets of Joyn, the joint-venture between our holding company Cooksonia and Bayer formed in 2017. As consideration for the assets acquired in the transaction and subject to the terms and conditions of the APA, we have agreed to pay approximately $83.0 million, which may be satisfied, at our discretion, in shares of Ginkgo Class A common stock and/or cash. The transaction is expected to close in the fourth quarter of 2022 subject to regulatory approvals and the satisfaction of customary closing conditions.

**Business Combination**

We entered into the Merger Agreement with Soaring Eagle Acquisition Corp. ("SRNG") on May 11, 2021. On September 14, 2021, the SRNG shareholders approved and adopted the Merger Agreement and the other proposals described in SRNG's definitive proxy statement/prospectus included in SRNG's registration statement on Form S-4 (File No. 333-256121), which was declared effective by the SEC on August 11, 2021. Upon the consummation of the Business Combination on September 16, 2021, SEAC Merger Sub Inc., a wholly owned subsidiary of SRNG ("Merger Sub"), merged with and into Ginkgo, the separate corporate existence of Merger Sub ceased, and Ginkgo survived the merger as a wholly owned subsidiary of SRNG, which was renamed "Ginkgo Bioworks Holdings, Inc."

The Business Combination was accounted for as a reverse recapitalization in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"). Under the guidance in ASC 805*, Business Combinations* ("ASC 805"), SRNG was treated as the "acquired" company for accounting and financial reporting purposes. We were deemed the accounting predecessor of the combined business, and as the parent company of the combined business, are the successor SEC registrant, meaning that our financial statements for previous periods will be disclosed in future periodic reports filed with the SEC. The most significant change in our reported financial position and results of operations as a result of the Business Combination was a net increase in cash (as compared to our audited consolidated balance sheet as of December 31, 2020) of $1,509.6 million, including $760.0 million in proceeds from investments by certain accredited investors for 76,000,000 shares of Ginkgo's Class A common stock (the "PIPE Investment") that was consummated substantially simultaneously with the closing of the Business Combination. The transaction costs for the Business Combination totaled $108.1 million.

As the successor to an SEC-registered and publicly-traded company, we will need to hire additional personnel and implement procedures and processes to address public company regulatory requirements and customary practices. We expect to incur additional expenses as a public company for, among other things, directors' and officers' liability insurance, director fees, and additional internal and external accounting, legal and administrative resources.

**Modification of Equity Awards in Connection with Business Combination**

Prior to the Business Combination, our restricted stock units ("RSUs") were granted with both a service-based vesting condition and a performance-based vesting condition. We have historically not recognized any stock-based compensation expense associated with these awards as the achievement of the performance condition required a change in control or an initial public offering (both as defined in the underlying award agreement) that was not deemed probable of occurring. The Business Combination did not meet the performance condition required for vesting of our RSUs.

On November 17, 2021 our board of directors modified the vesting terms of RSUs to allow 10% of the RSUs that met the service condition as of the closing of the Business Combination to vest with respect to the performance condition, effective as of November 19, 2021, the date on which the Form S-8 registration statement covering such shares became effective. The remaining RSUs vested in full with respect to the performance condition on or before March 15, 2022. The change to the vesting terms was accounted for as a modification and resulted in approximately $533.2 million and $1,115.0 million of stock-based compensation expense recognized in the three and six months ended June 30, 2022, respectively. Stock-based compensation expense also included $60.8 million and $129.1 million in the three and six months ended June 30, 2022, respectively, related to RSU earnout shares which were subject to the same performance condition as the underlying RSUs, in addition to achieving certain target stock price thresholds. The first target stock price of $12.50 per share was achieved on November 15, 2021.

**Components of Results of Operations**

***Revenue***

*Foundry Revenue*

We generate Foundry revenue through the execution of license and collaboration agreements whereby customers obtain license rights to our proprietary technology and intellectual property for use in the development and commercialization of engineered organisms and derived products. Under these agreements, we typically provide R&D services for cell programming with the goal of producing an engineered cell that meets a mutually agreed specification. Our customers obtain license rights to the output of our services, which are primarily the optimized strains or cell lines, in order to manufacture and commercialize products derived from that licensed strain or cell line. Generally, the terms of these agreements provide that we receive some combination of: (1) Foundry usage fees in the form of (i) upfront payments upon consummation of the agreement or other fixed payments, (ii) reimbursement for costs incurred for R&D services and (iii) milestone payments upon the achievement of specified technical criteria, plus (2) downstream value share payments in the form of (i) milestone payments upon the achievement of specified commercial criteria, (ii) royalties on sales of products from or comprising engineered organisms arising from the collaboration or licensing agreement and (iii) royalties related to cost of goods sold reductions realized by our customers. For the three and six months ended June 30, 2022 and 2021, royalties did not comprise a material amount of our revenue.

Foundry revenue includes transactions with Platform Ventures as well as Structured Partnerships where, as part of these transactions, we received an equity interest in such entities. Specifically related to the Platform Ventures, in these transactions, we received upfront non-cash consideration in the form of common equity interests in these entities, while the Platform Ventures each received cash equity investments from strategic partners and financial investors. We view the upfront non-cash consideration as prepayments for licenses which will be granted in the future as we complete mutually agreed upon technical development plans. In these instances, we also receive cash payments for our costs incurred for the R&D services performed by us, plus a margin. We are not compensated through additional milestone or royalty payments under these arrangements. Our transactions with Genomatica and Synlogic included the purchase of equity securities and the provision of R&D services. Our transactions with Startup Structured Partnerships included the provision of R&D services in exchange for equity interests or financial instruments that are convertible into equity and other downstream value share consideration. As we perform R&D services under the mutually agreed upon development plans, we recognize a reduction in the prefunded obligation based on costs incurred, plus margin basis. These arrangements are further described in Notes 4, 5, 12 and 14 of our condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q.

Downstream value share in the form of equity interest appreciation is not recognized as revenue but is expected to contribute to future cash flows upon liquidation, the amount and timing of which is inherently unpredictable. Equity investees are accounted for as equity method investments, cost method investments or carried at fair value.

*Biosecurity Revenue*

In the second quarter of 2020, in response to the COVID-19 pandemic, we launched our commercial offering of COVID-19 testing products and services for businesses, academic institutions, and other organizations in which we generate product and service revenue. We generate product revenue through the sale of lateral flow assay ("LFA") diagnostic test kits, polymerase chain reaction ("PCR") sample collection kits and pooled test kits, all of which we sell to our customers on a standalone basis. We generate service revenue primarily through the sale of our end-to-end COVID-19 testing services which consist of multiple promised goods and services including sample collection kits, physician authorizations, onsite test administration, outsourced laboratory PCR analysis, and access to results reported through a web-based portal.

Generally, the terms of these agreements provide that we are entitled to compensation: (i) upon delivery of diagnostic test kits when no service is provided and (ii) when services are included, upon the reporting of results to the customer.

Beginning in the first quarter of 2021, we launched our pooled testing initiative which focuses on providing end-to-end COVID-19 testing and reporting services to public health authorities. We are currently offering pooled testing and reporting services for K-12 schools across the United States, at airports through our partnership with XpresCheck and the CDC, as well as through other congregate settings such as our partnership with Eurofins and Quest Laboratories in the state of Texas. In the future, we believe that testing services may have a value proposition internationally and in other use cases including wastewater monitoring and air monitoring. The amount and components of Biosecurity revenue are dependent on the demand for COVID-19 testing products and services which is uncertain for the remainder of 2022 and beyond and is subject to seasonality as the demand for COVID-19 testing in schools is diminished during summer vacations and other school breaks.

***Costs and Operating Expenses***

*Cost of Biosecurity Product Revenue*

Cost of Biosecurity product revenue consists of costs associated with the sale of diagnostic and sample collection test kits which includes costs incurred to purchase test kits from third parties.

*Cost of Biosecurity Service Revenue*

Cost of Biosecurity service revenue consists of costs associated with the provision of our end-to-end COVID-19 testing services, which includes costs incurred to provide sample collection kits, physician authorizations, onsite test administration, outsourced laboratory PCR analysis, access to results reported through our proprietary web-based portal and reporting of results to public health authorities.

*Research and Development Expenses*

The nature of our business, and primary focus of our activities, generates a significant amount of R&D expenses. R&D expenses represent costs incurred by us for the following:

- development, operation, expansion and enhancement of our Foundry and Codebase; and
- development of new offerings, such as Biosecurity.

The activities above incur the following expenses:

- laboratory supplies, consumables and related services provided under agreements with third parties and in-licensing arrangements;
- personnel compensation and benefits; and
- rent, facilities, depreciation, software, professional fees and other direct and allocated overhead expenses.

We expense R&D costs as incurred. As we grow our active programs and customer base and invest in our Foundry and Codebase, we anticipate that our R&D expenses will continue to increase. The nature, timing, and estimated costs required to

support our growth will be dependent on advances in technology, our ability to attract new customers and the rate of market penetration within our existing customer industries.

In the first half of 2022, R&D expenses included a significant charge for stock-based compensation expense as a result of the modification of vesting terms of RSUs and the vesting of certain earnout shares (as further described above in "Modification of Equity Awards in Connection with Business Combination").

*General and Administrative Expenses*

General and administrative ("G&A") expenses consist primarily of costs for personnel in executive, business development, finance, human resources, legal and other corporate administrative functions. G&A expenses also include legal fees incurred relating to corporate, intellectual property and patent matters, professional fees incurred for accounting, auditing, tax and administrative consulting services, insurance costs, and facility-related costs not otherwise included in R&D expenses.

We expect our G&A expenses will continue to increase as we pursue organic and inorganic growth initiatives. The increases will likely relate to additional personnel, system costs and increased costs related to business development, finance and legal matters, along with increased expenses related to operating as a publicly traded company, such as fees related to audit, legal and tax services, regulatory compliance programs and investor relations.

In the first half of 2022, G&A expenses included a significant charge for stock-based compensation expense as a result of the modification of vesting terms of RSUs and the vesting of certain earnout shares (as further described above in "Modification of Equity Awards in Connection with Business Combination").

*Interest Income (Expense), Net*

Interest income (expense), net primarily consists of interest earned on our cash and cash equivalents offset by interest expense related to our lease financing obligation.

*Loss on Equity Method Investments*

Loss on equity method investments includes our share of losses from certain of our equity method investments under the hypothetical liquidation at book value ("HLBV") method.

*(Loss) Gain on Investments*

(Loss) gain on investments includes the change in fair value of our marketable equity securities in publicly-traded companies and an impairment loss recognized on non-marketable equity securities in privately-held companies.

*Change in Fair Value of Warrant Liabilities*

Change in fair value of warrant liabilities includes the change in fair value of private placement warrants ("Private Placement Warrants") and publicly-traded warrants ("Public Warrants"), which are classified as liabilities and were assumed as part of the Business Combination.

*Gain on Deconsolidation of Subsidiary*

Gain on deconsolidation of subsidiary relates to our deconsolidation of Verb, a variable interest entity, in the first quarter of 2022. The deconsolidation resulted in the removal of Verb's assets, liabilities and non-controlling interest balances from our balance sheet and the recognition of our retained interest in Verb measured at fair value as of the deconsolidation date.

*Other (Expense) Income, Net*

Other (expense) income, net primarily consists of change in fair value of our convertible notes with Access Bio, Inc. accounted for under the fair value option and sublease rent income.

*Provision for Income Taxes*

Income taxes are recorded in accordance with ASC 740*, Income Taxes* ("ASC 740"), which provides for deferred taxes using an asset and liability approach. We recognize deferred tax assets and liabilities for the expected future tax consequences of

events that have been included in our financial statements or tax returns. Deferred tax assets and liabilities are determined based on the difference between the financial statement and tax bases of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. A valuation allowance against deferred tax assets is recorded if, based on the weight of the available evidence, it is more likely than not that some or all the deferred tax assets will not be realized. For all periods presented, we have recorded a valuation allowance against the deferred tax assets that are not expected to be realized.

We account for uncertain tax positions using a more-likely-than-not threshold for recognizing and resolving uncertain tax positions. The evaluation of uncertain tax positions is based on factors, including, but not limited to, changes in the law, the measurement of tax positions taken or expected to be taken in tax returns, the effective settlement of matters subject to audit, new audit activity and changes in facts or circumstances related to a tax position.

Income taxes are determined at the applicable tax rates adjusted for non-deductible expenses, R&D tax credits and other permanent differences. Our income tax provision may be significantly affected by changes to our estimates.

## Results of Operations

### *Comparison of the Three and Six Months Ended June 30, 2022 and 2021*

The following table summarizes our consolidated statements of operations for each period presented:

| | Three Months Ended June 30, | | | Six Months Ended June 30, | | |
|---|---|---|---|---|---|---|
| **(in thousands)** | **2022** | **2021** | **Change** | **2022** | **2021** | **Change** |
| Foundry revenue | $ 44,242 | $ 21,592 | $ 22,650 | $ 65,730 | $ 44,096 | $ 21,634 |
| Biosecurity revenue: | | | | | | |
| Product | 3,887 | 355 | 3,532 | 17,834 | 6,130 | 11,704 |
| Service | 96,489 | 21,689 | 74,800 | 229,459 | 37,507 | 191,952 |
| Total revenue | 144,618 | 43,636 | 100,982 | 313,023 | 87,733 | 225,290 |
| Costs and operating expenses: | | | | | | |
| Cost of Biosecurity product revenue | 2,444 | 1,820 | 624 | 10,539 | 11,755 | (1,216) |
| Cost of Biosecurity service revenue | 61,467 | 15,290 | 46,177 | 138,804 | 29,055 | 109,749 |
| Research and development [1] | 289,188 | 52,031 | 237,157 | 611,908 | 111,616 | 500,292 |
| General and administrative [1] | 438,427 | 34,440 | 403,987 | 873,195 | 52,367 | 820,828 |
| Total operating expenses | 791,526 | 103,581 | 687,945 | 1,634,446 | 204,793 | 1,429,653 |
| Loss from operations | (646,908) | (59,945) | (586,963) | (1,321,423) | (117,060) | (1,204,363) |
| Other (expense) income: | | | | | | |
| Interest income (expense), net | 1,674 | (478) | 2,152 | 1,277 | (953) | 2,230 |
| Loss on equity method investments | (10,166) | (4,346) | (5,820) | (31,053) | (32,970) | 1,917 |
| (Loss) gain on investments | (38,673) | 2,755 | (41,428) | (38,223) | 15,377 | (53,600) |
| Change in fair value of warrant liabilities | 23,509 | — | 23,509 | 108,544 | — | 108,544 |
| Gain on deconsolidation of subsidiary | — | — | — | 15,900 | — | 15,900 |
| Other (expense) income, net | (51) | 7,119 | (7,170) | 1,586 | 5,774 | (4,188) |
| Total other (expense) income, net | (23,707) | 5,050 | (28,757) | 58,031 | (12,772) | 70,803 |
| Loss before income taxes | (670,615) | (54,895) | (615,720) | (1,263,392) | (129,832) | (1,133,560) |
| Income tax benefit | (45) | (431) | 386 | (229) | (590) | 361 |
| Net loss | (670,570) | (54,464) | (616,106) | (1,263,163) | (129,242) | (1,133,921) |
| Net loss attributable to non-controlling interest | (1,745) | (523) | (1,222) | (3,833) | (1,732) | (2,101) |
| Net loss attributable to Ginkgo Bioworks Holdings, Inc. stockholders | $ (668,825) | $ (53,941) | $ (614,884) | $ (1,259,330) | $ (127,510) | $ (1,131,820) |

[1] In the first half of 2022, R&D and G&A expenses included a significant charge to stock-based compensation expense as a result of the modification of the vesting terms of RSUs and all related earnout shares (as further described above in "Modification of Equity Awards in Connection with Business Combination"). Total stock-based compensation expense, inclusive of $0.8 million and $7.0 million in employer payroll taxes for the three and six months ended June 30, 2022, respectively, was as follows:

| | Three Months Ended June 30, | | Six Months Ended June 30, | |
|---|---|---|---|---|
| **(in thousands)** | **2022** | **2021** | **2022** | **2021** |
| Research and development | $ 217,291 | $ 22 | $ 483,631 | $ 40 |
| General and administrative | 389,979 | 14,497 | 782,674 | 14,597 |
| Total | $ 607,270 | $ 14,519 | $ 1,266,305 | $ 14,637 |

***Foundry Revenue***

Foundry revenue increased $22.7 million and $21.6 million in the three and six months ended June 30, 2022 compared to the same periods in 2021. The increase was primarily attributable to progress of Current Active Programs with existing and new customers, including a downstream value share payment related to the achievement of a commercial milestone in the second quarter of 2022. Additionally, revenue increased due to the launch of New Programs and was partially offset by the completion of certain programs. Programs typically require a ramp-up period and/or the achievement of technical and/or commercial milestones before contributing in a meaningful way to revenue.

The total number of Current Active Programs increased from 46 to 73 in the three months ended June 30, 2021 and 2022, respectively. In the second quarter of 2022, 13 New Programs commenced compared to 7 New Programs in the comparable prior year period. Cumulative Programs increased from 85 to 129 in the three months ended June 30, 2021 and 2022, respectively. The number of active customers increased from 22 to 36 in the three months ended June 30, 2021 and 2022, respectively.

The total number of Current Active Programs increased from 51 to 77 in the six months ended June 30, 2021 and 2022, respectively. In the first half of 2022, 24 New Programs commenced compared to 11 New Programs in the comparable prior year period. Cumulative Programs increased from 85 to 129 in the six months ended June 30, 2021 and 2022, respectively. The number of active customers increased from 24 to 37 in the six months ended June 30, 2021 and 2022, respectively.

While the majority of Foundry revenue today is made up of Foundry usage fees, as we increase Cumulative Programs and to the extent our customers successfully commercialize products built on our platform, downstream value share is expected to comprise a larger proportion of Foundry revenue. Downstream value share in the form of equity interest appreciation is not recognized as revenue but is expected to contribute to future cash flows upon liquidation, the amount and timing of which is inherently unpredictable.

***Biosecurity Revenue***

Biosecurity revenue increased $78.3 million in the three months ended June 30, 2022 compared to the same period in 2021 and was comprised of an increase in product revenue of $3.5 million and an increase in service revenue of $74.8 million.

Biosecurity revenue increased $203.7 million in the six months ended June 30, 2022 compared to the same period in 2021 and was comprised of an increase in product revenue of $11.7 million and an increase in service revenue of $192.0 million.

The amount and components of Biosecurity revenue are dependent on the demand for COVID-19 testing products and services which is uncertain in 2022 and beyond.

***Cost of Biosecurity Product and Service Revenue***

Cost of Biosecurity product and service revenue increased $46.8 million and $108.5 million in the three and six months ended June 30, 2022, respectively, compared to the same periods in 2021.

The increase was driven by increased demand for our COVID-19 testing products and services.

***Research and Development Expenses***

Research and development expenses increased $237.2 million in the three months ended June 30, 2022 compared to the same period in 2021. The increase was attributable to increases in personnel-related compensation and benefits expense of $5.4 million, professional fees of $3.6 million, rent and facilities expense of $2.8 million, software and technology expense of $2.4 million, depreciation and amortization expense of $1.9 million, outside services expense of $1.7 million and lab supplies and other direct and allocated overhead expenses of $2.1 million. The remaining change was attributable to an increase in stock-based compensation expense of $217.3 million (inclusive of employer payroll taxes) primarily as a result of the modification of the vesting terms of RSUs and certain earnout shares in the fourth quarter of 2021 (as further described above in “Modification of Equity Awards in Connection with Business Combination”).

Research and development expenses increased $500.3 million in the six months ended June 30, 2022 compared to the same period in 2021. The increase was attributable to increases in depreciation and amortization expense of $5.2 million, personnel-related compensation and benefits expense of $4.6 million, rent and facilities expense of $3.5 million, professional fees of $3.5 million, software and technology expense of $3.2 million, outside services expense of $2.3 million and non-capitalized equipment expense of $2.1 million, partially offset by a decrease in lab supplies of $7.5 million as a result of lower R&D expenses related to our Biosecurity offering and a decrease in other direct and allocated overhead expenses of

$0.2 million. The remaining change was attributable to an increase in stock-based compensation expense of $483.6 million (inclusive of employer payroll taxes) primarily as a result of the modification of the vesting terms of RSUs and certain earnout shares in the fourth quarter of 2021 (as further described above in "Modification of Equity Awards in Connection with Business Combination").

***General and Administrative Expenses***

General and administrative expenses increased $404.0 million in the three months ended June 30, 2022 compared to the same period in 2021. The increase was attributable to increases in professional fees of $12.6 million primarily as a result of becoming a public company and supporting business scaling, personnel-related compensation and benefits expense of $8.3 million, insurance expense of $3.2 million, marketing expense of $2.1 million, travel and entertainment expense of $1.3 million and increases in software and information technology, depreciation, rent and facilities and other direct and allocated overhead expenses of $1.0 million. The remaining increase was attributable to stock-based compensation expense of $375.5 million (inclusive of employer payroll taxes) primarily as a result of the modification of the vesting terms of RSUs and certain earnout shares in the fourth quarter of 2021 (as further described above in "Modification of Equity Awards in Connection with Business Combination").

General and administrative expenses increased $820.8 million in the six months ended June 30, 2022 compared to the same period in 2021. The increase was attributable to increases in professional fees of $21.7 million primarily as a result of becoming a public company and supporting business scaling, personnel-related compensation and benefits expense of $15.7 million, insurance expense of $6.5 million, marketing expense of $2.6 million, software and technology expense of $2.1 million, travel and entertainment expense of $1.8 million, depreciation and amortization expense of $1.0 million, rent and facilities expense of $0.8 million and increases in business taxes and other direct and allocated overhead expenses of $0.5 million. The remaining increase was attributable to stock-based compensation expense of $768.1 million (inclusive of employer payroll taxes) primarily as a result of the modification of the vesting terms of RSUs and certain earnout shares in the fourth quarter of 2021 (as further described above in "Modification of Equity Awards in Connection with Business Combination").

Increases in general and administrative expenses not attributable to stock-based compensation expense supported the growth of Foundry and Biosecurity revenue, merger and acquisition activity and activities related to becoming a public company.

***Interest Income (Expense), Net***

Interest income (expense), net increased $2.2 million in the three and six months ended June 30, 2022 compared to the same periods in 2021. The increase was due to higher cash balances and increases in interest rates on cash held in money market accounts.

***Loss on Equity Method Investments***

Loss on equity method investments increased $5.8 million in the three months ended June 30, 2022 compared to the same period in 2021. The increase was primarily attributable to our equity method investments in BiomEdit and Joyn. The initial fair value of our common units received in BiomEdit of $8.9 million during the three months ended June 30, 2022 has been subsequently reduced to $4.3 million as a result of the application of the HLBV method. The loss on our equity method investment in Joyn increased from $4.3 million in the three months ended June 30, 2021 to $5.4 million in the three months ended June 30, 2022, representing our share of the investee's losses under the HLBV method.

Loss on equity method investments decreased $1.9 million in the six months ended June 30, 2022 compared to the same period in 2021. The decrease was primarily attributable to our equity method investments in BiomEdit, Verb, Joyn, Arcaea and Allonnia. During the six months ended June 30, 2022, we recorded a $4.6 million loss on our equity method investment in BiomEdit as a result of the application of the HLBV method. Upon the deconsolidation of Verb in the first quarter of 2022, we recorded a $15.9 million loss on our retained investment in Verb due to a basis difference associated with in-process research and development identified as part of the initial accounting for the equity method investment. The loss on our equity method investment in Joyn increased from $8.4 million in the six months ended June 30, 2021 to $10.4 million in the six months ended June 30, 2022, representing our share of the investee's losses under the HLBV method. The increase in losses related to BiomEdit, Verb and Joyn were offset by a decrease in losses related to Arcaea and Allonnia. The fair value of the additional equity we received in Arcaea of $11.9 million during the six months ended June 30, 2021 was reduced to zero during the period as a result of the application of the HLBV method. The fair value of the additional equity we received in Allonnia of $12.7 million during the six months ended June 30, 2021 was also reduced to zero during the period as a result of the application of the HLBV method.

Under the HLBV method, we absorb losses as a common unit holder prior to preferred unit holders due to a substantive profit-sharing agreement where the preferred unit holders receive preferential distribution rights. Because we have no commitment to fund the losses of Verb, Arcaea or Allonnia, no further losses on these equity method investments were recognized during the periods presented.

***(Loss) Gain on Investments***

(Loss) gain on investments decreased $41.4 million and $53.6 million in the three and six months ended June 30, 2022, respectively, compared to the same periods in 2021. The decrease was driven by decreases in the stock prices of our marketable equity securities and a $10.1 million impairment loss recognized on our investment in Genomatica preferred stock during the second quarter of 2022.

***Change in Fair Value of Warrant Liabilities***

The change in fair value of warrant liabilities of $23.5 million and $108.5 million in the three and six months ended June 30, 2022, respectively, was due to a decrease in the estimated fair value of the Private Placement Warrants and a decrease in the quoted price of the Public Warrants primarily driven by a decrease in our stock price.

***Gain on Deconsolidation of Subsidiary***

Gain on deconsolidation of subsidiary relates to our deconsolidation of Verb and consisted of our $15.9 million retained interest in Verb measured at fair value as of the deconsolidation date.

***Other (Expense) Income, Net***

Other (expense) income, net decreased $7.2 million in the three months ended June 30, 2022 compared to the same period in 2021. The decrease was primarily attributable to a $7.3 million decrease in the change in fair value of the Access Bio Convertible Notes.

Other (expense) income, net decreased $4.2 million in the six months ended June 30, 2022 compared to the same period in 2021. The decrease was primarily attributable to a $4.7 million decrease in the change in fair value of the Access Bio Convertible Notes.

**Non-GAAP Information**

In addition to our results determined in accordance with U.S. GAAP, we believe that EBITDA and Adjusted EBITDA, each non-GAAP financial measures, are useful in evaluating our operational performance. We use this non-GAAP financial information to evaluate our ongoing operations and for internal planning and forecasting purposes. We believe that this non-GAAP financial information, when taken collectively, may be helpful to investors in assessing our operating performance.

We define EBITDA as net loss attributable to Ginkgo Bioworks Holdings, Inc. stockholders before the impact of interest income, interest expense, provision for income taxes and depreciation and amortization.

We define Adjusted EBITDA as EBITDA adjusted for stock-based compensation expense, gain or loss on equity method investments, gain or loss on investments, change in fair value of warrant liabilities, gain on deconsolidation of subsidiary, acquired in-process research and development in connection with asset acquisitions, and other income and expenses. In the second quarter of 2022, we redefined Adjusted EBITDA to exclude transaction and integration costs associated with planned, completed or terminated mergers and acquisitions and have recast our previous first quarter 2022 Adjusted EBITDA calculation to exclude these costs and conform to the new presentation. We believe that the use of EBITDA and Adjusted EBITDA provides an additional tool for investors to use in evaluating ongoing operating results and trends because it eliminates the effect of financing activities, investing activities, and certain non-cash charges and other items. Adjusted EBITDA includes non-cash adjustments such as stock-based compensation, gain or loss on equity method investments, and gain or loss on changes in fair value of our investments, warrant liabilities, loans receivable and contingent consideration liability. Adjusted EBITDA also considers cash components which are not part of our ongoing operating results such as gains related to settlement payments and transaction and integration costs incurred in connection with mergers and acquisitions.

We believe Adjusted EBITDA, although not a replacement for financial performance measures reported under U.S. GAAP, provides investors with a means to compare our financial measures with those of comparable companies, which may present similar non-GAAP financial measures to investors. However, you should be aware that when evaluating EBITDA and

Adjusted EBITDA we may generate future income or incur future expenses similar to those excluded when calculating these measures. In addition, our presentation of these measures should not be construed as an inference that our future results will be unaffected by future income or future expenses similar to those excluded when calculating these measures. Our computation of these measures, especially Adjusted EBITDA, may not be comparable to other similarly titled measures computed by other companies because not all companies calculate these measures in the same way. Because of these limitations, EBITDA and Adjusted EBITDA should not be considered in isolation or as a substitute for performance measures calculated in accordance with U.S. GAAP. We compensate for these limitations by primarily relying on our U.S. GAAP results supplemented by EBITDA and Adjusted EBITDA. You should review the reconciliation of net loss attributable to Ginkgo Bioworks Holdings, Inc. stockholders to EBITDA and Adjusted EBITDA below and not rely on any single financial measure to evaluate our business.

The following table reconciles net loss attributable to Ginkgo Bioworks Holdings, Inc. stockholders to EBITDA and Adjusted EBITDA for the three and six months ended June 30, 2022 and 2021, respectively:

| | Three Months Ended June 30, | | Six Months Ended June 30, | |
|---|---|---|---|---|
| **(in thousands)** | **2022** | **2021** | **2022** | **2021** |
| Net loss attributable to Ginkgo Bioworks Holdings, Inc. stockholders | $ (668,825) | $ (53,941) | $ (1,259,330) | $ (127,510) |
| Interest (income) expense, net | (1,674) | 478 | (1,277) | 953 |
| Income tax benefit | (45) | (431) | (229) | (590) |
| Depreciation and amortization | 9,608 | 7,165 | 19,096 | 12,794 |
| **EBITDA** | (660,936) | (46,729) | (1,241,740) | (114,353) |
| Stock-based compensation [(1)] | 607,270 | 14,519 | 1,266,305 | 14,637 |
| Loss on equity method investments [(2)] | 9,952 | 3,823 | 30,216 | 31,238 |
| Loss (gain) on investments | 38,673 | (2,755) | 38,223 | (15,377) |
| Change in fair value of warrant liabilities | (23,509) | — | (108,544) | — |
| Gain on deconsolidation of subsidiary | — | — | (15,900) | — |
| Merger and acquisition related expenses [(3)] | 2,716 | — | 6,562 | — |
| In-process research and development [(4)] | 1,605 | — | 1,605 | — |
| Other [(5)] | 906 | (6,406) | 332 | (4,831) |
| **Adjusted EBITDA** | $ (23,323) | $ (37,548) | $ (22,941) | $ (88,686) |

(1) For the three and six months ended June 30, 2022, includes employer payroll taxes of $0.8 million and $7.0 million, respectively.

(2) Represents losses on equity method investments under the HLBV method, net of losses attributable to non-controlling interests.

(3) Represents transaction and integration costs directly related to mergers and acquisitions including (i) due diligence, legal and other professional fees associated with acquisitions and (ii) the fair value adjustments to contingent consideration liabilities resulting from acquisitions. In the second quarter of 2022, we redefined Adjusted EBITDA to exclude the impact of merger and acquisition related expenses. We elected to recast our previous first quarter 2022 Adjusted EBITDA calculation to exclude these costs and conform to the new presentation.

(4) Represents acquired intangible assets expensed to research and development associated with an asset acquisition.

(5) For the three and six months ended June 30, 2022, includes change in fair value of Access Bio Convertible Notes. For the three and six months ended June 30, 2021, includes change in fair value of Access Bio Convertible Notes and gain related to a settlement payment from Amyris.

**Liquidity and Capital Resources**

**Sources of Liquidity**

Prior to the Business Combination, our sources of liquidity have been predominantly cash flows from equity offerings, convertible notes offerings, payments received for R&D services under license and collaboration arrangements including those received on an upfront basis and upon accomplishment of milestones, payments received from Biosecurity product sales and services, and government grants. Upon the closing of the Business Combination in September 2021, we received net proceeds totaling approximately $1,509.6 million, inclusive of $760.0 million from the PIPE Investment. As of June 30, 2022, we had cash and cash equivalents of $1,377.2 million which we believe will be sufficient to enable us to fund our projected operations through at least the next 12 months from the date of filing of this Quarterly Report on Form 10-Q.

**Material Cash Requirements**

We anticipate that our expenditures will increase significantly in connection with our ongoing activities, as we:

- continue our R&D activities under existing and new programs and further invest in our Foundry and Codebase;
- hire additional personnel and secure facilities to support our expanding R&D efforts;
- develop and expand our offerings, including Biosecurity;
- upgrade and expand our operational, financial and management systems and support our operations;
- acquire and integrate companies, assets or intellectual property that advance our company objectives;
- maintain, expand, and protect our intellectual property; and
- incur additional costs associated with operating as a public company.

Other than as described below, during the first six months of 2022, there were no significant changes to our material cash requirements, including contractual and other obligations, as compared to the material cash requirements disclosed in "Management's Discussion and Analysis of Financial Condition and Results of Operations" included in our 2021 Annual Report on Form 10-K.

*Purchase Obligations*

In March 2022, we entered into a four-year noncancelable supply agreement for the purchase of diverse products including synthetic DNA. Under the agreement, we are obligated to spend a minimum of $58.0 million over the four-year term, with approximately $10.8 million payable in the next 12 months.

*Operating Leases*

In June 2022, we entered into an amendment to our headquarters lease in Boston, Massachusetts, which is expected to increase our total base rent payments by approximately $23.1 million over the life of the lease beginning in April 2023 through January 2036, with approximately $0.4 million due in the next twelve months.

***Cash Flows***

The following table provides information regarding our cash flows for each period presented:

| | Six Months Ended June 30, | |
|---|---|---|
| **(in thousands)** | **2022** | **2021** |
| Net cash used in: | | |
| Operating activities | $ (119,195) | $ (83,042) |
| Investing activities | (50,648) | (46,977) |
| Financing activities | (2,146) | (2,556) |
| Effect of exchange rate changes | (104) | — |
| Net decrease in cash, cash equivalents and restricted cash | $ (172,093) | $ (132,575) |

*Operating Activities*

Net cash used in operating activities for the six months ended June 30, 2022 consisted of net loss of $1,263.2 million, adjusted for net change in operating assets and liabilities of $63.1 million and non-cash charges of $1,207.1 million. The net change in operating assets and liabilities was primarily due to a $38.6 million increase in accounts receivable driven by an increase in Biosecurity revenue, a $4.7 million increase in inventory from increased purchases of LFA and pooled test kits in response to higher demand, a $12.8 million decrease in accrued expenses and other current liabilities, a $19.7 million decrease in deferred revenue, a $4.0 million decrease in other non-current liabilities, partially offset by a $10.7 million increase in accounts payable and a $5.0 million decrease in prepaid expenses and other current assets. Non-cash charges primarily consisted of $19.1 million in depreciation and amortization expense, $1,259.3 million in stock-based compensation expense, $31.1 million loss on equity method investments, $38.2 million loss on investments, partially offset by $18.1 million of non-cash equity consideration received from a customer upon achievement of a milestone, $108.5 million gain on the change in fair value of warrant liabilities and $15.9 million gain on the deconsolidation of Verb.

Net cash used in operating activities for the six months ended June 30, 2021 consisted of net loss of $129.2 million, adjusted for net change in operating assets and liabilities of $5.6 million and non-cash charges of $40.6 million. The net change in operating assets and liabilities was primarily due to a $4.9 million decrease in prepaid expenses and other current assets and a

$19.1 million increase in accrued expenses and other current liabilities, partially offset by a $6.5 million increase in accounts receivable, a $7.3 million decrease in accounts payable and a $6.1 million decrease in deferred revenue. Non-cash charges primarily consisted of $12.8 million in depreciation and amortization expense, $14.6 million in stock-based compensation expense, $33.0 million loss on equity method investments, partially offset by a $15.4 million gain on investments and a $4.4 million gain on the change in fair value of loans receivable.

*Investing Activities*

Net cash used in investing activities for the six months ended June 30, 2022 primarily consisted of purchases of property and equipment of $13.2 million associated with Foundry capacity and capability investments, purchase of marketable equity securities of $3.7 million, relinquishment of $28.8 million in cash upon the deconsolidation of Verb, $6.5 million convertible note financing provided to Joyn and $1.4 million of cash acquired in acquisition.

Net cash used in investing activities for the six months ended June 30, 2021 primarily consisted of purchases of property and equipment of $46.0 million associated with Foundry capacity and capability investments.

*Financing Activities*

Net cash used in financing activities for the six months ended June 30, 2022 primarily consisted of principal payments on capital leases and lease financing obligation, tax withholding payments related to net share settlement of equity awards and payment of contingent consideration related to a business acquisition.

Net cash used in financing activities for the six months ended June 30, 2021 primarily consisted of principal payments on capital leases and lease financing obligation and payments of deferred offering costs.

**Critical Accounting Estimates**

There have been no material changes to our critical accounting estimates as compared to the critical accounting estimates disclosed in “Management’s Discussion and Analysis of Financial Condition and Results of Operations” included in our 2021 Annual Report on Form 10-K.

**Recently Issued Accounting Pronouncements**

See Note 1, “Basis of Presentation and Summary of Significant Accounting Policies,” of our condensed consolidated financial statements contained in Part I, Item 1 of this Quarterly Report on Form 10-Q for a discussion of recently issued accounting pronouncements.

**Item 3. Quantitative and Qualitative Disclosures About Market Risk.**

***Interest Rate Fluctuation Risk***

We are exposed to market risk related to changes in interest rates. 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 cash equivalents are invested in short-term U.S. Treasury and government obligations. However, because of the short-term nature of the instruments in our portfolio, an immediate change in market interest rates of 100 basis points would not have a material impact on the fair market value of our cash and cash equivalents or on our financial position or results of operations.

***Foreign Currency Fluctuation Risk***

We are subject to foreign currency exchange risk from the translation of the financial statements of our foreign subsidiaries, whose financial condition and results of operations are reported in their local currencies and then translated into U.S. dollars at the applicable currency exchange rate for inclusion in our consolidated financial statements. Foreign currency translation adjustments were $3.1 million and $3.8 million for the three and six months ended June 30, 2022, respectively. Additionally, we have contracted with and may continue to contract with foreign vendors.

***Inflation Fluctuation Risk***

Inflation generally affects us by increasing our cost of labor, laboratory supplies, consumables and equipment. We do not believe that inflation had a material effect on our business, financial condition or results of operations during the three and six months ended June 30, 2022.

**Item 4. Controls and Procedures.**

***Evaluation of Disclosure Controls and Procedures***

Our disclosure controls and procedures are designed to ensure that information required to be disclosed in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the SEC, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Exchange Act Rule 13a–15(e) and 15d-15(e)) as of June 30, 2022. Based on that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that the Company's disclosure controls and procedures were effective as of June 30, 2022.

***Changes in Internal Control over Financial Reporting***

There were no changes in our internal control over financial reporting (as such term is defined in Exchange Act Rule 13a–15(f) and 15d-15(f)) during the most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

## PART II—OTHER INFORMATION

### Item 1. Legal Proceedings.

From time to time, we may in the ordinary course of business be named as a defendant in lawsuits, indemnity claims and other legal proceedings. We do not believe any pending litigation to be material, the outcome of which would, in management's judgment based on information currently available, have a material adverse effect on our results of operations or financial condition. See Note 8, *Commitments and Contingencies*, to the unaudited condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q.

### Item 1A. Risk Factors.

*An investment in our securities involves a high degree of risk. You should carefully consider the following risk factors, together with all of the other information included in this Quarterly Report on Form 10-Q, before making an investment decision. Our business, prospects, financial condition or operating results could decline due to any of these risks and, as a result, you may lose all or part of your investment.*

*Unless the context otherwise requires, all references in this section to the "Company," "we," "us" or "our" refer to the business of Ginkgo and its subsidiaries*.

**Risks Related to Ginkgo's Business**

***We have a history of net losses. We expect to continue to incur losses for the foreseeable future, and we may never achieve or maintain profitability.***

We have incurred significant operating losses since our inception. Our net loss attributable to our stockholders was approximately $668.8 million and $1,259.3 million for the three and six months ended June 30, 2022, respectively. As of June 30, 2022, we had an accumulated deficit of approximately $3,557.3 million. We may incur losses and negative cash flow from operating activities for the foreseeable future as we continue to invest significant additional funds toward further developing our platform, the cell programs we perform on behalf of our customers and otherwise growing our business, including our biosecurity offering. Our operating expenses have increased as a result of becoming a public company, and we expect that our operating expenses will continue to increase as we grow our business. We have derived a significant portion of our revenues from fees and milestone payments from technical development services provided to customers to advance programs, as well as a significant portion of our revenues from our biosecurity offering. Historically, these fees have not been sufficient to cover the full cost of our operations. Additionally, if our customers terminate their agreements or development plans with us, our near-term revenues could be adversely affected. In addition, certain of our customer agreements provide for milestone payments, future royalties and other forms of contingent consideration, the payment of which are uncertain, as they are dependent on our ability to successfully develop engineered cells, bioprocesses, or other deliverables and our customers' ability and willingness to successfully develop and commercialize products and processes.

Our expenses may exceed revenues for the foreseeable future and we may not achieve profitability. If we fail to achieve profitability, or if the time required to achieve profitability is longer than we anticipate, we may not be able to expand or continue our business, and the value of our common stock could be negatively impacted. Our ability to achieve or sustain profitability is based on numerous factors, many of which are beyond our control, including the development of our platform, the initiation of new programs with new and existing customers, the commercial terms of our programs, our ability to advance cell engineering programs in a timely and cost-effective manner, our ability to extend new offerings to customers, our customers' ability to scale up bioprocesses, the ability of our customers to produce and sell products, the impact of market acceptance of our customers' products, and our customers' market penetration and margins. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis.

***We may need substantial additional capital in the future in order to fund our business.***

We have consumed considerable amounts of capital to date, and we expect to incur continued net losses over the next several years as we continue to develop our business, advance our programs, expand and enhance our platform, and make the capital investments necessary to scale up our Foundry operations and Codebase assets. We may also use additional capital for our biosecurity offering, strategic investments and acquisitions. We believe that our cash and cash equivalents, short-term investments, and interest earned on investments will be sufficient to meet our projected operating requirements for several years and until we reach profitability. However, these assumptions may prove to be incorrect and we could exhaust our available capital resources sooner than we currently expect. Because of the numerous risks and uncertainties associated with our programs, including risks and uncertainties that could impact the rate of progress of our programs, we are unable to estimate with certainty the amounts of capital outlays and operating expenditures associated with these activities.

We do not currently have any commitments for future funding. We may receive fees, milestones, and royalty payments under our customer agreements, but these are not guaranteed. Additionally, we may be able to sell our equity interests in certain subsidiaries or collaborations but most of these equity stakes are illiquid (e.g., in private companies) and we may not be able to find a buyer or may incur significant impairment if forced to sell these positions for liquidity. We may not receive any further funds under those agreements, the funds we receive may be lower than projected, or our program costs may be higher than projected. In addition, we may not be able to sign new customer agreements or enter into new development plans with existing customers with adequate funds to cover program development expenses. As a result of these and other factors, we do not know whether additional financing will be available when needed, or, if available, whether such financing would be on terms favorable to our stockholders or us.

If future financings involve the issuance of equity securities, our existing stockholders would suffer dilution. If we raise debt financing in the future, we may be subject to restrictive covenants that limit our ability to conduct our business. Our ability to raise funds may be adversely impacted by current or future economic conditions. If we fail to raise sufficient funds and continue to incur losses, our ability to fund our operations, take advantage of strategic opportunities, or otherwise respond to competitive pressures could be significantly limited. If adequate funds are not available, we may not be able to successfully execute our business plan or continue our business.

***We have experienced rapid growth and expect our growth to continue, and if we fail to effectively manage our growth, then our business, results of operations, and financial condition could be adversely affected.***

We have experienced substantial growth in our business since inception, which has placed and may continue to place significant demands on our company culture, operational infrastructure, and management. We believe that our culture has been a critical component of our success. We have invested substantial time and resources in building our team and nurturing a culture of empowerment of, and active engagement by, our employees. As we expand our business and mature as a public company, we may find it difficult to maintain our culture while managing this growth. Any failure to manage our anticipated growth and organizational changes in a manner that preserves the key aspects of our culture could be detrimental to future success, including our ability to recruit and retain personnel, and effectively focus on and pursue our objectives. This, in turn, could adversely affect our business, results of operations, and financial condition.

In addition, in order to successfully manage our rapid growth, our organizational structure has become more complex and is likely to continue to become more complex. In order to manage these increasing complexities, we will need to continue to scale and adapt our operational, financial, and management controls, as well as our reporting systems and procedures. The expansion of our systems and infrastructure will require us to commit substantial financial, operational, and management resources before our revenue increases and without any assurances that our revenue will increase.

Finally, continued growth could strain our ability to maintain reliable service levels and offerings for our customers. If we fail to achieve the necessary level of capacity, quality and efficiency in performing services and other development activities, or the necessary level of efficiency in our organizational structure as we grow, then our business, results of operations, and financial condition could be adversely affected.

***Our limited operating history makes it difficult to evaluate our current business and future prospects.***

We have a portfolio of cell engineering programs which vary in start date, duration, complexity, and revenue potential. Additionally, our downstream economics in the form of equity interests, milestone payments, or royalty streams add an additional level of uncertainty to our possible future performance. Consequently, predictions about our future success or viability are highly uncertain and may not be as accurate as they could be if we had a longer company history of successfully developing, commercializing and generating revenue from our programs and/or downstream economic participation. With respect to our biosecurity offering, prior to 2020, we had no experience developing or commercializing testing services. Moreover, as described above, given the limited operating history of our biosecurity offering, our reliance on government funding for testing, potential disruptions from vaccine rollout generally, the availability of COVID-19 therapeutics, the impact of summer vacation and other school breaks, and the increased availability of over-the-counter testing options, the future performance of our COVID-19 testing program is unpredictable. Moreover, we cannot predict how long the COVID-19 pandemic will continue and, therefore, we cannot predict the duration of the revenue stream, which could diminish significantly, from our COVID-19 testing services.

Our long-term objective is to generate free cash flow from the commercialization of programs by customers across a variety of industries, as well as from our biosecurity-focused offerings. Our estimated costs and timelines for the completion of programs are based on our experiences to date and our expectations for each stage of the program in development. Given the variety of types of programs we support and the continued growth of our platform, there is variability in timelines and costs for launching and executing programs, and completion dates can change over the course of a customer engagement. In addition, our costs and timelines may be greater or subject to variability where regulatory requirements lead to longer timelines, such as in agriculture, food, and therapeutics. In addition, we have equity interests in certain companies and there is and will continue to be variability in the financial performance of these other companies or future companies in which we may have equity interests.

As a business with a limited operating history, we may encounter unforeseen expenses, difficulties, complications, delays, and other known and unknown obstacles. We have encountered in the past, and will encounter in the future, risks and uncertainties frequently experienced by growing companies with limited operating histories in emerging and rapidly changing industries. If our assumptions regarding these risks and uncertainties, which we use to plan and operate our business, are incorrect or change, or if we do not address these risks successfully, our results of operations could differ materially from our expectations, and our business, financial condition, and results of operations could be adversely affected.

***If we cannot maintain and expand current customer partnerships and enter into new customer partnerships, our business could be adversely affected.***

We do not generate substantial revenue from our own products, and instead generate revenue from customer collaborations in which we provide services, and also receive downstream value in the form of royalties, equity, or milestone payments. As a result, our success depends on our ability to expand the number, size and scope of our customer collaborations. Our ability to win new business depends on many factors, including our reputation in the market, the quality of our service offerings relative to alternatives, the pricing and efficiency of our services relative to alternatives, and our technical capabilities. If we fail to maintain a position of strength in any of these factors, our ability to either sign new customer collaborations or launch new programs with existing customers may suffer and this could adversely affect our prospects. Additionally, in the process of developing programs, we generate Foundry know-how and accumulate meaningful biological and data assets, including optimized proteins and organisms, characterized genetic parts, enhanced understanding of metabolic pathways, biological, chemical, and genetic libraries, and other elements of biological data. Data and know-how generated from our programs provide the basis for expanded capabilities that we believe further supports our customer collaborations. As a result, in addition to reducing our revenue or delaying the development of our programs, the loss of one or more of our customer relationships or the failure to add new customers or programs may hinder our accumulation of such information, thus hindering our efforts to advance our technological differentiation and improve our platform.

We engage in conversations with companies regarding potential customer collaborations on an ongoing basis. We may spend considerable time and money engaging in these conversations and feasibility assessments, including understanding the technical approach to a program, customer concerns and limitations, and legal or regulatory landscape of a potential program or offering, which may not result in a commercial agreement. Even if an agreement is reached, the resulting relationship may

not be successful for many reasons, including our inability to complete a program to our customers' specifications or within our customers' time frames, or unsuccessful development or commercialization of products or processes by our customers. In such circumstances, our revenues and downstream value potential from such a collaboration might be meaningfully reduced.

***We currently own and may in the future own equity interests in other operating companies, including certain of our customers; consequently, we have exposure to the volatility and liquidity risks inherent in holding their equity and overall operational and financial performance of these businesses.***

We currently own equity interests in several of our customers. In the future, we may also own equity interests in other companies. The process by which we receive equity interests and the factors we consider in deciding whether to accept, hold or dispose of these equity positions may differ significantly from those that an independent investor would evaluate when considering equity interests in a company. Owning equity increases our exposure to the risks of the other company and, in the case of customers, beyond the products of our collaborations. Our equity ownership positions expose us to market volatility and the potential for negative returns. We may have restrictions on resale or limited markets to sell our equity ownership. In many cases, our equity position is a minority position which exposes us to further risk, as we are not able to exert control over the companies in which we hold securities.

In connection with future collaborations or joint ventures, we may, from time to time, receive warrants or options, all of which involve special risks. To the extent we receive warrants or options in connection with future collaborations or joint ventures, we would be exposed to risks involving pricing differences between the market value of underlying securities and our exercise price for the warrants or options, a possible lack of liquidity, and the related inability to close a warrant or option position, all of which could ultimately have an adverse effect on our financial position.

***We leverage our own resources and partner with strategic and financial investors in order to help early stage companies and innovators secure funding and benefit from our platform, which exposes us to a number of risks.***

Since our founding, we have helped to launch new companies (such as BiomEdit, LLC, Motif FoodWorks, Inc., Allonnia LLC, Arcaea, LLC (formerly known as Kalo Ingredients, LLC), Ayana Bio, LLC, Joyn Bio LLC and Verb Biotics, LLC) by bringing together strategic and financial investors to secure funding for these early stage and small companies. Going forward, we intend to continue to leverage our own balance sheet and partner with investors to enable companies at all stages to benefit from our platform.

Partnering with and investing in early stage and small companies may expose us to a number of risks, including that early stage and small companies may have:

- shorter operating histories, narrower product lines and smaller market shares than larger businesses, which tend to render small companies more vulnerable to competitors' actions and market conditions, as well as general economic downturns;

- more limited access to capital and higher funding costs, may be in a weaker financial position and may need more capital than originally anticipated to expand, compete and operate their business;

- the inability to obtain financing from the public capital markets or other traditional sources, such as commercial banks, in part because loans made to these types of companies entail higher risks than loans made to companies that have larger businesses, greater financial resources or are otherwise able to access traditional credit sources on more attractive terms;

- a higher likelihood of depending on the management talents and efforts of a small group of persons; therefore, the death, disability, resignation or termination of one or more of these persons could have a material adverse impact on such company and, in turn, on us;

- less predictable operating results, may be engaged in rapidly changing businesses with products subject to a substantial risk of obsolescence, and may require substantial additional capital to support their operations, finance expansion or maintain their competitive position;

- particular vulnerabilities to changes in customer preferences and market conditions, depend on a limited number of customers, and face intense competition, including from companies with greater financial, technical, managerial and marketing resources; and

- fewer administrative resources, which can lead to greater uncertainty in their ability to generate accurate and reliable financial data, including their ability to deliver audited financial statements.

Any of these factors or changes thereto could impair an early stage or small company's financial condition, results of operation, cash flow or result in other adverse events, such as bankruptcy. This, in turn, could result in losses in our investments and a change in our income (loss) on investments.

***We may be unable to complete pending strategic acquisitions or successfully integrate strategic acquisitions which could adversely affect our business and financial condition.***

Our inability to complete any pending strategic acquisitions or to successfully integrate any new or previous strategic acquisitions could have a material adverse effect on our business. Our business strategy includes the acquisition of technologies and businesses that complement or augment our existing products and services. We may continue to seek attractive opportunities to acquire businesses, enter into joint ventures and make other investments that are complementary to our existing strengths. There are no assurances, however, that any strategic acquisition opportunities will arise or, if they do, that they will be consummated. Certain acquisitions may be difficult to complete for a number of reasons, including the need to satisfy customary closing conditions, the need for antitrust and/or other regulatory approvals, as well as disputes or litigation. For example, our announced and pending Zymergen merger and Bayer acquisition are subject to a number of closing conditions, as described in Note 15 to our consolidated financial statements. Any strategic acquisition we may complete may be made at a substantial premium over the fair value of the net identifiable assets of the acquired company and thus our realization of this value relies on successful integration and continued operations. We may not be able to integrate acquired businesses successfully into our existing businesses, make such businesses profitable, retain key employees or realize anticipated cost savings or synergies, if any, from these acquisitions, which could adversely affect our business and financial condition. Further, our ongoing business may be disrupted, and our management's attention may be diverted by acquisitions, investments, transition and/or integration activities.

***We may pursue strategic acquisitions and investments that are dilutive to our stockholders and that could have an adverse impact on our business if they are unsuccessful.***

We have made acquisitions in the past and, as appropriate opportunities become available, we may acquire additional businesses, assets, technologies, or products to enhance our business in the future, but our ability to do so successfully cannot be ensured. We have also made investments in companies that we view as synergistic with our business. Although we conduct due diligence on these acquisitions and investments, such processes may underestimate or fail to reveal significant liabilities and we could incur losses resulting from liabilities of the acquired business that are not covered by indemnification we may obtain from the seller. Even if we identify suitable opportunities, including pending transactions, we may not be able to complete such acquisitions on favorable terms or at all, which could damage our business. Additionally, pursuing acquisitions, whether successful or unsuccessful, could result in civil litigation and regulatory penalties. Any acquisitions we make may not strengthen our competitive position, and these transactions may be viewed negatively by customers or investors. We may decide to incur debt or spend cash in connection with a strategic acquisition, which may cause us to face liquidity concerns or be subject to restrictive covenants in the future. We have, and in the future may, also issue common stock or other equity securities to the stockholders of the acquired company, which could constitute a material portion of our then-outstanding shares of common stock and may reduce the percentage ownership of our existing stockholders.

In addition, we may not be able to successfully integrate the acquired personnel, assets, technologies, products and/or operations into our existing business in an effective, timely, and non-disruptive manner or retain acquired personnel following an acquisition. Acquisitions may also divert management's attention from day-to-day responsibilities, increase our expenses and reduce our cash available for operations and other uses. In addition, we may not be able to fully recover the

costs of such acquisitions or be successful in leveraging any such strategic transactions into increased business, revenue, or profitability. We also cannot predict the number, timing, or size of any future acquisitions or the effect that any such transactions might have on our operating results.

Accordingly, although there can be no assurance that we will undertake or successfully complete any future acquisitions, any transactions that we do complete may not yield the anticipated benefits and may be subject to the foregoing or other risks and have a material and adverse effect on our business, financial condition, results of operations, and prospects. Conversely, any failure to pursue or delay in completing any acquisition or other strategic transaction that would be beneficial to us, including those caused by competing parties, could delay the development of our platform or advancement of our programs and, thus, potential commercialization of our customer's products.

***Our programs may not achieve milestones and other anticipated key events on the expected timelines or at all, which could have an adverse impact on our business and could cause the price of our common stock to decline.***

We may adopt various technical, manufacturing, regulatory, commercial, and other objectives for our programs. These milestones may include our or our customers' expectations regarding the commencement or completion of technical development, the achievement of manufacturing targets, the submission of regulatory filings, or the realization of other development, regulatory, or commercialization objectives by us or our customers. The achievement of many of these milestones may be outside of our control. All of these milestones are based on a variety of assumptions, including assumptions regarding capital resources, constraints, and priorities, progress of and results from research and development ("R&D") activities, and other factors, including impacts resulting from the COVID-19 pandemic, any of which may cause the timing of achievement of the milestones to vary considerably. If we, our collaborators, or our customers fail to achieve milestones in the expected timeframes, the commercialization of our programs may be delayed, our credibility may be undermined, our business and results of operations may be harmed, and the trading price of our common stock may decline.

***We must continue to secure and maintain sufficient and stable supplies of laboratory reagents, consumables, equipment, and laboratory services. We depend on a limited number of suppliers, some of which are single-source suppliers, and contract manufacturers for critical supplies, equipment, and services for research, development, and manufacturing of our products and processes. Our reliance on these third parties exposes us to risks relating to costs, contractual terms, supply, and logistics, and the loss of any one or more of these suppliers or contract manufacturers or their failure to supply us with the necessary supplies, equipment, or services on a timely basis, could cause delays in our research, development, or production capacity and adversely affect our business.***

The COVID-19 pandemic has caused substantial disruption in global supply chains and the ability of third parties to provide us services on a timely basis or at all. As a result, we have experienced shortages in some of our key equipment and supplies, including those required in our labs, as well as disruptions in services provided by third parties, and may continue to do so in the future as a result of the pandemic, or otherwise. We may also experience price increases, quality issues and longer lead times due to unexpected material shortages, service disruptions, and other unanticipated events, which may adversely affect our supply of lab equipment, lab supplies, chemicals, reagents, supplies, and lab services. For some suppliers, we do not enter into long-term agreements and instead secure our materials and services on a purchase order basis. Our suppliers may reduce or cease their supply of materials or services to us at any time in the future. If the supply of materials or services is interrupted, our programs may be delayed.

We depend on a limited number of suppliers for critical items, including lab consumables and equipment, for the development of our programs. Some of these suppliers are single-source suppliers. We do not currently have the infrastructure or capability internally to manufacture these items at the necessary scale or at all. Although we have a reserve of supplies and although alternative suppliers exist for some of these critical products, services, and equipment, our existing processes used in our Foundries have been designed based on the functions, limitations, features, and specifications of the products, services, and equipment that we currently utilize. While we work with a variety of domestic and international suppliers, our suppliers may not be obligated to supply products or services or our arrangements may be terminated with relatively short notice periods. Additionally, we do not have any control over the process or timing of the acquisition or

manufacture of materials by our manufacturers and cannot ensure that they will deliver to us the items we order on time, or at all.

In particular, we rely on Twist Bioscience Corporation for custom DNA synthesis and Thermo Fisher Scientific Inc. and others for certain instruments and consumables. The price and availability of DNA, chemicals, reagents, equipment, consumables, and instruments have a material impact on our ability to provide Foundry services. We may rely on contract manufacturers like Fermic, s.a. de.c.v for scale-up fermentation development, fermentation, and manufacturing of products for some customers.

The loss of the products, services, and equipment provided by one or more of our suppliers could require us to change the design of our research, development, and manufacturing processes based on the functions, limitations, features, and specifications of the replacement items or seek out a new supplier to provide these items. Additionally, as we grow, our existing suppliers may not be able to meet our increasing demand, and we may need to find additional suppliers. We may not be able to secure suppliers who provide lab supplies at, or equipment and services to, the specification, quantity, and quality levels that we demand (or at all) or be able to negotiate acceptable fees and terms of services with any such suppliers.

As described above, some lab equipment, lab consumables, and other services and materials that we purchase are purchased from single-source or preferred suppliers, which limits our negotiating leverage and our ability to rely on additional or alternative suppliers for these items. Our dependence on these single-source and preferred suppliers exposes us to certain risks, including the following:

- our suppliers may cease or reduce production or deliveries, raise prices, or renegotiate terms;
- we may be unable to locate a suitable replacement on acceptable terms or on a timely basis, if at all;
- if there is a disruption to our single-source or preferred suppliers' operations, and if we are unable to enter into arrangements with alternative suppliers, we will have no other means of continuing the relevant research, development, or manufacturing operations until they restore the affected facilities or we or they procure alternative sources of supply;
- delays caused by supply issues may harm our reputation, frustrate our customers, and cause them to turn to our competitors for future programs; and
- our ability to progress the development of existing programs and the expansion of our capacity to begin future programs could be materially and adversely impacted if the single-source or preferred suppliers upon which we rely were to experience a significant business challenge, disruption, or failure due to issues such as financial difficulties or bankruptcy, issues relating to other customers such as regulatory or quality compliance issues, or other financial, legal, regulatory, or reputational issues.

Moreover, to meet anticipated market demand, our suppliers may need to increase manufacturing capacity, which could involve significant challenges. This may require us and our suppliers to invest substantial additional funds and hire and retain the technical personnel who have the necessary experience. Neither we nor our suppliers may successfully complete any required increase to existing research, development, or manufacturing capacity in a timely manner, or at all.

For the quarter ended June 30, 2022, our cost of lab equipment, lab supplies, and lab services accounted for a significant portion of our total R&D expenses. In the event of price increases by suppliers, whether as a result of inflationary pressures or otherwise, we may attempt to pass the increased costs to our customers. However, we may not be able to raise the prices of our Foundry services sufficiently to cover increased costs resulting from increases in the cost of our materials and services, or the interruption of a sufficient supply of materials or services. As a result, materials and services costs, including any price increase for our materials and services, may negatively impact our business, financial condition, and results of operations.

Some of our suppliers and contract manufacturers are foreign entities. We may face disruptions due to the inability to obtain customs clearances in a timely manner or restrictions on shipping or international travel due to the COVID-19 pandemic. As a result of ongoing global supply chain challenges resulting in very long lead times for certain products and equipment, we

may order in larger volumes in order to secure the supplies we require for our future operations, which may negatively impact our financial conditions, especially if we are unable to use the supplies ordered.

***We use biological, hazardous, flammable and/or regulated materials that require considerable training, expertise and expense for handling, storage and disposal and may result in claims against us.***

We work with biological and chemical materials that could be hazardous to human, animal, or plant health and safety or the environment. Our operations produce hazardous and biological waste products, and we largely contract with third parties for the disposal of these products. Federal, state, and local laws and regulations govern the use, generation, manufacture, storage, handling, and disposal of these materials and wastes. Compliance with applicable laws and regulations is expensive, and current or future laws and regulations may restrict our operations. If we do not comply with applicable laws and regulations, we may be subject to fines and penalties.

In addition, we cannot eliminate the risk of (a) accidental or intentional injury or (b) release, or contamination from these materials or wastes, which could expose us to liability. Furthermore, laws and regulations are complex, change frequently, and have tended to become more stringent. We cannot predict the impact of such changes and cannot be certain of our future compliance. Accordingly, in the event of release, contamination, or injury, we could be liable for the resulting harm or penalized with fines in an amount exceeding our resources and our operations could be suspended or otherwise adversely affected. These liabilities could also include regulatory actions, litigation, investigations, remediation obligations, damage to our reputation and brand, supplemental disclosure obligations, loss of customer, consumer, and partner confidence in the safety of our laboratory operations, impairment to our business, and corresponding fees, costs, expenses, loss of revenues, and other potential liabilities, as well as increased costs or loss of revenue or other harm to our business.

***The release of GMOs or Genetically Modified Materials, whether inadvertent or purposeful, into uncontrolled environments could have unintended consequences, which may result in increased regulatory scrutiny and otherwise harm our business and financial condition.***

The genetically engineered organisms and materials that we develop may have significantly altered characteristics compared to those found in the wild, and the full effects of deployment or release of our genetically engineered organisms and materials into uncontrolled environments may be unknown. In particular, such deployment or release, including an unauthorized release, could impact the environment or community generally or the health and safety of our employees, our customers' employees, and the consumers of our customers' products.

In addition, if a high profile biosecurity breach or unauthorized release of a biological agent occurs within our industry, our customers and potential customers may lose trust in the security of the laboratory environments in which we produce genetically modified organisms ("GMOs") and genetically modified plant or animal cells and genetically modified proteins and biomaterials (collectively, "Genetically Modified Materials"), even if we are not directly affected. Any adverse effect resulting from such a release, by us or others, could have a material adverse effect on the public acceptance of products from engineered cells and our business and financial condition. Such a release could result in increased regulatory scrutiny of our facilities, platform, and programs, and could require us to implement additional costly measures to maintain our regulatory permits, licenses, authorizations and approvals. To the extent such regulatory scrutiny or changes impact our ability to execute on existing or new programs for our customers, or make doing so more costly or difficult, our business, financial condition, or results of operations may be adversely affected. In addition, we could have exposure to liability for any resulting harm, as well as to regulatory actions, litigation, investigations, remediation obligations, damage to our reputation and brand, supplemental disclosure obligations, loss of customer, consumer, and partner confidence in the safety of engineered cells materials and organisms, impairment to our business, and corresponding fees, costs, expenses, loss of revenues, and other potential liabilities, as well as increased costs or loss of revenue or other harm to our business.

***We could synthesize DNA sequences or engage in other activity that inadvertently contravenes biosecurity requirements, or regulatory authorities could promulgate more far-reaching biosecurity requirements that our standard business practices cannot accommodate, which could give rise to substantial legal liability, impede our business, and damage our reputation.***

The Federal Select Agent Program ("FSAP") involves rules administered by the Centers for Disease Control and Prevention and the Animal and Plant Health Inspection Service that regulate possession, use, and transfer of biological select agents and toxins that have the potential to pose a severe threat to public, animal, or plant health or to animal or plant products. In accordance with the International Gene Synthesis Consortium's ("IGSC") Harmonized Screening Protocol for screening of synthetic DNA sequence orders, we follow biosafety and biosecurity industry practices and avoid DNA synthesis activities that implicate FSAP rules by screening synthetic DNA sequence orders against the IGSC's Regulated Pathogen Database; however, we could err in our observance of compliance program requirements in a manner that leaves us in noncompliance with FSAP or other biosecurity rules. In addition, authorities could promulgate new biosecurity requirements that restrict our operations. One or more resulting legal penalties, restraints on our business or reputational damage could have material adverse effects on our business, financial condition, or results of operations.

***Third parties may use our engineered cells, materials, and organisms and accompanying production processes in ways that could damage our reputation.***

After our customers have received our engineered cells, materials, and organisms and accompanying production processes, we do not have any control over their use and our customers may use them in ways that are harmful to our reputation. In addition, while we have established a biosecurity program designed to comply with biosafety and biosecurity requirements and export control requirements in an effort to ensure that third parties do not obtain our engineered cells or other biomaterials for malevolent purposes, we cannot guarantee that these preventative measures will eliminate or reduce the risk of the domestic and global opportunities for the misuse or negligent use of our engineered cells materials, and organisms and production processes. Accordingly, in the event of such misuse or negligent use, our reputation, future revenue, and operating results may suffer.

***International expansion of our business exposes us to business, regulatory, political, operational, financial, and economic risks associated with doing business outside of the United States.***

We currently market our services and deliver our programs, materials, and processes outside of the United States and may market future offerings outside of the United States. We, and our suppliers, collaborators, and customers, currently conduct business outside of the United States. From time to time, our services may include the hiring or secondment of our employees outside the United States at third party facilities or require the hiring or secondment of foreign persons within our facilities, including as a result of foreign acquisitions. Accordingly, we are subject to a variety of risks inherent in doing business internationally, and our exposure to these risks will increase as we continue to expand our operations and customer base. These risks include:

- political, social and economic instability;
- fluctuations in currency exchange rates;
- higher levels of credit risk, corruption, and payment fraud;
- enhanced difficulties of integrating any foreign acquisitions;
- increased expenses and diversion of our management's attention from advancing programs;
- regulations that might add difficulties in repatriating cash earned outside the United States and otherwise prevent us from freely moving cash;
- import and export controls and restrictions and changes in trade regulations;
- compliance with the U.S. Foreign Corrupt Practices Act, the U.K. Bribery Act, and similar laws in other jurisdictions;

- multiple, conflicting and changing laws and regulations such as privacy, security and data use regulations, tax laws, tariffs, trade regulations, economic sanctions and embargoes, employment laws, anti-corruption laws, regulatory requirements, reimbursement or payor regimes and other governmental approvals, permits and licenses;
- failure by us, our collaborators or our customers to obtain regulatory clearance, authorization or approval for the use of our services in various countries;
- additional potentially relevant third-party patent rights;
- complexities and difficulties in obtaining intellectual property protection and enforcing our intellectual property;
- difficulties in staffing and managing foreign operations, including difficulties related to the increased operations, travel, infrastructure and legal compliance costs associated with international locations;
- logistics and regulations associated with shipping chemicals, biomaterials and product samples, including infrastructure conditions and transportation delays;
- financial risks, such as longer payment cycles, difficulty collecting accounts receivable, the impact of local and regional financial crises, on demand and payment for our products and exposure to foreign currency exchange rate fluctuations;
- natural disasters, political and economic instability, including wars (including the Russian invasion of Ukraine), terrorism and political unrest, the outbreak of disease, or public health epidemics, such as COVID-19, which could have an adverse impact on our employees, contractors, customers, partners, travel and the global economy;
- breakdowns in infrastructure, utilities and other services;
- boycotts, curtailment of trade and other business restrictions; and
- the other risks and uncertainties described in this Quarterly Report on Form 10-Q.

Additionally, as part of our growth strategy, we will continue to evaluate potential opportunities for international expansion. Operating in international markets requires significant resources and management attention and will subject us to regulatory, economic and political risks in addition to those we face in the United States. However, our international expansion efforts may not be successful, which could limit the size of our market or the ability to provide services or programs internationally.

In addition, due to potential costs from any international expansion efforts and potentially higher supplier costs outside of the United States, our international operations may operate with a lower margin profile. As a result, our margins may fluctuate as we expand our operations and customer base internationally.

Any of these factors could significantly harm our future international expansion and operations and, consequently, our revenue and results of operations.

**Risks Related to Our Customers**

***We rely on our customers to develop, produce and manufacture products using the engineered cells and/or biomanufacturing processes that we develop. If these initiatives by our customers are not successful or do not achieve commercial success, or if our customers discontinue their development, production and manufacturing efforts using our engineered cells and/or biomanufacturing processes, our future financial position may be adversely impacted.***

We operate as a platform company. As such, we rely on our customers to commercialize products that may be enabled by our engineered cells and/or biomanufacturing processes. A portion of the value in our customer collaborations is earned through downstream value sharing in the form of equity, royalty streams, or milestone payments. If our customers are not successful in bringing these products to market, the downstream portion of our value will be adversely impacted. Because we do not

directly control manufacturing, product or downstream process development or commercialization, we have limited ability to impact the quality of our partners' production processes and ultimate commercial success.

In addition, our customers may simply choose not to develop or commercialize a product we have enabled in which we are entitled to downstream value sharing. In our current relationships, we would have limited or no recourse to find alternative methods to monetize these products without the original customer. Because this industry is still nascent and the regulatory environment is evolving, we have limited historical information on the probability of commercial success for bioengineered products or biomanufacturing processes in the market and have limited ability to underwrite the likelihood that our customers will be able to create valuable products or processes in their market using the results of their programs with us. If we overestimate the probability of commercial success, the price of our common stock may be adversely impacted as a result of lower expectations for future cash flows from customer collaborations.

***Our revenue is concentrated in a limited number of customers, some of which are related parties, and our revenue, results of operations, cash flows and reputation in the marketplace may suffer upon the loss of a significant customer.***

We have derived, and may continue to derive, a significant portion of our revenue from a limited number of large customers. During the quarter ended June 30, 2022, three customers each represented more than 10% of our total revenue and cumulatively represented 41% of our total revenue. Due to the significant time required to acquire new customers, to plan and develop new programs for customers, and to satisfactorily execute on existing programs, the loss of any of these customers, or the loss of any other significant customer or a significant reduction in the amount of demand from a significant customer would adversely affect our revenue, results of operations, cash flows and reputation in the marketplace. There is always a risk that existing customers will not elect to do business with us in the future or will experience financial difficulties. If our customers experience financial difficulties or business reversals which reduce or eliminate the need for our services, they may be unable or unwilling to fulfill their contracts with us. There is also the risk that our customers will attempt to impose new or additional requirements on us that reduce the profitability of the services performed by us. Our customer concentration also increases the concentration of our accounts receivable and our exposure to payment defaults by key customers, which could expose us to substantial and potentially unrecoverable costs if we do not receive payment from key customers. Additionally, the loss of any significant customer could pose reputational harm to us and make it more challenging to acquire new customers.

In addition, while our customer collaborations are typically multi-year, we generally do not require our customers to generate a minimum amount of annual demand and without such contracts, our customers are not obligated to use our services beyond the amounts they choose to incur. Our customers may choose to use fewer of our services depending on program progress, their own technological capabilities, market demand for their products and/or their own internal budget cycles. As a result, we cannot accurately predict our customers' decisions to reduce or cease utilizing our services. Even where we enter into long-term contracts with our customers, there is no guarantee that such agreements will be negotiated on terms that are commercially favorable to us in the long-term. In addition, existing customers may choose to perform some or all of the services they expect from us internally, with another third-party partner or by using capabilities from acquisitions of assets.

***In certain cases, our business partners may have discretion in determining when and whether to make announcements about the status of our collaborations, including about developments and timelines for advancing programs, and the price of our common stock may decline as a result of announcements of unexpected results or developments.***

Generally, we and our customers must mutually agree on determining when and whether to make announcements about the status of our collaborations, including developments in our programs and timelines for commercialization of or improvements to products using engineered cells developed using our platform. However, in some cases our customers may report or otherwise may be obligated to disclose certain matters without our consent. Our partners may also wish to report such information more or less frequently than we intend to or may not wish to report such information at all. We or our partners may announce a collaboration or partnership even if there is no guarantee that we will recognize program fees. The price of our common stock may decline as a result of a public announcement of unexpected results or developments in our partnerships, or as a result of our partners not consenting to an announcement or withholding information.

**Risks Related to the COVID-19 Pandemic**

***The recent COVID-19 pandemic and the global attempt to contain it may harm our business and results of operations.***

The full impact of the continuing COVID-19 pandemic and related public health measures on our business will depend largely on future developments, including the duration and severity of the pandemic, which remains highly uncertain. Extraordinary actions have been taken by international, federal, state and local public health and governmental authorities to contain and combat the outbreak and spread of COVID-19 throughout the world, including travel bans, quarantines, capacity limitations at facilities, "stay-at-home" orders and similar mandates for many individuals to substantially restrict daily activities and for many businesses to curtail or cease normal operations. Additionally, our operations rely on the availability of laboratory scientists, engineers and facility, safety, quality and compliance personnel to work on-site. If a critical team member falls ill or needs to quarantine, or if a critical mass of our personnel falls ill or needs to quarantine, we may not be able to continue operations. The COVID-19 pandemic has also had an adverse effect on our ability to attract, recruit, interview and hire at the pace we would typically expect to support our rapidly expanding operations, as well as on our ability to build out facilities to accommodate expanding operations.

The COVID-19 pandemic has had, and is expected to continue to have, an adverse impact on our operations, particularly as a result of preventive and precautionary measures that we, other businesses, and governments are taking. For example, as part of these efforts and in accordance with applicable government directives, we initially temporarily suspended some programs at our facilities in Boston, Massachusetts in late March 2020. We have continued to operate within the rules and guidance applicable to our business during the pandemic, including by requiring physical distancing, quarantining our personnel and reducing capacity limits in our facilities, and operations at third-party facilities have been similarly impacted by governmental mandates and guidelines; however, a continuing implementation of these restrictions, or the implementation of additional restrictions, could further impact our ability to operate effectively and conduct ongoing R&D, laboratory operations, sales and marketing activities or other activities or operations, or lead to further compliance costs.

We have also incurred expenses associated with our efforts to accommodate personnel during the COVID-19 pandemic, including costs associated with the provision of COVID-19 testing to our personnel, safety accommodations, providing on-site amenities and enhanced on-site cleaning efforts, and we will continue to incur such expenses associated with our operations.

The pandemic has also caused substantial disruption in global supply chains. These interruptions may require us to suspend operations or delay programs. If we continually delay programs with existing customers, we may be in breach of our contracts with existing customers or customers may decide to cease doing business with us or have decreased demand for our products. We may also experience a slow-down in our pipeline of new programs or a termination of existing programs if our customers or potential customers face disruptions during the pandemic. Difficulties and delays such as those we have experienced and may experience in the future may prevent us from meeting our operating and financial goals, both in general and within our targeted timelines, and may cause our revenues and operating results to fluctuate from period to period.

***Uncertainty regarding the ongoing demand and/or capacity (including capacity at third party clinical testing laboratories) of our COVID-19 individual and pooled sample tests could materially adversely affect our business.***

Our biosecurity offering consists of COVID-19 testing programs, which are subject to inherent risks of commercial viability, such as demand for tests, price or market share erosion due to competition and the duration of the COVID-19 pandemic. We are in a highly competitive market – many companies have launched or are seeking to launch COVID-19 testing products and many of these companies already have an existing commercial and technical infrastructure to market and commercialize such offerings. We have limited experience marketing or commercializing diagnostic or pooled sample testing programs and may not be able to sufficiently support operations with our current base of personnel or recruit enough personnel to effectively commercialize COVID-19 testing programs, particularly during a pandemic, at which time the pipeline for experienced personnel will be in high demand. Moreover, as vaccines for COVID-19 and at-home or over-the-counter COVID-19 tests become more widely available, and as infection rates decrease, demand for COVID-19 testing may also decrease.

Our COVID-19 testing business relies heavily on the adoption of pooled testing in schools, which may be hesitant to adopt COVID-19 testing without positive support from parents or teachers. Although we make test validation results and protocols available to parents and teachers, they may not trust the accuracy of the tests or may have concerns about how the tests are performed, how samples are used or tracked and whether appropriate privacy measures are being taken with respect to individually identifiable health information, including genetic information. The ability for schools to pay for COVID-19 testing relies heavily on the availability of federal, state or local funding for testing. If such funding is depleted, discontinued or otherwise becomes unavailable, or if there are restrictions on the use of such funding for our pooled sample test offerings, our COVID-19 testing business may not be commercially viable. Our COVID-19 testing business is subject to seasonality concerns as the demand for COVID-19 testing in schools is diminished during summer vacations, as well as other school breaks. In addition, as a result of the recent FDA emergency use authorization of a COVID-19 vaccine for children five through eleven years of age, the demand for COVID-19 testing in schools could diminish significantly or be eliminated.

Creating the commercial and technical infrastructure to test on a mass scale is expensive. We may also be limited in our ability to scale up based on expense or unavailability of the required materials, equipment, personnel and infrastructure necessary to deliver diagnostic or pooled sample tests on a mass scale. We may not be able to recover our investment expenses with sufficient revenue generated by our diagnostic and pooled sample testing efforts.

Our ability to commercialize our testing programs is also subject to regulatory or governmental controls, decisions or actions. If the U.S. Department of Health and Human Services ("HHS") terminates its Declaration Justifying Emergency Use of Medical Countermeasures because the circumstances justifying emergency use no longer exist and, if the third-party COVID-19 tests that are used in our testing services are not able to obtain premarket approval, clearance or other marketing authorization from the U.S. Food and Drug Administration ("FDA"), we may be unable to market or distribute these COVID-19 tests, fulfill our contractual testing requirements or generate revenues from our test offerings. We may also experience price erosion if federal or state governments implement price controls or if the price of supply inputs increase.

Finally, the sale of each test is dependent on the supply of the appropriate collection devices authorized for use with the COVID-19 tests we utilize in our testing programs. Disruptions in this supply chain will have a material adverse effect on our ability to sell tests.

***Uncertainty regarding the sales and delivery of our COVID-19 individual and pooled sample tests could materially adversely affect our business.***

Although we have partnerships with third party clinical testing laboratories to support a high volume of pooled sample testing for COVID-19 nationally, pooled testing has not yet been adopted by all states nor have we established partnerships with clinical testing laboratories in all states. We are continuing to develop processes to scale capacity of COVID-19 pooled sample collection and testing. However, we can give no assurance that we will be able to successfully scale the pooled sample collection and test capacity or that we will be able to establish or maintain the collaborative third party relationships that support such testing capacity. In addition, even if we are able to scale to high volume testing nationwide, there can be no assurance that the testing capacity will be used.

***We may be subject to tort liability if the COVID-19 tests we utilize in our testing programs provide inaccurate results.***

The Public Readiness and Emergency Preparedness Act (the "PREP Act") provides immunity for manufacturers, distributors, program planners, qualified persons, and their officials, agents, and employees from certain claims under state or federal law for a "loss" arising out of the administration or use of a "covered countermeasure" in the United States. Distributors are certain persons or entities engaged in the distribution of drugs, biologics, or devices. Program planners include persons who supervise or administer a program with respect to the administration, distribution, provision, or use of a Covered Countermeasure (as defined in the PREP Act). Covered Countermeasures include security countermeasures and "qualified pandemic or epidemic products," including products intended to diagnose or treat pandemic or epidemic disease, such as COVID-19 diagnostic tests, as well as treatments intended to address conditions caused by such products. Covered Countermeasures must also be approved, cleared, or authorized for emergency use, or otherwise authorized for investigational use, by the FDA in order to be considered Covered Countermeasures under the PREP Act.

For these immunities to apply, the Secretary of HHS must issue a declaration in cases of public health emergency or "credible risk" of a future public health emergency. On March 10, 2020, the Secretary of HHS issued a declaration under the PREP Act and has issued subsequent amendments thereto to provide liability immunity for activities related to certain countermeasures against the ongoing COVID-19 pandemic.

We act as the authorized distributor of certain third-party COVID-19 tests and collection kits that have received Emergency Use Authorization ("EUA") and supervise testing programs for our COVID-19 testing customers. There can be no assurance that our test distribution and program planning activities regarding these programs would be covered under the provisions of the PREP Act. Also, there can be no assurance that the U.S. Congress will not act in the future to reduce coverage under the PREP Act or to repeal it altogether.

Furthermore, some of the third-party tests used as part of our pooled testing program are not covered by an EUA and, at this time, we do not believe that such testing services, administration, or program planning related to our pooled testing program will qualify for PREP Act immunity. If product liability lawsuits are brought against us in connection with allegations of harm connected to our COVID-19 testing services, we may incur substantial liabilities and may be required to limit our testing services. The PREP Act is a complex law with limited judicial precedent, and thus even for the third-party COVID-19 tests and collection kits used in our testing services that are subject to EUAs, we may have to expend significant time and legal resources to obtain dismissal of a lawsuit on the basis of PREP Act immunity.

If we cannot successfully defend ourselves against claims that our COVID-19 testing services caused injuries and if we are not entitled to immunity under the PREP Act, or the U.S. Congress limits or eliminates coverage under the PREP Act, or if the liability protections under the PREP Act are not adequate to cover all claims, we may incur substantial liabilities. Regardless of merit or eventual outcome, product liability claims may result in decreased demand for our services, injury to our reputation, costs to defend litigation, loss of revenue, and substantial money awards to customers.

***We are dependent on our relationships with our telehealth partner to provide healthcare services, and our business would be adversely affected if those relationships were disrupted.***

Our contractual relationships with our telehealth partner who provides physician authorization for COVID-19 diagnostic and screening testing may implicate certain state laws in the United States that generally prohibit non-physician entities from practicing medicine, exercising control over physicians or engaging in certain practices such as fee-splitting with physicians. There can be no assurance that these laws will be interpreted in a manner consistent with our practices or that other laws or regulations will not be enacted in the future that could have a material and adverse effect on our business, financial condition and results of operations. Regulatory authorities, state medical boards of medicine, state attorneys general and other parties, including our telehealth partner, may assert that we are engaged in the prohibited corporate practice of medicine, and/or that its arrangements with its telehealth partner constitutes unlawful fee-splitting. If a state's prohibition on the corporate practice of medicine or fee-splitting law is interpreted in a manner that is inconsistent with our practices, we would be required to restructure or terminate our relationship with our telehealth partner to bring our activities into compliance with such laws. A determination of non-compliance, or the termination of or failure to successfully restructure these relationships could result in disciplinary action, penalties, damages, fines, and/or a loss of revenue, any of which could have a material and adverse effect on our business, financial condition and results of operations. State corporate practice of medicine doctrines and fee-splitting prohibitions also often impose penalties on healthcare professionals for aiding the corporate practice of medicine, which could discourage our telehealth partner from providing services to us.

**Risks Related to the Synthetic Biology Industry**

***Rapidly changing technology and emerging competition in the synthetic biology industry could make the platform, programs, and products we and our customers are developing obsolete or non-competitive unless we continue to develop our platform and pursue new market opportunities.***

The synthetic biology industry is still emerging and is characterized by rapid and significant technological changes, frequent new product introductions and enhancements, and evolving industry demands and standards. Our future success will depend

on our ability to sign and initiate new programs that address the evolving needs of our customers on a timely and cost-effective basis, to advance existing programs and to pursue new market opportunities that develop as a result of technological and scientific advances. Additionally, our customers may face significant competition or other risks which may adversely impact our business and results of operations.

There are a number of companies in the broader synthetic biology industry, and our future success will depend on our ability to maintain a competitive position with respect to technological advances. Technological development by others may result in our platform becoming obsolete. Our ability to compete successfully will depend on our ability to develop proprietary technologies that enable our customers to develop products using our platform in a manner that is either less expensive, faster, superior or otherwise differentiated from what a competitor's technologies and products might enable. If we are unable to continue to successfully advance our platform or the services it provides at scale, or if our customers are unable to commercialize the products or processes made or improved upon by using our platform, our business and results of operations will be adversely impacted.

Due to the significant lead time involved in launching a new program or developing a new product or process using our platform, our customers are required to make a number of assumptions and estimates regarding the commercial feasibility of a new program, including assumptions and estimates regarding the size of an emerging product category and demand for those end-products and processes which will use our technology, the ability to scale-up manufacturing processes to produce a product on a commercial scale, the ability to penetrate that emerging product category, customer adoption of a downstream product, the existence or non-existence of products being simultaneously developed by competitors, potential market penetration and obsolescence, planned or unplanned. As a result, it is possible that we may commence a new program with a customer who wishes to develop a product or process that has been displaced by the time of launch, addresses a market that no longer exists or is smaller than previously thought, that end-consumers do not like or otherwise is not competitive at the time of launch, in each case, after the incurrence of significant opportunity costs on our part to develop such product. The ultimate success of the products developed by our customers using our services may be dependent on the success of other markets in which we or our customers do not operate in or have knowledge or expertise or which, in each case, may not reach the size anticipated by us or our customers or may be replaced by another emerging product category or eliminated entirely.

***The market, including customers and potential investors, may be skeptical of our ability to deliver on programs because they are based on a relatively novel and complex technology.***

The market, including customers and potential investors, may be skeptical of the viability and benefits of bioengineered products as well as our enabling abilities, including our platform and programs, because they are based on a relatively novel approach and the adoption of complex technology. There can be no assurance that our platform and programs will be understood, approved, or accepted by customers, regulators and potential investors or that we will be able to sell our services profitably at competitive prices and with features sufficient to establish demand.

In addition, in order for novel products from our programs to be successfully commercialized, support from the entire relevant supply chain is needed. Relationships with all parts of the supply chain are important in order to gain visibility into market trends and feature and specification requirements and in order to ensure customers are able to successfully manufacture their products, obtain regulatory approval and gain access to key distribution channels. If we are unable to convince these potential customers, their suppliers, or the consumers who purchase products containing or made or developed using engineered cells and/or biomanufacturing processes, of the utility and value of such products or that such products are superior to the products they currently use, we will not be successful in entering these markets and our business and results of operations will be adversely affected. If potential investors are skeptical of the success of our platform or cell programs, our ability to raise capital and the value of our common stock may be adversely affected.

***Ethical, legal and social concerns about GMOs and Genetically Modified Materials and their resulting products could limit or prevent the use of products or processes using our technologies, limit public acceptance of such products or processes and limit our revenues.***

Our technologies and the technologies of our customers involve the use of genetically modified cells, organisms and biomaterials, including, without limitation, GMOs, genetically modified microorganisms ("GMMs"), Genetically Modified Materials and their respective products. The use, production and marketing of Genetically Modified Materials, are subject to laws and regulations in many countries, some of which are new and some of which are still evolving. In the United States, the FDA, the Environmental Protection Agency ("EPA") and the U.S. Department of Agriculture ("USDA") are the primary agencies that regulate the use of GMOs, GMMs and potential products derived from GMOs or GMMs. If regulatory approval of the Genetically Modified Materials or resulting products is not secured, our business operations, financial condition and our ability to grow as a business could be adversely affected. We expect to encounter regulations regarding Genetically Modified Materials in most, if not all, of the countries in which our customers may seek to establish production capabilities or sell their products and the scope and nature of these regulations will likely be different from country to country. Governmental authorities could, for safety, social or other purposes, impose limits on, or implement regulation of, the use, production or marketing of Genetically Modified Materials. If our customers cannot meet the applicable requirements in other countries in which they intend to produce or sell their products, or if it takes longer than anticipated to obtain such approvals, our business could be adversely affected.

In addition, public perception regarding the safety and environmental hazards of, and ethical concerns over, Genetically Modified Materials or the processes used to create them, including gene editing or gene regulating technologies, could influence public acceptance of our and our customers' technologies, products, and processes. For instance, certain advocacy groups engage in efforts that include regulatory legal challenges and labeling campaigns for genetically modified products, as well as application of pressure to consumer retail outlets seeking a commitment not to carry genetically modified foods. These groups in the past have pressured retail food outlets and grocery store chains to publicly state that they will not carry genetically modified foods and have pressured food brands to publicly state that they will not use ingredients produced by genetically modified microbes. In addition, certain labeling-related initiatives have heightened consumer awareness of GMOs, which may make consumers less likely to purchase products containing GMO ingredients, which could have a negative impact on the commercial success of our customers' products and programs. These concerns could result in increased expenses, regulatory scrutiny, delays or other impediments to our programs. The subject of Genetically Modified Materials has received negative publicity, which has aroused public debate. This adverse publicity has led to, and could continue to lead to, greater regulation and trade restrictions on imports of Genetically Modified Materials or their resulting products. In addition, with the acquisitions of Dutch DNA Biotech B.V. and FGen AG ("FGen"), we are expanding into the European Union market, which has increased government regulation and scrutiny over genetically modified products. There is a risk that products produced using our technologies could cause adverse health effects or other adverse events, which could also lead to negative publicity, regulatory action or private litigation. If we are unable to overcome the ethical, legal and social concerns relating to genetic engineering, our programs could face increased expenses, regulatory scrutiny, delays or other impediments to deliver our programs or the commercialization of resulting products and processes.

Finally, the COVID-19 pandemic may increase biosecurity concerns by public and/or governmental stakeholders regarding genetic engineering technologies and risks around engineered viruses, microbes and organisms. Such concerns, restrictions, or governmental restrictions could limit the use of Genetically Modified Materials in our customers' products, which could have a material adverse effect on our business, financial condition and results of operations.

**Risks Related to Intellectual Property**

***If we are unable to obtain, maintain and defend patents protecting our intellectual property, our competitive position will be harmed.***

Our success depends in part on our ability to obtain and maintain intellectual property protection for our proprietary technologies. We protect our proprietary technologies through patents and trade secrets, both of which entail risk. If we are unable to obtain, maintain or protect intellectual property rights related to our technology, or if our intellectual property rights are inadequate, our competitive position, business, financial conditions, results of operations and prospects may be harmed.

Because of the volume and nature of our inventions, patent protection may not be practicable, available, or appropriate for some aspects of our proprietary technologies. While we own patents and pending patent applications in the United States and

in foreign jurisdictions, these applications do not ensure the protection of our intellectual property. There may be prior art of which we are not aware. Additionally, obtaining, maintaining, defending and enforcing patents is costly, time consuming and complex, and we may not be able to file and prosecute all necessary or desirable patent applications, or maintain and enforce any patents that may issue from such 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 technologies before it is too late to obtain patent protection. Although we enter into confidentiality agreements with parties who have access to confidential or patentable aspects of our R&D output, such as our employees, collaborators, consultants, advisors and other third parties, any of these parties may breach the agreements and disclose such output before a patent application is filed, thereby jeopardizing our ability to seek patent protection.

Further, pending applications may not be issued or may be issued with claims significantly narrower than we currently seek. Patents for which claims have been allowed may be successfully challenged and invalidated. Unless and until our pending applications issue, their protective scope is impossible to determine and, even after issuance, their protective scope may be limited.

Recent changes in patent law have made patents covering life science inventions more difficult to obtain and enforce. Further legislative changes or changes in the interpretation of existing patent law could increase the uncertainty and cost surrounding the prosecution of our owned patent applications and the maintenance, enforcement or defense of our owned patents. The Leahy-Smith America Invents Act ("the Leahy-Smith Act") included changes that affect the way patent applications are prosecuted; redefine prior art; enable third-party submission of prior art to the United States Patent and Trademark Office ("USPTO") during patent prosecution; and provide cost-effective avenues for competitors and other third parties to challenge the validity of patents at USPTO-administered post-grant proceedings, including post-grant review, inter partes review, and derivation proceedings. Thus, the Leahy-Smith Act and its continued 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.

Other changes in the law may further detract from the value of life science patents and facilitate challenges to our patents. In some cases, we use genetic sequence information from naturally occurring organisms, which may not be patentable. Recent U.S. Supreme Court rulings have narrowed the scope of patent protection for naturally occurring sequences and for inventions based on the observation and exploitation of natural phenomena. These decisions have weakened the rights of patent owners in certain situations. The U.S. Court of Appeals for the Federal Circuit has also issued a series of rulings that create obstacles to the patenting of groups of genetic sequences that share functional characteristics, making it more difficult to obtain claims to certain genetic constructs, particularly antibodies. These changes in the law have created uncertainty with respect to the validity and enforceability of patents covering natural and engineered sequences. 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 further material adverse effect on our patent rights and our ability to protect, defend and enforce our patent rights in the future.

Further, the issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability, and our patents may be challenged in the courts or patent offices in the United States and abroad. An adverse determination in any such challenge could result in loss of exclusivity, or patent claims being narrowed, invalidated or held unenforceable, in whole or in part. Any of these results could limit our ability to stop others from using or commercializing similar or identical technology to compete directly with us. In addition, if the breadth or strength of protection provided by our patents and patent applications is threatened, regardless of the outcome, it could dissuade companies from collaborating with us. Such proceedings also may result in substantial cost and require significant time from our scientists and management, even if the eventual outcome is favorable to us.

The laws of some foreign countries do not protect intellectual property rights to the same extent as do the laws of the United States or may apply different rules concerning the assignment of intellectual property rights. Many companies have encountered significant problems in protecting and defending intellectual property rights in certain foreign jurisdictions. We may encounter similar difficulties, particularly as we expand to work with foreign employees and contractors and expand our collaboration activities into foreign markets. The legal systems of certain countries, particularly certain developing countries,

do not favor the enforcement of patents by foreign holders and, in some cases, do not favor the enforcement of patents at all, particularly patents in the life sciences. This could make it difficult for us to stop the infringement of our patents. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business and could be unsuccessful.

Reductions in the scope or enforceability of our patent protection may adversely affect our customers' ability to commercialize their products and may thus reduce our downstream value from royalties, equity, or commercial milestone payments.

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

Because patent protection may not be available or appropriate for significant aspects of the technology we are developing, our success may depend in large part on our proprietary information, including genetic and other chemical and biological data, processes, know-how, and other trade secrets developed over years of R&D, some of which are embodied in proprietary software. We rely heavily on trade secret protections, especially in cases where we believe patents or other forms of registered intellectual property protection may not be appropriate or obtainable. However, trade secrets are difficult to protect. The secrecy of the Company's trade secrets must be maintained for them to retain their status and protection as trade secrets. While we strive to protect the secrecy of our trade secrets and other proprietary information, including by requiring our employees, customers, consultants, and contractors to enter into confidentiality agreements and instituting multilayered protections covering our digital environment and biomaterials, we may not be able to adequately protect our trade secrets or other proprietary information. We cannot guarantee that we have entered into such agreements with every party that may have or has had access to our trade secrets, biomaterials or proprietary technology and processes. Further, despite these efforts, any of these parties may 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.

We seek to preserve the integrity and confidentiality of our information by maintaining physical security of our premises and physical and electronic security of our information technology systems, but it is possible that these security measures could be breached. We also rely on systems provided by third parties, which may suffer security breaches or incidents. Such security breaches may be inadvertent or may come about due to intentional misconduct or other malfeasance or by human error or technical malfunctions, including those caused by hackers, employees, contractors, or vendors. It may be difficult or impossible to recover trade secrets or other confidential information once it is hacked, and hackers may operate from jurisdictions that will not cooperate with such efforts. Enforcing any claim that a third party unlawfully obtained and is using any of our trade secrets is expensive and time consuming, and the outcome is unpredictable. In addition, courts in some jurisdictions are less willing or unwilling to protect trade secrets even when a hacker or thief can be identified.

Our competitors may lawfully obtain or independently develop knowledge that is equivalent to one or more of our trade secrets. Were they to do so, we would be unable to prevent them from using that independently developed knowledge. Such a competitor could claim that we had learned the trade secret from them and bring an action against us on that basis. If any of our trade secrets were to be disclosed to or independently developed by a competitor or other third party, our competitive position could be materially and adversely harmed. Moreover, a competitor could file for patent protection covering intellectual property that we have chosen to protect as a trade secret. In such a case, we might be restricted or excluded from using that intellectual property even if we had developed it before our competitor did.

Our facilities hold large collections of microbial strains, cell lines and other biomaterials. Failure to implement adequate controls and protections, failure to implement adequate disposal procedures, unauthorized visitors in the labs, or customers' failure to adequately protect biological materials can put us and our customers at risk of losing valuable assets through negligence or theft and enabling the use of those lost materials by our competitors. While we believe that we take reasonable measures to protect the security of biomaterials owned by us or our customers, it is possible that our security controls and practices may not prevent unauthorized or other improper access to such genetic material. Any unauthorized access, acquisition, use, destruction, or release of the GMOs we engineer could result in our having exposure to significant liability under our contracts, as well as to regulatory actions, litigation, investigations, remediation obligations, damage to our reputation and brand, supplemental disclosure obligations, loss of customer, consumer, or partner confidence in the security

of our platform, impairment to our business, and corresponding fees, costs, expenses, loss of revenues, and other potential liabilities.

Our customers sometimes provide organisms, genetic material and/or data to us in connection with our collaborations. In the event that we fail to protect customer materials or data or inadvertently use such materials or data for unauthorized purposes, we could be liable to our customers under trade secret laws or contractual provisions.

There could be unintended consequences to the environment generally or the health and safety of our employees or the public as a result of an unauthorized release of Genetically Modified Materials into uncontrolled environments. In addition, if a biosecurity breach or unauthorized release of genetic material were to occur within our industry, our customers and potential customers might lose trust in the security of the laboratory environments in which we produce GMOs, even if we are not directly affected. Any adverse effect resulting from such a release, by us or others, could have a material adverse effect on the public acceptance of our products and business and our financial condition. Such a release could result in enhanced regulatory activity, and we could have exposure to liability for any resulting harm.

***We may be subject to claims challenging the inventorship or ownership of our patents, biomaterials and other intellectual property.***

Certain of our employees, consultants and contractors were previously employed at universities or other software or biotechnology companies, including our competitors or potential competitors. Additionally, some of our consultants or contractors may have ongoing relationships with universities. Although we try to ensure that our employees, consultants and contractors do not use the intellectual property of others in their work for us, we may be subject to claims that these individuals or other contractors have used or disclosed intellectual property, including trade secrets or other proprietary information, of another. Litigation may result from these claims.

While it is our policy to require that our employees, consultants and contractors who may be involved in the development of intellectual property 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 are unsuccessful in litigating 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 use or commercialize our technology or products, which license might not be available on commercially reasonable terms, or at all. 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.

The life science academic and research community has abided by norms of free exchange of biomaterials, but recently, norms have begun to change so that parties may assert ownership and control over biomaterials that they permitted to be freely disseminated in the past. Thus, despite our best efforts to confirm our right to use biomaterials in our possession, we may use organisms that we believe to be free of encumbrance that are, in fact, subject to claims of title by others. In such a situation, litigation may be required to clear title, if it can be cleared at all. Similarly, we may be subject to claims that we have used biomaterials obtained from licensors or repositories for unauthorized purposes, or purposes not consistent with the licensing terms of the providing organization.

***We may become involved in lawsuits or other enforcement proceedings to protect or enforce our patents or other intellectual property, which could be expensive, time consuming and potentially unsuccessful.***

Competitors and other third parties may infringe or otherwise violate our issued patents or other intellectual property. In addition, our patents may become involved in inventorship, ownership, or priority disputes. We may also become subject to claims by collaboration partners that intellectual property or biomaterials that we believe to be owned by us are actually owned by them. Any litigation concerning any of these issues would be expensive, time consuming and uncertain. There can be no assurances that we would prevail in any suit brought by us or against us by third parties, or successfully settle or otherwise resolve those claims. Significant litigation would have substantial costs, even if the eventual outcome were favorable to us, and would divert management's attention from our business objectives.

***Under certain circumstances, we may share or lose rights to intellectual property developed under U.S. federally funded research grants and contracts.***

Some of our inventions, data, or other intellectual property have been or may be developed during the course of research funded by the U.S. government. The U.S. government may have the right to take title to government-funded inventions if we fail to disclose the inventions to the government in a timely manner or fail to file a patent for the intellectual property within specified time limits. Further, in consequence of our receiving government funding, the U.S. government may have certain rights to intellectual property that we use in our platform or programs pursuant to the Bayh-Dole Act of 1980, as amended (the "Bayh-Dole Act"). Under the Bayh-Dole Act, U.S. government rights in certain "subject inventions" developed under a government-funded program may include a non-exclusive, irrevocable worldwide license to use inventions for any governmental purpose. In some circumstances, the U.S. government may acquire unlimited rights in data we generate. In addition, the U.S. government has the right to require us, or an assignee or exclusive licensee to U.S. Government-funded inventions, to grant licenses to any of these inventions to the government or a third party if the government determines that: (i) adequate steps have not been taken to commercialize the invention; (ii) government action is necessary to meet public health or safety needs; (iii) government action is necessary to meet requirements for public use under federal regulations; or (iv) the right to use or sell such inventions is exclusively licensed to an entity within the United States and substantially manufactured outside the United States without the U.S. government's prior approval. Additionally, we may be restricted from granting exclusive licenses for the right to use or sell such inventions unless the licensee agrees to comply with relevant Bayh-Dole Act restrictions (e.g., manufacturing substantially all of the invention in the United States) and reporting requirements. In addition, the U.S. government may acquire title in any country in which a patent application is not filed. Certain technology and inventions are also subject to transfer restrictions during the term of these agreements with the U.S. government and for a period thereafter. These restrictions may limit sales of products or components, transfers to foreign subsidiaries for the purpose of the relevant agreements, and transfers to certain foreign third parties. If any of our intellectual property becomes subject to any of the rights or remedies available to the U.S. government or third parties pursuant to the Bayh-Dole Act, this could impair the value of our intellectual property and could adversely affect our business.

***The use of digital genetic sequence information may be subject to the Nagoya Protocol, which could increase our costs and adversely affect our business.***

The Nagoya Protocol is a supplemental agreement to the Convention on Biological Diversity ("CBD"). The Nagoya Protocol is designed to provide for equitable sharing of benefits arising from the utilization of genetic resources and traditional knowledge. Under the Nagoya Protocol, countries possessing genetic resources ("source countries") are tasked with setting up procedures and institutional infrastructure for researchers to obtain prior informed consent, both from the source country and from any relevant indigenous or traditional communities, for biological research. Many have been slow to adopt workable institutions permitting the rational negotiation of benefit-sharing agreements. Many source countries are now asserting that the use of digital genetic sequence information is subject to the constraints of the Nagoya Protocol or similar national- or local-level benefit-sharing requirements. It is unclear whether this position will ultimately be adopted or what the implications of such adoption might be. It is unclear what a source country might assert if we used genetic sequences (i) extracted by a third party from a natural resource that was removed from its source country before that source country ratified the CBD or signed the Nagoya Protocol (ii) extracted by a third party and uploaded to public sequence databases after the source country ratified the CBD; (iii) in a heterologous host organism; or (iv) as a base for further engineering, so that the sequence we use no longer conforms to the natural sequence on which it was based.

We make extensive use of public and proprietary sequence databases to support our work. While we undertake efforts to identify and comply with laws and international protocols relating to the use of genetic resources, the uncertainty surrounding the use of digital sequence information and the lack of workable institutions in many source countries for the efficient negotiation of benefit-sharing agreements may limit our use or cause uncertainty in our use of certain sequences that we obtain from public access databases or natural sources. New financial obligations may arise regarding our use of sequence information. Customers that must certify their compliance with Nagoya Protocol obligations may be reluctant to do business with us unless we engage in expensive and time-consuming benefit-sharing negotiations with source countries of publicly available genetic sequences. These changes could increase our R&D costs and adversely affect our business, financial condition, and results.

***Third party patents may limit our freedom to operate in certain areas, which may adversely affect our business.***

There may be patents that affect our freedom to operate in certain areas, and we may as a result choose to design around or license such patents from third parties. If we must spend significant time and money designing around or licensing patents held by others, our business and financial prospects may be harmed. We may be restricted from carrying out certain operations in our Foundry, or we may be limited in our ability to design new products for our customers. We may become subject to claims by third parties alleging that we are infringing, misappropriating, or otherwise violating their intellectual property rights.

***If we are sued for infringing intellectual property rights of third parties, such litigation could be costly and time consuming and could prevent or delay us from using our platform and technologies.***

Any litigation arising from any dispute relating to the intellectual property of third parties would be expensive, time-consuming, and uncertain. There can be no assurance that we would prevail in any such dispute. Parties making claims against us might be able to obtain injunctive or other relief, which could block our or our customers' ability to develop, commercialize and sell products or use our technologies, and could result in the award of substantial damages against us, including treble damages, attorney's fees, costs and expenses if we were found to have willfully infringed. In the event of a successful claim against us, we or our customers might be required to pay damages and ongoing royalties, and obtain licenses from third parties, or be prohibited from selling certain products or using certain technologies. We may not be able to obtain these licenses on acceptable or commercially reasonable terms, if at all. In addition, we or our customers could encounter delays in product or service introductions while we attempt to develop alternative designs or redesign existing products or technologies to avoid or resolve these claims. Our loss in any lawsuit or failure to obtain a license could prevent us from using our platform and technologies. Such a loss or failure could materially affect our business and reputation. Any litigation pertaining to these issues would have substantial costs, even if the eventual outcome were favorable to us, and would divert management's attention from our business objectives.

***If our trademarks and trade names are not adequately protected, then we may not be able to build name recognition in our markets of interest and our business may be adversely affected.***

Our registered or unregistered trademarks or trade names may be challenged, infringed, diluted, tarnished, circumvented or declared generic or determined to be infringing on other marks. We may not be able to protect our rights to these trademarks and trade names, which we need to build name recognition among potential collaborators or customers in our markets of interest. At times, competitors may adopt trade names or trademarks similar to ours, thereby impeding our ability to build brand identity and possibly leading to market confusion. In addition, there could be potential trade name or trademark infringement, dilution or tarnishment claims brought by owners of other trademarks or trademarks that incorporate variations of our registered or unregistered trademarks or trade names. Over the long term, if we are unable to establish name recognition based on our trademarks and trade names, then we may not be able to compete effectively and our business may be adversely affected. Our efforts to enforce or protect our proprietary rights related to trademarks, trade names, trade secrets, domain names, copyrights or other intellectual property may be ineffective and could result in substantial costs and diversion of resources and could adversely affect our business, financial condition, results of operations and prospects.

***Any claims or lawsuits relating to infringement of intellectual property rights brought by or against us will be costly and time consuming and may adversely affect our business, financial condition and results of operations.***

Any of the risks identified above could result in significant litigation. In addition to the specific litigation-related risks identified above, litigation of any kind carries certain inherent risks. Because of the substantial amount of discovery required in connection with litigation in U.S. courts, there is a risk that some of our confidential information could be compromised in the discovery process. There could be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on our share price.

Further, our agreements with some of our customers, suppliers or other entities require us to defend or indemnify these parties if they become involved in infringement claims that target our products, services or technologies, or in certain other situations. If we must defend or indemnify third parties, we could incur significant costs and expenses that could adversely affect our business, operating results or financial condition.

***Intellectual property rights do not necessarily address all potential threats to our business.***

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations and may not adequately protect our business or permit us to maintain our competitive advantage. The following examples are illustrative:

- we may choose not to file a patent in order to maintain certain intellectual property as trade secrets or know-how, and a third party may subsequently file a patent covering such intellectual property;
- others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our owned or licensed intellectual property rights;
- the patents of others may harm our business;
- we might not have been the first to make the inventions covered by the issued patents or pending patent applications that we own;
- we might not have been the first to file patent applications covering certain of our inventions; and
- issued patents that we hold rights to may fail to provide us with any competitive advantage, or may be held invalid or unenforceable, including as a result of legal challenges by our competitors.

Should any of these events occur, they could harm our business, financial condition, results of operations and prospects.

***Intellectual property disputes of third parties and customers could have a material adverse effect on our business, financial condition, and results.***

We rely, and expect to continue to rely on, certain capital equipment, machinery, consumables, reagents, software, services and intellectual property that we purchase or license from third parties for use in our operations, platform, products, services and offerings. We cannot be certain that our vendors, suppliers, and licensors are not infringing upon the intellectual property rights of others or that they have sufficient rights to the third-party technology used in our business in all jurisdictions in which we may operate. Disputes with any of these third parties over uses or terms could result in the payment of additional royalties or penalties by us, cancellation or non-renewal of the underlying license, termination of supplies or rights to use, or litigation. In the event that we cannot resolve issues of this kind, we may be required to discontinue or limit our use of the operations, platform, products, services or offerings that include or incorporate the licensed intellectual property. Any such discontinuation or limitation could have a material and adverse impact on our business, financial condition and results of operation.

Our customers may become involved in intellectual property disputes with third parties that are related or unrelated to any products or services we have supplied or rendered to them. Such disputes could result in a customer being unable to market its products, thus depriving us of license, milestone, or other revenues. Such deprivation could have a material adverse impact on our financial condition and results.

***Our use of "open-source" software could negatively affect our ability to market or provide our services and could subject us to possible litigation.***

We have used "open-source" software in connection with the development and deployment of our software platform, and we expect to continue to use open-source software in the future. Open-source software is licensed by its authors or other third parties under open-source licenses, which in some instances may subject us to certain unfavorable conditions, including requirements that we offer our products that incorporate the open-source software for no cost, that we make publicly available all or part of the source code for any modifications or derivative works we create based upon, incorporating or using the open-source software, or that we license such modifications or derivative works under the terms of the particular open-source license.

Companies that incorporate open-source software into their products have, from time to time, faced claims challenging the use of open-source software and compliance with open-source license terms. We could be subject to similar suits by parties claiming ownership of what we believe to be open-source software or claiming noncompliance with open-source licensing terms. While we monitor our use of open-source software and try to ensure that none is used in a manner that would require us to disclose our proprietary source code or that would otherwise breach the terms of an open-source agreement, we cannot guarantee that we will be successful, that all open-source software is reviewed prior to use in our platform, that our developers have not incorporated open- source software into our products that we are unaware of or that they will not do so in the future.

Furthermore, there are an increasing number of open-source software license types, almost none of which have been interpreted by U.S. or foreign courts, resulting in a dearth of guidance regarding the proper legal interpretation of such licenses. As a result, there is a risk that open-source software licenses could be construed in a manner that imposes unanticipated conditions or restrictions on our ability to market or provide our products and services. If we are held to have breached or failed to fully comply with all the terms and conditions of an open-source software license, we could face infringement claims or other liability, or be required to seek costly licenses from third parties to continue providing our offerings on terms that are not economically feasible, if at all, to re-engineer all or a portion of our platform, to discontinue or delay the provision of our offerings if re-engineering could not be accomplished on a timely basis or to make generally available, in source code form, our proprietary code. Further, in addition to risks related to license requirements, use of certain open-source software carries greater technical and legal risks than does the use of third-party commercial software. For example, open-source software is generally provided without any support or warranties or other contractual protections regarding infringement or the quality of the code, including the existence of security vulnerabilities. To the extent that our platform depends upon the successful operation of open-source software, any undetected errors or defects in open-source software that we use could prevent the deployment or impair the functionality of our systems and injure our reputation. In addition, the public availability of such software may make it easier for others to compromise our platform. Any of the foregoing risks could materially and adversely affect our business, financial condition and results of operations.

**Risks Related to Personnel, IT and Physical Infrastructure**

***Loss of key personnel, including our founders and senior executives, and/or failure to attract, train and retain additional key personnel could delay our cell engineering programs, harm our platform development efforts, limit our biosecurity offerings, and harm our ability to meet our business objectives, particularly given the substantial investment required to train certain of our employees.***

Our business involves complex, global operations across a variety of markets and requires a management team and employee workforce that is knowledgeable in the many areas in which we operate. Our future success depends upon our ability to attract, train, retain and motivate highly qualified management, scientific, engineering, information technology, operations,

business development and marketing personnel, among others. In addition, the market for qualified personnel is very competitive because of (a) the limited number of people available who have the necessary technical skills and understanding of our technology and products and (b) the nature of our industry which requires certain of our technical personnel to be on-site in our facilities. We compete for qualified technical personnel with other life sciences and information technology companies, as well as academic institutions and research institutions in the markets in which we operate, including Boston, Massachusetts, Cambridge, Massachusetts, Emeryville, California, Utrecht, Netherlands, Basel, Switzerland and Melbourne, Australia. In addition, as we add international operations, we will increasingly need to recruit qualified personnel outside the United States. However, doing so may also require us to comply with laws to which we are not currently subject, which could cause us to allocate or divert capital, personnel and other resources from our organization, which could adversely affect our business, financial condition, results of operations, prospects and reputation. Establishing international operations and recruiting personnel has and may continue to be impacted by COVID-19 travel and operational restrictions. Our senior leadership team is critical to our vision, strategic direction, platform development, operations and commercial efforts. Our employees, including members of our leadership team, could leave our company with little or no prior notice and would be free to work for a competitor. We also do not maintain "key person" life insurance on any of our employees. The departure of one or more of our founders, senior leadership team members or other key employees could be disruptive to our business until we are able to hire qualified successors.

Our continued platform development, growth and commercial success depends, in part, on recruiting and retaining highly-trained personnel across our various target industries and markets with the necessary background and ability to develop and use our platform and to effectively identify and sell to current and new customers. New hires require significant training and, in most cases, take significant time before they achieve full productivity. Our failure to successfully hire and integrate these key personnel into our business could adversely affect our business. To attract top talent, we believe we will need to offer competitive compensation and benefits packages, including equity incentive programs, which may require significant investment. If we are unable to offer competitive compensation this may make it more difficult for us to attract and retain key employees. Moreover, if the perceived value of our equity awards declines, it may adversely affect our ability to attract and retain key employees. If we do not maintain the necessary personnel to accomplish our business objectives, we may experience staffing constraints that adversely affect our ability to support our programs and operations.

In addition, some of our personnel are qualified foreign nationals whose ability to live and work in the U.S. is contingent upon the continued availability of appropriate visas and whose ability to work on some of our technologies may require the procurement of appropriate export licenses. Due to the competition for qualified personnel in the key markets in which we operate, we expect to continue to utilize foreign nationals to fill part of our recruiting needs. As a result, changes to United States immigration policies have and could further restrain the flow of technical and professional talent into the United States and adversely affect our ability to hire and retain qualified personnel.

***Our business and results of operations are dependent on adequate access to laboratory and office space and suitable physical infrastructure, including electrical, plumbing, HVAC and network infrastructure, to conduct our operations. Our headquarters and laboratories are located in a flood zone in Boston's Seaport District. If we are unable to access enough space or we experience failures of our physical infrastructure, our business and results of operations could be adversely affected.***

Our business depends on providing customers with technical services. In order to properly conduct our business, we need access to sufficient laboratory space and equipment to perform the activities necessary to advance and complete our programs. Additionally, we need to ensure that our laboratories and corporate offices remain operational at all times, which includes maintaining suitable physical infrastructure, including electrical, plumbing and HVAC, logistics and transportation systems and network infrastructure. We lease our laboratories and office spaces and we rely on the landlords for basic maintenance of our leased laboratories and office buildings. If one of our landlords has not maintained a leased property sufficiently, we may be forced into an early exit from the facility, which could be disruptive to our business. Furthermore, we may continue to acquire laboratories not built by us in order to sufficiently scale and expand our output capacity. If we discover that these buildings and their infrastructure assets are not in the condition we expected when they were acquired, we may be required to incur substantial additional costs to repair or upgrade the laboratories.

Problems in and around one or more of our laboratories or corporate offices, whether or not within our control, could result in service interruptions or significant infrastructure or equipment damage. These could result from numerous factors, including:

- human error;
- equipment failure;
- physical, electronic and cybersecurity breaches;
- fire, earthquake, hurricane, flood, tornado and other natural disasters;
- extreme temperatures;
- flood and/or water damage;
- fiber cuts;
- power loss;
- terrorist acts, including acts of bioterrorism;
- sabotage, vandalism and cyberattacks; and
- local epidemics or global pandemics such as the COVID-19 pandemic.

We have timeline obligations to certain customers with respect to their programs. As a result, service interruptions or significant equipment damage in our laboratories could result in difficulty maintaining program timelines for these customers and potential claims related to such failures. Because the services we provide in our laboratories are critical to many of our customers' businesses, service interruptions or significant equipment damage in our laboratories could also result in lost revenue or other indirect or consequential damages to our customers. We cannot guarantee that a court would enforce any contractual limitations on our liability in the event that one of our customers brings a lawsuit against us as a result of a problem at one of our laboratories and we may decide to reach settlements with affected customers irrespective of any such contractual limitations. In addition, any loss of service, equipment damage or inability to meet our service obligations could reduce the confidence of our customers and could consequently impair our ability to obtain and retain customers, which would adversely affect both our ability to generate revenues and our operating results.

Furthermore, we are dependent upon internet service providers, telecommunications carriers and other website operators, some of which have experienced significant system failures and electrical outages in the past.

Our customers may, in the future, experience difficulties due to system failures unrelated to our systems and offerings. If, for any reason, these providers fail to provide the required services, our business, financial condition and results of operations could be materially and adversely impacted.

**Risks Related to Financial Reporting**

***We rely on our customers, joint venturers, equity investees and other third parties to deliver timely and accurate information in order to accurately report our financial results in the time frame and manner required by law.***

We need to receive timely, accurate, and complete information from a number of third parties in order to accurately report our financial results on a timely basis. If the information that we receive is not accurate, our consolidated financial statements may be materially incorrect and may require restatement. Although we have audit rights with these parties, performing such an audit could be expensive and time consuming and may not be adequate to reveal any discrepancies in a time frame consistent with our reporting requirements. As a result, we may have difficulty completing accurate and timely financial disclosures, which could have an adverse effect on our business.

***We use estimates in determining the fair value of certain assets and liabilities. If our estimates prove to be incorrect, we may be required to write down the value of these assets or write up the value of these liabilities, which could adversely affect our financial position.***

Our ability to measure and report our financial position and operating results is influenced by the need to estimate the fair value of an asset or liability. Fair value is estimated based on a hierarchy that maximizes the use of observable inputs and minimizes the use of unobservable inputs. Observable inputs are inputs that reflect the assumptions that market participants would use in pricing the asset or liability developed based on market data obtained from sources independent of the reporting entity. Unobservable inputs are inputs that reflect the reporting entity's own assumptions about the assumptions market participants would use in pricing the asset or liability developed based on the best information available in the circumstances. We estimate the impact or outcome of future events on the basis of information available at the time of the financial statements. An accounting estimate is considered critical if it requires that management make assumptions about matters that were highly uncertain at the time the accounting estimate was made. If actual results differ from management's judgments and assumptions, then they may have an adverse impact on our results of operations and cash flows.

***Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.***

We have incurred net losses since our inception and we may never achieve or sustain profitability. Generally, for U.S. federal income tax purposes, net operating losses incurred will carry forward. However, net operating loss carryforwards generated prior to January 1, 2018 are subject to expiration for U.S. federal income tax purposes. As of December 31, 2021, we had federal net operating loss carryforwards of approximately $665.2 million, of which $139.2 million begin to expire in 2029. We have approximately $526.0 million of federal net operating losses as of December 31, 2021 that can be carried forward indefinitely. As of December 31, 2021, we had state net operating loss carryforwards of approximately $529.3 million, of which $485.9 million begin to expire in 2029. We have approximately $43.4 million of state net operating losses as of December 31, 2021 that can be carried forward indefinitely. As of December 31, 2021, we had federal research and development tax credit carryforwards of approximately $23.3 million which begin to expire in 2029. As of December 31, 2021, we also had state research and development and investment tax credit carryforwards of approximately $18.0 million which begin to expire in 2030.

Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, if a corporation undergoes an "ownership change," generally defined as a greater than 50% change by value in its equity ownership by certain stockholders over a three-year period, the corporation's ability to use its pre-ownership change net operating loss carryforwards and other pre-ownership change tax attributes, such as research tax credits, to offset its post- ownership change income or taxes may be limited. Similar provisions of state tax law may also apply to limit the use of our state net operating loss carryforwards and other state tax attributes. We have not performed an analysis to determine whether our past issuances of stock and other changes in our stock ownership may have resulted in one or more ownership changes. If it is determined that we have in the past experienced an ownership change, or if we undergo one or more ownership changes as a result of future transactions in our stock, which may be outside our control, then our ability to utilize our net operating loss carryforwards and other tax attributes may be materially limited. As a result, even if we earn taxable income, we may be unable to use a material portion of our net operating loss carryforwards and other tax attributes, which could adversely affect our future cash flows. There is also a risk that regulatory changes, such as suspensions on the use of net operating losses or other unforeseen reasons, may result in our existing net operating loss carryforwards expiring or otherwise becoming unavailable to offset future taxable income. For these reasons, we may not be able to utilize a material portion of our net operating loss carryforwards and other tax attributes even if we attain profitability.

***If we fail to maintain an effective system of internal control over financial reporting, we may not be able to accurately report our financial results or prevent fraud. As a result, stockholders could lose confidence in our financial and other public reporting, which would harm our business and the trading price of our common stock.***

As a public reporting company, we are subject to the rules and regulations established by the SEC and the New York Stock Exchange ("NYSE"). These rules and regulations require, among other things, that we establish and periodically evaluate procedures with respect to our internal control over financial reporting. Reporting obligations as a public company are likely

to place a considerable strain on our financial and management systems, processes and controls, as well as on our personnel, including senior management. In addition, as a public company, we are required to document and test our internal control over financial reporting pursuant to Section 404 of the Sarbanes-Oxley Act of 2002 so that our management can certify as to the effectiveness of our internal control over financial reporting. Management's initial certification under Section 404 of the Sarbanes-Oxley Act of 2002 will be required with our Annual Report on Form 10-K for the year ending December 31, 2022. In support of such certifications, we are required to document and make significant changes and enhancements, including potentially hiring additional personnel, to our internal control over financial reporting. Likewise, our independent registered public accounting firm is not required to attest to the effectiveness of our internal control over financial reporting until our first annual report is required to be filed with the SEC following the date we are no longer an emerging growth company. At such time as we are required to obtain auditor attestation, if we then have a material weakness, we would receive an adverse opinion regarding our internal control over financial reporting from our independent registered accounting firm.

To achieve compliance with Section 404 within the prescribed period, we will need to continue to dedicate internal resources, including hiring additional financial and accounting personnel and potentially engaging outside consultants. 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. We have identified material weaknesses in our internal control environment in the past and cannot provide assurances that there will not be material weaknesses or significant deficiencies in our internal control over financial reporting in the future. 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 that our internal control over financial reporting is effective or if our independent registered public accounting firm determines we have a material weakness or significant deficiency in our internal control over financial reporting, we could lose investor confidence in the accuracy and completeness of our financial reports, the market price of shares of our common stock could decline, and we could be subject to sanctions or investigations by NYSE, 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 have identified material weaknesses in our internal control over financial reporting in the past. 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 our annual or interim financial statements will not be prevented or detected on a timely basis. If we are unable to remediate these material weaknesses, or if we identify additional material weaknesses in the future or otherwise fail to maintain an effective system of internal controls, we may not be able to accurately or timely report our financial condition or results of operations, which may adversely affect investor confidence in us and, as a result, our stock price.

***Our cash and cash equivalents could be adversely affected if the financial institutions in which we hold our cash and cash equivalents fail.***

We regularly maintain cash balances at third-party financial institutions in excess of the Federal Deposit Insurance Corporation insurance limit. While we monitor the cash balances in our operating accounts on a daily basis and adjust the balances as appropriate, these balances could be impacted, and there could be a material adverse effect on our business, if one or more of the financial institutions with which we deposit cash fails or is subject to other adverse conditions in the financial or credit markets. To date, we have experienced no loss or lack of access to our invested cash or cash equivalents; however, we can provide no assurance that access to our invested cash and cash equivalents will not be impacted by adverse conditions in the financial and credit markets.

**Risks Related to Governmental Regulation and Litigation**

***Failure to comply with federal, state, local and international laws and regulations could adversely affect our business and our financial condition.***

A variety of federal, state, local and international laws and regulations govern certain aspects of our business. For example, we maintain a registration from the U.S. Drug Enforcement Administration ("DEA") for the research of certain controlled substances and permits from the Boston Public Health Commission to conduct work with recombinant DNA. Some of our programs or products made or developed using our engineered cells and/or biomanufacturing processes are subject to regulations, including those promulgated by the FDA, DEA, EPA or USDA. Products utilized in our COVID-19 testing services are subject to regulations promulgated by the FDA, the Centers for Medicare and Medicaid Services, and certain state governments. In addition, we are subject to laws relating to, among other things, anti-bribery, insider trading, sourcing of biological materials and data privacy. The legal and regulatory requirements that apply to our business may be interpreted and applied in a manner that is inconsistent from one jurisdiction to another or may conflict with other rules or our practices. As a result, our practices may not comply, or may not comply in the future with all such laws, regulations, requirements and obligations. Any failure, or perceived failure, by us to comply with any federal, state, local or international laws, regulations, industry self-regulatory principles, industry standards or codes of conduct, regulatory guidance, orders to which we may be subject or other legal obligations could adversely affect our reputation, brand and business, and may result in claims, proceedings or actions against us by governmental entities or others or other liabilities or require us to change our operations. We may also be contractually required to indemnify and hold harmless third parties from the costs or consequences of non-compliance with any laws, regulations or other legal obligations.

We may also become subject to increasing regulation in the future as we expand our business. We have limited experience operating a business located outside of Massachusetts. As we continue to expand our operations and offerings domestically and globally, we will have to expend significant management and financial resources to maintain compliant practices in those locations. Non-compliance could lead to litigation, which would require substantial management and financial resources.

***We may incur significant costs complying with environmental, health and safety laws and regulations, and failure to comply with these laws and regulations could expose us to significant liabilities.***

We use hazardous chemical and biological materials in our business and are subject to a variety of federal, state, local and international laws and regulations governing, among other matters, the use, generation, manufacture, transportation, storage, handling, disposal of, and human exposure to these materials, including regulation by governmental regulatory agencies, such as the Occupational Safety and Health Administration and the EPA. We have incurred, and will continue to incur, capital and operating expenditures and other costs in the ordinary course of our business in complying with these laws and regulations.

Although we have implemented safety procedures for storing, handling and disposing of these materials and waste products in an effort to comply with these laws and regulations, we cannot be sure that our safety measures will be compliant or capable of eliminating the risk of injury or contamination from the generation, manufacturing, use, storage, transportation, handling, disposal of and human exposure to hazardous materials and/or flammable chemicals. Failure to comply with environmental, health and safety laws could subject us to liability and resulting damages. There can be no assurance that violations of environmental, health and safety laws will not occur as a result of human error, accident, equipment failure, contamination, intentional misconduct or other causes. Compliance with applicable environmental laws and regulations may be expensive, and the failure to comply with past, present or future laws could result in the imposition of fines, regulatory oversight costs, third party property damage, product liability and personal injury claims, investigation and remediation costs, the suspension of production or a cessation of operations, and our liability may exceed our total assets. Liability under environmental laws can be imposed for the full amount of damages without regard to comparative fault for the investigation and cleanup of contamination and impacts to human health and for damages to natural resources. Contamination at properties we may own and operate and at properties to which we send hazardous materials, may result in liability for us under environmental laws and regulations.

Our business and operations may be affected by other new environmental, health and safety laws and regulations, which may require us to change our operations, or result in greater compliance costs and increasing risks and penalties associated with violations, which could impair our research, development or production efforts and harm our business.

***If we fail to comply with healthcare and other governmental regulations, we could face substantial penalties and our business, financial condition and results of operations could be adversely affected.***

Our business activities may be subject to regulation and enforcement by the FDA, U.S. Department of Justice, HHS, Office of Inspector General, and other federal and state governmental authorities. Although our offerings are not currently billed to any third-party payor, including any commercial payor or government healthcare program, we may, in the future, submit claims for our COVID-19 testing services to third-party payors, including government healthcare programs. If we submit claims to third-party payors, such activity will expand the scope of federal and state healthcare laws applicable to us.

Federal and state healthcare laws and regulations that may affect our ability to conduct business include, without limitation:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons or entities from knowingly and willfully soliciting, offering, receiving or paying any remuneration, directly or indirectly, overtly or covertly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, lease, order, or arranging for or recommending the purchase, lease or order of, any item or service, for which payment may be made, in whole or in part, under federal healthcare programs such as Medicare and Medicaid. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;

- the federal physician self-referral prohibition, commonly known as the Stark Law, which prohibits a physician, in the absence of an applicable exception, from making a referral for certain designated health services covered by the Medicare or Medicaid program, including clinical laboratory services, if the physician or an immediate family member of the physician has a financial relationship with the entity providing the designated health services. The Stark Law also prohibits the entity furnishing the designated health services from billing, presenting or causing to be presented a claim for the designated health services furnished pursuant to the prohibited referral;

- the federal civil false claims laws, including without limitation the federal False Claims Act (which can be enforced through "qui tam," or whistleblower actions, by private citizens on behalf of the federal government), and civil monetary penalties laws, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, false or fraudulent claims for payment of government funds, or knowingly making, using or causing to be made or used, a false record or statement material to an obligation to pay money to the government or knowingly and improperly avoiding, decreasing or concealing an obligation to pay money to the federal government. In addition, the government may assert that a claim including items and services resulting from a violation of the federal Anti-Kickback Statute or Stark Law constitutes a false or fraudulent claim for purposes of the civil False Claims Act;

- the Eliminating Kickbacks in Recovery Act ("EKRA"), which created a new federal crime for knowingly and willfully: (1) soliciting or receiving any remuneration in return for referring a patient to a recovery home, clinical treatment facility, or laboratory; or (2) paying or offering any remuneration to induce such a referral or in exchange for an individual using the services of a recovery home, clinical treatment facility, or laboratory. Unlike the Anti-Kickback Statute, EKRA is not limited to services reimbursable under a government health care program, but instead extends to all services reimbursed by "health care benefit programs";

- the healthcare fraud statutes under the Health Information Technology for Economic and Clinical Health Act ("HIPAA"), which impose criminal and civil liability for, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, or knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statement, in connection with the delivery of, or payment for healthcare benefits, items or services by a healthcare benefit program, which includes both government and privately funded benefits programs. Similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;

- federal consumer protection and unfair competition laws, which broadly regulate platform activities and activities that potentially harm consumers; and

- state law equivalents of each of the above federal laws, such as anti-kickback, self-referral, and fee-splitting, and false claims laws which may apply to items or services reimbursed by any third-party payor, including commercial insurers and self-pay patients.

Because of the breadth of these laws and the narrowness of available statutory and regulatory exemptions, exceptions, and safe harbors, it is possible that some of our activities could be subject to challenge under one or more of such laws. We may face claims and proceedings by private parties, and claims, investigations and other proceedings by governmental authorities, relating to allegations that our business practices do not comply with current or future laws or regulations involving applicable fraud and abuse or other healthcare laws and regulations, and it is possible that courts or governmental authorities may conclude that we or any of our partners have not complied with them, or that we may find it necessary or appropriate to settle any such claims or other proceedings. Any action brought against us for violation of these or other laws or regulations, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. If our operations are found to be in violation of any federal or state laws described above or any other current or future fraud and abuse or other healthcare laws and regulations that apply to us, we may be subject to claims and proceedings by private parties, investigations and other proceedings by governmental authorities, as well as penalties, including significant criminal, civil and administrative penalties, damages and fines, disgorgement, additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of noncompliance with these laws or regulations, imprisonment for individuals and exclusion from participation in government programs, such as Medicare and Medicaid, as well as contractual damages and reputational harm. We could also be required to curtail or cease our operations. In addition, if any customers, healthcare professionals we engage, laboratory partners or other entities with whom we do business are found not to be in compliance with applicable laws, they may be subject to the same criminal, civil or administrative sanctions, including exclusion from government-funded healthcare programs. Any of the foregoing could seriously harm our business and financial results.

***We may become subject to the comprehensive laws and rules governing billing and payment, noncompliance with which could result in non-payment or recoupment of overpayments for our services or other sanctions.***

We may, in the future, submit claims for our COVID-19 testing services to third-party payors. Payors typically have differing and complex billing and documentation requirements. If we fail to comply with these payor-specific requirements, we may not be paid for our services or payment may be substantially delayed or reduced. Numerous state and federal laws would also apply to our claims for payment, including but not limited to (i) "coordination of benefits" rules that dictate which payor must be billed first when a patient has coverage from multiple payors, (ii) requirements that overpayments be refunded within a specified period of time, (iii) "reassignment" rules governing the ability to bill and collect professional fees on behalf of other providers, (iv) requirements that electronic claims for payment be submitted using certain standardized transaction codes and formats, and (v) laws requiring all health and financial information of patients to be maintained in a manner that complies with stringent security and privacy standards.

Audits, inquiries and investigations from government agencies and health network partners can occur from time to time in the ordinary course of our business, and could result in costs to us and a diversion of management's time and attention. New regulations and heightened enforcement activity also could negatively affect our cost of doing business and our risk of becoming the subject of an audit or investigation. If we bill for our service in the future, our failure to comply with rules related to billing or adverse findings from audits by government and private payors could result in, among other penalties, non-payment for services rendered or recoupments or refunds of amounts previously paid for such services. We cannot predict whether any future audits, inquiries or investigations, or the public disclosure of such matters, likely would negatively impact our business, financial condition, results of operations, cash flows and the trading price of our securities. See also "*Risk Factors—Risks Related to Governmental Regulation and Litigation—If we fail to comply with healthcare and other governmental regulations, we could face substantial penalties and our business, financial condition and results of operations could be adversely affected*."

***We and our laboratory partners are subject to a variety of laboratory testing standards, compliance with which is an expensive and time-consuming process, and any failure to comply could result in substantial penalties and disruptions to our business.***

We and the third-party laboratories that we partner with are subject to the Clinical Laboratory Improvement Amendments of 1988 ("CLIA"). CLIA is a federal law that regulates clinical laboratories that perform testing on specimens derived from humans for the purpose of providing information for the diagnosis, prevention or treatment of disease. CLIA requires

virtually all laboratories to be certified by the federal government and mandates compliance with various operational, personnel, facilities administration, quality and proficiency testing requirements depending on the level of complexity for which the laboratory is certified. CLIA certification is also a prerequisite to be eligible to bill state and federal healthcare programs, as well as many private third-party payors, for laboratory testing services. Our partner laboratories hold CLIA certifications for high complexity testing, which mandate compliance with various operational, personnel, facilities administration, quality and proficiency testing requirements depending on the level of complexity for which the laboratory is certified. In addition, we hold a CLIA high complexity testing certification and perform certain CLIA-waived tests on behalf of our clients, which subjects us directly to certain CLIA requirements. Sanctions for failure to comply with CLIA requirements may include suspension, revocation, or limitation of a laboratory's CLIA certificate, as well as the imposition of significant fines or criminal penalties. Any sanction imposed under CLIA, its implementing regulations, or state or foreign laws or regulations governing licensure, or our partner laboratories' failure to renew a CLIA certificate, a state or foreign license, or accreditation, could have a material adverse effect on our business.

In addition, our partner laboratories and our laboratories holding CLIA Certificates of Waiver are subject to state laws and regulations governing laboratory licensure. Some states have enacted state licensure laws that are more stringent than CLIA. Our ability to successfully deploy COVID-19 testing at large scale may be adversely impacted if our partner laboratories do not maintain the required regulatory licensure and operate in accordance with CLIA standards. In certain markets such as California, New York, and Pennsylvania, we or our partner laboratories may also need to obtain and maintain additional licensure from such states. It is uncertain that our partner laboratories will be granted such licensure and, in such case, we cannot offer testing to patients located in those states, which could limit our ability to offer testing on a wide scale.

It is possible that additional states may enact laboratory licensure requirements in the future, which could further limit our ability to expand our services.

We rely on third-party laboratories in the conduct of our biosecurity business offering. If any of our partners cease working with us, or face supply chain disruptions or other difficulties, our business could be harmed. Specifically, if any of our partners were to lose or fail to obtain or renew their CLIA certifications or state laboratory licenses, whether as a result of a revocation, suspension or limitation, such laboratories would no longer be able to run the COVID-19 tests we offer to our customers, and our ability to successfully deploy a COVID-19 pooled sample testing program nationwide may be adversely impacted.

***The testing industry is subject to complex and costly regulation and if government regulations are interpreted or enforced in a manner adverse to us, we may be subject to enforcement actions, penalties, exclusion, and other material limitations on our operations.***

We offer COVID-19 testing services by partnering with third-party laboratories, diagnostic test manufacturers and manufacturers of collection kits, which are subject to extensive and frequently changing federal, state and local laws and regulations governing various aspects of our business, including significant governmental certification and licensing regulations. New laws, regulations and judicial decisions, or new interpretations of existing laws, regulations and decisions, may also limit our potential revenues, and we may need to revise our R&D or commercialization programs. The costs of defending claims associated with violations, as well as any sanctions imposed, could significantly adversely affect our financial performance.

We are required to comply with federal and state genetic testing and privacy laws. We have measures in place to collect clinical data and genetic and other biological samples, and disclose test results, from subjects who have provided appropriate informed consents. However, informed consents could be challenged in the future, and those informed consents could prove invalid, unlawful or otherwise inadequate for our purposes. Any legal challenges could consume our management and financial resources.

Current regulations governing the testing services we offer are shifting and in some cases unclear. In addition, our laboratory partners may be unsuccessful in validating, or obtaining or maintaining authorizations for, the tests we rely on to provide our COVID-19 testing services. If any third-party manufacturers or laboratories offering tests that we use in our testing services

are deemed by the FDA or other regulatory authorities to have violated applicable law or if the tests or test components are marketed, processed or distributed in violation of applicable law, we may be subject to enforcement action or litigation, or we may be required to find alternative tests to support our testing services, which could increase our costs and prevent us from successfully commercializing our COVID-19 testing services.

In addition, we are required to comply with applicable FDA regulations with respect to our distribution of certain COVID-19 diagnostic test kits and collection kits, including, for certain kits, compliance with applicable terms and conditions of an EUA. Such conditions may include requirements related to collection of information on the performance of the product, reporting of adverse events, recordkeeping requirements, and labeling and promotional activities. To the extent that we market or promote third-party tests or test kits outside of the uses authorized for these products or in a false or misleading manner, the tests or collection kits could be considered misbranded or adulterated and in violation of applicable law.

Advertising for any of the tests or collection kits we distribute or the testing services we offer is also subject to regulation by the Federal Trade Commission ("FTC"), under the Federal Trade Commission Act ("FTC Act"). The FTC may take enforcement action for advertising claims that are not adequately substantiated or that are false or misleading. Violations of applicable FDA requirements could result in enforcement actions, such as warning or "untitled" letters, revocation of EUAs, seizures, injunctions, civil penalties and criminal prosecutions and fines, and violation of the FTC Act could result in injunctions and other associated remedies, all of which could have a material adverse effect on our business. Most states also have similar regulatory and enforcement authority for laboratory testing and distribution of related collection kits. For example, many state laws require us to hold a specific form of license to distribute COVID-19 diagnostic test kits and collection kits into such states. These requirements vary from one state to another and frequently change. Complying with state laws and regulations may subject us to similar risks and delays as those we could experience under federal regulation.

***We are subject to federal and state laws and regulations governing the protection, use, and disclosure of health information and other types of personal information, and our failure to comply with those laws and regulations or to adequately secure the information we hold could result in significant liability or reputational harm.***

Numerous state and federal laws, regulations, standards and other legal obligations, including consumer protection laws and regulations, which govern the collection, dissemination, use, access to, confidentiality, security and processing of personal information, including health-related information, could apply to our operations or the operations of our partners. For example, HIPAA imposes privacy, security and breach notification obligations on certain healthcare providers, health plans, and healthcare clearinghouses, known as covered entities, as well as their business associates that perform certain services that involve creating, receiving, maintaining or transmitting individually identifiable health information for or on behalf of such covered entities, and their covered subcontractors. HIPAA requires covered entities and business associates to develop and maintain policies with respect to the protection of, use and disclosure of protected health information ("PHI"), including the adoption of administrative, physical and technical safeguards to protect such information, and certain notification requirements in the event of a breach of unsecured PHI. If in the future we engage in certain types of standard electronic transactions involving payors, including billing the Medicare or Medicaid programs or commercial health plans, we will be subject to HIPAA as a "covered entity." We are currently subject to HIPAA as a "business associate" because we perform certain services involving the use or disclosure of PHI on behalf of covered entity customers with respect to our COVID-19 testing service offerings. Implementation of the infrastructure necessary to meet HIPAA standards requires substantial investment. Being subject to HIPAA as a covered entity or business associate exposes us to significant fines and penalties, including criminal fines and penalties.

Additionally, under HIPAA, covered entities must report breaches of unsecured PHI to affected individuals without unreasonable delay, not to exceed 60 days following discovery of the breach by a covered entity or its agents. Notification also must be made to the HHS Office for Civil Rights and, in certain circumstances involving large breaches, to the media. Business associates must report breaches of unsecured PHI to covered entities within 60 days of discovery of the breach by the business associate or its agents. A non-permitted use or disclosure of PHI is presumed to be a breach under HIPAA unless the Covered Entity or Business Associate establishes that there is a low probability the information has been compromised consistent with requirements enumerated in HIPAA.

Entities that are found to be in violation of HIPAA as the result of a breach of unsecured PHI, a complaint about privacy practices or an audit by HHS, may be subject to significant civil, criminal and administrative fines and penalties and/or additional reporting and oversight obligations if required to enter into a resolution agreement and corrective action plan with HHS to settle allegations of HIPAA non-compliance. HIPAA also authorizes state attorneys general to file suit on behalf of their residents. Courts may award damages, costs and attorneys' fees related to violations of HIPAA in such cases. While HIPAA does not create a private right of action allowing individuals to sue us in civil court for violations of HIPAA, its standards have been used as the basis for duty of care in state civil suits such as those for negligence or recklessness in the misuse or breach of PHI.

Even when HIPAA or a state law does not apply, according to the FTC, violating consumers' privacy rights or failing to take appropriate steps to keep consumers' personal information secure may constitute unfair and/or deceptive acts or practices in violation of Section 5(a) of the FTC Act. The FTC expects a company's data security measures to be reasonable and appropriate in light of the sensitivity and volume of consumer information it holds, the size and complexity of its business, and the cost of available tools to improve security and reduce vulnerabilities.

Several states have enacted privacy laws governing the use and disclosure of health information, such as the California Confidentiality of Medical Information Act; these laws are not preempted by HIPAA to the extent they are more stringent than HIPAA. Such laws and regulations will be subject to interpretation by various courts and other governmental authorities, thus creating potentially complex compliance issues for us and our partners. Further, in recent years, there have been a number of well-publicized data breaches involving the improper dissemination of personal information of individuals both within and outside of the healthcare industry. Laws in all 50 states require businesses to provide notice to individuals whose personally identifiable information has been disclosed as a result of a data breach. The laws are not consistent, and compliance in the event of a widespread data breach is costly. States are also constantly amending existing laws, and creating new data privacy and security laws, requiring attention to frequently changing regulatory requirements. For example, the California Consumer Privacy Act of 2018 ("CCPA") went into effect on January 1, 2020. The CCPA creates new transparency requirements and grants California residents several new rights with respect to their personal information. Failure to comply with the CCPA may result in, among other things, significant civil penalties and injunctive relief, or potential statutory or actual damages. On November 3, 2020, California voters passed a ballot initiative for the California Privacy Rights Act ("CPRA"), which will significantly expand the CCPA. Most CPRA provisions will take effect on January 1, 2023, though the obligations will apply to any personal information collected after January 1, 2022. The CPRA will impose additional data protection obligations on covered businesses, including additional consumer rights processes, limitations on data uses, new audit requirements for higher risk data, and opt outs for certain uses of sensitive data. It will also create a new California data protection agency authorized to issue substantive regulations and could result in increased privacy and information security enforcement. The majority of the provisions will go into effect on January 1, 2023, and additional compliance investment and potential business process changes may be required. Similar laws have been proposed or passed in other states, including the Virginia Consumer Data Protection Act, which will take effect on January 1, 2023. We will need to invest substantial resources in putting in place policies and procedures to comply with these evolving state laws.

As our operations and business grow, we may become subject to or affected by new or additional data protection laws and regulations and face increased scrutiny or attention from regulatory authorities. For example, the European Union General Data Protection Regulation ("GDPR"), which went into effect in May 2018, imposes strict requirements for processing the personal data of individuals within the European Economic Area. Companies that must comply with the GDPR face increased compliance obligations and risk, including more robust regulatory enforcement of data protection requirements and potential fines for noncompliance of up to €20 million or 4% of the annual global revenues of the noncompliant company, whichever is greater. Among other requirements, the GDPR regulates transfers of personal data subject to the GDPR to third countries that have not been found to provide adequate protection to such personal data, including the United States, and the efficacy and longevity of current transfer mechanisms between the EU and the United States remains uncertain. For example, in 2016, the EU and United States agreed to a transfer framework for data transferred from the EU to the United States, called the Privacy Shield, but the Privacy Shield was invalidated in July 2020 by the Court of Justice of the European Union. Further, from January 1, 2021, companies have to comply with the GDPR and also the United Kingdom GDPR (the "UK GDPR"), which, together with the amended UK Data Protection Act 2018, retains the GDPR in UK national law. The UK

GDPR mirrors the fines under the GDPR, i.e., fines up to the greater of €20 million (£17.5 million) or 4% of global turnover. The relationship between the United Kingdom and the European Union in relation to certain aspects of data protection law remains unclear, and it is unclear how United Kingdom data protection laws and regulations will develop in the medium to longer term. On June 28, 2021, the European Commission adopted an adequacy decision in favor of the United Kingdom, enabling data transfers from EU member states to the United Kingdom without additional safeguards. However, the United Kingdom adequacy decision will automatically expire in June 2025 unless the European Commission renews or extends that decision and remains under review by the Commission during this period. These changes may lead to additional costs and increase our overall risk exposure.

Although we work to comply with applicable laws, regulations and standards, contractual obligations and other legal obligations, these requirements are evolving and may be modified, interpreted and applied in an inconsistent manner from one jurisdiction to another, and may conflict with one another or other legal obligations with which Ginkgo must comply. Recently, there has been an increase in public awareness of privacy issues in the wake of revelations about the data-collection activities of various government agencies and in the number of private privacy-related lawsuits filed against companies. Any failure or perceived failure by us or our employees, representatives, contractors, consultants, collaborators, or other third parties to comply with such requirements or adequately address privacy and security concerns, even if unfounded, could result in additional cost and liability to us, damage our reputation, and adversely affect our business and results of operations.

***We have pursued in the past and may pursue additional U.S. Government contracting and subcontracting opportunities in the future and as a U.S. Government contractor and subcontractor, we are subject to a number of procurement rules and regulations.***

We have entered into agreements with governmental entities and contractors in the past to serve as a U.S. government contractor or subcontractor and may do so again in the future. U.S. government procurement contractors and subcontractors must comply with specific procurement regulations and other requirements. These requirements, although customary in U.S. government contracts, could impact our performance and compliance costs, including by limiting or delaying our ability to share information with business partners, customers and investors. The U.S. government has in the past and may in the future demand contract terms that are less favorable than standard arrangements with private sector customers and may have statutory, contractual, or other legal rights to terminate contracts with us for convenience or for other reasons. Generally, U.S. government contracts contain provisions permitting unilateral termination or modification, in whole or in part, at the government's convenience. Under general principles of government contracting law, if the government terminates a contract for convenience, the government contractor may recover only its incurred or committed costs, settlement expenses and profit on work completed prior to the termination. If the government terminates a contract for default, the government contractor is entitled to recover costs incurred and associated profits on accepted items only and may be liable for excess costs incurred by the government in procuring undelivered items from another source. Any termination for default may also adversely affect our ability to contract with other government customers, as well as our reputation, business, financial condition and results of operations. In addition, changes in U.S. government budgetary priorities could lead to changes in the procurement environment, affecting availability of U.S. government contracting, subcontracting or funding opportunities, which could lead to modification, reduction or termination of our U.S. government contracts or subcontracts. If and to the extent such changes occur, they could impact our results and potential growth opportunities.

Furthermore, our U.S. government contracts grant the government the right to use technologies developed by us under the government contract or the right to share data related to our technologies, for or on behalf of the government. Under our government contracts, we may not be able to limit third parties, including our competitors, from accessing certain of these technology or data rights, including intellectual property, in providing products and services to the government.

In addition, failure by us, our employees, representatives, contractors, partners, agents, intermediaries, other customers or other third parties to comply with these regulations and requirements could result in reductions of the value of contracts, contract modifications or termination, claims for damages, refund obligations, the assessment of civil or criminal penalties and fines, loss of rights in our intellectual property and temporary suspension or permanent debarment from government contracting, all of which could negatively impact our results of operations and financial condition. Any such damages, penalties, disruptions or limitations in our ability to do business with the public sector could result in reduced sales of our

products, reputational damage, penalties and other sanctions, any of which could harm our business, reputation and results of operations.

***We are engaged in certain research activities involving controlled substances, including cannabinoids and other chemical intermediates, the making, use, sale, importation, exportation, and distribution of which may be subject to significant regulation by the DEA and other regulatory agencies.***

We are engaged in certain research activities involving the development of microbes designed to generate cannabinoids, their precursors and other chemical intermediaries, some of which may be regulated as controlled substances in the United States. Controlled substances are subject to state, federal, and foreign laws and regulations regarding their manufacture, use, sale, importation, exportation, and distribution. Among other things, controlled substances are regulated under the federal Controlled Substances Act of 1970 and implementing regulations of the DEA. The DEA regulates controlled substances as Schedule I, II, III, IV or V substances. Schedule I substances by definition have no established medicinal use and may generally not be marketed or sold in the United States. Schedule I substances are subject to the most stringent controls and Schedule V the least controls of the five schedules, based on their relative risk of abuse.

Cannabinoids are naturally occurring compounds found in the cannabis plant. The cannabis plant and its derivatives are highly regulated by the DEA and the USDA. Specifically, marihuana, which is defined as all parts of the plant *Cannabis sativa L.*, whether growing or not, the seeds thereof, the resin extracted therefrom, and every compound, manufacture, salt, derivative, mixture, or preparation, is classified as a Schedule I controlled substance. However, the term does not include "hemp," which means the cannabis plant and any part of that plant, including the seeds and all derivatives, extracts, cannabinoids, isomers, acids, salts, and salts of isomers, whether growing or not, with a delta-9 tetrahydrocannabinol ("THC") concentration of not more than 0.3% on a dry weight basis. Thus, depending on the THC concentration of the product, the product may or may not be regulated as a controlled substance. The DEA has historically regulated synthetic cannabinoids similarly to naturally-derived cannabinoids. Consequently, even though our cannabinoids that could be produced from microbes may not be derived from the cannabis plant, the DEA may consider them to be controlled substances subject to stringent regulatory controls.

Regulations associated with controlled substances govern manufacturing, labeling, packaging, testing, dispensing, production and procurement quotas, recordkeeping, reporting, handling, shipment and disposal. These regulations include required security measures, such as background checks on employees and physical control of inventory and increase the personnel needs and the expense associated with development and commercialization of products or product candidates including controlled substances. Regulators conduct periodic inspections of entities involved in handling, manufacturing, or otherwise distributing controlled substances, and have broad enforcement authorities. If we are found to be non-compliant with applicable controlled substance registrations and related requirements, we may need to modify its business activities and/or stop handling or producing the products regulated as controlled substances, and could be subject to enforcement action, significant fines or penalties, and/or adverse publicity, among other consequences.

Various states also independently regulate controlled substances. Though state-controlled substances laws often mirror federal law, because the states are separate jurisdictions, they may separately schedule substances, as well. The failure to comply with applicable regulatory requirements could lead to enforcement actions and sanctions from the states in addition to those from the DEA or otherwise arising under federal law.

***Changes in government regulations may materially and adversely affect our sales and results of operations.***

The markets where we provide our services are heavily influenced by foreign, federal, state and local government regulations and policies. The U.S. or foreign governments may take administrative, legislative, or regulatory action that could materially interfere with our customer's ability to sell products derived from engineered cells in certain countries and/or to certain customers. The uncertainty regarding future standards and policies may also affect our ability to develop our programs or to license engineered cells to customers and to initiate new programs with our customers, which could have a material adverse effect on our business, financial condition and results of operations.

Changes in U.S. trade policy more generally could trigger retaliatory actions by affected countries, which could impose restrictions on our ability to do business in or with affected countries or prohibit, reduce or discourage purchases of our services by foreign customers, leading to increased program costs, increased costs of developing or manufacturing our customers' products and higher prices for their products in foreign markets. Changes in, and responses to, U.S. trade policy could reduce the competitiveness of our services or our customers' products, cause our services to be less in demand and our sales to decline and adversely impact our ability to compete, which could materially and adversely impact our business, financial condition and results of operations.

***We are subject to certain U.S. and foreign anti-corruption, anti-bribery and anti-money laundering laws and regulations. We can face serious consequences for violations.***

We are subject to the U.S. Foreign Corrupt Practices Act of 1977, as amended (the "FCPA"), the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the U.K. Bribery Act and possibly other anti-corruption, anti-bribery and anti-money laundering laws and regulations in the jurisdictions in which we do business, both domestic and abroad. Anti-corruption and anti-bribery laws have been enforced aggressively in recent years. The FCPA and other anti-corruption laws generally prohibit companies, their employees, agents, representatives, business partners and third-party intermediaries from corruptly promising, authorizing, offering, or providing, directly or indirectly, anything of value to government officials, political parties, or candidates for public office for the purpose of obtaining or retaining business or securing an improper business advantage. The UK Bribery Act and other anti-corruption laws also prohibit commercial bribery not involving government officials, and requesting or accepting bribes; and anti-money laundering laws prohibit engaging in certain transactions involving criminally-derived property or the proceeds of criminal activity.

We and our third-party business partners, representatives and agents may have direct or indirect interactions with officials and employees of government agencies or state-owned or -affiliated universities or other entities (for example, to obtain necessary permits, licenses, patent registrations and other regulatory approvals), which increases our risks under the FCPA and other anti-corruption laws. We also engage contractors, consultants and other third parties from time to time to conduct business development activities abroad. We may be held liable for the corrupt or other illegal activities of our employees or third parties even if we do not explicitly authorize such activities. We have increased and, in the future, expect our non-U.S. activities to increase over time, which may also increase our exposure under these laws.

The FCPA also requires that we keep accurate books and records and maintain a system of adequate internal controls. While we have controls to address compliance with such laws, and will continue to review and enhance our compliance program, we cannot assure you that our employees, agents, representatives, business partners or third-party intermediaries will always comply with our policies and applicable law, for which we may be ultimately held responsible.

Any allegations or violation of the FCPA or other applicable anti-bribery, anti-corruption laws and anti-money laundering laws may result in whistleblower complaints, sanctions, settlements, investigations, prosecution, enforcement actions, substantial criminal fines and civil penalties, disgorgement of profits, imprisonment, debarment, tax reassessments, breach of contract and fraud litigation, loss of export privileges, suspension or debarment from U.S. government contracts, adverse media coverage, reputational harm and other consequences, all of which may have an adverse effect on our reputation, business, financial condition, results of operations and prospects. Responding to an investigation or action can also result in a materially significant diversion of management's attention and resources and significant defense costs and other professional fees.

***Significant disruptions to our and our service providers' information technology systems or data security incidents could result in significant financial, legal, regulatory, business and reputational harm to us.***

We are increasingly dependent on information technology systems and infrastructure, including services licensed, leased or purchased from third parties such as cloud computing infrastructure and operating systems, to operate its business. In the ordinary course of business, we collect, store, process and transmit large amounts of sensitive information, including intellectual property, proprietary business information, personal information and other confidential information. It is critical that we do so in a secure manner to maintain the confidentiality, integrity and availability of such sensitive information. We

have also outsourced elements of our operations (including elements of its information technology infrastructure) to third parties, and as a result, we manage a number of third-party vendors who may have access to our networks or our confidential information. While we take measures to safeguard and protect this information, threats to network and data security are increasingly diverse and sophisticated. We may also face increased cybersecurity risks due to our reliance on internet technology and the number of our employees working remotely, which may create additional opportunities for cybercriminals to exploit vulnerabilities. Despite our efforts, training and processes to prevent security breaches and incidents, our information technology systems, servers, and those of third parties that we use in our operations are vulnerable to cybersecurity risks, including cyberattacks such as viruses and worms, phishing attacks and other forms of social engineering, denial-of-service attacks, ransomware attacks, physical or electronic break-ins, third-party or employee theft or misuse, and other negligent actions, errors or malfeasance by employees or other third parties, and similar disruptions from unauthorized tampering with its servers and computer systems or those of third parties that we use in its operations, which could lead to interruptions, delays, loss or corruption of critical data, unauthorized access to or acquisition of health-related and other personal information. In addition, we may be the target of email scams and other social engineering attacks that attempt to acquire personal information or company assets or access to our systems. Despite our efforts to create security barriers to such threats, we may not be able to entirely mitigate these risks. Our third-party service providers face similar risks. Any cyberattack that attempts to obtain our data or assets, including data that we maintain on behalf of its customers, disrupt its service, or otherwise access its systems, or those of third parties we use, or any other security breach or incident, could adversely affect our business, financial condition and operating results, be expensive to remedy, and damage our reputation. We and our third-party service providers may face difficulties or delays in identifying or otherwise responding to any attacks or actual or potential security breaches or security incidents. We may incur significant costs and operational consequences of investigating, remediating, eliminating and putting in place additional tools and devices designed to prevent actual or perceived security breaches and other security incidents, including in response to any actual or perceived incident we may suffer, and substantial costs to comply with any notification or other legal obligations resulting from any security breaches or other security incidents. In addition, any such breaches or incidents, or the perception that they have occurred, may result in negative publicity, and could have an adverse effect on our business, financial condition, and operating results.

Although we maintain insurance coverage that may cover certain liabilities in connection with security breaches and other security incidents, we cannot be certain our insurance coverage will be adequate for liabilities actually incurred, that insurance will continue to be available to us on commercially reasonable terms (if at all) or that any insurer will not deny coverage as to any future claim.

***Governmental trade controls, including export and import controls, sanctions, customs requirements and related regimes, could subject us to liability or loss of contracting privileges or limit our ability to compete in certain markets.***

Our programs and technologies are subject to U.S. and non-U.S. export controls. Export authorizations may be required for biotechnology products, technologies, or services to be exported outside of the United States, to a foreign person, or outside of a foreign jurisdiction. Our current or future programs or technologies are, and may in the future, be subject to the Export Administration Regulations (“EAR”). If a program, technology, or service meets certain criteria for control under the EAR, then that engineered cell, production process, resulting product, technology, or service would be exportable outside the United States or to a foreign person or from one foreign jurisdiction to another foreign jurisdiction only if we obtain the applicable export license or other applicable authorization including qualifying for a license exception, if required. Compliance with the U.S. and foreign export laws and regulations and other applicable regulatory requirements regarding the sales, shipment and use of our engineering cells, bioprocesses and other technology may affect our ability to work with foreign partners, affect the speed at which we can introduce new products into non-U.S. markets, or limit our ability to sell programs or services or license technologies into some countries.

Additionally, certain materials that we use in our programs are subject to U.S. import controls. We currently have, and may in the course of business need to procure, certain import authorizations, for example, related to plant pests, chemicals, biological agents and other controlled materials, including from the USDA, EPA and CDC. Compliance with applicable regulatory requirements regarding the import of such materials may limit our access to materials critical to our development activities or affect the speed at which we can advance new programs.

Our activities are also subject to the economic sanctions laws and regulations of the United States and other jurisdictions. Such controls prohibit certain transactions, potentially including financial transactions and the transfer of products, technologies and services, to sanctioned countries, governments and persons, without a license or other appropriate authorization. U.S. sanctions policy changes could affect our or our customers' ability to interact, directly and indirectly, with targeted companies or companies in sanctioned countries.

While we take precautions to comply with U.S. and non-U.S. export control, import control and economic sanctions laws and regulations, we cannot guarantee that such precautions will prevent violations of such laws, including transfers to unauthorized persons or destinations, and including inadvertent violations as a result of a misclassification of a product, technology or service under export control laws. Violations could result in our business being subject to government investigations, denial of export or import privileges, significant fines or penalties, denial of government contracts and reputational harm. Any limitation on our ability to export our engineered cells, production processes, resulting products, technology, or services, or import materials critical to our programs would likely adversely affect our business and financial condition.

***Changes in U.S. and foreign tax laws could have a material adverse effect on our business, cash flow, results of operations or financial condition.***

We are subject to income and non-income based taxes in the U.S. and foreign jurisdictions. Changes in tax laws, regulations and policies, or their interpretation and application, in the jurisdictions where we are subject to tax, could have a material adverse effect on our business, cash flow, results of operations or financial condition. The U.S. Congress has recently been debating changes to U.S. corporate income tax laws, which could result in significant changes to these laws. In addition, the Group of Twenty (G20), the Organization for Economic Co-operation and Development (OECD), the European Commission (EC) and individual taxing jurisdictions have published proposals covering various international tax-related issues, including country-by-country reporting, permanent establishment rules, transfer pricing and tax treaties. It is possible that any future tax legislation that may be enacted could materially impact our effective tax rate and cash tax liability as well as tax credits and incentives.

***We may become subject to lawsuits or indemnity claims in the ordinary course of business, which could materially and adversely affect our business and results of operations.***

From time to time, we may in the ordinary course of business be named as a defendant in lawsuits, indemnity claims and other legal proceedings. These actions may seek, among other things, compensation for alleged product liability, personal injury, employment discrimination, breach of contract, property damage and other losses or injunctive or declaratory relief.

The marketing, sale and use of our services engineered cells, production processes and resulting products could lead to the filing of product liability claims were someone to allege that our services, engineered cells, production processes or resulting products failed to perform as designed or intended or caused injury or other harms. A product liability claim could result in substantial damages and be costly and time-consuming for us to defend.

Regardless of merit or eventual outcome, product liability claims may result in:

- decreased demand for programs and resulting products;
- loss of revenue;
- substantial monetary payments;
- significant time and costs to defend related litigation;
- the inability to commercialize any products from our programs; and
- injury to our reputation and significant negative media attention.

In the event that such actions, claims or proceedings are ultimately resolved unfavorably to us at amounts exceeding our accrued liability, or at material amounts, the outcome could materially and adversely affect our business and results of operations. In addition, payments of significant amounts, even if reserved, could adversely affect our liquidity position. We maintain product liability insurance, but this insurance may not fully protect us from the financial impact of defending against product liability claims. Any product liability claim brought against us, with or without merit, could increase our insurance rates or prevent us from securing insurance coverage in the future. Additionally, any product liability lawsuit could cause current collaborators to terminate existing agreements or potential collaborators to seek other companies, any of which could impact our business and results of operations.

***Our business could be adversely affected by legal challenges to our telehealth partner's business model.***

Certain of our COVID-19 biosecurity offerings rely significantly on healthcare provider orders for testing that are placed on the basis of telemedicine encounters. The ability to conduct telehealth services in a particular state is directly dependent upon the applicable laws governing remote healthcare, the practice of medicine and healthcare delivery in general in such location which are subject to changing political, regulatory and other influences. With respect to telehealth services, state medical boards continue to implement new rules or interpret existing rules in a manner that may limit or restrict the ability of the centers to conduct their business as it has been conducted in the past. Additionally, during the COVID-19 public health emergency, many states enacted waivers and adopted other temporary measures that lifted certain restrictions on out-of-state providers and relaxed licensure requirements to allow greater access to telehealth services during the public health emergency period. At this time, we cannot predict whether these waivers or temporary measures will remain in place after the end of the public health emergency period. Accordingly, we must monitor compliance with laws in every jurisdiction in which we operate, and we cannot provide assurance that government authorities may nonetheless challenge our activities and arrangements with our telehealth partner and consider them non-compliant. Additionally, it is possible that the laws and rules governing the practice of medicine, including remote healthcare, in one or more jurisdictions may change in a manner deleterious to our business. If a successful legal challenge or an adverse change in the relevant laws were to occur, and we are unable to adapt our business model accordingly, our operations as well as the operations of our telehealth partner in the affected jurisdictions would be disrupted, which could have a material adverse effect on our business, financial condition and results of operations.

**Risks Related to our Common Stock, Organizational Structure and Governance**

***We are not, and do not intend to become, regulated as an "investment company" under the Investment Company Act, and if we were deemed an "investment company" under the Investment Company Act, applicable restrictions could make it impractical for us to continue our business as contemplated and could have a material adverse effect on our business.***

An entity generally will be deemed to be an "investment company" for purposes of the Investment Company Act if:

- it is an "orthodox" investment company because it is or holds itself out as being engaged primarily, or proposes to engage primarily, in the business of investing, reinvesting or trading in securities; or

- it is an inadvertent investment company because, absent an applicable exemption, (i) it owns or proposes to acquire investment securities having a value exceeding 40% of the value of its total assets (exclusive of U.S. government securities and cash items) on an unconsolidated basis, or (ii) it owns or proposes to acquire investment securities having a value exceeding 45% of the value of its total assets (exclusive of U.S. government securities and cash items) and/or more than 45% of its income is derived from investment securities on a consolidated basis with its wholly owned subsidiaries.

We believe that we are engaged primarily in the business of providing cell engineering services to customers from across a variety of industries and not in the business of investing, reinvesting or trading in securities. We hold ourselves out as a synthetic biology company and do not propose to engage primarily in the business of investing, reinvesting or trading in securities. Accordingly, we do not believe that we are an "orthodox" investment company as defined in Section 3(a)(1)(A) of the Investment Company Act of 1940, as amended (the "Investment Company Act") and described in the first bullet point

above. Furthermore, we believe that less than 40% of our total assets (exclusive of U.S. government securities and cash items) on an unconsolidated basis will be composed of assets that could be considered investment securities. Accordingly, we do not believe that we are an inadvertent investment company by virtue of the 40% tests in Section 3(a)(1)(C) of the Investment Company Act as described in the second bullet point above. In addition, we believe that we are not an investment company under Section 3(b)(1) of the Investment Company Act because we are primarily engaged in a non-investment company business.

The Investment Company Act and the rules thereunder contain detailed parameters for the organization and operation of investment companies. Among other things, the Investment Company Act and the rules thereunder limit or prohibit transactions with affiliates, impose limitations on the issuance of debt and equity securities, generally prohibit the issuance of options and impose certain governance requirements. We intend to conduct our operations so that we will not be deemed to be an investment company under the Investment Company Act or otherwise conduct our business in a manner that does not subject us to the registration and other requirements of the Investment Company Act. In order to ensure that we are not deemed to be an investment company, we may be limited in the assets that we may continue to own and, further, may need to dispose of or acquire certain assets at such times or on such terms as may be less favorable to us than in the absence of such requirement. If anything were to happen which would cause us to be deemed to be an investment company under the Investment Company Act (such as significant changes in the value of our programs or a change in circumstance that results in a reclassification of our interests in our programs for purposes of the Investment Company Act), the requirements imposed by the Investment Company Act could make it impractical for us to continue our business as currently conducted, which would materially adversely affect our business, financial condition and results of operations. In addition, if we were to become inadvertently subject to the Investment Company Act, any violation of the Investment Company Act could subject us to material adverse consequences, including potentially significant regulatory penalties and the possibility that certain of our contracts could be deemed unenforceable.

***Only our employees and directors are entitled to hold shares of Class B common stock (including shares of Class B common stock granted or otherwise issued to our employees and directors in the future), which shares have ten votes per share. This limits or precludes other stockholders' ability to influence the outcome of matters submitted to stockholders for approval, including the election of directors, the approval of certain employee compensation plans, the adoption of certain amendments to our organizational documents and the approval of any merger, consolidation, sale of all or substantially all of our assets, or other major corporate transaction requiring stockholder approval.***

Shares of our Class B common stock have ten votes per share, whereas shares of our Class A common stock have one vote per share and shares of our Class C common stock have no voting rights (except as otherwise expressly provided in our amended and restated certificate of incorporation (the "Charter") or required by applicable law). As of June 30, 2022, our directors and executive officers hold in the aggregate approximately 49.2% of the total voting power of our outstanding capital stock, and our directors, founders and executive officers hold in the aggregate approximately 68.7% of the total voting power of our outstanding capital stock. Accordingly, holders of shares of Class B common stock are able to significantly influence the outcome of matters submitted to our stockholders for approval, including the election of directors, the approval of certain employee compensation plans, the adoption of amendments to our organizational documents and the approval of any merger, consolidation, sale of all or substantially all of our assets or other major corporate transaction requiring stockholder approval. This concentrated voting power limits or precludes other stockholders' ability to influence the outcome of these matters. Holders of Class B common stock may have interests that differ from holders of Class A common stock and may vote in a way with which holders of Class A common stock disagree and which may be adverse to the interests of holders of Class A common stock. This concentrated voting power is likely to have the effect of limiting the likelihood of an unsolicited merger proposal, unsolicited tender offer or proxy contest for the removal of directors. As a result, our governance structure and Charter may have the effect of depriving our stockholders of an opportunity to sell their shares at a premium over prevailing market prices and make it more difficult to replace our directors and management. Furthermore, this concentrated voting power could discourage a potential investor from acquiring Class A common stock due to the limited voting power of such stock relative to Class B common stock, which could also adversely affect the trading price of Class A common stock.

Our multi-class stock structure is intended to preserve our existing founder-led governance structure, to promote employee retention and engagement, to facilitate continued innovation and the risk-taking that it requires, to permit us to continue to prioritize our long-term goals rather than short-term results, to enhance the likelihood of continued stability in the composition of our board of directors and its policies, and to discourage certain types of transactions that may involve an actual or threatened acquisition of the company, all of which we believe are essential to the long-term success of our company and to long-term stockholder value. We expect to maintain this concentrated voting power among our founders and employees for the foreseeable future, including by issuing additional shares of Class B common stock to our employees pursuant to our equity compensation plans.

Future transfers of shares of Class B common stock to persons other than Ginkgo directors and employees, or trusts or legal entities through which the right to vote the shares of Class B common stock held thereby is exercised exclusively by one or more of Ginkgo's directors or employees (any such director, employee, trust or legal entity, an "Eligible Holder"), or the holder of shares of Class B common stock ceasing to be an Eligible Holder, will generally result in those shares converting to shares of Class A common stock on a one-to-one basis, subject to certain exceptions and unless a majority of the independent directors of our board of directors determine that such transfer or event will not result in such automatic conversion. Each share of Class B common stock is also convertible at any time at the option of the holder into one share of Class A common stock. The conversion of Class B common stock to Class A common stock over time will have the effect of increasing the relative voting power of those holders of Class B common stock who retain their shares of Class B common stock in the long term. As a result, the relative voting power of holders of Class A common stock is expected to remain limited for a significant period of time, and it is possible that one or more of the persons or entities holding Class B common stock could gain significant voting control as other holders of Class B common stock sell or otherwise convert their shares into Class A common stock. In addition, the conversion of Class B common stock to Class A common stock would dilute holders of Class A common stock in terms of voting power within the Class A common stock. Because holders of Class C common stock have no voting rights (except as otherwise expressly provided in the Charter or required by applicable law), the holders of Class B common stock may be able to significantly influence the outcome of matters submitted to our stockholders for approval for a longer period of time than would be the case if we issued Class A common stock rather than Class C common stock in such transactions.

***Our share price may change significantly over time, and you may not be able to resell our common stock at or above the price you paid or at all, and you could lose all or part of your investment as a result.***

The trading price of our Class A common stock has been in the past and is likely to continue to be volatile. Such volatility may be, in part, attributable to:

- future sales of our common stock or other securities by us or our existing stockholders, or the perception of such future sales;
- results of operations of the company or our competitors that vary from the expectations of securities analysts and investors;
- changes in expectations as to our future financial performance and growth, including assessments of our business, prospects, financial estimates and investment recommendations by securities analysts, investors and short sellers;
- additions or departures of key management personnel or members of our board of directors;
- announcements by us or our competitors of significant contracts, new products, acquisitions, joint marketing relationships, joint ventures, other strategic relationships or capital commitments;
- announcements relating to actual or potential civil and non-civil litigation, as well as governmental or regulatory investigations or inquiries;
- guidance that we provide to the public, any changes in this guidance or our failure to meet this guidance;

- changes in the perception of our offerings or the synthetic biology industry more general including changes in regulatory conditions;
- the development and sustainability of an active trading market for our common stock;
- changes in accounting principles;
- changes in general economic or market conditions or trends in our industry or markets;
- other events or factors, including those resulting from natural disasters, pandemics, epidemics, war (including Russia's invasion of Ukraine), acts of terrorism or responses to these events.

These factors among others may materially adversely affect the market price of our Class A common stock, regardless of our actual operating performance. In addition, price volatility may be greater if the public float and trading volume of our common stock are low.

In the past, following periods of market volatility, stockholders have instituted securities class action litigation. If we were involved in securities litigation, it could have a substantial cost and divert resources and the attention of executive management from our business regardless of the outcome of such litigation.

***Future sales, or the perception of future sales, by us or our stockholders in the public market could cause the market price for our securities to decline.***

The sale of our securities in the public market, including by entities to which we have issued shares in connection with transactions, or the perception that such sales could occur, could harm the prevailing market price of our securities. These sales, or the possibility that these sales may occur, also might make it more difficult for us to sell equity securities in the future at a time and at a price that we deem appropriate.

As of the consummation of the Business Combination, we had a total of approximately 1,959 million shares of common stock outstanding on a fully-diluted basis, consisting of approximately 1,333 million shares of Class A common stock and approximately 626 million shares of Class B common stock. All shares issued in the merger are freely tradable without registration under the Securities Act, and without restriction by persons other than our "affiliates" (as defined under Rule 144 of the Securities Act, "Rule 144"), including our directors, executive officers and other affiliates. Of these shares, approximately 631 million shares of common stock outstanding on a fully-diluted basis are subject to a one-year lock-up, which is scheduled to expire on September 16, 2022. In addition to the above, there are up to approximately 206 million shares of common stock that may be earned if the trading price is greater than or equal to the earnout price threshold in the table below for any point in a trading day during 20 trading days in a 30 consecutive trading day period, of which approximately 51.5 million shares were earned as of June 30, 2022. The vast majority of the shares that are part of the earnout will not be subject to lock-up once the earnout conditions are met.

| Earnout Price Threshold | | Number of Shares Earned |
|---|---|---|
| $12.50 | (earnout condition has been met) | Approximately 51.5 million |
| $15.00 | | Approximately 51.5 million |
| $17.50 | | Approximately 51.5 million |
| $20.00 | | Approximately 51.5 million |

In connection with the Business Combination, in September 2021, Jason Kelly, Reshma Shetty, Austin Che and Bartholomew Canton were each granted 21,458,317 restricted stock units, pursuant to Founder Equity Grant Agreements dated January 1, 2020. Each named founder agreed to extend the vesting on these restricted stock units and their 4,324,037 restricted stock units granted in 2020 such that these restricted stock units and their associated earnout shares will not fully vest until October 1, 2022, and such vesting is subject to the founder's continued service at Ginkgo through such date. When those restricted stock units and earnouts vest, if any of such shares are sold into the market (including to cover the income tax

obligations associated with this vesting event or otherwise), such sales could harm the prevailing market price of our securities.

In addition, the shares of our common stock reserved for future issuance under our equity incentive plans will become eligible for sale in the public market once those shares are issued, subject to provisions relating to various vesting agreements and, in some cases, limitations on volume and manner of sale applicable to affiliates under Rule 144, as applicable. Our compensation committee of our board of directors may determine the exact number of shares to be reserved for future issuance under our equity incentive plans at its discretion. We are expected to file one or more registration statements on Form S-8 under the Securities Act to register shares of Class A common stock or securities convertible into or exchangeable for shares of Class A common stock issued pursuant to our equity incentive plans. Any such Form S-8 registration statements will automatically become effective upon filing. Accordingly, shares registered under such registration statements will be available for sale in the open market.

***Short sellers may engage in manipulative activity intended to drive down the market price of our Class A common stock, which could also result in related regulatory and governmental scrutiny, among other effects.***

Short selling is the practice of selling securities that the seller does not own but rather has borrowed or intends to borrow from a third party with the intention of later buying lower priced identical securities to return to the lender. Accordingly, it is in the interest of a short seller of our Class A common stock for the price to decline. At any time, short sellers may publish, or arrange for the publication of, opinions or characterizations that are intended to create negative market momentum. Issuers, like us, whose securities have historically had limited trading history or volumes and/or have been susceptible to relatively high volatility levels can be vulnerable to such short seller attacks. Short selling reports can cause increased volatility in an issuer's stock price, and result in regulatory and governmental inquiries. On October 6, 2021, such a report was published about us. Shortly after, we received a preliminary and informal inquiry from the U.S. Department of Justice related to such report. Any related inquiry or formal investigation from a governmental organization or other regulatory body, including any inquiry from the SEC, could result in a material diversion of our management's time and could have a material adverse effect on our business and results of operations.

***Our Charter authorizes a large number of shares of Class B common stock for issuance in the future. The future issuance of shares of Class B common stock may have the effect of further concentrating voting power with our employees and other Class B stockholders, and could have an adverse effect on the trading price of Class A common stock.***

Under our Charter, we are authorized to issue 4,500,000,000 shares of Class B common stock, which are entitled to ten votes per share. We currently intend to issue additional shares of Class B common stock in the future to existing and newly hired employees pursuant to our equity compensation plans. Our authorized but unissued shares of Class B common stock are available for issuance to Eligible Holders with the approval of our board of directors without stockholder approval, except as may be required by the Listing Rules of the NYSE. In addition, our authorized but unissued shares of Class B common stock are available for issuance to persons other than Eligible Holders only with the approval of a majority of our directors elected by the holders of Class B common stock, voting separately as a class. If we issue additional shares of Class B common stock in the future, holders of shares of Class A common stock, which are entitled to one vote per share, will experience disproportionate voting power dilution relative to economic dilution, and the holders of Class B common stock may be able to significantly influence the outcome of matters submitted to our stockholders for approval for a longer period of time than would be the case if we issued shares of Class A common stock.

See *"Risk Factors—Risks Relating to our Organizational Structure and Governance—Only our employees and directors are entitled to hold shares of Class B common stock (including shares of Class B common stock granted or otherwise issued to our employees and directors in the future), which shares have ten votes per share. This limits or precludes other stockholders' ability to influence the outcome of matters submitted to stockholders for approval, including the election of directors, the approval of certain employee compensation plans, the adoption of amendments to our organizational documents and the approval of any merger, consolidation, sale of all or substantially all of our assets or other major corporate transaction requiring stockholder approval."*

***Under our Charter, we are authorized to issue 800,000,000 shares of Class C common stock, which have no voting rights (except as otherwise expressly provided in the Charter or required by applicable law). Outstanding Class C common stock may have the effect of extending voting power in Class B common stock, and may discourage potential acquisitions of our business and could have an adverse effect on the trading price of Class A common stock.***

Under our Charter, we are authorized to issue 800,000,000 shares of Class C common stock, which have no voting rights (except as required by law). Class C common stock may be used for a variety of corporate purposes, including financings, acquisitions and investments. Our authorized but unissued shares of Class C common stock are available for issuance with the approval of our board of directors without stockholder approval, except as may be required by the Listing Rules of the NYSE. Because the Class C common stock carries no voting rights (except as otherwise expressly provided in the Charter or required by applicable law), is not convertible into any other capital stock, and is not listed for trading on an exchange or registered for sale with the SEC, shares of Class C common stock may be less liquid and less attractive to any future recipients of these shares than shares of Class A common stock, although we may seek to list the Class C common stock for trading and register shares of Class C common stock for sale in the future. In addition, because our Class C common stock has no voting rights (except as otherwise expressly provided in the Charter or required by applicable law), the holders of Class B common stock may be able to significantly influence the outcome of matters submitted to our stockholders for approval for a longer period of time than would be the case if we issued Class A common stock rather than Class C common stock in such transactions. In addition, further issuances of Class C common stock would have a dilutive effect on the economic interests of Class A common stock and Class B common stock. Any such issuance could also cause the trading price of Class A common stock to decline.

***We cannot predict the effect the multi-class structure of our common stock may have on the trading price of our Class A common stock.***

The holding of low-voting stock, such as Class A common stock, may not be permitted by the investment policies of certain institutional investors or may be less attractive to the portfolio managers of certain institutional investors. In addition, certain index providers have announced restrictions on including companies with multiple-class share structures in certain of their indices. In July 2017, S&P Dow Jones announced that they would cease to allow most newly public companies with dual- or multi-class capital structures to be included in their indices. Affected indices include the S&P 500, S&P MidCap 400 and S&P SmallCap 600, which together make up the S&P Composite 1500. Under the announced policies, our multi-class capital structure would make our Class A common stock ineligible for inclusion in certain indices, and as a result, mutual funds, exchange-traded funds and other investment vehicles that attempt to passively track those indices would not invest in our common stock. These policies may depress our valuation compared to those of other similar companies that are included. Because of our multi-class stock structure, our Class A common stock will likely continue to be excluded from certain of these indices, and we cannot assure you that other stock indices will not take similar actions. Given the sustained flow of investment funds into passive strategies that seek to track certain indices, exclusion from stock indices would likely preclude investment by many of these funds in our Class A common stock and could make shares of our Class A common stock less attractive to other investors. As a result, the trading price of shares of our Class A common stock could be adversely affected.

***Our focus on the long-term best interests of our company and our consideration of all of our stakeholders, including our stockholders, workforce, customers, suppliers, academic researchers, governments, communities and other stakeholders that we may identify from time to time, may conflict with short-term or medium-term financial interests and business performance, which may adversely impact the value of our common stock.***

We believe that focusing on the long-term best interests of our company and our consideration of all of our stakeholders, including our stockholders, workforce, customers, suppliers, academic researchers, governments, communities and other stakeholders we may identify from time to time, is essential to the long-term success of our company and to long-term stockholder value. Therefore, we have made decisions, and may in the future make decisions, that we believe are in the long-term best interests of our company and our stockholders, even if such decisions may negatively impact the short- or medium-term performance of our business, results of operations, and financial condition or the short- or medium-term performance of our Class A common stock. Our commitment to pursuing long-term value for the company and its stockholders, potentially at the expense of short- or medium-term performance, may materially adversely affect the trading price of our Class A common

stock, including by making owning our Class A common stock less appealing to investors who are focused on returns over a shorter time horizon. Our decisions and actions in pursuit of long-term success and long-term stockholder value, which may include our multi-class stock structure, making investments in R&D and our employees, and investing in and introducing new products and services, may not result in the long-term benefits that we expect, in which case our business, results of operations and financial condition, as well as the trading price of our Class A common stock, could be materially adversely affected.

**Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.**

On April 1, 2022, we issued a total of 5,749,957 shares of our Class A common stock to FGen, valued at approximately $20.9 million, as consideration in connection with the acquisition of the outstanding equity interests of FGen, in a private transaction exempt from the registration requirements of the Securities Act pursuant to Section 4(a)(2) of the Securities Act.

On June 9, 2022, we issued a total of 388,649 shares of our Class A common stock to the former noteholders of Bitome, valued at approximately $1.2 million as consideration in connection with the acquisition of substantially all assets of Bitome, in a private transaction exempt from the registration requirements of the Securities Act pursuant to Section 4(a)(2) of the Securities Act.

**Item 3. Defaults Upon Senior Securities.**

None.

**Item 4. Mine Safety Disclosures.**

None.

**Item 5. Other Information.**

None.

**Item 6. Exhibits.**

| Exhibit Number | Description |
|---|---|
| 3.1 | Certificate of Incorporation of Ginkgo Bioworks Holdings, Inc. (incorporated by reference to Exhibit 3.1 of the Company's Current Report on Form 8-K filed with the SEC on September 20, 2021). |
| 3.2 | Amendment to Certificate of Incorporation of Ginkgo Bioworks Holdings, Inc. (incorporated by reference to Exhibit 3.2 of the Company's Current Report on Form 8-K filed with the SEC on September 20, 2021). |
| 3.3 | Bylaws of Ginkgo Bioworks Holdings, Inc. (incorporated by reference to Exhibit 3.3 of the Company's Current Report on Form 8-K filed with the SEC on September 20, 2021). |
| 10.1* | Form of Stock Option Agreement, granted under the Ginkgo Bioworks Holdings, Inc. 2021 Incentive Award Plan. |
| 10.2* | Form of Global Restricted Stock Unit Agreement, granted under the Ginkgo Bioworks Holdings, Inc. 2021 Incentive Award Plan. |
| 10.3* | Fourteenth Amendment to Lease Agreement, dated June 1, 2022, by and between BCP-CG 27 Property LLC and Ginkgo Bioworks, Inc. |
| 10.4* | Second Amendment to Lease Agreement, dated August 10, 2022, by and between IDB 21-25 Drydock Limited Partnership and Ginkgo Bioworks, Inc. |
| 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. |
| 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. |
| 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. |
| 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. |
| 101.INS | Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because XBRL tags are embedded within the Inline XBRL document. |
| 101.SCH | Inline XBRL Taxonomy Extension Schema Document |
| 101.CAL | Inline XBRL Taxonomy Extension Calculation Linkbase Document |
| 101.DEF | Inline XBRL Taxonomy Extension Definition Linkbase Document |
| 101.LAB | Inline XBRL Taxonomy Extension Label Linkbase Document |
| 101.PRE | Inline XBRL Taxonomy Extension Presentation Linkbase Document |
| 104 | Cover Page Interactive Data File (embedded within the Inline XBRL document) |

* Filed herewith.

**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Ginkgo Bioworks Holdings, Inc.

Date: August 15, 2022 By: /s/ Jason Kelly
Name: Jason Kelly
Title: Chief Executive Officer (Principal Executive Officer)

Date: August 15, 2022 By: /s/ Mark Dmytruk
Name: Mark Dmytruk
Title: Chief Financial Officer (Principal Financial Officer)

Date: August 15, 2022 By: /s/ Marie Fallon
Name: Marie Fallon
Title: Chief Accounting Officer (Principal Accounting Officer)

**Exhibit 10.1**

**GINKGO BIOWORKS HOLDINGS, INC.**
**2021 INCENTIVE AWARD PLAN**

## STOCK OPTION GRANT NOTICE

Capitalized terms not specifically defined in this Stock Option Grant Notice (the "***Grant Notice***") have the meanings given to them in the 2021 Incentive Award Plan (as amended from time to time, the "***Plan***") of Ginkgo Bioworks Holdings, Inc. (the "***Company***").

The Company has granted to the participant listed below ("***Participant***") an option (the "***Option***") to purchase up to the number of Shares set forth below in this Grant Notice, subject to the terms and conditions of this Grant Notice, and the Plan and the Stock Option Agreement attached as **Exhibit A** (the "***Agreement***"), both of which are incorporated into this Grant Notice by reference.

| | |
|---|---|
| **Participant:** | |
| **Grant Date:** | |
| **Exercise Price per Share:** | |
| **Shares Subject to the Option:** | |
| **Final Expiration Date:** | |
| **Vesting Commencement Date:** | |
| **Vesting Schedule:** | [To be specified in individual award agreements] |
| **Type of Option:** | [Non-Qualified Stock Option] |

By Participant's signature below, Participant agrees to be bound by the terms of this Grant Notice, the Plan and the Agreement. Participant has reviewed the Plan, this Grant Notice and the Agreement in their entirety, has had an opportunity to obtain the advice of counsel prior to executing this Grant Notice and fully understands all provisions of the Plan, this Grant Notice and the Agreement. Participant hereby agrees to accept as binding, conclusive and final all decisions or interpretations of the Administrator upon any questions arising under the Plan, this Grant Notice or the Agreement. If Participant does not click the "Accept" or "Reject" grant button on the Fidelity platform (or otherwise return an executed copy of this Grant Notice to the Company) by [ ] (unless a later date is determined by the Company), Participant will be deemed to have accepted this Option. Further, any exercise of the Option issued pursuant to this Grant Notice and Agreement shall constitute Participant's acceptance of the Option and agreement with all terms and conditions of the Option, as set forth in the Plan, the Agreement, this Grant Notice.

| **GINKGO BIOWORKS HOLDINGS, INC.** | **PARTICIPANT** |
|---|---|
| By: | |
| Name: | [Participant Name] |
| Title: | |

**Exhibit A**

## STOCK OPTION AGREEMENT

Capitalized terms not specifically defined in this Agreement have the meanings specified in the Grant Notice or, if not defined in the Grant Notice, in the Plan.

### ARTICLE I.
### GENERAL

1.1 Grant of Option. The Company has granted to Participant the Option effective as of the grant date set forth in the Grant Notice (the "***Grant Date***").

1.2 Incorporation of Terms of Plan. The Option is subject to the terms and conditions set forth in this Agreement and the Plan, which is incorporated herein by reference. In the event of any inconsistency between the Plan and this Agreement, the terms of the Plan will control.

### ARTICLE II.
### PERIOD OF EXERCISABILITY

2.1 Commencement of Exercisability. The Option will vest and become exercisable according to the vesting schedule in the Grant Notice (the "***Vesting Schedule***") except that any fraction of a Share as to which the Option would be vested or exercisable will be accumulated and will vest and become exercisable only when a whole Share has accumulated. Notwithstanding anything in the Grant Notice, the Plan or this Agreement to the contrary, unless the Administrator otherwise determines, the Option will immediately expire and be forfeited as to any portion that is not vested and exercisable as of Participant's Termination of Service for any reason.

2.2 Duration of Exercisability. The Vesting Schedule is cumulative. Any portion of the Option which vests and becomes exercisable will remain vested and exercisable until the Option expires as set forth in Section 2.3 below. The Option will be forfeited immediately upon its expiration.

2.3 Expiration of Option. The Option may not be exercised to any extent by anyone after, and will expire on, the first of the following to occur:

(a) The final expiration date in the Grant Notice;

(b) Except as the Administrator may otherwise approve, the expiration of three (3) months from the date of Participant's Termination of Service, unless Participant's Termination of Service is for: (i) a breach of the Participant's fiduciary duties to the Company or any of its affiliates or (ii) the Participant's willful misconduct or negligence in connection with his or her duties, services or activities (romanettes (i) and (ii) together, "***Cause***"), or by reason of Participant's death or Disability;

(c) Except as the Administrator may otherwise approve, the expiration of one (1) year from the date of Participant's Termination of Service by reason of Participant's death or Disability; and

(d) Except as the Administrator may otherwise approve, Participant's Termination of Service for Cause.

### ARTICLE III.

**EXERCISE OF OPTION**

3.1 Person Eligible to Exercise. During Participant's lifetime, only Participant may exercise the Option. After Participant's death, any exercisable portion of the Option may, prior to the time the Option expires, be exercised by Participant's Designated Beneficiary as provided in the Plan.

3.2 Partial Exercise. Any exercisable portion of the Option or the entire Option, if then wholly exercisable, may be exercised, in whole or in part, according to the procedures in the Plan or as otherwise provided for by the Administrator at any time prior to the time the Option or portion thereof expires, except that the Option may only be exercised for whole Shares.

3.3 Responsibility for Taxes. The Company shall not be responsible for withholding any applicable income tax, social insurance contributions, payroll tax, fringe benefits tax, payment on account, or other tax-related items related to the Option and legally applicable or deemed legally applicable to Participant ("***Tax-Related Items***") from a Participant who is a non-employee Director, unless required by applicable law. Participant acknowledges and agrees that, regardless of any action the Company takes with respect to any or all Tax-Related Items, the ultimate liability for all Tax-Related Items is and remains Participant's responsibility. Participant acknowledges that the Company (i) makes no representations or undertakings regarding the treatment of any Tax-Related Items in connection with any aspect of the Option, including the grant, vesting or exercise of the Option, the subsequent sale of Shares acquired upon exercise of the Option and the receipt of any dividends in respect of such Shares; and (ii) does not commit to and is under no obligation to structure the terms or any aspect of the Option to reduce or eliminate Participant's liability for Tax-Related Items or achieve any particular tax result.

**ARTICLE IV.**
**OTHER PROVISIONS**

4.1 Adjustments. Participant acknowledges that the Option is subject to adjustment, modification and termination in certain events as provided in this Agreement and the Plan.

4.2 Notices. Any notice to be given under the terms of this Agreement to the Company must be in writing and addressed to the Company in care of the Company's Secretary at the Company's principal office or the Secretary's then-current email address. Any notice to be given under the terms of this Agreement to Participant must be in writing and addressed to Participant (or, if Participant is then deceased, to the person entitled to exercise the Option) at Participant's last known mailing address or email address in the Company's personnel files. By a notice given pursuant to this Section, either party may designate a different address for notices to be given to that party. Any notice will be deemed duly given when actually received, when sent by email, when sent by certified mail (return receipt requested) and deposited with postage prepaid in a post office or branch post office regularly maintained by the United States Postal Service, or when delivered by a nationally recognized express shipping company.

4.3 Titles. Titles are provided herein for convenience only and are not to serve as a basis for interpretation or construction of this Agreement.

4.4 Conformity to Securities Laws. Participant acknowledges that the Plan, the Grant Notice and this Agreement are intended to conform to the extent necessary with all Applicable Laws and, to the extent Applicable Laws permit, will be deemed amended as necessary to conform to Applicable Laws.

4.5 Successors and Assigns. The Company may assign any of its rights under this Agreement to single or multiple assignees, and this Agreement will inure to the benefit of the successors and assigns of the Company. Subject to the restrictions on transfer set forth in the Plan, this Agreement will be binding

upon and inure to the benefit of the heirs, legatees, legal representatives, successors and assigns of the parties hereto.

4.6 Limitations Applicable to Section 16 Persons. Notwithstanding any other provision of the Plan or this Agreement, if Participant is subject to Section 16 of the Exchange Act, the Plan, the Grant Notice, this Agreement and the Option will be subject to any additional limitations set forth in any applicable exemptive rule under Section 16 of the Exchange Act (including any amendment to Rule 16b-3) that are required for the application of such exemptive rule. To the extent Applicable Laws permit, this Agreement will be deemed amended as necessary to conform to such applicable exemptive rule.

4.7 Entire Agreement. The Plan, the Grant Notice and this Agreement (including any exhibit hereto) constitute the entire agreement of the parties and supersede in their entirety all prior undertakings and agreements of the Company and Participant with respect to the subject matter hereof.

4.8 Agreement Severable. In the event that any provision of the Grant Notice or this Agreement is held illegal or invalid, the provision will be severable from, and the illegality or invalidity of the provision will not be construed to have any effect on, the remaining provisions of the Grant Notice or this Agreement.

4.9 Limitation on Participant's Rights. Participation in the Plan confers no rights or interests other than as herein provided. This Agreement creates only a contractual obligation on the part of the Company as to amounts payable and may not be construed as creating a trust. Neither the Plan nor any underlying program, in and of itself, has any assets. Participant will have only the rights of a general unsecured creditor of the Company with respect to amounts credited and benefits payable, if any, with respect to the Option, and rights no greater than the right to receive the Shares as a general unsecured creditor with respect to the Option, as and when exercised pursuant to the terms hereof.

4.10 Counterparts. The Grant Notice may be executed in one or more counterparts, including by way of any electronic signature, subject to Applicable Law, each of which will be deemed an original and all of which together will constitute one instrument.

4.11 Insider Trading/Market Abuse Laws. Participant acknowledges that Participant may be subject to insider trading restrictions and/or market abuse laws in applicable jurisdictions, which may affect Participant's ability to accept, acquire, sell or attempt to sell, or otherwise dispose of the shares, rights to shares (e.g., the Option) or rights linked to the value of Shares, during such times as Participant is considered to have "inside information" regarding the Company (as defined by the laws or regulations in applicable jurisdictions). Applicable insider trading laws and regulations may prohibit the cancellation or amendment of orders Participant placed before possessing inside information. Furthermore, Participant may be prohibited from (i) disclosing insider information to any third party (other than on a "need to know" basis) and (ii) "tipping" third parties or causing them to otherwise buy or sell securities. Any restrictions under these laws or regulations are separate from and in addition to any restrictions that may be imposed under any applicable Company insider trading compliance policy. Participant acknowledges that it is Participant's responsibility to comply with any applicable restrictions, and Participant should speak to Participant's personal advisor on this matter.

4.12 No Advice Regarding Grant. The Company is not providing any tax, legal or financial advice, nor is the Company making any recommendations regarding Participant's participation in the Plan, or Participant's acquisition or sale of Shares. Participant should consult with Participant's own personal tax, legal and financial advisors regarding Participant's participation in the Plan before taking any action related to the Plan.

4.13 Imposition of Other Requirements. The Company reserves the right to impose other requirements on Participant's participation in the Plan, on the Option and on any award or Shares acquired under the Plan, to the extent the Company determines it is necessary or advisable for legal or administrative reasons. Participant agrees to sign any additional agreements or undertakings that may be necessary to accomplish the foregoing.

4.14 Governing Law. The Option and this Agreement shall be governed by and construed in accordance with the laws of the State of Delaware, U.S.A., without regard to conflict of laws principles.

* * * * *

**GINKGO BIOWORKS HOLDINGS, INC.**
**2021 INCENTIVE AWARD PLAN**

# GLOBAL RESTRICTED STOCK UNIT GRANT NOTICE

Capitalized terms not specifically defined in this Global Restricted Stock Unit Grant Notice (the "***Grant Notice***") have the meanings given to them in the 2021 Incentive Award Plan (as amended from time to time, the "***Plan***") of Ginkgo Bioworks Holdings, Inc. (the "***Company***").

The Company has granted to the participant listed below ("***Participant***") the Restricted Stock Units described in this Grant Notice (the "***RSUs***"), subject to the terms and conditions of the Plan and the Global Restricted Stock Unit Agreement attached as **Exhibit A**, including any appendices thereto (the Global Restricted Stock Unit Agreement, together with any such appendices, the "***Agreement***"), all of which are incorporated into this Grant Notice by reference.

**Participant:**

**Grant Date:**

**Number of RSUs:**

**Vesting Commencement Date:**

**Vesting Schedule:** [To be specified in individual award agreements]

By accepting the grant of the RSUs and Dividend Equivalents (this "***Award***"), Participant understands and agrees that as a condition of the grant of the Award hereunder, Participant is required to, and hereby affirmatively elects to, (1) sell that number of Shares as may be necessary to satisfy any applicable withholding tax obligations arising in connection with or resulting from the RSUs and Dividend Equivalents covered by this Agreement and any Restricted Stock Units and Dividend Equivalents granted to Participant under the Plan on or after the Grant Date, unless otherwise specified in the applicable award agreement, and (2) allow the broker or its affiliate to remit the cash proceeds of such sale(s) to the Company and/or its Subsidiaries for delivery to the appropriate taxing authorities (collectively, the "***Tax Treatment***"). Participant acknowledges and agrees that any costs and expenses related to any such sale by a broker or an affiliate of a broker in connection with the Tax Treatment shall be Participant's sole responsibility.

By accepting this Award, Participant agrees to be bound by the terms of this Grant Notice, the Plan and the Agreement. Participant has reviewed the Plan, this Grant Notice and the Agreement in their entirety, has had an opportunity to obtain the advice of counsel prior to executing this Grant Notice and fully understands all provisions of the Plan, this Grant Notice and the Agreement. Participant hereby agrees to accept as binding, conclusive and final all decisions or interpretations of the Administrator upon any questions arising under the Plan, this Grant Notice or the Agreement. If Participant does not click the "Accept" or "Reject" grant button on the Fidelity platform (or otherwise return an executed copy of this Grant Notice to the Company) by [ ] (unless a later date is determined by the Company), Participant will be deemed to have accepted this Award. Further, any acceptance of Shares issued pursuant to this Grant Notice and Agreement shall constitute Participant's acceptance of the RSUs and agreement with all terms and conditions of the RSUs, as set forth in the Plan, the Agreement and this Grant Notice.

| **GINKGO BIOWORKS HOLDINGS, INC.** | **PARTICIPANT** |
| --- | --- |
| By: | |
| Name: | [Participant Name] |
| Title: | |

**Exhibit A**

# GLOBAL RESTRICTED STOCK UNIT AGREEMENT

Capitalized terms not specifically defined in this Agreement have the meanings specified in the Grant Notice or, if not defined in the Grant Notice, in the Plan.

## ARTICLE I.
## GENERAL

1.1 Award of RSUs and Dividend Equivalents.

(a) The Company has granted the RSUs to Participant effective as of the grant date set forth in the Grant Notice (the "***Grant Date***"). Each RSU represents the right to receive one Share or, at the option of the Company, an amount of cash, in either case, as set forth in this Agreement. Participant will have no right to the distribution of any Shares or payment of any cash until the time (if ever) the RSUs have vested.

(b) The Company hereby grants to Participant, with respect to each RSU, a Dividend Equivalent for ordinary cash dividends paid to substantially all holders of outstanding Shares with a record date after the Grant Date and prior to the date the applicable RSU is settled, forfeited or otherwise expires. Each Dividend Equivalent entitles Participant to receive the equivalent value of any such ordinary cash dividends paid on a single Share. The Company will establish a separate Dividend Equivalent bookkeeping account (a "***Dividend Equivalent Account***") for each Dividend Equivalent and credit the Dividend Equivalent Account (without interest) on the applicable dividend payment date with the amount of any such cash paid. Participant will have no right to the payment of any Dividend Equivalent until the time (if ever) the related RSU has vested.

1.2 Incorporation of Terms of Plan. The RSUs are subject to the terms and conditions set forth in this Agreement and the Plan, which is incorporated herein by reference. In the event of any inconsistency between the Plan and this Agreement, the terms of the Plan will control.

1.3 Unsecured Promise. The RSUs and Dividend Equivalents will at all times prior to settlement represent an unsecured Company obligation payable only from the Company's general assets.

## ARTICLE II.
## VESTING; FORFEITURE AND SETTLEMENT

2.1 Vesting; Forfeiture. The RSUs will vest according to the vesting schedule in the Grant Notice except that any fraction of an RSU that would otherwise be vested will be accumulated and will vest only when a whole RSU has accumulated. In the event of Participant's Termination of Service for any reason, all unvested RSUs will immediately and automatically be cancelled and forfeited, except as otherwise determined by the Administrator or provided in a binding written agreement between Participant and the Company. Dividend Equivalents (including any Dividend Equivalent Account balance) will vest or be forfeited, as applicable, upon the vesting or forfeiture of the RSU with respect to which the Dividend Equivalent (including the Dividend Equivalent Account) relates.

2.2 Settlement.

(a) RSUs and Dividend Equivalents (including any Dividend Equivalent Account balance) will be paid in Shares or cash at the Company's option as soon as administratively practicable after the vesting of the applicable RSU, but in no event more than sixty (60) days after the date on which the RSU vests. Notwithstanding the foregoing, the Company may delay any payment under this Agreement that the Company reasonably determines would violate Applicable Law until the earliest date the Company reasonably determines the making of the payment will not cause such a violation (in accordance with U.S. Treasury Regulation Section 1.409A-2(b)(7)(ii)).

(b) If an RSU is paid in cash, the amount of cash paid with respect to the RSU will equal the Fair Market Value of a Share on the day immediately preceding the payment date. If a Dividend Equivalent is paid in Shares, the number of Shares paid with respect to the Dividend Equivalent will equal the quotient, rounded down to the nearest whole Share, of the Dividend Equivalent Account balance divided by the Fair Market Value of a Share on the day immediately preceding the payment date.

## ARTICLE III.
## TAXATION AND TAX WITHHOLDING

3.1 Representation. Participant represents to the Company that Participant has reviewed with Participant's own tax advisors the tax consequences of this Award and the transactions contemplated by the Grant Notice and this Agreement. Participant is relying solely on such advisors and not on any statements or representations of the Company or any of its agents. Participant acknowledges and agrees that the provisions of the Grant Notice relating to the Tax Treatment shall apply to this Award.

3.2 Tax Withholding.

(a) To the extent that the receipt, vesting or settlement of this Award results in compensation income or wages to Participant for U.S. federal, state, local and/or non-U.S. tax purposes, Participant shall make arrangements satisfactory to the Company regarding the payment of, any income tax, social insurance contribution or other applicable taxes that are required to be withheld in respect of this Award, which, unless otherwise determined by the Company, shall be satisfied by the Tax Treatment. The Company shall otherwise be permitted to use any of the methods permitted under Section 9.5 of the Plan to satisfy any tax withholding in connection with this Award, without the need for Participant's consent.

(b) Participant acknowledges that Participant is ultimately liable and responsible for all taxes owed in connection with the RSUs and the Dividend Equivalents, regardless of any action the Company or any Subsidiary takes with respect to any tax withholding obligations that arise in connection with the RSUs or Dividend Equivalents, including the Tax Treatment. Neither the Company nor any Subsidiary makes any representation or undertaking regarding the treatment of any tax withholding in connection with the award, vesting or payment of the RSUs or the Dividend Equivalents or any subsequent sale of Shares received in respect of the RSUs or the Dividend Equivalents. The Company and the Subsidiaries do not commit and are under no

obligation to structure the RSUs or Dividend Equivalents to reduce or eliminate Participant's tax liability.

## ARTICLE IV.
## OTHER PROVISIONS

4.1 Adjustments. Participant acknowledges that the RSUs, the Shares subject to the RSUs and the Dividend Equivalents are subject to adjustment, modification and termination in certain events as provided in this Agreement and the Plan.

4.2 Notices. Any notice to be given under the terms of this Agreement to the Company must be in writing and addressed to the Company in care of the Company's Secretary at the Company's principal office or the Secretary's then-current email address. Any notice to be given under the terms of this Agreement to Participant must be in writing and addressed to Participant at Participant's last known mailing address or email address in the Company's personnel files. By a notice given pursuant to this Section, either party may designate a different address for notices to be given to that party. Any notice will be deemed duly given when actually received, when sent by email, when sent by certified mail (return receipt requested) and deposited with postage prepaid in a post office or branch post office regularly maintained by the United States Postal Service, or when delivered by a nationally recognized express shipping company.

4.3 Titles. Titles are provided herein for convenience only and are not to serve as a basis for interpretation or construction of this Agreement.

4.4 Conformity to Securities Laws. Participant acknowledges that the Plan, the Grant Notice and this Agreement are intended to conform to the extent necessary with all Applicable Laws and, to the extent Applicable Laws permit, will be deemed amended as necessary to conform to Applicable Laws.

4.5 Successors and Assigns. The Company may assign any of its rights under this Agreement to single or multiple assignees, and this Agreement will inure to the benefit of the successors and assigns of the Company. Subject to the restrictions on transfer set forth in the Plan, this Agreement will be binding upon and inure to the benefit of the heirs, legatees, legal representatives, successors and assigns of the parties hereto.

4.6 Limitations Applicable to Section 16 Persons. Notwithstanding any other provision of the Plan or this Agreement, if Participant is subject to Section 16 of the Exchange Act, the Plan, the Grant Notice, this Agreement, the RSUs and the Dividend Equivalents will be subject to any additional limitations set forth in any applicable exemptive rule under Section 16 of the Exchange Act (including any amendment to Rule 16b-3) that are requirements for the application of such exemptive rule. To the extent Applicable Laws permit, this Agreement will be deemed amended as necessary to conform to such applicable exemptive rule.

4.7 Entire Agreement. The Plan, the Grant Notice and this Agreement (including any appendices attached hereto) constitute the entire agreement of the parties and supersede in their entirety all prior undertakings and agreements of the Company and Participant with respect to the subject matter hereof.

4.8 Agreement Severable. In the event that any provision of the Grant Notice or this Agreement is held illegal or invalid, the provision will be severable from, and the illegality or invalidity of the provision will not be construed to have any effect on, the remaining provisions of the Grant Notice or this Agreement.

4.9 Limitation on Participant's Rights. Participation in the Plan confers no rights or interests other than as herein provided. This Agreement creates only a contractual obligation on the part of the Company as to amounts payable and may not be construed as creating a trust. Neither the Plan nor any underlying program, in and of itself, has any assets. Participant will have only the rights of a general unsecured creditor of the Company with respect to amounts credited and benefits payable, if any, with respect to the RSUs and Dividend Equivalents, and rights no greater than the right to receive cash or the Shares as a general unsecured creditor with respect to the RSUs and Dividend Equivalents, as and when settled pursuant to the terms of this Agreement.

4.10 Not a Contract of Employment. Nothing in the Plan, the Grant Notice or this Agreement confers upon Participant any right to continue in the employ or service of the Company or any Subsidiary or interferes with or restricts in any way the rights of the Company and its Subsidiaries, which rights are hereby expressly reserved, to discharge or terminate the services of Participant at any time for any reason whatsoever, with or without Cause.

4.11 Part-Time Status. Participant acknowledges and agrees that if Participant changes classification from a full-time employee to a part-time employee or if Participant goes on a leave of absence, the Administrator may, in its sole discretion, reduce, eliminate or extend the vesting of Participant's unvested RSUs, including any Restricted Stock Units previously granted to Participant under the Plan or a Prior Plan. Participant's execution of this Agreement serves as consent to any such change in vesting.

4.12 Counterparts. The Grant Notice may be executed in one or more counterparts, including by way of any electronic signature, subject to Applicable Law, each of which will be deemed an original and all of which together will constitute one instrument.

4.13 Governing Law. The RSUs and this Agreement shall be governed by and construed in accordance with the laws of the State of Delaware, U.S.A., without regard to conflict of laws principles.

* * * * *

**Appendix A**

**TO THE RESTRICTED STOCK UNIT AGREEMENT**

**PROVISIONS FOR PARTICIPANTS BASED OUTSIDE THE U.S.**

The following terms and conditions apply to Participants based outside the U.S. or who are otherwise subject to the laws of a jurisdiction other than the U.S. In general, the terms and conditions in this Appendix A supplement the provisions of the main body of this Agreement, unless otherwise indicated herein.

1. **Nature of Grant**. By acknowledging and accepting this Agreement, Participant acknowledges, understands and agrees that:

(a) the Plan is established voluntarily by the Company, it is discretionary in nature and it may be modified, amended, suspended or terminated by the Company at any time, to the extent permitted by the Plan;

(b) all decisions with respect to future grants of Restricted Stock Units or other awards, if any, will be at the sole discretion of the Company;

(c) Participant is voluntarily participating in the Plan;

(d) the RSUs, the Dividend Equivalents and the Shares subject to the RSUs, and the income from and value of same, are not intended to replace any pension rights or compensation;

(e) the RSUs, the Dividend Equivalents and the Shares subject to the RSUs, and the income from and value of same, are not part of normal or expected compensation or salary for any purposes, including, but not limited to, calculating any severance, resignation, termination, redundancy, dismissal, end-of-service payments, holiday pay, bonuses, long-service awards, pension or retirement or welfare benefits or similar payments;

(f) unless otherwise agreed with the Company in writing, the RSUs, the Dividend Equivalents and the Shares subject to the RSUs, and the income from and value of same, are not granted as consideration for, or in connection with, the service Participant may provide as a director of any Subsidiary;

(g) the future value of the underlying Shares is unknown, indeterminable and cannot be predicted with certainty;

(h) no claim or entitlement to compensation or damages shall arise from forfeiture of the RSUs or Dividend Equivalents resulting from Participant ceasing to provide employment or other services to the Company or any Subsidiary (for any reason whatsoever and whether or not later found to be invalid or in breach of employment laws in the jurisdiction where Participant is employed or the terms of Participant's employment or service agreement, if any);

(i) unless otherwise provided in the Plan or by the Company in its discretion, the RSUs, the Dividend Equivalents and the benefits evidenced by this Agreement do not create any entitlement to have the RSUs or Dividend Equivalents or any such benefits transferred to, or

assumed by, another company nor be exchanged, cashed out or substituted for, in connection with any corporate transaction affecting the shares of the Company; and

(j) neither the Company nor any Subsidiary shall be liable for any foreign exchange rate fluctuation between Participant's local currency and the U.S. Dollar that may affect the value of the RSUs or Dividend Equivalents or of any amounts due to Participant pursuant to the settlement of the RSUs or Dividend Equivalents or the subsequent sale of any Shares acquired upon settlement.

2. **Tax Matters**. This Section replaces Section 3.2 of the Agreement:

(a) Responsibility for Taxes. Participant acknowledges that, regardless of any action taken by the Company or, if different, Participant's employer (the "***Employer***"), the ultimate liability for all income tax, social insurance, payroll tax, fringe benefits tax, payment on account or other tax-related items related to Participant's participation in the Plan and legally applicable to Participant ("***Tax-Related Items***") is and remains Participant's responsibility and may exceed the amount, if any, actually withheld by the Company or the Employer. Participant further acknowledges that the Company and the Employer (i) make no representations or undertakings regarding the treatment of any Tax-Related Items in connection with any aspect of the RSUs, and (ii) do not commit to and are under no obligation to structure the terms of the grant or any aspect of the RSUs to reduce or eliminate Participant's liability for Tax-Related Items or achieve any particular tax result. Further, if Participant is subject to Tax-Related Items in more than one jurisdiction, Participant acknowledges that the Company and/or the Employer (or former employer, as applicable) may be required to withhold or account for Tax-Related Items in more than one jurisdiction. The Company may refuse to issue or deliver the Shares or the proceeds of the sale of Shares if Participant fails to comply with his or her obligations in connection with the Tax-Related Items.

(b) Withholding Generally. In connection with any relevant taxable or tax withholding event, as applicable, Participant will pay or make adequate arrangements satisfactory to the Company and/or the Employer to fulfill any and all liability for Tax-Related Items. In this regard, Participant authorizes the Company and/or the Employer, or their respective agents, at their discretion, to satisfy any applicable withholding obligations or rights with regard to Tax-Related Items by one or a combination of the following without the need for Participant's consent: (i) withholding from Participant's wages or other cash compensation payable to Participant by the Company, the Employer or any other Subsidiary, (ii) withholding from proceeds of the sale of Shares acquired upon vesting and settlement of the RSUs either through a voluntary sale or through a mandatory sale arranged by the Company (on Participant's behalf pursuant to this authorization without further consent), (iii) withholding Shares to be issued upon vesting and settlement of the RSUs, (iv) requiring Participant to tender a cash payment to the Company, the Employer or another Subsidiary, and/or (v) any other method of withholding determined by the Company to be permitted under the Plan and applicable law and, to the extent required by the Plan or applicable law, approved by the Committee.

(c) Withholding Rates. The Company may withhold for Tax-Related Items by considering statutory or other withholding rates, including up to the maximum applicable rates in Participant's jurisdiction(s). In the event the application of such withholding rate leads to

over-withholding, Participant may receive a refund of any over-withheld amount in cash from the Company or the Employer (and, in no event, will Participant have any entitlement to the equivalent amount in Shares); alternatively, if not refunded by the Company or the Employer, Participant may be able to seek a refund from the local tax authorities. In the event the application of such withholding rate leads to under-withholding, Participant may be required to pay any additional Tax-Related Items directly to the applicable tax authorities.

3. **Data Privacy**. If Participant would like to participate in the Plan, Participant will need to review the information provided in this Section 3 of Appendix A and, where applicable, declare Participant's consent to the processing and/or transfer of personal data as described below.

***(a)*** EEA+ Controller. If Participant is based in the European Union ("EU"), the European Economic Area, Switzerland or the United Kingdom (collectively, "EEA+"), Participant should note that the Company, with its registered address at 27 Drydock Avenue, 8th Floor, Boston, MA 02210, USA, is the controller responsible for the processing of Participant's personal data in connection with this Agreement and the Plan.

***(b)*** Data Collection and Usage. The Company collects, uses and otherwise processes certain personal data about Participant, including, but not limited to, Participant's name, home address and telephone number, email address, date of birth, social insurance number, passport or other identification number (e.g., resident registration number), salary, nationality, job title, any shares of stock or directorships held in the Company, details of all RSUs or any other entitlement to shares of stock awarded, canceled, exercised, vested, unvested or outstanding in Participant's favor, which the Company receives from Participant, the Employer or otherwise in connection with this Agreement or the Plan ("Personal Data"), for the purposes of implementing, administering and managing the Plan and allocating Shares pursuant to the Plan.

If Participant is based in the EEA+, the legal basis for the processing of Personal Data by the Company is the necessity of the data processing for the Company to (i) perform its contractual obligations under this Agreement, (ii) comply with legal obligations established in the EEA+, or (iii) pursue the legitimate interest of complying with legal obligations established outside of the EEA+.

If Participant is based outside of the EEA+, the legal basis, where required, for the processing of Personal Data by the Company is Participant's consent, as further described below.

***(c)*** Stock Plan Administration Service Providers. The Company transfers Personal Data to Fidelity ("Broker"), an independent service provider, which is assisting the Company with the implementation, administration and management of the Plan. In the future, the Company may select a different service provider and share Personal Data with such other provider serving in a similar manner. Broker will open an account for Participant to receive and trade Shares acquired under the Plan. Participant may be asked to agree on separate terms and data processing practices with Broker, with such agreement being a condition to the ability to participate in the Plan.

***(d)*** International Data Transfers. The Company and its service providers, including without limitation, Fidelity, operate (with respect to the Company) in the United States.

Participant's country or jurisdiction may have different data privacy laws and protections than the United States. By participating in the Plan, Participant acknowledges and accepts that the transfer of Data outside Participant's country or jurisdiction is necessary for the Company to perform its contractual obligations under the Agreement and for the Company's legitimate business interests of managing the Plan and generally administering employee participation. To the extent required by applicable law, the Company shall implement appropriate safeguards for international transfers of Data, including, for example, by executing standard contractual clauses approved for such use by the European Commission.

***(e)*** Data Retention. The Company will hold and use the Personal Data only as long as is necessary to implement, administer and manage Participant's participation in the Plan, or as required to comply with legal or regulatory obligations, including under tax and security laws.

***(f)*** Data Subject Rights. Participant may have a number of rights under data privacy laws in his or her jurisdiction. Depending on where Participant is based, such rights may include the right to (i) request access or copies of Personal Data the Company processes, (ii) the rectification or amendment of incorrect or incomplete Personal Data, (iii) the deletion of Personal Data, (iv) request restrictions on the processing of Personal Data, (v) object to the processing of Personal Data for legitimate interests, (vi) the portability of Personal Data, (vi) lodge complaints with competent authorities in Participant's jurisdiction, and/or to (viii) receive a list with the names and addresses of any potential recipients of Personal Data. To receive additional information regarding these rights or to exercise these rights, Participant can contact privacy@ginkgobioworks.com.

***(g)*** Necessary Disclosure of Personal Data. Participant understands that providing the Company with Personal Data is necessary for the performance of this Agreement and that Participant's refusal to provide Personal Data would make it impossible for the Company to perform its contractual obligations and may affect Participant's ability to participate in the Plan.

***(h)*** Voluntariness and Consequences of Consent Denial or Withdrawal. Participation in the Plan is voluntary and Participant is providing any consents referred to herein on a purely voluntary basis. Participant understands that Participant may withdraw any such consent at any time with future effect for any or no reason. If Participant does not consent, or if Participant later seeks to withdraw Participant's consent, Participant's salary from or employment and career with the Employer will not be affected; the only consequence of refusing or withdrawing Participant's consent is that the Company would not be able to grant the RSUs or other awards to Participant or administer or maintain the RSUs. For more information on the consequences of refusal to consent or withdrawal of consent, Participant should contact equity@ginkgobioworks.com.

***(i)*** Declaration of Consent.

If Participant is based in the EEA+, by acknowledging and accepting this Agreement and indicating consent via the Company's online acceptance procedure, Participant explicitly declares consent to the onward transfer of Personal Data by the Company to Broker or, as the case may be, a different service provider of the Company in the U.S. as described in Section 3(d) above.

If Participant is based outside of the EEA+, by acknowledging and accepting this Agreement and indicating consent via the Company's online acceptance procedure, Participant explicitly declares consent to the entirety of the Personal Data processing operations described in this Section 3 including, without limitation, the onward transfer of Personal Data by the Company to Broker or, as the case may be, a different service provider of the Company in the U.S.

4. **Language**. Participant acknowledges and represents that Participant is proficient in the English language, or has consulted with an advisor who is sufficiently proficient in English, so as to allow Participant to understand the terms of this Agreement, including this Appendix A and any other appendices thereto, and any other documents related to the Plan or this Agreement. If Participant has received this Agreement, including the appendices or any other document related to the Plan translated into a language other than English and if the translated version is different than the English version, the English version will control.

5. **Compliance with Law**. Notwithstanding any other provision of the Plan or this Agreement, unless there is an exemption from any registration, qualification or other legal requirement applicable to the Shares, the Company shall not be required to deliver any of the Shares that are otherwise issuable upon settlement of the RSUs prior to the completion or approval of any registration or qualification of the Shares under any applicable law or under any rulings or regulations of any governmental regulatory body, which registration, qualification or approval the Company shall, in its absolute discretion, deem necessary or advisable. Participant understands that the Company is under no obligation to register or qualify the Shares with any securities commission or to seek approval or clearance from any governmental authority for the issuance or sale of the Shares. Further, Participant agrees that the Company shall have unilateral authority to amend this Agreement without Participant's consent to the extent necessary to comply with securities, exchange control or other laws applicable to issuance of Shares.

6. **Choice of Venue**. Any and all disputes relating to, concerning or arising from this Agreement, or relating to, concerning or arising from the relationship between the parties evidenced by the RSUs or this Agreement, shall be brought and heard exclusively in the U.S. District Court for the District of Massachusetts. Each of the parties hereby represents and agrees that such party is subject to the personal jurisdiction of said courts; hereby irrevocably consents to the jurisdiction of such courts in any legal or equitable proceedings related to, concerning or arising from such dispute, and waives, to the fullest extent permitted by law, any objection which such party may now or hereafter have that the laying of the venue of any legal or equitable proceedings related to, concerning or arising from such dispute which is brought in such courts is improper or that such proceedings have been brought in an inconvenient forum.

7. **Imposition of Other Requirements**. The Company reserves the right to impose other requirements on Participant's participation in the Plan, on the RSUs, the Dividend Equivalents and on any Shares acquired under the Plan, to the extent the Company determines it is necessary or advisable for legal or administrative reasons, and to require Participant to sign any additional agreements or undertakings that may be necessary to accomplish the foregoing.

8. **No Advice Regarding Grant**. The Company is not providing any tax, legal or financial advice, nor is the Company making any recommendations regarding Participant's participation in the Plan or Participant's acquisition or sale of the underlying Shares. Participant should consult

with Participant's own personal tax, legal and financial advisors regarding participation in the Plan before taking any action related to the Plan.

9. **Insider Trading/Market Abuse Laws**. Participant acknowledges that Participant may be subject to insider trading restrictions and/or market abuse laws in applicable jurisdictions, including (but not limited to) the U.S. and Participant's jurisdiction, which may affect Participant's ability to accept, acquire, sell or otherwise dispose of Shares or rights to Shares (*e.g.*, RSUs) or rights linked to the value of shares during such times Participant is considered to have "inside information" regarding the Company as defined in the laws or regulations in the applicable jurisdictions). Any restrictions under these laws or regulations are separate from and in addition to any restrictions that may be imposed under any applicable insider trading policy of the Company. Participant is responsible for complying with any such restrictions and should speak to Participant's personal legal advisor on this matter.

10. **Foreign Asset/Account Reporting and Exchange Control Requirements**. Participant acknowledges that there may be foreign asset and/or account reporting and/or exchange control requirements which may affect Participant's ability to acquire or hold Shares or cash received from participating in the Plan in a brokerage or bank account outside Participant's country. Participant may be required to report such accounts, balances, assets and/or the related transactions to the tax, exchange control or other authorities in Participant's jurisdiction. Participant also may be required to repatriate sale proceeds or other funds received as a result of participation in the Plan to Participant's jurisdiction through a designated bank or broker and/or within a certain time after receipt. Participant is responsible for complying with such regulations and should speak to Participant's personal legal advisor on this matter.

11. **Additional Country-Specific Provisions**. Participant shall also be subject to any terms and conditions set forth in Appendix B to this Agreement for Participant's jurisdiction. Moreover, if Participant relocates to another jurisdiction while the RSUs are outstanding or while holding any Shares acquired upon vesting and settlement of the RSUs, the terms and conditions set forth in Appendices A and B will apply to Participant, to the extent the Company determines that the application of such terms and conditions is necessary or advisable for legal or administrative reasons.

**Appendix B**

**TO THE GLOBAL RESTRICTED STOCK UNIT AGREEMENT**

**JURISDICTION-SPECIFIC PROVISIONS FOR PARTICIPANTS BASED OUTSIDE THE U.S.**

***Terms and Conditions***

This Appendix B includes terms and conditions that govern the Award and/or the Shares underlying the Award if Participant is a citizen or resident of and/or works in one of the jurisdictions listed below. These terms and conditions are in addition to, or, if so indicated, in place of, the other terms and conditions set forth in this Agreement, including Appendix A.

If Participant is a citizen or resident of a country other than the one in which Participant is currently working (or is considered as such for local law purposes) or if Participant transfers employment or residency to a different jurisdiction after the grant date, the Company will, in its discretion, determine the extent to which the terms and conditions contained herein will be applicable to Participant.

***Notifications***

This Appendix B also includes notifications relating to exchange control, securities laws and other issues of which Participant should be aware with respect to his or her participation in the Plan. The information is based on the exchange control, securities and other laws in effect in the respective countries as of **May 2022**. Such laws are often complex and change frequently. As a result, the Company strongly recommends that Participant not rely on the notifications herein as the only source of information relating to the consequences of participation in the Plan because the information may be out of date at the time the Award vests and is settled or Shares acquired under the Plan are sold.

In addition, the information contained herein is general in nature and may not apply to Participant's particular situation, and the Company is not in a position to assure Participant of any particular result. Accordingly, Participant should seek appropriate professional advice as to how the relevant laws in Participant's country may apply to Participant's situation.

If Participant is a citizen or resident of a country other than the one in which Participant is currently working (or is considered as such for local law purposes) or if Participant transfers employment or residency to a different jurisdiction after the grant date, the information contained herein may not apply to Participant in the same manner.

**FRANCE**

***Terms and Conditions***

**NATURE OF AWARD**. The RSUs are not granted under the French specific regime provided by Articles L. 225-197-1 to L. 225-197-5 and Articles L. 22-10-59 to L. 22-10-60 of the French Commercial Code, as amended.

**Consent to Receive Information in English**. By accepting the Award, Participant confirms having read and understood the Plan and the Agreement, which were provided in the English language. Participant accepts the terms of those documents accordingly. *En acceptant les attribution, le Participant confirme avoir lu et compris le Plan et l'Accord, qui ont été fournis en langue anglaise. Le Participant accepte les termes de ces documents en conséquence.*

***Notifications***

**Exchange Control Information**. The value of any cash or securities imported to or exported from France without the use of a financial institution must be reported to the customs and excise authorities when the value of such cash or securities is equal to or greater than a certain amount. Participant should consult with his or her personal financial advisor for further details regarding this requirement.

**Foreign Asset/Account Reporting Information**. Participant is required to report all foreign accounts (whether open, current or closed) to the French tax authorities when filing his or her annual tax return.

**GERMANY**

***Notifications***

**Exchange Control Notification.** Cross-border payments, including the receipt of proceeds from the sale of securities (*e.g.*, Shares), must be reported monthly to the German Federal Bank if such payments exceed EUR 12,500. Participant is responsible for satisfying this reporting obligation and must file the report electronically by the fifth day of the month following the month in which the payment occurred. A copy of the form can be accessed via the German Federal Bank's website at www.bundesbank.de and is available in both German and English. In addition, Participant may be required to report the acquisition of Shares under the Plan if the value of the Shares exceeds EUR 12,500 to the Bundesbank.

**Foreign Asset/Account Reporting Information.** Participant must notify his or her local tax office of the acquisition of Shares if the value of all Shares Participant acquires under the Plan exceeds EUR 150,000 or Participant holds 10% or more of the total Shares.

**ITALY**

***Terms and Conditions***

**Plan Document Acknowledgement**. By accepting the Award, Participant acknowledges that Participant has received a copy of the Plan, has reviewed the Plan and the Agreement in their entirety and fully understands and accepts all provisions of the Plan and the Agreement.

Participant further acknowledges that Participant has read and specifically and expressly approves the following clauses in the Agreement: Article 2: Vesting; Forfeiture and Settlement, Appendix B and the following clauses in Appendix A: Section 1: Nature of Grant; Section 2: Tax Matters; Section 3: Data Privacy; and Section 6: Choice of Venue.

***Notifications***

**FOREIGN ASSET/ACCOUNT REPORTING INFORMATION**. Italian residents who, at any time during the fiscal year, hold foreign financial assets (including cash and Shares) that may generate taxable income in Italy are required to report these assets on their annual tax returns (UNICO Form, RW Schedule) for the year during which the assets are held, or on a special form if no tax is due. These reporting obligations will also apply to Italian residents who are the beneficial owners of foreign financial assets under Italian money laundering provisions. Italian residents should consult with their personal tax advisor to determine their personal reporting obligations.

**THE NETHERLANDS**

There are no country specific provisions.

**SWITZERLAND**

**SECURITIES LAW INFORMATION**. Neither this document nor any other materials relating to the grant of the Award (i) constitutes a prospectus according to articles 35 et seq. of the Swiss Federal Act on Financial Services ("***FinSA***") (ii) may be publicly distributed or otherwise made publicly available in Switzerland to any person other than an employee or (iii) has been or will be filed with, approved, or supervised by any Swiss reviewing body according to article 51 of FinSA or any Swiss regulatory authority, including the Swiss Financial Market Supervisory Authority (FINMA).

**Appendix C**

## VESTING SCHEDULE

**Exhibit 10.3**

27 Drydock Avenue
Boston, Massachusetts
(the "**Building**")

FOURTEENTH AMENDMENT ("**FOURTEENTH AMENDMENT**")

Execution Date: June 1, 2022

| | |
|---|---|
| LANDLORD: | BCP-CG 27 Property LLC, a Delaware limited liability company |
| TENANT: | Ginkgo Bioworks, Inc., a Delaware corporation |
| EXISTING PREMISES: | A total of 178,161 rentable square feet of the Building, as more specifically set forth in the Lease. |
| DATE OF LEASE: | December 22, 2011 |
| EXPIRATION DATE: | January 31, 2036 |
| PREVIOUS LEASE AMENDMENTS: | First Amendment to Lease Agreement dated April , 2012<br>Second Amendment to Lease dated August 1, 2014<br>Third Amendment to Lease dated August 15, 2014<br>Fourth Amendment to Lease dated May 1, 2016<br>Fifth Amendment to Lease dated May 31, 2016<br>Sixth Amendment to Lease dated August 5, 2016<br>Seventh Amendment to Lease dated July 31, 2017<br>Eighth Amendment to Lease dated March 23, 2018<br>Ninth Amendment to Lease dated September 6, 2018<br>Tenth Amendment to Lease dated July 29, 2020<br>Eleventh Amendment to Lease dated August 14, 2020<br>Twelfth Amendment to Lease dated January 13, 2021<br>Thirteenth Amendment to Lease dated September 6, 2021 |
| EIGHTEENTH EXPANSION PREMISES: | Approximately 18,170 rentable square feet located on the westerly side of the fourth (4th) floor of the Building, substantially as shown on the plan attached hereto as Exhibit A. |

WHEREAS, Tenant and Landlord desire to (i) expand the Premises to include the Eighteenth Expansion Premises and (ii) amend certain other provisions of the Lease, all upon the terms and conditions hereinafter set forth.

NOW, THEREFORE, for good and valuable consideration, the parties hereby agree that the above-referenced lease (the "**Lease**") is hereby amended as follows:

1. DEMISE OF EIGHTEENTH EXPANSION PREMISES

Landlord hereby leases to Tenant, and Tenant hereby hires and takes from Landlord, the Eighteenth Expansion Premises for a Term commencing as of the Eighteenth Expansion Premises Commencement Date (as hereinafter defined) and, co-terminus with the Lease, expiring on the Expiration Date of the Lease. Said leasing of the Eighteenth Expansion Premises shall be upon all of the same terms and conditions of the Lease, except as follows or as otherwise specifically set forth herein:

A. Eighteenth Expansion Premises Commencement Date. The "**Eighteenth Expansion Premises Commencement Date**" shall be the date when Landlord delivers the Eighteenth Expansion Premises to Tenant in broom-clean condition. Landlord shall use reasonable good faith efforts and diligence to cause the Eighteenth Expansion Premises Commencement Date to occur on or before April 1, 2023. Notwithstanding the foregoing, in the event that the Eighteenth Expansion Premises Commencement Date is later than July 1, 2023 (as such date shall be extended for any delay caused by (a) Tenant or any of its agents, employees or contractors or (b) an event of Force Majeure) (as so extended, the "**Outside Date**"), then Tenant shall be entitled to a rent abatement against Tenant's obligation to pay Basic Rent and Operating Expenses and Taxes with respect to the Eighteenth Expansion Premises only following the Eighteenth Expansion Premises Commencement Date equal to one (1) day for each day between the Outside Date and the Eighteenth Expansion Premises Commencement Date.

B. Eighteenth Expansion Premises Rent Commencement Date. The "**Eighteenth Expansion Premises Rent Commencement Date**" shall be the later of (x) the date five (5) months after the Eighteenth Expansion Premises Commencement Date or (y) the Base Building Work Completion Date (as hereinafter defined). Once the Eighteenth Expansion Premises Commencement Date and the Eighteenth Expansion Premises Rent Commencement Date have been determined, Landlord and Tenant shall execute an agreement, in a reasonable form provided by Landlord, in which shall be stated the Eighteenth Expansion Premises Commencement Date and the Eighteenth Expansion Premises Rent Commencement Date.

C. Basic Rent. Tenant shall pay Basic Rent with respect to the Eighteenth Expansion Premises at the same per rentable square foot rental rate then in effect for the Fifteenth Expansion Premises (as defined in the Tenth Amendment). For the avoidance of doubt, such rental rates are as follows:

| Time Period* | Per Rentable Square Foot | Annual Basic Rent | Monthly Basic Rent |
|---|---|---|---|
| 1/1/22 – 12/31/22 | $79.31 | $1,441,062.70 | $120,088.56 |

| | | | |
|---|---|---|---|
| 1/1/23 – 12/31/23 | $81.69 | $1,484,307.30 | $123,692.28 |
| 1/1/24 – 12/31/24 | $84.14 | $1,528,823.80 | $127,401.98 |
| 1/1/25 – 12/31/25 | $86.66 | $1,574,612.20 | $131,217.68 |
| 1/1/26 – 12/31/26 | $89.26 | $1,621,854.20 | $135,154.52 |
| 1/1/27 – 12/31/27 | $91.94 | $1,670,549.80 | $139,212.48 |
| 1/1/28 – 12/31/28 | $94.70 | $1,720,699.00 | $143,391.58 |
| 1/1/29 – 12/31/29 | $97.54 | $1,772,301.80 | $147,691.82 |
| 1/1/30 – 1/31/30 | $100.47 | $1,825,539.90 | $152,128.33 |
| 2/1/30 – 1/31/36 | At the rental rates then applicable to the Seventeenth Expansion Premises, as set forth in Section 4(B) of the Thirteenth Amendment. | | |

* Note: Eighteenth Expansion Premises Rent Commencement Date not yet determined; Basic Rent for the Eighteenth Expansion Premises will begin on the Eighteenth Expansion Premises Rent Commencement Date at the per rentable square foot rate noted above for the period in which the Eighteenth Expansion Premises Rent Commencement Date occurs, and will end on the Expiration Date.

D. Operating Expenses and Taxes. Tenant's Proportionate Share with respect to the Eighteenth Expansion Premises shall be 6.27%, which is the ratio that the rentable square footage of the Eighteenth Expansion Premises (18,170) bears to the Building Rentable Area (289,613). Tenant's obligation to pay Operating Expenses and Taxes with respect to the Eighteenth Expansion Premises shall begin on the Eighteenth Expansion Premises Rent Commencement Date.

E. Condition of Eighteenth Expansion Premises. Tenant shall take the Eighteenth Expansion Premises "as-is" in its then (i.e., as of the date of delivery) state of construction, finish, and decoration and without any obligation on the part of Landlord to prepare or construct the Eighteenth Expansion Premises (other than Landlord's Eighteenth Expansion Premises Work) or to provide any tenant improvement allowance (other than the Eighteenth Expansion Premises Allowance), Tenant hereby agreeing that it shall be responsible for all other work required to prepare the Eighteenth Expansion Premises for its occupancy thereof ("**Tenant's Eighteenth Expansion Premises Work**"). Landlord shall cause all base Building systems serving the Eighteenth Expansion Premises to be in good working order upon the Eighteenth Expansion Premises Commencement Date.

F. Landlord's Eighteenth Expansion Premises Work. Attached hereto as Exhibit B is a matrix (the "**Landlord/Tenant Matrix**") showing certain base building infrastructure with respect to the Eighteenth Expansion Premises that will be Landlord's responsibility to provide (collectively, "**Landlord's Eighteenth Expansion Premises Work**") and certain other items which will be Tenant's responsibility to complete as part of

Tenant's Eighteenth Expansion Premises Work. The parties acknowledge that Landlord's Eighteenth Expansion Premises Work will be performed following the Eighteenth Expansion Premises Commencement Date concurrently with Tenant's Eighteenth Expansion Premises Work. Accordingly, Landlord and Tenant agree to cooperate with each other to minimize interference with the construction of the other party. Landlord's Eighteenth Expansion Premises Work shall be deemed substantially complete for purposes hereof on the date (the "**Base Building Work Completion Date**") as of which the same has been completed except for (a) any minor, touch- up or punch list-type items of work and adjustment of equipment and fixtures that can be completed after Tenant commences its occupancy of the Eighteenth Expansion Premises without materially interfering with Tenant's use thereof for the conduct of its business and (b) items which, in accordance with good construction practice, should be performed after and/or concurrently with the performance of any tenant improvement work to be performed by Tenant; provided, however, that if substantial completion of Landlord's Eighteenth Expansion Premises Work is delayed as a result of any Tenant Delay (as hereinafter defined), then the Base Building Work Completion Date shall be the date when Landlord's Eighteenth Expansion Premises Work would have been so substantially completed but for such Tenant Delay. Landlord shall use commercially reasonable efforts to cause the Base Building Work Completion Date to occur on or before the date seven (7) months after the Eighteenth Expansion Premises Commencement Date (the "**Anticipated Completion Date**"); provided, however, that Landlord shall not be liable to Tenant for the failure of Landlord's Eighteenth Expansion Premises Work to be substantially completed on or before such Anticipated Completion Date. Notwithstanding the foregoing, in the event the Base Building Work Completion Date does not occur on or before the Rent Credit Outside Date (as hereinafter defined), then Tenant shall be entitled to a credit against Tenant's obligation to pay Basic Rent with respect to the Eighteenth Expansion Premises only equal to one (1) day for each day between the Rent Credit Outside Date and the date when Landlord's Eighteenth Expansion Premises Work is substantially completed. The "**Rent Credit Outside Date**" shall mean the date one hundred eighty (180) days after the Anticipated Completion Date; provided, however, that the Rent Credit Outside Date shall be extended by the length of any delays in Landlord's Eighteenth Expansion Premises Work arising from (i) Tenant Delay (as hereinafter defined), (ii) Long-Lead Items (as hereinafter defined) or (iii) causes beyond Landlord's reasonable control (including the force majeure events set forth in Section 25(c) of the Lease). As used herein, "**Tenant Delay**" shall mean any delay in the completion of Landlord's Eighteenth Expansion Premises Work resulting from any or all of the following: (a) any changes requested by Tenant to Landlord's Eighteenth Expansion Premises Work (which changes shall be subject to Landlord's prior written approval, which may be granted or withheld in Landlord's sole discretion); (b) any failure by Tenant to respond to any request by Landlord for approval or information in connection with Landlord's Eighteenth Expansion Premises Work within five (5) days of Tenant's receipt of such request; (c) any delays caused by Tenant's Eighteenth Expansion Premises Work (it being understood that the scheduling and/or performance of Landlord's Eighteenth Expansion Premises Work shall have priority over Tenant's Eighteenth Expansion Premises Work); or (d) any other action or inaction by Tenant or any of Tenant's agents, engineers, architects, or contractors. As used herein, "**Long-Lead Items**" shall mean improvements, items, materials, finishes or installations that are not reasonably available to Landlord as needed to meet the schedule for Landlord's Eighteenth Expansion Premises Work. The provisions set forth in this Section 1(F) shall be Tenant's sole remedy for any delay in Landlord's Eighteenth Expansion Premises Work. In the event of any inconsistency between the Landlord/Tenant Matrix and the Lease with respect to the condition of the Eighteenth Expansion Premises and/or the ongoing Building

infrastructure, systems or services to be provided to the Eighteenth Expansion Premises, the Landlord/Tenant Matrix shall control. Without limiting the foregoing, Section 16 of the Eighth Amendment (Emergency Generator Capacity; New Electrical Service Work) shall have no applicability with respect to the Eighteenth Expansion Premises. Notwithstanding the foregoing, on or before May 1, 2022, Tenant may provide notice to Landlord (which notice may be provided by e-mail, and which notice the parties acknowledge was provided by Tenant to Landlord prior to the Execution Date of this Fourteenth Amendment and which notice Landlord and Tenant agree is valid and effective) that it requests that the Landlord's Eighteenth Expansion Premises Work be redirected to the Fourteenth Expansion Premises, which request shall be subject to Landlord's approval (not to be unreasonably withheld, conditioned or delayed provided that the cost to perform Landlord's Eighteenth Expansion Premises Work would not increase as a result of such redirection). If Tenant timely requests such redirection and if Landlord approves the same, then (i) Landlord's obligation to perform Landlord's Eighteenth Expansion Premises Work (i.e., the work items marked with an "X" under the "Landlord" column on the Landlord/Tenant Matrix) shall be deemed to apply to the Fourteenth Expansion Premises instead of the Eighteenth Expansion Premises and (ii) Tenant shall accept the Eighteenth Expansion Premises in its "as- is" condition without any obligation on the part of Landlord to perform any work to prepare the Eighteenth Expansion Premises for Tenant's occupancy thereof.

G. Eighteenth Expansion Premises Allowance. Upon the Eighteenth Expansion Premises Commencement Date, Landlord shall contribute up to Two Million Two Hundred Thirty-Four Thousand Nine Hundred Ten and 00/100 Dollars ($2,234,910.00) (i.e., $123.00 per rentable square foot of the Eighteenth Expansion Premises) (the "**Eighteenth Expansion Premises Allowance**") towards the design and construction of Tenant's Eighteenth Expansion Premises Work. Said Eighteenth Expansion Premises Allowance shall be disbursed subject to the same terms and conditions as are applicable to the disbursement of the Landlord's 6E/7W Contribution under Sections 9.B-D of the Thirteenth Amendment, except as follows: (a) any references therein to the "Landlord's 6E/7W Contribution" shall be deemed to mean the Eighteenth Expansion Premises Allowance; (b) subject to the provisions below, the Eighteenth Expansion Premises Allowance may only be used towards the design and construction of Tenant's Eighteenth Expansion Premises Work; and (c) any reference therein to "Tenant's 6E/7W Work" shall be deemed to mean the Tenant's Eighteenth Expansion Premises Work".
For the avoidance of doubt, the Outside Allowance Date shall be the same as the "Outside Allowance Date" under the Thirteenth Amendment (i.e., three (3) years from the 7W Stepped- Up Rent Commencement Date as defined in the Thirteenth Amendment). In the event that Tenant requests (and Landlord approves) a redirection of Landlord's Eighteenth Expansion Premises Work to the Fourteenth Expansion Premises in accordance with Section 1(F) above, Tenant may utilize up to seventy-five percent (75%) of the Eighteenth Expansion Premises Allowance for improvements in and to the Fourteenth Expansion Premises.

H. Must-Take Premises. The parties acknowledge that the Eighteenth Expansion Premises is the same as the Must-Take Premises (as defined in the Twelfth Amendment). Accordingly, Section 4 of the Twelfth Amendment is hereby deleted and of no further force or effect.

I. 4th Floor HVAC. The parties acknowledge that the HVAC furnished to the Eighteenth Expansion Premises is currently provided by certain HVAC equipment located on the roof of the Building, as shown as "4th Floor HVAC Equipment" on Exhibit C attached

hereto (the "**4th Floor HVAC Equipment**"), and that the 4th Floor HVAC Equipment also provides HVAC to other areas on the fourth (4th) floor of the Building (including the common corridor and certain other areas located within the leased premises of another tenant). In the event that Tenant elects to re-direct Landlord's Eighteenth Expansion Premises Work to the Fourteenth Expansion Premises in accordance with Section 1(F) above, then, commencing on the Eighteenth Expansion Premises Commencement Date, (i) such 4th Floor HVAC Equipment would become part of the Building's Systems that Landlord is responsible to maintain pursuant to Section 7(a) of the Lease, and (ii) Tenant shall be responsible for paying its equitable share of any costs incurred by Landlord to maintain, repair and/or replace such 4th Floor HVAC Equipment (such equitable share to be reasonably determined by Landlord from time to time). In the event that Tenant does not elect to re-direct Landlord's Eighteenth Expansion Premises Work to the Fourteenth Expansion Premises in accordance with Section 1(F) above, then the parties acknowledge and agree that (x) Landlord would remove the 4th Floor HVAC Equipment as part of Landlord's Eighteenth Expansion Premises Work and (y) the parties' respective obligations for the initial installation of HVAC infrastructure and equipment to serve the Eighteenth Expansion Premises shall be as set forth on the Landlord/Tenant Matrix attached hereto as Exhibit B.

J. Maintenance and Repair. Notwithstanding anything to the contrary contained in the Lease, from and after the Base Building Work Completion Date, Tenant shall repair, replace and maintain in good condition all portions of Landlord's Eighteenth Expansion Premises Work that exclusively serve the Premises. Without limiting the foregoing, Tenant shall maintain a periodic service and maintenance contract (each, a "**Service Contract**") on any such systems or equipment. Tenant shall deliver to Landlord a copy of each initial Service Contract promptly after the Base Building Work Completion Date, and thereafter within ten (10) business days after any renewal thereof. Tenant shall also provide Landlord with copies of any maintenance reports upon Landlord's request. Notwithstanding the foregoing, Landlord shall be responsible for all capital costs relating to Landlord's Eighteenth Expansion Premises Work, whether or not the same exclusively serve the Premises, including costs of replacement of systems and equipment included in capital costs incurred by Landlord for replacement of systems and equipment included in Landlord's Eighteenth Expansion Premises Work (subject to inclusion in Operating Costs to the extent permitted by Section 4(b)(2)(C) of the Lease).
Notwithstanding anything to the contrary in the Lease (including said Section 4(b)(2)(C)), all capital costs incurred by Landlord for replacement of systems and equipment included in Landlord's Eighteenth Expansion Premises Work that exclusively serve the Premises shall be amortized on a straight-line basis over the useful economic life of such improvements in accordance with Generally Accepted Accounting Principles, without interest, and charged back to Tenant as Additional Rent.

K. Control Areas; Chemical Storage. From and after the Eighteenth Expansion Premises Commencement Date, Tenant shall be entitled to one (1) so-called "control area" on the fourth (4th) floor of the Building. Such control area shall be established, installed, maintained and used by Tenant in accordance with, and shall be subject to, all of the terms and conditions of the Lease and in compliance with all applicable Laws. From and after the Eighteenth Expansion Premises Commencement Date, in accordance with Section 14 of the Eighth Amendment, Tenant shall have the right to use its proportionate share of the Hazardous Materials permitted to be stored on the fourth (4th) floor of the Building and Tenant shall not use, store or bring into the fourth (4th) floor of the Building quantities of Hazardous Materials in excess of such proportionate share; provided that such Hazardous Materials shall at all times

be brought upon, kept or used in so-called "control areas" and in accordance with (x) all applicable Laws (including any such Laws relating to the protection of human health, safety, wildlife or the environment), and (y) prudent environmental practice and (with respect to medical waste and so-called "biohazard" materials) good scientific and medical practice. Such proportionate share of Hazardous Materials capacity shall be based on the rentable square footage of the Eighteenth Expansion Premises in relation to the total rentable square footage of the fourth (4th) floor of the Building.

2. SECURITY DEPOSIT

Landlord and Tenant acknowledge that Landlord is currently holding an irrevocable letter of credit (the "**Letter of Credit**") in the amount of $2,897,035.68, and hereby agree that the following provisions shall govern such Letter of Credit:

A. In the event that Tenant proposes to replace the Letter of Credit, the same shall be (i) in a form reasonably approved by Landlord, (ii) issued by a bank approved in writing by Landlord with an investment grade credit rating from Moody's (i.e., a rating of Baa3 or above), S&P (i.e., a rating of BBB- or above), or Fitch (i.e., a rating of BBB- or above) (an "**Acceptable Bank**") (Landlord acknowledging herein that Western Alliance Bank is an Acceptable Bank as of the Execution Date of this Fourteenth Amendment), (iii) in the amount set forth above, and (iv) for a term of at least one (1) year, subject to automatic extension in accordance with the terms of the Letter of Credit. If the issuer of the Letter of Credit ceases to qualify as an Acceptable Bank or becomes subject to insolvency or receivership proceedings of any sort, Tenant shall be required to deliver a (the "**Substitute Letter of Credit**") within fifteen (15) business days after notice thereof from Landlord. If the issuer of the Letter of Credit gives notice of its election not to renew the Letter of Credit for any additional period, Tenant shall be required to deliver a Substitute Letter of Credit at least thirty (30) days prior to the expiration of the term of such Letter of Credit. If Tenant fails to furnish such renewal or replacement by the applicable deadline set forth above, Landlord may draw upon the Letter of Credit and hold the proceeds thereof (the "**Security Proceeds**") as a cash security deposit, which cash security deposit (a) shall not be required to accrue interest, (b) may be commingled with other funds of Landlord and (c) may be applied by Landlord to cure any default by Tenant hereunder. Tenant agrees that it shall maintain the Letter of Credit, in the full amount required hereunder, in effect until a date which is at least sixty (60) days after the Expiration Date of the Lease. Tenant's failure to maintain or replace the Letter of Credit as required hereunder shall be treated as a failure to pay rent for purposes of Landlord's remedies.

B. If Tenant is in default of its obligations under the Lease, then Landlord shall have the right, at any time after such event, without giving any further notice to Tenant, to draw down from the Letter of Credit (or Substitute Letter of Credit or Additional Letter of Credit, as defined below, as the case may be) (i) the amount necessary to cure such default or (ii) if such default cannot reasonably be cured by the expenditure of money, the amount which, in Landlord's opinion, is necessary to satisfy Tenant's liability in account thereof. In the event of any such draw by Landlord, Tenant shall, within fifteen (15) business days of written demand therefor, deliver to Landlord an additional Letter of Credit satisfying the foregoing conditions (the "**Additional Letter of Credit**"), except that the amount of such Additional Letter of Credit

shall be the amount of such draw. In addition, in the event of a termination based upon the default of Tenant under the Lease, or a rejection of the Lease pursuant to the provisions of the Federal Bankruptcy Code, Landlord shall have the right to draw upon the Letter of Credit (from time to time, if necessary) to cover the full amount of damages and other amounts due from Tenant to Landlord under the Lease. Any amounts so drawn shall, at Landlord's election, be applied first to any unpaid rent and other charges which were due prior to the filing of the petition for protection under the Federal Bankruptcy Code. Tenant hereby covenants and agrees not to oppose, contest or otherwise interfere with any attempt by Landlord to draw down from said Letter of Credit including, without limitation, by commencing an action seeking to enjoin or restrain Landlord from drawing upon said Letter of Credit. Tenant also hereby expressly waives any right or claim it may have to seek such equitable relief. In addition to whatever other rights and remedies Landlord may have against Tenant if Tenant breaches its obligations under this paragraph, Tenant hereby acknowledges that it shall be liable for any and all damages which Landlord may suffer as a result of any such breach.

C. Upon request of Landlord, Tenant shall, at its expense, cooperate with Landlord in obtaining an amendment to or replacement of any Letter of Credit which Landlord is then holding so that the amended or new Letter of Credit reflects the name of any new owner of the Building.

D. To the extent that Landlord has not previously drawn upon any Letter of Credit, Substitute Letter of Credit, Additional Letter of Credit or Security Proceeds (collectively, the "**Collateral**") held by Landlord, Landlord shall return such Collateral to Tenant on the expiration of the Term, less any amounts due from Tenant hereunder.

E. In no event shall the proceeds of any Letter of Credit be deemed to be a prepayment of rent or a measure of liquidated damages.

3. LANDLORD'S BASE BUILDING WORK (13TH AMENDMENT)

The Anticipated Base Building Work Completion Date (as defined in Section 6(B) of the Thirteenth Amendment) is hereby amended to mean April 5, 2023, it being understood and agreed that April 5, 2023 shall be deemed to be the Anticipated Base Building Work Completion Date for all purposes under the Thirteenth Amendment.

4. BROKERAGE

Each of Landlord and Tenant represents and warrants to the other that it has had no dealings with any real estate broker, finder, or other person other than CBRE and Columbia Group Realty Advisors (collectively, the "**Brokers**") with respect to this Fourteenth Amendment. Each of Tenant and Landlord hereby indemnifies and hold harmless the other against and from any claim for any brokerage commission or other fees and all costs, expenses and liabilities in connection therewith, including, without limitation, attorneys' fees and expenses, arising out of any breach of the foregoing representation and warranty made by it. This representation and warranty shall survive the expiration or earlier termination of the Term hereof.

5. CONFLICT

In the event that any of the provisions of the Lease are inconsistent with this Fourteenth Amendment or the state of facts contemplated hereby, the provisions of this Fourteenth Amendment shall control.

6. RATIFICATION

Except as herein and hereby modified and amended, the Lease shall remain in full force and effect and all of the other terms, provisions, covenants, and conditions thereof are ratified and confirmed.

7. MODIFICATIONS

This Fourteenth Amendment may not be modified orally but only by a writing signed by the parties hereto and dated subsequent to the date hereof.

8. GOVERNING LAW

This Fourteenth Amendment shall be governed by, and construed, interpreted, and enforced in accordance with the laws of the Commonwealth of Massachusetts, without reference to its principles of conflicts of law.

9. COUNTERPARTS.

This Fourteenth Amendment may be executed in multiple counterparts, each of which shall constitute one agreement, even though all parties do not sign the same counterpart. In the event that any signature is delivered by facsimile transmission or by e-mail delivery of a ".pdf" format data file, such signature shall create a valid and binding obligation of the party executing (or on whose behalf such signature is executed) with the same force and effect as if such facsimile or ".pdf" signature page were an original thereof.

10. ENTIRE AGREEMENT; NO AMENDMENT.

This Fourteenth Amendment constitutes the entire agreement and understanding between the parties with respect to the subject of this Fourteenth Amendment and shall supersede all prior written and oral agreements concerning this subject matter. This Fourteenth Amendment may not be amended, modified or otherwise changed in any respect whatsoever except by a writing duly executed by authorized representatives of Landlord and Tenant. Each party acknowledges that it has read this Fourteenth Amendment, fully Fourteenth all of this Fourteenth Amendment's terms and conditions, and executes this Fourteenth Amendment freely, voluntarily and with full knowledge of its significance. Each party to this Fourteenth Amendment has had the opportunity to receive the advice of counsel prior to the execution hereof.

11. BINDING EFFECT

This Fourteenth Amendment shall be binding upon and inure to the benefit of the parties and their respective successors and assigns.

[*Signatures on Following Page*]

EXECUTED UNDER SEAL as of the date first above written.

LANDLORD:

BCP-CG 27 Property LLC,
a Delaware limited liability company

By: /s/ Matthew Stegall
Name: Matthew Stegall
Title: Managing Director

TENANT:

Ginkgo Bioworks, Inc., a Delaware
corporation

By: /s/ Barry Canton
Name: Barry Canton
Title: CTO
06/01/2022

**Exhibit 10.4**

SECOND AMENDMENT TO LEASE

THIS SECOND AMENDMENT TO LEASE (this "**Amendment**"), is made as of the 10th day of August, 2022 (the "**Effective Date**"), by and between **IDB 21-25 DRYDOCK LIMITED PARTNERSHIP,** a Delaware limited partnership (the "**Landlord**") and **GINKGO BIOWORKS, INC.**, a Delaware corporation (the "**Tenant**").

WITNESSETH:

Reference is hereby made to the following facts:

A. Landlord (as successor-in-interest to Jamestown 21-23-25 Drydock, L.P.) and Tenant have entered into that certain Lease (as previously amended, the "**Existing Lease**") originally dated as of March 18, 2016 (the "**Original Lease**"), as amended by that certain First Amendment to Lease Agreement dated as of August 13, 2018 (the "**First Amendment**") for certain premises (the "**Existing Premises**") in the building commonly known as The Bronstein Building, located at 21, 23 and 25 Drydock Avenue in Boston, Massachusetts (as more particularly described in the Existing Lease, the "**Building**"). The Existing Premises consists of (i) Suites 23- 810W, 23-810E, 25-810W, and 25-810E, all on the eighth (8th) floor of the Building, and (ii) that certain PH Premises (as defined in the Existing Lease) on the sixth (6th) floor of the Building, all as more particularly described in the Existing Lease. All capitalized words and phrases not otherwise defined herein shall have the meanings ascribed to them in the Existing Lease. The Existing Lease, as modified and amended by this Amendment, is referred to herein as the "**Lease**."

B. Landlord and Tenant have agreed to expand the Existing Premises to include the following additional premises (the "**Second Amendment Premises**") (i) Suite 21-750W, consisting of approximately 18,154 rentable square feet, (ii) Suite 21-820E, consisting of approximately 17,454 rentable square feet, (iii) Suite 21-810W, consisting of approximately 19,218 rentable square feet, and (iv) chemical storage space within the common chemical storage room located on the first (1st) floor of the Building, consisting of approximately 379 rentable square feet, all as more particularly described in this Amendment and depicted on the floor plan attached to this Amendment as Exhibit A; and to modify and amend the Existing Lease, all in the manner hereinafter set forth.

NOW THEREFORE, in consideration of Ten Dollars ($10.00) and other good and valuable consideration, the receipt, sufficiency and delivery of which are hereby acknowledged, the parties agree that the Existing Lease is hereby amended as follows:

1. Second Amendment Lease Term. The "**Second Amendment Commencement Date**" shall mean the Effective Date. The "**Second Amendment Rent Commencement Date**" shall mean that date which is the earlier to occur of: (x) Tenant's occupancy of the Second Amendment Premises for the Permitted Use, or (y) eight (8) months after the Second Amendment Commencement Date; provided however, that in the event that the Landlord's Second Amendment Work is not Substantially Complete at least thirty (30) days prior to such date, then the Second Amendment Rent Commencement Date shall be the date occurring thirty (30) days after the date

of Substantial Completion of Landlord's Second Amendment Work. The "**Second Amendment Lease Term**" shall mean the period of time commencing on the Second Amendment Commencement Date and expiring on the last day of the month in which the tenth (10th) anniversary of the Second Amendment Rent Commencement Date occurs (the "**Second Amendment Expiration Date**"), unless earlier terminated or extended, in accordance with and subject to the terms and conditions set forth in the Lease.

2. Demise of Second Amendment Premises. Landlord hereby demises and leases to Tenant, and Tenant hereby hires and takes from Landlord, subject to and in accordance with the terms and conditions of the Lease, the Second Amendment Premises, for the Second Amendment Lease Term, unless earlier terminated or extended in accordance with the provisions of the Lease. The demise and use of the Second Amendment Premises shall be upon and subject to all of the terms and conditions of the Existing Lease, except as expressly set forth in this Amendment. From and after the occurrence of the Second Amendment Commencement Date each reference contained in the Lease to the "**Premises**" shall be considered to be a reference to the Existing Premises and Second Amendment Premises, collectively.

3. Landlord's Second Amendment Work, Tenant's Work and Payment of Landlord's Second Amendment Contribution.

a. Defined Terms. For purposes of this Section 3, the following terms shall have the meanings set forth below:

i. "**Landlord's Second Amendment Contribution**" shall mean Twelve Million Six Hundred Ninety-Seven Thousand One Hundred Fifty and 00/100 Dollars ($12,697,150.00) (i.e., $230.00 per rentable square foot of the Second Amendment Premises).

ii. "**Landlord's Second Amendment Post Delivery Work**" shall mean the work within the Second Amendment Premises identified as "Post Delivery Work" on the Landlord/Tenant Work Matrix attached hereto as Exhibit B.

iii. "**Landlord's Second Amendment Pre Delivery Work**" shall mean the work within the Second Amendment Premises identified as "Pre Delivery Work" on the Landlord/Tenant Work Matrix attached hereto as Exhibit B. Landlord and Tenant acknowledge and agree that Landlord's Second Amendment Pre Delivery Work is Substantially Complete.

iv. "**Landlord's Second Amendment Work**" shall collectively mean the Landlord's Second Amendment Pre Delivery Work and the Landlord's Second Amendment Post Delivery Work.

v. "**Substantially Complete**" shall mean (x) with respect to Landlord's Second Amendment Pre Delivery Work, the substantial completion of the Landlord's Second Amendment Pre Delivery Work, excepting only (a) punch-list items which can be completed without material interference with Tenant's Second

Amendment Work, and (b) any other items which because of the seasonal nature of the item (such as HVAC balancing) or in accordance with good construction practice, are not practicable to complete at such time, and (y) with respect to Landlord's Second Amendment Post Delivery Work, the substantial completion of Landlord's Second Amendment Post Delivery Work, excepting only (a) punch-list items which can be completed without material interference with Tenant's Second Amendment Work or Tenant's use of the Second Amendment Premises, and (b) any other items which because of the seasonal nature of the item (such as HVAC balancing) or in accordance with good construction practice, are not practicable to complete at such time; provided that Landlord's Second Amendment Post Delivery Work shall not be deemed Substantially Complete unless and until the base Building HVAC, mechanical, electrical, lighting, plumbing and life safety systems serving the Second Amendment Premises that are included in Landlord's Second Amendment Post Delivery Work are ready for connection to Tenant's systems serving the Second Amendment Premises and use by Tenant.

vi. "**Second Amendment Substantial Completion Date**" shall mean the date on which Landlord's Second Amendment Work is Substantially Complete.

vii. "**Tenant Delay**" shall mean any delay in the performance of any of Landlord's Second Amendment Work and/or the issuance of a building permit or certificate of occupancy arising out of or resulting from the following: (i) any delay and/or default on the part of Tenant or its agents, engineers, architects, or contractors, (ii) any interference with the performance of any of Landlord's Second Amendment Work by Tenant or any of its agents, engineers, architects, or contractors, or (iii) any other action or inaction by Tenant or any of Tenant's agents, engineers, architects, or contractors. Notwithstanding the foregoing, except for a Tenant Delay arising from Tenant's failure timely to act within, on or before a date or time period expressly set forth in this Amendment, in which case no Tenant Delay Notice shall be required, in no event shall any act or omission be deemed to be a Tenant Delay unless Landlord has given Tenant written notice (the "**Tenant Delay Notice**") advising Tenant (w) that a Tenant Delay is occurring, (x) of the basis on which Landlord has determined that a Tenant Delay is occurring,
(y) if the length of such Tenant Delay is reasonably ascertainable by Landlord, Landlord's good faith estimate of the length of the Tenant Delay; provided however, in no event shall such estimate in any way limit or otherwise derogate from the existence of a Tenant Delay in excess of such Landlord estimate, and (z) not more than five (5) days prior to the date on which Tenant receives a Tenant Delay Notice shall be included in the period of time charged to Tenant pursuant to such Tenant Delay Notice.

viii. "**Tenant's Second Amendment Work**" shall mean (a) all items identified as Tenant's responsibility on the Landlord/Tenant Work Matrix attached hereto

as Exhibit B, (b) the installation of Trade Fixtures, furniture, and personal property within the Second Amendment Premises, and (c) and any other improvements and alterations necessary or desired by Tenant to prepare the Second Amendment Premises for initial occupancy by Tenant, excepting only the Landlord's Second Amendment Work, including, if desired by Tenant, an internal stairwell between the portions of the Second Amendment Premises that are located on the seventh and eighth floors of 21 Drydock Avenue; provided however, Tenant shall be solely responsible at Tenant's sole cost and expense (subject to the Landlord's Second Amendment Contribution) for the (i) construction, maintenance and repair of such stairwell; and (ii) the removal of such stairwell and restoration of the affected portions of the Building on or before the expiration or earlier termination of the Lease (or applicable portion thereof), which restoration shall be subject to the requirements and approval of the Landlord, such approval not to be unreasonably withheld, conditioned or delayed.

b. Landlord's Second Amendment Work.

i. Subject to and in accordance with the provisions of this Section 3, Landlord shall perform the Landlord's Second Amendment Work substantially in accordance with Exhibit B. Landlord shall cause Landlord's Second Amendment Work to be completed in a good and workmanlike manner, utilizing new or like new standard building materials and finishes, in conformance with all Requirements.

ii. Notwithstanding anything in the Landlord/Tenant Work Matrix attached hereto as Exhibit B to the contrary, Tenant has requested that Landlord install within the 21 Drydock Rooftop Area, as a component of Landlord's Second Amendment Post Delivery Work, the rooftop-mounted make up air units more particularly described in Exhibit I attached hereto, together with related equipment and installations, to service the Second Amendment Premises (collectively, the "**Rooftop MUAs**"), the cost of which exceeds the cost to acquire and install Building standard floor-level make up air units. Tenant shall be responsible for the amount (the "**Excess MUA Costs**") by which the cost to acquire and install the Rooftop MUAs exceeds the cost to acquire and install Building standard floor-mounted make up air units to service the Second Amendment Premises; provided however, Tenant shall not be responsible for Excess MUA Costs in excess of
$400,000.00 (the "**Excess MUA Costs Cap**"). By not later than thirty (30) days following Landlord's invoice therefor (which invoice shall not be sent prior to Landlord's Substantial Completion of Landlord's Second Amendment Post Delivery Work), Tenant shall either (i) deliver written notice to Landlord that Tenant elects to use Landlord's Second Amendment Contribution to pay for the Excess MUA Costs (subject to the Excess MUA Costs Cap), if and to the extent a sufficient portion of Landlord's Second Amendment Contribution remains undisbursed at such time, or (ii) pay to Landlord the Excess MUA Costs (subject to the Excess MUA Costs Cap). Landlord shall be responsible, at Landlord's sole cost and expense, for all Excess MUA Costs in excess of the Excess MUA Costs Cap. If Tenant elects to utilize Landlord's Second Amendment Contribution to pay for said Excess MUA Costs and a sufficient portion of Landlord's Second Amendment

Contribution remains undisbursed to pay said Excess MUA Costs, then Landlord shall deduct the Excess MUA Costs (subject to the Excess MUA Costs Cap) from the undisbursed Landlord's Second Amendment Contribution. If Tenant fails to timely elect to utilize Landlord's Second Amendment Contribution to pay for the Excess MUA Costs, Tenant is not then entitled to disbursement of the Landlord's Second Amendment Contribution in accordance with the terms and conditions of Section 3(d)(i) below, or an insufficient portion of the Landlord's Second Amendment Contribution remains undisbursed to pay for the Excess MUA Costs (subject to the Excess MUA Costs Cap), then Tenant shall be deemed to have elected to pay the Excess MUA Costs (subject to the Excess MUA Costs Cap) to Landlord in accordance with Clause (ii) above.

c. Delivery of Second Amendment Premises for Tenant's Second Amendment Work; Substantial Completion of Landlord's Second Amendment Work.

i. Landlord will exercise commercially reasonable efforts to cause Landlord's Second Amendment Work to be Substantially Completed on or before March 1, 2023 (the "**Estimated Second Amendment Work Completion Date**"), as such date may be extended for Tenant Delays and/or delays resulting from any Unavoidable Delay. Notwithstanding the foregoing, (i) if Landlord's Second Amendment Work is not Substantially Completed on or before the one hundred twentieth (120th) day after the Estimated Second Amendment Work Completion Date (as such date may be extended by Tenant Delays and/or delays resulting from Unavoidable Delay, the "**First Milestone Date**"), then for and with respect to each day between the First Milestone Date and the date on which Landlord's Second Amendment Work is Substantially Completed, Tenant shall receive a credit against the Base Rent payable under the Lease in an amount equal to the per diem Base Rent payable for the Second Amendment Premises in the initial Second Amendment Lease Year, and (ii) if Landlord's Second Amendment Work is not Substantially Completed on or before the one hundred eightieth (180th) day after the Estimated Second Amendment Work Completion Date (as such date may be extended by delays resulting from any Unavoidable Delay for up to but not in excess of six (6) months and/or Tenant Delays, the "**Second Milestone Date**"), then Tenant shall have the option, by written notice given to Landlord no later than thirty (30) days after the Second Milestone Date, to terminate the Lease solely with respect to the Second Amendment Premises, in which event the Lease shall, solely with respect to the Second Amendment Premises, thereupon terminate without further liability of the parties hereunder, except for those obligations which expressly survive the expiration or earlier termination of the Lease. Tenant's remedies under this Section 3(c)(i) shall be Tenant's sole and exclusive remedies on account of Landlord's failure to Substantially Complete Landlord's Second Amendment Work by the Estimated Second Amendment Work Completion Date, First Milestone Date, Second Milestone Date, or any other particular date.

ii. Except as expressly set forth in Section 3(c)(i) above, Landlord shall not be liable for any failure to Substantially Complete any portion of the Landlord's Second Amendment Work, or to cause the Substantial Completion of Landlord's Second Amendment Work to have occurred by the Estimated Second Amendment Work Completion Date, First Milestone Date or Second Milestone Date, and no such failure shall

impair the validity of the Lease or extend the Second Amendment Lease Term.

Notwithstanding any provision of the Lease to the contrary, if Substantial Completion of any part of Landlord's Second Amendment Work is delayed as a result of or arising out of a Tenant Delay, then Landlord's Second Amendment Work or such portion thereof shall be deemed to have been Substantially Completed on the date that such work would have been Substantially Completed but for such Tenant Delay. Notwithstanding any such deemed Substantial Completion, Landlord shall continue to use commercially reasonable diligence to complete Landlord's Second Amendment Work from and after such date.

iii. Landlord and Tenant acknowledge and agree that the portions of the Landlord's Second Amendment Work and the Tenant's Second Amendment Work shall be performed concurrently. Landlord and Tenant shall each take reasonable measures to ensure that their respective contractors cooperate in all commercially reasonable ways with the other's contractors to avoid any delay in either the Landlord's Second Amendment Work or the Tenant's Second Amendment Work or any conflict with the performance of either the Landlord's Second Amendment Work or the Tenant's Second Amendment Work, Tenant acknowledging, however, that in the case of conflict, the performance of the Landlord's Second Amendment Work shall have priority. Promptly following Tenant's request therefor, but in no event more frequently than twice a month, the Landlord and Tenant construction representatives shall meet to discuss the construction schedule for Landlord's Second Amendment Work and Tenant's Second Amendment Work. Without limitation, construction meetings between the Landlord and Tenant construction representatives (including regularly scheduled construction meetings) shall satisfy the foregoing requirement. Any such meetings may be held virtually, in person or through a conference call, and shall be held at a mutually agreeable time. During such meetings Landlord's construction representative shall provide Tenant's construction representative with any updates with respect to critical path items related to the Landlord's Second Amendment Work (e.g., new electrical service, gas service, major HVAC systems, etc.) and the anticipated Second Amendment Substantial Completion Date.

iv. Landlord hereby warrants and represents to Tenant that the Landlord's Second Amendment Work shall be performed: (i) in a good and workmanlike manner; (ii) in all material respects, in accordance with Exhibit B, and (iii) in accordance with all applicable Requirements ("**Landlord's Warranty**"). On or about the Second Amendment Substantial Completion Date, Landlord and Tenant shall jointly inspect the Second Amendment Premises and Landlord shall promptly thereafter provide Tenant with a punchlist prepared by Landlord incorporating those items jointly identified by Landlord and Tenant during their joint inspection of the Second Amendment Premises. Landlord shall complete such punch-list items as soon as reasonably practicable after such walk- through of the Second Amendment Premises. If, on or before the Warranty Expiration Date (as hereinafter defined), Tenant gives Landlord written notice of any breach of Landlord's Warranty promptly after Tenant becomes aware of such breach, Landlord shall, at no cost to Tenant, correct or repair such breach as soon as conditions reasonably permit and as to which, in either case, Tenant shall have given notice to Landlord, as aforesaid. The "**Warranty Expiration Date**" shall be defined as the date that is eleven (11) months and three (3) weeks after the Second Amendment Substantial Completion Date. Except to the extent to which Tenant shall have given Landlord notice of respects in which Landlord

has breached Landlord's Warranty, Tenant shall be deemed conclusively to have: (i) approved the Landlord's Second Amendment Work, (ii) waived any claim that Landlord has breached Landlord's Warranty, and (iii) have agreed that Tenant has no claim that Landlord has failed to perform any of Landlord's obligations under the Lease with respect to the Landlord's Second Amendment Work. With respect to any latent defects in Landlord's Second Amendment Work discovered by Tenant after the Warranty Expiration Date, if such latent defects are covered by the warranty Landlord receives from its general contractor with respect to Landlord's Second Amendment Work or the terms and conditions of Landlord's construction contract with its general contractor with respect to Landlord's Second Amendment Work, then Landlord shall use commercially reasonable efforts to cause Landlord's general contractor to correct or repair such latent defects. The provisions hereof set forth the Tenant's sole remedies for any breach of the Landlord's Warranty.

d. Tenant's Second Amendment Work and Payment of Landlord's Second Amendment Contribution.

i. Commencing as of the Second Amendment Commencement Date, Landlord shall pay to Tenant, subject to and in accordance with the terms and conditions of Section (d)(i)(ii) below, an amount equal to the lesser of (1) Tenant's costs incurred in the performance of Tenant's Second Amendment Work; and (2) the Landlord's Second Amendment Contribution, provided that as of the date on which Landlord is required to make payment thereof pursuant the provisions hereof: (a) the Lease is in full force and effect, and (b) no default under the Lease exists that has not been cured. Landlord's Second Amendment Contribution shall be payable solely on account of hard construction costs, labor directly related to Tenant's Second Amendment Work, materials delivered to the Second Amendment Premises, and soft costs in connection with Tenant's Second Amendment Work including architectural and engineering fees and costs to obtain permits in connection with Tenant's Second Amendment Work. Upon the occurrence of the Landlord's Second Amendment Contribution Outside Requisition Date (as hereinafter defined), any amount of the applicable Landlord's Contribution which has not been previously requisitioned by Tenant shall be retained by Landlord and Tenant shall have no further right or claim thereto. The "**Landlord's Second Amendment Contribution Outside Requisition Date**" shall mean the date which is the earlier to occur of (i) twenty- four (24) months after the commencement of any portion of Tenant's Second Amendment Work within the Premises, and (ii) eighteen (18) months after the Second Amendment Rent Commencement Date; provided however, if Tenant is diligently pursuing but has not completed Tenant's Second Amendment Work by the date which is fifteen (15) months after the Second Amendment Rent Commencement Date (the "**Landlord's Second Amendment Contribution Extension Date**"), then by not later than the Landlord's Second Amendment Contribution Extension Date Tenant may deliver written notice to Landlord requesting an extension of the eighteen (18) month period set forth in this clause (ii), whereupon such eighteen (18) month period shall be extended for an additional period of six (6) months; provided however, in no event shall the Landlord's Second Amendment Contribution Outside Requisition Date be extended to a date later than twenty-four (24) months after the Second Amendment Rent Commencement Date.

ii. Landlord shall make progress payments on account of Landlord's Second Amendment Contribution to Tenant on a monthly or, if requested by Tenant, a less frequent basis to reimburse Tenant for costs and expenses paid by Tenant for the work performed during the preceding month or such longer period. Each of Landlord's progress payments shall be limited to an amount equal to the costs and expenses paid by Tenant during the immediately preceding month or such longer period covered by such requisition (as certified by an authorized representative of Tenant) to Tenant's consultants, contractors, subcontractors and material suppliers, or other parties entitled to payment for costs described above (excluding any amounts which have been subject to previous disbursements from Landlord's Second Amendment Contribution) multiplied by sixty-six and 66/100ths percent (66.66%) until the Landlord's Second Amendment Contribution, reduced by retainage (the "**Retainage**") of ten percent (10%), is fully expended. Such progress payments shall be made within thirty (30) days next following the delivery to Landlord of the completed requisition. Each requisition shall be executed by an authorized representative of Tenant, and shall be accompanied by (i) with the exception of the first requisition, copies of partial waivers of lien from all contractors, subcontractors, material suppliers, and paid design professionals performing work, providing materials or performing services covering all work, materials and services which were the subject of previous progress payments by Landlord and Tenant, (ii) a certification from Tenant's architect that the work for which the requisition is being made has been performed substantially in accordance with the plans for the Tenant's Second Amendment Work approved by Landlord, and (iii) such other documents and information as Landlord may reasonably request consistent with the requirements of landlords of similar properties, to similar tenants, in the Seaport District. Landlord shall disburse the Retainage, together with the remaining balance of Landlord's Second Amendment Contribution, if any, upon submission by Tenant to Landlord of Tenant's requisition therefor accompanied by all documentation required under the foregoing provisions, together with (A) proof of the satisfactory completion of all required inspections and issuance of any required approvals, permits and sign-offs for the Tenant's Second Amendment Work by Governmental Authorities having jurisdiction thereover, (B) final "as-built" plans and specifications for the Tenant's Second Amendment Work, and (C) issuance of final lien waivers by all contractors, subcontractors, material suppliers, and design professionals covering all of the Tenant's Second Amendment Work. Nothing herein shall be deemed to make any third party, including any contractor, subcontractor, materialman, laborer, architect, engineer, attorney or other person or entity, a third party beneficiary.

e. Landlord's Second Amendment Plans Contribution. Landlord shall contribute up to Eight Thousand Two Hundred Eighty and 75/100 Dollars ($8,280.75) (i.e., $0.15 per rentable square foot of the Second Amendment Premises) ("**Landlord's Second Amendment Plans Contribution**") towards the cost of one (1) test-fit plan and one (1) revision thereof prepared by Tenant with respect to Tenant's Second Amendment Work. Landlord shall pay the Landlord's Second Amendment Plans Contribution directly to the architect preparing the foregoing plans.

f. General Provisions. Except for performance of Landlord's Second Amendment Work, Landlord's Second Amendment Contribution and Landlord's Second Amendment Plans Contribution, Landlord has no obligation to perform any work, supply any

materials, incur any expense or make any alterations, additions or improvements to the Second Amendment Premises in order to prepare the Second Amendment Premises for Tenant's use and occupancy. Excepting only Landlord's Second Amendment Contribution, Tenant shall, at its own cost and expense, in accordance with and subject to the terms and provisions of the Lease (including, without limitation, Section 4.2 of the Existing Lease), perform or cause to be performed any and all Tenant's Second Amendment Work. Except with respect to matters covered by Landlord's Warranty (which shall subject to Section 3(c)(v) above) Tenant's commencement of Tenant's Second Amendment Work shall be conclusive evidence that Landlord has Substantially Completed Landlord's Second Amendment Pre-Delivery Work, that Tenant has accepted possession of the Second Amendment Premises in its then-current condition, and that at the time such possession was taken, the Second Amendment Premises and the Building were in a good and satisfactory condition as required by the Lease.

g. Construction Representatives. Each party authorizes the other to rely upon all approvals granted and other actions taken by the respective construction representative(s) designated from time to time by such party, or any person hereafter expressly designated in writing in substitution or addition thereof by notice to the party relying thereon. Tenant hereby designates Doug Detwiler as its construction representative and Landlord hereby designates Dustin Lord and Erin Orpik as its construction representatives.

4. Rent.

a. For and with respect to the Existing Premises, throughout the remainder of the Lease Term, Tenant shall pay to Landlord Base Rent, Tenant's monthly payments on account of Tenant's Proportionate Share of Operating Costs, electricity and all other utility charges, HVAC charges, Construction Rent and all other Additional Rent payable pursuant to the Existing Lease, except as set forth in this Amendment. All such amounts shall be payable in accordance with the terms and provisions of the Existing Lease. Effective as of the Second Amendment Commencement Date, Exhibit D to the Lease (as amended by Section 6 of the First Amendment) is hereby deleted in its entirety, and Exhibit D attached hereto is substituted in its place.

b. For and with respect to the Second Amendment Premises, commencing on the Second Amendment Rent Commencement Date and continuing throughout the Second Amendment Lease Term, Tenant shall pay Base Rent to Landlord in accordance with the Base Rent payment schedule set forth in Exhibit F attached hereto.

c. For and with respect to the Second Amendment Premises, commencing on the Second Amendment Rent Commencement Date and continuing throughout the Second Amendment Lease Term, Tenant shall pay to Landlord Tenant's Proportionate Share of Operating Costs, electricity and all other utility charges, HVAC charges, and all other Additional Rent and charges payable pursuant to the Lease in accordance with the terms and provisions of the Existing Lease, except as set forth in this Amendment.

d. Tenant acknowledges that, in the event Landlord has the option (in accordance with all applicable Requirements and any PILOT Agreement) of making real estate tax payments with respect to the Building and the land thereunder (the "**Land**") in the form of either

PILOT payments or payments of Taxes (as hereinafter defined), then Landlord will pay real estate taxes in an amount equal to the lesser of (i) PILOT payments and/or Tax Rent payable by Landlord to the Prime Lessor under the Prime Lease, or (ii) Taxes (as hereinafter defined). Notwithstanding any provision of the Existing Lease to the contrary, from and after (1) the Effective Date, for and with respect to the Existing Premises and (2) the Second Amendment Rent Commencement Date, for and with respect to the Second Amendment Premises, Tenant shall pay to Landlord, in lieu of Tenant's PILOT Payments pursuant to Section 2.5 of the Existing Lease, monthly payments of real estate taxes, which shall be equal to (x) if Landlord makes payments to the Prime Lessor in accordance with clause (i) above, Tenant's PILOT Payments and/or other tax payments pursuant to Section 2.5 of the Lease, or (y) if Landlord pays Taxes in accordance with clause (ii) above, Tenant's Proportionate Share of Taxes. "**Taxes**" shall mean all amounts payable by Landlord as real estate taxes. The term "Taxes" includes, without limitation, the following: any fire service or other charges for municipal services and all governmental impositions and taxes imposed upon the Building and the Land, and assessments, as well as all ad valorem, license or other taxes imposed upon the Building or the Land and/or imposed upon Landlord by reason of its ownership thereof or the Lease other than state or federal inheritance, income or succession taxes. If at any time during the Lease Term, the methods of taxation of real estate prevailing at the commencement of the execution hereof shall be altered so that in lieu of, in addition to, or as a substitute for, the whole or any part of the Taxes, there shall be levied, assessed or imposed (i) a tax, assessment, levy, imposition or charge, wholly or partially as capital levy or otherwise, on the rents received therefrom; or (ii) a tax, assessment, levy, imposition or charge measured by or based in whole or in part upon the Leased Premises (or applicable portion thereof) and imposed upon Landlord; or
(iii) a tax license fee or the like measured by the rents payable, the same shall be included as Taxes hereunder.

5. Tenant's Proportionate Share.

a. Landlord and Tenant acknowledge and agree that, as of the Second Amendment Commencement, the rentable area of the Building is 829,218 square feet. Accordingly, notwithstanding any provision of the Existing Lease to the contrary, (i) for and with respect to the period of time commencing on the Second Amendment Commencement Date and continuing until the PH Premises Surrender Date (as hereinafter defined), "**Tenant's Proportionate Share"** shall mean: (u) for and with respect to the Phase I Premises, 1.973% (v) for and with respect to the Phase II Premises, 2.177%, (w) for and with respect to the Phase III Premises, 2.049%, (x) for and with respect to the Phase IV Premises, 2.175%, (y) for and with respect to the PH Premises, 0.029% and (z) for and with respect to the Second Amendment Premises, 6.657%, and (ii) for and with respect to the period of time commencing on the day immediately following the PH Premises Surrender Date and continuing until the day immediately preceding the Remeasurement Effective Date (as hereinafter defined), "**Tenant's Proportionate Share"** shall mean: (v) for and with respect to the Phase I Premises, 1.973% (w) for and with respect to the Phase II Premises, 2.177%, (x) for and with respect to the Phase III Premises, 2.072%, (y) for and with respect to the Phase IV Premises, 2.199%, and (z) for and with respect to the Second Amendment Premises, 6.657%.

b. Notwithstanding any provision of the Existing Lease to the contrary, from and after February 1, 2027 (the "**Remeasurement Effective Date**"), the parties hereby confirm

and agree that the rentable area of the Phase I Premises shall be deemed to comprise 17,369 rentable square feet, the rentable area of the Phase II Premises shall be deemed to comprise 17,751 rentable square feet, the rentable area of the Phase III Premises shall be deemed to comprise 18,074 rentable square feet, the rentable area of the Phase IV Premises shall be deemed to comprise 17,998 rentable square feet, and the rentable area of the Second Amendment Premises shall be deemed to comprise 55,205 rentable square feet. Accordingly, notwithstanding any provision of the Existing Lease to the contrary, from and after the Remeasurement Effective Date, "**Tenant's Proportionate Share"** shall mean: (i) for and with respect to the Phase I Premises, 2.095% (ii) for and with respect to the Phase II Premises, 2.141%, (iii) for and with respect to the Phase III Premises, 2.180%, (iv) for and with respect to the Phase IV Premises, 2.170%, and (vi) for and with respect to the Second Amendment Premises, 6.657%.

6. 21 Drydock Rooftop Installations; Relocation.

a. Section 10 of the First Amendment is hereby deleted in its entirety and is of no further force or effect. Nothing stated herein shall amend or modify in any respect Tenant's rooftop rights set forth in Section 2.1(B) of the Original Lease.

b. Tenant shall have the right, subject to the rights of existing tenants in the Project and approval of the Prime Lessor (which Landlord shall use reasonable and diligent good faith efforts to obtain) and the terms and conditions of this Section 5, to use and access the 21 Drydock Rooftop Area, as hereinafter defined, to install and maintain equipment (collectively, "**21 Drydock Rooftop Equipment**"), including (x) supplemental HVAC, dedicated exhaust fans, an emergency generator, a satellite dish and/or antennae(s) for Tenant's communication network, and (y) within the interior sections of walls and ceilings below the 21 Drydock Rooftop Area, wiring, cabling, piping, conduit and ductwork for connection to such installations and equipment, for a period commencing as of the date that Tenant installs the 21 Drydock Rooftop Equipment in the 21 Drydock Rooftop Area ("**21 Drydock Rooftop Area Commencement Date**") and terminating as of the expiration or earlier termination of the Second Amendment Lease Term. The "**21 Drydock Rooftop Area**" shall mean the area depicted on Exhibit C attached hereto. Tenant shall be permitted to use the 21 Drydock Rooftop Area solely for the purpose of installing the 21 Drydock Rooftop Equipment installed in accordance with plans and specifications approved by Landlord in advance, such approval not to be unreasonably withheld, conditioned or delayed, utilizing a frequency or frequencies and transmission power identified in such approved specifications and no other frequencies or transmission power shall be used by Tenant without Landlord's prior written consent, which shall not be unreasonably withheld, conditioned or delayed. Tenant shall reimburse Landlord for the reasonable costs of any third-party review of Tenant's plans in connection with the installation of the 21 Drydock Rooftop Equipment. Such installation shall be designed in such manner as to be removable in a manner which will not damage the roof of the Building. Tenant's use of the 21 Drydock Rooftop Area shall be upon all of the conditions of the Lease, except as follows:

(i) Any such installations and the costs to maintain and restore such installations shall be at Tenant's sole expense.

(ii) The 21 Drydock Rooftop Equipment shall not interfere with the operations of any other tenant in the Building.

(iii) Tenant shall have no obligation to pay Base Rent or Additional Rent on account of Operating Costs and Taxes in respect of the 21 Drydock Rooftop Area.

(iv) Landlord shall have no obligation to provide any services to the 21 Drydock Rooftop Area.

(v) Tenant shall have no right to make any changes, alterations, decorations or other improvements to the 21 Drydock Rooftop Area or the 21 Drydock Rooftop Equipment without Landlord's prior written consent, which shall not be unreasonably withheld, conditioned or delayed.

(vi) Landlord shall provide Tenant with 24-hour access to the 21 Drydock Rooftop Area, subject to Landlord's reasonable security procedures and restrictions based on emergency conditions and to other causes beyond Landlord's reasonable control. Tenant shall give Landlord reasonable advance written notice of the need for access to the 21 Drydock Rooftop Area (except that such notice may be oral in an emergency), and Landlord must be present during any entry by Tenant onto the 21 Drydock Rooftop Area unless the same is infeasible because of an emergency. Each notice for access shall be in the form of a work order referencing the Lease and describing, as applicable, the date access is needed, the name of the contractor or other personnel requiring access, the name of the supervisor authorizing the access/work, the areas to which access is required, the Building common elements to be impacted (risers, electrical rooms, etc.) and the description of new equipment or other 21 Drydock Rooftop Equipment to be installed and evidence of Landlord's approval thereof. In the event of an emergency, such notice shall follow within five
(5) days after access to the 21 Drydock Rooftop Area.

(vii) At the expiration or earlier termination of the Second Amendment Lease Term, Tenant shall remove all 21 Drydock Rooftop Equipment from the 21 Drydock Rooftop Area, unless Landlord notifies Tenant prior to the expiration or earlier termination of the Lease Term that all or any portion of the 21 Drydock Rooftop Equipment shall remain in the 21 Drydock Rooftop Area, whereupon such 21 Drydock Rooftop Equipment shall be surrendered to Landlord and shall become the property of Landlord.

(viii) Tenant shall be responsible for the cost of repairing any damage to the roof of the Building caused by the installation or removal of any 21 Drydock Rooftop Equipment.

(ix) Tenant shall have no right to sublet the 21 Drydock Rooftop Area, except in connection with a sublease permitted hereunder or otherwise approved by Landlord in accordance with the terms hereof.

(x) No person, firm or entity (including, without limitation, other tenants, licensees or occupants of the Project) shall have the right to benefit from the services provided by the 21 Drydock Rooftop Equipment other than Tenant, a Permitted Transferee, a Related Entity, an Operating Company, or any other subtenant to which Landlord grants consent in accordance with

the terms and conditions of Section 4.7 of the Lease, but subject to Section 6(b)(ix) above.

(xi) In the event that Landlord performs repairs to or replacement of the roof which require the removal or relocation of the 21 Drydock Rooftop Equipment, Tenant shall, to the extent reasonably required, at Landlord's cost, remove or relocate the 21 Drydock Rooftop Equipment as required to enable Landlord to make such repairs or replacements. Tenant recognizes that there may be an interference with Tenant's use of the 21 Drydock Rooftop Equipment in connection with such work. Landlord shall use reasonable efforts to complete such work as promptly as possible and to perform such work in a manner which will minimize or, if reasonably possible, eliminate any interruption in Tenant's use of the 21 Drydock Rooftop Equipment.

(xii) Any services required by Tenant in connection with Tenant's use of the 21 Drydock Rooftop Area or the 21 Drydock Rooftop Equipment shall be installed by Tenant, at Tenant's expense, subject to Landlord's prior approval.

(xiii) To the maximum extent permitted by law, all 21 Drydock Rooftop Equipment in the 21 Drydock Rooftop Area shall be at the sole risk of Tenant, and Landlord shall have no liability to Tenant in the event that any 21 Drydock Rooftop Equipment are damaged for any reason, except to the extent caused by the negligence or willful misconduct of Landlord, its agents, employees or contractors.

(xiv) Tenant shall take the 21 Drydock Rooftop Area "as-is", in the condition in which the 21 Drydock Rooftop Area is in as of the 21 Drydock Rooftop Area Commencement Date.

(xv) Tenant shall comply with all applicable laws, ordinances and regulations in Tenant's use of the 21 Drydock Rooftop Area and the 21 Drydock Rooftop Equipment.

(xvi) Landlord shall have the right, upon one hundred twenty (120) days' notice to Tenant, to require Tenant to relocate the 21 Drydock Rooftop Area to comparably functional space on another area ("**Relocation Rooftop Area**") on the roof of the Building suitable for the use of the 21 Drydock Rooftop Equipment. In such event, Tenant shall, at Landlord's cost and expense, on or before the one hundred twentieth (120th) day after Landlord gives such notice, relocate all of its 21 Drydock Rooftop Equipment from the 21 Drydock Rooftop Area to the Relocation Rooftop Area.

(xvii) In addition to complying with the applicable construction provisions of the Lease, Tenant shall not install or operate 21 Drydock Rooftop Equipment in any portion of the 21 Drydock Rooftop Area until (x) Tenant shall have obtained Landlord's prior written approval, which approval will not be unreasonably withheld, conditioned or delayed, of Tenant's plans and specifications for the placement and installation of the 21 Drydock Rooftop Equipment in the 21 Drydock Rooftop Area, and (y) Tenant shall have obtained and delivered to Landlord copies of all required governmental and quasi-governmental permits, approvals, licenses and authorizations necessary for the lawful installation, operation and maintenance of the 21 Drydock Rooftop Equipment. The parties hereby acknowledge and agree, by way of illustration and not limitation, that Landlord shall have the right to withhold its approval of Tenant's plans and specifications hereunder, and shall not be deemed to be unreasonable in doing so, if Tenant's intended placement or method of installation or operation of the 21 Drydock Rooftop Equipment (i) may subject other licensees, tenants or occupants of the Project, or other surrounding or neighboring landowners or

their occupants, to signal interference, Tenant hereby acknowledging that a shield may be required in order to prevent such interference, (ii) does not minimize to the fullest extent practicable the obstruction of the views from the windows of the Building that are adjacent to the 21 Drydock Rooftop Equipment, if any, (iii) does not materially diminish (in Landlord's reasonable judgment, which shall not, however, require Tenant to incur unreasonable expense) the design and finish of the Building, (iv) may damage the structural integrity of the Building or the roof thereof, or (v) may constitute a violation of any consent, approval, permit or authorization necessary for the lawful installation of the 21 Drydock Rooftop Equipment.

(xviii) In addition to the indemnification provisions set forth in the Lease which shall be applicable to the 21 Drydock Rooftop Area, Tenant shall, to the maximum extent permitted by law, indemnify, defend and hold Landlord and its agents, contractors and employees harmless from and against any and all claims, losses, demands, actions or causes of actions suffered by any person, firm, corporation or other entity arising from Tenant's use of the 21 Drydock Rooftop Equipment and/or the 21 Drydock Rooftop Area not caused by the negligence or willful misconduct of Landlord and its agents, contractors and employees.

(xix) Landlord shall have the right to designate or identify the 21 Drydock Rooftop Equipment with or by a lease or license number (or other marking) and to place such number (or marking) on or near such 21 Drydock Rooftop Equipment.

7. Connectivity Between the Building and the BDC. If Tenant leases the premises (the "**BDC Premises**") that are immediately adjacent to the Second Amendment Premises on the seventh (7th) floor of the building commonly known as The Boston Design Center, located at 17 and 19 Drydock Avenue in Boston, Massachusetts (the "**BDC**"), then, subject to the terms and conditions of this Section 7, during the Second Amendment Lease Term, Tenant shall be permitted to connect the Second Amendment Premises to the BDC Premises within the two (2) locations (between columns A and B and E and F) depicted on the plan attached hereto as Exhibit E. Said connections shall be subject to the third party approvals required for the same as set forth below and approval by Landlord of construction drawings for such connections, such approval not to be unreasonably withheld, conditioned or delayed. Landlord and Tenant hereby recognize and agree that such connections from the Second Amendment Premises to the BDC Premises will require the consent of the Prime Lessor (as the ground lessor for the ground lease governing the BDC), and, if the BDC is not controlled by or under common control with the ground lessee of the Building, the ground lessee of the BDC (the "**BDC Landlord**") (which ground lessee, as of the Effective Date, is IDB 17-19 Drydock Limited Partnership), as the tenant under such ground lease and Tenant's landlord for the BDC Premises. Landlord shall use reasonable and diligent good faith efforts to obtain the consent of Prime Lessor and BDC Landlord, and all such required approvals, including, without limitation, all necessary permits, approvals, variances and permissions from the City of Boston or any other applicable Governmental Authorities with respect to the same, in each case at the sole cost and expense of Tenant; provided however, (i) Landlord shall pursue the variances required for the two (2) connections concurrently, and shall not be obligated to pursue additional variances or pursue said variances at different times, and (ii) failure to receive any of the same shall in no way impair or derogate from the validity or effectiveness of the Lease or this Lease Amendment. Tenant, at its sole cost and expense shall be responsible for the preparation of all plans for such connections. In the event that such connections

are approved, Landlord or BDC Landlord shall perform all of the required work at Tenant's sole cost and expense in accordance with the approved plans and in a good and workmanlike manner promptly after receipt of all required permits and approvals, and using reasonable diligence to complete the same. Tenant shall be responsible for all costs of (i) construction, maintenance and repair of the same; and (ii) the removal and restoration of the connection(s) on or before the earlier of to occur of the expiration or earlier termination of the Second Amendment Lease Term and the expiration or earlier termination of the lease of the BDC Premises, which restoration shall be subject to the requirements and approval of the Landlord, such approval not to be unreasonably withheld, conditioned or delayed. Tenant shall reimburse Landlord and BDC Landlord for all reasonable out-of-pocket costs and expenses incurred by Landlord and BDC Landlord in connection with this Section 7 within thirty (30) days following Landlord's or BDC Landlord's invoice therefor.

8. Existing Premises; As-Is Condition.

a. Tenant acknowledges that the Existing Premises have been under its control, subject to and in accordance with the terms and conditions of the Existing Lease. Tenant has had a full and complete opportunity to review and inspect all aspects of the Existing Premises and the condition thereof. Tenant shall lease the Existing Premises "as-is", "where is", and in all respects in the condition in which the Existing Premises are in as of the Effective Date, without any obligation on the part of Landlord to prepare or construct the Existing Premises for Tenant's occupancy, to provide any allowances or inducements, or to construct any additional work or improvements therein or in the Building (excepting only the Landlord's Second Amendment Work), and without any representation or warranty (express or implied) on the part of Landlord as to the condition of the Existing Premises.

b. Landlord and Tenant acknowledge and agree that as part of Landlord's performance of the Landlord's Second Amendment Work, Landlord will require access to the Existing Premises. Tenant shall cooperate with Landlord in connection with Landlord's performance of the Landlord's Second Amendment Work, including, without limitation, providing Landlord with access to the Existing Premises as reasonably necessary for the purposes of performing any such work. Tenant, at Tenant's sole cost and expense and promptly upon Landlord's request, shall move (and, to the extent reasonably necessary, store offsite) all fixtures, furniture, equipment and personal property located within the Existing Premises to allow Landlord to perform the Landlord's Second Amendment Work, and Tenant's failure to promptly perform such obligation shall be considered a Tenant Delay. Tenant acknowledges that the Landlord's Second Amendment Work will be ongoing during Tenant's occupancy of the Existing Premises, and there shall be no Rent abatement or allowance to Tenant for a diminution of rental value, no actual or constructive eviction of Tenant, in whole or in part, no relief from any of Tenant's other obligations under the Lease, and no liability on the part of Landlord, by reason of inconvenience, annoyance or injury to business arising from the performance of Landlord's Second Amendment Work or the storage of any materials in connection therewith. Any delay in the completion of Landlord's Second Amendment Work or inconvenience suffered by Tenant during the performance of Landlord's Second Amendment Work shall not subject Landlord to any liability for any loss or damage resulting therefrom or entitle Tenant to any credit, abatement or adjustment of Rent or other sums payable under the Lease. Landlord shall use reasonable efforts to minimize interference with

Tenant's use and occupancy of the Existing Premises during the performance of Landlord's Second Amendment Work.

9. Construction Management Fee; Specialty Alterations. The following shall be added to Section 4.2 of the Existing Lease as new Subsections "F", "G" and "H":

F. For all alterations performed by Tenant, including, without limitation, Tenant's Second Amendment Work, Tenant shall pay to Landlord a construction management fee for Landlord's oversight of such work in an amount equal to one percent (1%) of the hard costs of such work, which construction management fee shall be paid pro rata as such costs are incurred by Tenant.

G. For all alterations performed by Landlord on behalf of Tenant, excepting only the Landlord's Second Amendment Work, Tenant shall pay to Landlord a construction management fee in an amount equal to three percent (3%) of the hard costs of such work, which construction management fee shall be paid pro rata as such costs are incurred by Landlord.

H. Subject to the provisions of this Section 4.2, if Tenant makes any alterations that require unusual expense to readapt the Leased Premises to normal use as an office and research and development facility ("**Specialty Alterations**"), then Landlord may elect to require Tenant at the expiration or sooner termination of the Lease Term to remove such Specialty Alterations and repair any damage to the Leased Premises caused by such removal (which election shall be made at the time of Landlord's approval of such alterations).

10. Emergency Generator. Landlord shall provide a Building common emergency generator ("**Generator**") for Tenant's use to serve the Second Amendment Premises during the Second Amendment Lease Term, in common with others so entitled thereto from time to time, which Generator shall provide no less than five (5) Watts per rentable square foot to the laboratory portion of the Second Amendment Premises, which shall in no event be more than sixty percent (60%) of the rentable area of the Second Amendment Premises (provided that the aggregate electrical demand of all equipment connected by Tenant to the Generator at any time shall not exceed five (5) Watts per rentable square foot of the laboratory portion of the Second Amendment Premises, which shall in no event be more than sixty percent (60%) of the rentable area of the Second Amendment Premises). The Generator has been or will be installed at Landlord's cost as part of the Landlord's Second Amendment Work. Tenant shall be responsible, at Tenant's sole cost and expense, for all work required to connect the Second Amendment Premises to, and distribute power from, the Generator. Landlord shall be responsible for obtaining all governmental permits, licenses, and authorizations necessary for the operation of the Generator. Tenant shall comply with all reasonable rules and regulations promulgated by Landlord with respect to its connection to, and use of, the Generator. Landlord may, at its sole costs and expense, relocate the Generator within the Project provided the same does not materially adversely affect Tenant's ability to utilize the Generator without material interruption. Tenant shall pay, as Additional Rent, Tenant's Generator Share (as hereinafter defined) of the costs to operate, maintain, and repair the Generator pursuant to the foregoing. "**Tenant's Generator Share**" shall mean a ratio, the

numerator of which is the aggregate rentable area of the Second Amendment Premises and the denominator of which is equal to: (i) if the rentable area of all of the premises in the Building designed for laboratory uses or in which laboratory uses are permitted is 150,000 rentable square feet or less, then 150,000 rentable square feet, and (ii) if the rentable area of all of the premises in the Building designed for laboratory uses or in which laboratory uses are permitted exceeds 150,000 rentable square feet, then the actual rentable area of all of the premises in the Building designed for laboratory uses or in which laboratory uses are permitted, from time to time.

11. Shared PH Neutralization System. (a) Subject to the terms and conditions of this Section 11, the portion of the Existing Premises located at 23 Drydock Avenue and the Second Amendment Premises (collectively, the "**PH Connected Premises**") shall include Tenant's Laboratory Share of the Building common PH neutralization systems, which are or will be located upon the Substantial Completion of Landlord's Second Amendment Work within 23 Drydock Avenue and 21 Drydock Avenue, respectively. Landlord has or will obtain and will maintain throughout the Lease Term and Second Amendment Lease Term, as applicable, a wastewater treatment operator permit (a "**MWRA Permit**") from the Massachusetts Water Resources Authority ("**MWRA**") for the operation of the PH neutralization systems. Tenant shall be authorized to use the PH neutralization systems solely for the connection of the PH Connected Premises, and at all times subject to and in accordance with such MWRA Permit. The type, size, location, and manner of all connections and discharges by Tenant to the PH neutralization systems, if any, shall be subject to the prior approval of Landlord in each instance prior to connecting to the PH neutralization system, such approval not to be unreasonably withheld, conditioned or delayed. Tenant's rights under this Section 11 shall be subject to all of the terms and conditions of the Lease, as well as the following additional conditions and requirements:

(1) Tenant's use of the PH neutralization systems shall be at Tenant's sole risk to the extent permitted pursuant to applicable Requirements (Landlord making no representation or warranty regarding the sufficiency of the PH neutralization systems for Tenant's use);

(2) Tenant's use of the PH neutralization systems shall be undertaken by Tenant in compliance with all applicable Requirements, and Tenant shall obtain any and all permits required in connection with such use by Tenant (excepting only the MWRA Permit);

(3) Tenant shall be responsible for connecting to the central distribution point for the PH neutralization systems in locations reasonably approved by Landlord;

(4) Tenant shall pay, as Additional Rent, Tenant's Laboratory Share of the costs to operate, maintain, and repair the PH neutralization systems;

(5) The use of the PH neutralization systems shall be subject to the Building Rules; and;

(6) Landlord has made no warranties, whether express or implied, with respect to the PH neutralization systems, and Tenant disclaims any and all such warranties; provided however, the PH neutralization systems have been or will be installed by Landlord in a good and workmanlike condition and will be maintained by Landlord in good order, condition and repair.

Tenant shall not introduce any substances or materials into the PH neutralization systems, if any, (x) which are in violation of the terms of the MWRA Permit, (y) which are in violation of applicable Requirements, or (z) which would interfere with the proper functioning of the PH neutralization systems. As used herein, "**Tenant's Laboratory Share**" shall mean a ratio, the numerator of which is the aggregate rentable area of the PH Connected Premises (as increased pursuant to Section 5 above) and the denominator of which is equal to: (i) if the rentable area of all of the premises in the Building designed for laboratory uses or in which laboratory uses are permitted is 150,000 rentable square feet or less, then 150,000 rentable square feet, and (ii) if the rentable area of all of the premises in the Building designed for laboratory uses or in which laboratory uses are permitted exceeds 150,000 rentable square feet, then the actual rentable area of all of the premises in the Building designed for laboratory uses or in which laboratory uses are permitted, from time to time.

(b) Effective as of the date (the "**PH Premises Surrender Date**") which is thirty (30) days after Landlord has made the PH neutralization systems located within both 23 Drydock Avenue and 21 Drydock Avenue available for Tenant to connect to the PH Connected Premises in accordance with Section 11(a) above, the Lease Term solely with respect to the PH Premises shall end and expire, and all of Tenant's right, title and interest in and to the PH Premises shall terminate and be extinguished, with the same force and effect as if such PH Premises Surrender Date was the expiration date of the Term of the Lease with respect to the PH Premises. Landlord anticipates that the PH Premises Surrender Date will occur on or about February 28, 2023. From and after the PH Premises Surrender Date, Tenant shall have no further obligation to pay Base Rent or Tenant's Proportionate Share of Operating Costs with respect to the PH Premises. The Lease is and shall remain in full force and effect for and with respect to the remaining Premises for the remaining balance of the Lease Term, in accordance with and subject to the terms and conditions thereof. By not later than the PH Premises Surrender Date, Tenant shall yield-up and surrender the PH Premises in the condition in which the Premises are required to be surrendered pursuant to Section 5.4 of the Lease at the expiration of the Lease Term. If Tenant fails to yield-up and surrender the PH Premises by the PH Premises Surrender Date, then, notwithstanding the occurrence of the PH Premises Surrender Date, Tenant shall be liable for holdover charges with respect thereto at the rate set forth in Section 7.22 of the Lease, prorated on a per diem basis for the Surrender Space, and otherwise in accordance with Section 7.22 of the Lease. Effective as of the date (the "**PH Premises Vacate Date**") on which Tenant actually yields-up and surrenders the PH Premises in accordance with the foregoing provisions, Landlord and Tenant shall be released from any and all obligations and liabilities under the Lease relating to the PH Premises which first accrue after the PH Premises Vacate Date. Nothing contained herein shall constitute a waiver, limitation, amendment, or modification of any of the following: (i) the liabilities and obligations of Landlord and Tenant relating to the PH Premises which accrue prior to the PH Premises Vacate Date; (ii) the indemnifications under the Lease relating to the PH Premises with respect to claims, liabilities, and obligations which accrue prior to the PH Premises Vacate Date (whether or not such claims, liabilities or obligations are asserted or claimed prior to the PH Premises Vacate Date); (iii) the obligations and liabilities of Landlord and Tenant under the Lease with respect to the PH Premises which expressly survive the termination of the Lease Term; or (iv) the obligations and liabilities of both Landlord and Tenant relating to the remainder of the Premises.

12. Transfers; Operating Companies. The following shall be added to Section 4.7 of the Existing Lease as a new Subsection "F":

F. Notwithstanding anything to the contrary contained herein, Tenant shall have the right, upon ten (10) Business Day's prior notice to Landlord (except if prohibited by law, in which case, notice shall be provided by not later than five (5) Business Days after the date on which such notice is not prohibited by law), but without having to obtain Landlord's consent, to permit Operating Companies (as hereinafter defined) to sublet space within the Leased Premises, provided that (i) any alterations, improvements or additions to the Premises shall be subject to the terms and conditions of Section 4.2 above; (ii) the Operating Companies shall occupy space in the Leased Premises for the Permitted Use and for no other purpose; and (iii) if requested by Landlord, Tenant shall notify Landlord, in writing, of the identity and estimated number of any employees of such Operating Companies prior to occupancy of the Leased Premises by such Operating Companies (and thereafter upon Landlord's request), (iv) no such "space sharing" arrangement shall be effected for the purpose of qualifying as a transaction which does not require Landlord's consent (i.e. and thereby avoiding the operation of the provisions of this Section 4.7), (v) each Operating Company shall not occupy an area in excess of 22,000 rentable square feet in the aggregate within the Premises, and (vi) the Operating Companies, together with any assignees of the Lease and/or sublessees of the Premises shall not occupy, in the aggregate, an area under the Lease that exceeds 38,000 rentable square feet. If Tenant or any Operating Company fails to comply with or satisfy the provisions of clauses (i) through
(vi) above, then the provisions of this Section 4.7(F) shall be inapplicable with respect to the sublet to such Operating Company, and such sublet shall require Landlord's consent pursuant to Section 4.7(A) above and shall be subject to the provisions of Section 4.7(B) above. If any Operating Companies occupy any portion of the Leased Premises as described herein, (i) each sublet to an Operating Company shall be subject and subordinate to the provisions of the Lease, (ii) the Operating Companies shall comply with all provisions of the Lease, and a default by any Operating Company shall be deemed a default by Tenant under the Lease; (iii) all notices required to be provided by Landlord under the Lease shall be required to be sent only to Tenant in accordance with the terms of the Lease and in no event shall Landlord be required to send any notices to any Operating Companies;
(iv) in no event shall any use or occupancy of any portion of the Leased Premises by any Operating Company release or relieve Tenant from any of its obligations under the Lease;
(v) the Operating Companies shall be deemed to be contractors of Tenant for purposes of Tenant's indemnification obligations set forth in the Lease; and (vi) in no event shall the occupancy of any portion of the Leased Premises by Operating Companies be deemed to create a landlord/tenant relationship between Landlord and such Operating Companies, and, in all instances, Tenant shall be considered the sole tenant under the Lease notwithstanding the occupancy of any portion of the Leased Premises by the Operating Companies. The term "**Operating Company**" shall mean a business entity with which Tenant or any of its Related Entities has an independent ongoing business relationship in connection with any Permitted Use of the Leased Premises, and may include, without limitation, entities in which Tenant or its Related Entities have invested and with which Tenant has an independent ongoing business relationship in connection with any Permitted Use of the Leased Premises. If Landlord's consent is required to permit an Operating

Company to sublet space within the Leased Premises pursuant to this Section 4.7(F) and the Operating Companies, together with any assignees of the Lease and/or sublessees of the Premises do not occupy, in the aggregate, an area under the Lease that exceeds 38,000 rentable square feet, then Landlord shall not withhold its consent to such sublease solely on the basis of having competing space in the Project.

13. Security Deposit; Guaranty.

a. The parties hereby acknowledge that Landlord is currently holding a Letter of Credit in the amount of $1,400,000.00 (the "**Existing Security Deposit**") to secure the payment and performance of Tenant's obligations under the Lease. Concurrent with Tenant's execution and delivery of this Amendment, Tenant shall deliver to Landlord an additional Security Deposit in the amount of One Million Eighty-One Thousand One Hundred Seventy-Eight and 00/100 Dollars ($1,081,178.00) (the "**Additional Security Deposit**"). Such Additional Security Deposit may be effected by Tenant providing Landlord with (i) an additional Letter of Credit in the amount of the Additional Security Deposit, subject to and in accordance with the terms and conditions of Section
6.5 of the Original Lease, as amended by Section 11 of the First Amendment, and in form reasonably acceptable to Landlord, (ii) a substitute Letter of Credit in an amount equal to the sum of the amounts of the Existing Security Deposit and the Additional Security Deposit, which Landlord shall exchange for the Letter of Credit which Landlord is then holding promptly following Landlord's receipt of such substitute Letter of Credit, subject to and in accordance with the terms and conditions of Section 6.5 of the Original Lease, as amended by Section 11 of the First Amendment, and in form reasonably acceptable to Landlord, or (iii) an amendment to the existing Letter of Credit, reflecting the increase of the Additional Security Deposit amount, subject to and in accordance with the terms and conditions of Section 6.5 of the Original Lease, as amended by Section 11 of the First Amendment, and in form reasonably acceptable to Landlord. Said Additional Security Deposit shall be held by Landlord during the Second Amendment Lease Term in accordance with Section 6.5 of the Original Lease, as amended by Section 11 of the First Amendment and this Amendment; provided however, if there is no event of default under the Lease, then upon the expiration or earlier termination of the Second Amendment Lease Term, Landlord shall promptly return the Additional Security Deposit to Tenant.

b. Concurrent with the execution of this Lease Amendment, Ginkgo Bioworks Holdings Inc., a Delaware corporation ("**Guarantor**") has executed and delivered to Landlord the Guaranty (the "**Guaranty**") in the form attached hereto as Exhibit H. The Guaranty shall remain in full force and effect throughout the Second Amendment Lease Term.

14. Parking. In addition to Tenant's parking with respect to the Existing Premises described in Section 9.2 of the Existing Lease, subject to the terms and conditions of this Section 14, for and with respect to the Second Amendment Premises during the Second Amendment Lease Term, Tenant shall have the right to (a) one (1) unreserved parking space per 5,000 rentable square feet of the Second Amendment Premises (i.e., eleven (11) unreserved parking spaces based on 55,205 rentable square feet of the Second Amendment Premises) (collectively, the "**Second Amendment Unreserved Parking Spaces**") in the BMIP parking garage ("**BMIP Garage**") located at 12 Drydock Avenue, and (b) three (3) additional reserved parking spaces located in the parking lot in front of the Building (the "**Second Amendment Reserved Parking Spaces**", and

together with the Second Amendment Unreserved Parking Spaces, the "**Second Amendment Parking Spaces**"). Tenant shall pay, as Additional Rent, a monthly parking charge for the Second Amendment Parking Spaces, which charge is currently $450.00 per month, per space, which rate may be increased from time to time. The Second Amendment Parking Spaces shall be used only for parking duly registered and operating private passenger motor vehicles owned and operated by Tenant or its employees and for visitor parking. Neither the Landlord nor any operator shall be liable for any loss, injury or damage to persons using the Second Amendment Parking Spaces or automobiles or other property therein, and, to the fullest extent permitted by law, the use of the Second Amendment Parking Spaces shall be at the sole risk of Tenant and its employees. Visitor parking is available in the BMIP Garage, on a first come, first serve basis for parking for all tenants in the Marine Industrial Park, at hourly parking rates, but, except as expressly set forth herein, Tenant has no particular rights in such garage except for the rights of the general public to park in such garage and the right to utilize any spaces in the BMIP garage that are available to Landlord under the Prime Lease on a first-come, first serve basis. On or before the expiration or earlier termination of the Second Amendment Lease Term, Tenant shall surrender and yield up to Landlord the Second Amendment Parking Spaces.

15. Renewal Option.

a. Tenant shall have the right to renew the Second Amendment Lease Term for all of the Second Amendment Premises for one renewal term of five (5) years (the "**Second Amendment Renewal Term**") commencing on the day after the expiration of the initial Second Amendment Lease Term (the "**Second Amendment Renewal Term Commencement Date**") and ending on the day preceding the fifth (5th) anniversary of the Second Amendment Renewal Term Commencement Date, unless the Second Amendment Renewal Term shall sooner terminate pursuant to any of the terms of the Lease or otherwise. The Second Amendment Renewal Term shall commence only if (a) Tenant notifies Landlord (the "**Exercise Notice**") of Tenant's exercise of such renewal right not later than fifteen (15) months prior to the Second Amendment Expiration Date, (b) at the time of the exercise of such right and immediately prior to the Second Amendment Renewal Term Commencement Date, no default shall have occurred and be continuing hereunder beyond any applicable notice and cure period, and (c) Tenant, any Operating Companies (except to the extent that Operating Companies, together with any assignees of the Lease and/or sublessees of the Premises occupy, in the aggregate, an area under the Lease that exceeds 38,000 rentable square feet) and any Permitted Transferees, occupy for their own use, in the aggregate, not less than seventy-five percent (75%) of the Second Amendment Premises at the time the Exercise Notice is given. Time is of the essence with respect to the giving of the Exercise Notice. The Second Amendment Renewal Term shall be upon all of the agreements, terms, covenants and conditions of the Lease, except that (w) the Base Rent shall be the Fair Market Value (as defined below), and (x) Tenant shall have no further right to renew the Second Amendment Lease Term. Any termination, cancellation or surrender of the entire interest of Tenant under the Lease, or the interest of Tenant in the Second Amendment Premises, at any time during the Second Amendment Lease Term shall terminate the foregoing right of renewal of Tenant hereunder.

b. Renewal Term Rent. The annual Base Rent payable during the Second Amendment Renewal Term shall be equal to 100% of the annual Fair Market Value (as hereinafter defined) of the Second Amendment Leased Premises as of commencement of the Second Amendment

Renewal Term (the "**Calculation Date**"). "**Fair Market Value**" shall mean the fair market annual rental value of the Second Amendment Leased Premises as of the Calculation Date for a term equal to the Second Amendment Renewal Term, based on comparable space in the Project, or on comparable space in comparable buildings located in the Seaport District of Boston, Massachusetts, including all of Landlord's services provided for in the Lease, and with the Second Amendment Leased Premises considered as vacant, and in "as is" condition existing on the Second Amendment Renewal Term Commencement Date. The calculation of Fair Market Value shall also be adjusted to take into account all relevant factors including, without limitation, the Permitted Use, free rent, tenant improvement allowances and fees then being paid for comparable space in the Project, or on comparable space in comparable buildings located in the Seaport District of Boston, Massachusetts. Landlord shall advise Tenant (the "**Rent Notice**") of Landlord's determination of Fair Market Value twelve (12) months prior to the Second Amendment Renewal Term Commencement Date. If Tenant disputes Landlord's determination of Fair Market Value, then Tenant shall either withdraw its exercise of its right to renew the Second Amendment Term of the Lease by notice to Landlord, in which event Tenant's right to renew shall be irrevocably be extinguished, or give notice (a "**Dispute Notice**") to Landlord of such dispute within thirty (30) days after delivery of the Rent Notice, and such dispute shall be resolved by arbitration as provided below. Time is of the essence of the giving of said Rent Notice and Dispute Notice. Failure on the part of Tenant to timely submit a Dispute Notice shall constitute a waiver of the right of Tenant to dispute the Fair Rental Value determined by Landlord, and in such event the Base Rent for the Second Amendment Renewal Term shall be as set forth in the Rent Notice. If the Base Rent payable during the Second Amendment Renewal Term is not determined prior to the Second Amendment Renewal Term Commencement Date, then Tenant shall pay Base Rent in an amount equal to the Fair Market Value for the Second Amendment Premises as determined by Landlord (the "**Interim Rent**"). Upon final determination of the Base Rent for the Second Amendment Renewal Term, Tenant shall commence paying such Base Rent as so determined, and within ten (10) days after such determination Tenant shall pay any deficiency in prior payments of Base Rent or, if the Base Rent as so determined shall be less than the Interim Rent, Tenant shall be entitled to a credit against the next succeeding installments of Base Rent in an amount equal to the difference between each installment of Interim Rent and the Base Rent as so determined which should have been paid for such installment until the total amount of the over payment has been recouped.

c. Arbitration. If Tenant timely disputes Landlord's determination of Fair Market Value pursuant to provisions above, then such dispute shall be determined by arbitration in accordance with the then prevailing expedited procedures of the American Arbitration Association or its successor for arbitration of commercial disputes, except that the expedited procedures shall be modified as follows:

(i) In its Dispute Notice Tenant shall specify the name and address of the person to act as the arbitrator on Tenant's behalf. The arbitrator shall be a commercial real estate broker or an appraiser with the M.A.I. designation from the American Institute of Real Estate Advisors, with at least 10 years full-time commercial real estate appraisal or brokerage experience who is familiar with the Fair Market Value of first-class commercial flex and R&D space in the Seaport District in Boston, Massachusetts. Failure on the part of Tenant to make the timely

and proper demand for such arbitration shall constitute a waiver of the right thereto and the Base Rent shall be as set forth in the Rent Notice. Within ten (10) Business Days after receipt of the Dispute Notice, Landlord shall give notice to Tenant specifying the name and address of the person designated by Landlord to act as arbitrator on its behalf, which arbitrator shall be similarly qualified. If Landlord fails to notify Tenant of the appointment of its arbitrator within such ten (10) Business Day period, and such failure continues for three (3) Business Days after Tenant delivers a second notice to Landlord, then the arbitrator appointed by Tenant shall be the arbitrator to determine the Fair Market Value for the Second Amendment Leased Premises.

(ii) If two arbitrators are chosen, the arbitrators so chosen shall meet within ten (10) Business Days after the second arbitrator is appointed and shall seek to reach agreement on Fair Market Value. If within twenty (20) Business Days after the second arbitrator is appointed the two arbitrators are unable to reach agreement on Fair Market Value then the two arbitrators shall appoint a third arbitrator, who shall be a competent and impartial person with qualifications similar to those required of the first two arbitrators. If they are unable to agree upon such appointment within five (5) Business Days after expiration of such twenty (20) Business Day period, the third arbitrator shall be selected by the parties themselves. If the parties do not agree on the third arbitrator within five (5) Business Days after expiration of the foregoing five (5) Business Day period, then either party, on behalf of both, may request appointment of such a qualified person by the Boston Office of the American Arbitration Association. The third arbitrator shall decide the dispute, if it has not been previously resolved, by following the procedures set forth below. Each party shall pay the fees and expenses of its respective arbitrator and both shall share the fees and expenses of the third arbitrator. Attorneys' fees and expenses of counsel and of witnesses for the respective parties shall be paid by the respective party engaging such counsel or calling such witnesses.

(iii) Fair Market Value shall be fixed by the third arbitrator in accordance with the following procedures. Concurrently with the appointment of the third arbitrator, each of the arbitrators selected by the parties shall state, in writing, his or her determination of the Fair Market Value supported by the reasons therefor. The third arbitrator shall have the right to consult experts and competent authorities for factual information or evidence pertaining to a determination of Fair Market Value, but any such determination shall be made in the presence of both parties with full right on their part to cross-examine. The third arbitrator shall conduct such hearings and investigations as he or she deem appropriate and shall, within thirty (30) days after being appointed, select which of the two proposed determinations most closely approximates his or her determination of Fair Market Value. The third arbitrator shall have no right to propose a middle ground or any modification of either of the two proposed determinations. The determination he or she chooses as that most closely approximating his or her determination of the Fair Market Value shall constitute the decision of the third arbitrator and shall be final and binding upon the parties. The third arbitrator shall render the decision in

writing with counterpart copies to each party. The third arbitrator shall have no power to add to or modify the provisions of the Lease. Promptly following receipt of the third arbitrator's decision, the parties shall enter into an amendment to the Lease evidencing the extension of the Second Amendment Term for the Second Amendment Renewal Term and confirming the Base Rent for the Second Amendment Renewal Term, but the failure of the parties to do so shall not affect the effectiveness of the third arbitrator's determination.

(iv) In the event of a failure, refusal or inability of any arbitrator to act, his or her successor shall be appointed by him or her, but in the case of the third arbitrator, his or her successor shall be appointed in the same manner as that set forth herein with respect to the appointment of the original third arbitrator.

16. Hazardous Materials. The following is hereby inserted as a new Section 4.17 of the Lease:

Section 4.17 Hazardous Materials. Landlord and Tenant agree as follows with respect to the existence or use of "Hazardous Material" in, on or about the Leased Premises, Building, and the Project:

A. Tenant, at its sole cost and expense, shall comply with all laws, statutes, ordinances, rules and regulations of any local, state or federal governmental authority having jurisdiction concerning environmental, health and safety matters (collectively, "**Environmental Laws**"), including, but not limited to, the use of animals or laboratory specimens, any discharge into the air, surface, water, sewers, soil or groundwater of any Hazardous Material (as defined below), whether within or outside the Leased Premises or within the Building or Project. Notwithstanding the foregoing, nothing contained in the Lease requires, or shall be construed to require, Tenant to incur any liability related to or arising from environmental conditions (i) for which the Landlord is responsible pursuant to the terms of the Lease, or (ii) which existed within the Leased Premises, the Building or Project prior to the date Tenant takes possession of, or enters, the Leased Premises, or (iii) which is introduced by Landlord or another tenant or occupant to the Building or Project (or any licensee or invitee of any of the foregoing), provided, however, that if any such environmental condition was exacerbated by Tenant (or Tenant's contractors, subcontractors, agents, subtenants, assigns, etc.), the cost (and any delays resulting therefrom) of the liability therefor and any such removal or remediation shall be equitably borne by Landlord and Tenant based upon the degree to which Tenant's (or such other Tenant parties') actions have materially increased the cost of such removal or remediation. Tenant shall comply with all applicable Requirements (including applicable zoning and building code requirements and Landlord's reasonable quantity limitations to provide for multiple tenant use and compliance applicable to the Building area and/or the so-called "control areas" therein; provided, however, that Tenant shall only be permitted to use the "control areas" located within the Leased Premises and in such areas Tenant shall not use more than the allocated proportionate share of permitted storage of Hazardous Materials for the floor on which the Leased Premises are located) pertaining to the transportation, storage, use or disposal of such Hazardous Materials brought upon, kept or used in or about the Leased Premises or otherwise in, on or at the Building or Project by Tenant, its

agents, employees, contractors or invitees. Tenant is required to adhere to and comply with the allowable quantities of Hazardous Materials that are allocated to Tenant by the Landlord's flammable matrix, from time to time. Without limitation of the foregoing, Tenant shall have exclusive use of one (1) "control area" located within the Second Amendment Premises on the seventh (7th) floor of the Building and two "control areas" located within the Second Amendment Premises on the eighth ($8^{th}$) floor of the Building. Before bringing Hazardous Materials into the Building or Project, Tenant shall submit to Landlord a list of Tenant's Hazardous Materials for Landlord's prior review and approval, which approval shall not be unreasonably withheld, conditioned or delayed. The Hazardous Materials and quantities set forth in such list shall not exceed the limitations and quantities set forth on Exhibit H attached hereto. In the event Tenant intends to add a new Hazardous Material or materially increase the quantity of any Hazardous Material following Landlord's approval of such list, Tenant shall submit to Landlord an updated list of Tenant's Hazardous Materials for Landlord's prior review and approval, which approval shall not be unreasonably withheld, conditioned or delayed, provided that the Hazardous Materials and quantities set forth in such updated list shall not exceed the limitations and quantities set forth on Exhibit H attached hereto.

B. Tenant shall not cause or permit any Hazardous Material to be brought upon, kept or used in or about the Leased Premises or otherwise in, on or at the Building or Project by Tenant, its agents, employees, contractors or invitees, without the prior written consent of Landlord, except for Hazardous Materials which are permitted by and in accordance with the Lease (including, without limitation, pursuant to Section 4.17(A), above), and, provided that all such permitted materials are stored, used and disposed of in strict compliance with all applicable Environmental Laws and with good scientific and medical practice. Within ten (10) Business Days following Landlord's written request (which shall not be made more than once in any six (6) month period unless Tenant is in default under the Lease (after any applicable notice and cure period)), Tenant shall provide Landlord with any information requested by Landlord concerning the existence, use, generation, or disposal of all Hazardous Materials, including quantities used and such other information as Landlord may reasonably request, used by Tenant in at the Leased Premises or otherwise in, at or under the Building or Project, including, but not limited to, the following information: (a) all relevant information relating to such materials (e.g., a list of each type of Hazardous Materials used, stored, generated or disposed of by Tenant at the Leased Premises and a description of how Tenant disposes of said Hazardous Materials, a copy of its most current materials list and applicable quantities thereof, applicable material safety data sheets (MSDS) and safety data sheets (SDS) and transportation and removal manifests, to the extent such manifests are required by applicable law or Tenant actually keeps such manifests as part of its standard business practices), and (b) copies of any licenses or permits obtained by Tenant in order to use, generate or dispose of Hazardous Materials, including any MWRA permits and approvals. Tenant shall also as soon as practicable provide to Landlord (without demand by Landlord) a copy of any notice, registration, application, permit, or license given to or received from any governmental authority or private party, or persons entering or occupying the Leased Premises, concerning the presence, release, exposure or disposal of any Hazardous Materials in violation of Environmental Laws in or about the Leased Premises, the Building, or the Project. Notwithstanding the foregoing, with respect to any of Tenant's Hazardous Materials which Tenant does not properly handle, store or dispose of in compliance with all applicable

Environmental Laws and good scientific and medical practice, Tenant shall, upon written notice from Landlord, no longer have the right to bring such material into the Leased Premises, the Building of which the Leased Premises is a part or the Project until Tenant has demonstrated, to Landlord's reasonable satisfaction, that Tenant has implemented programs to thereafter properly handle, store or dispose of such material.

C. As used in the Lease, the term "**Hazardous Material**" means any hazardous or toxic substances, hazardous waste, environmental, biological, chemical, radioactive substances, oil, petroleum products and any waste or substance, which because of its quantitative concentration, chemical, biological, radioactive, flammable, explosive, infectious or other characteristics, constitutes or may reasonably be expected to constitute or contribute to a danger or hazard to public health, safety or welfare or to the environment, or that would trigger any employee or community "right-to-know" requirements adopted by any federal, state or local governing or regulatory body or which is or otherwise becomes regulated by any Environmental Law, including but not limited to the Massachusetts "Right to Know" Law, Chapter 111F of the General Laws of Massachusetts, specifically including live organisms, viruses and fungi, Medical Waste (as defined below), and so-called "biohazard" materials. The term "**Hazardous Material**" includes, without limitation, any material or substance which is (i) designated as a "hazardous substance" pursuant to Section 1311 of the Federal Water Pollution Control Act (33 U.S.C. Section 1317), (ii) defined as a "hazardous waste" pursuant to Section 1004 of the Federal Resource Conservation and Recovery Act, 42 U.S.C. Section 6901 et seq. (42 U.S.C. Section 6903), (iii) defined as a "hazardous substance" pursuant to Section 101 of the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. Section 9601 et seq. (42 U.S.C. Section 9601), (iv) defined as "hazardous substance" or "oil" under Chapter 21E of the General Laws of Massachusetts, or (v) a so-called "biohazard" or Medical Waste, or is contaminated with blood or other bodily fluids; and "Environmental Laws" include, without limitation, the laws listed in the preceding clauses (i) through (iv). The term "**Medical Waste**" shall mean the types of waste described in any federal, state or local laws, rules and regulations and any similar type of waste. Tenant shall not cause or permit any Medical Waste to be brought, kept or used in or about the Leased Premises, the Building, or the Project by Tenant, its employees, agents, contractors or invitees except in strict compliance with all applicable Environmental Laws and with good scientific and medical practice. Tenant shall comply with all applicable and appropriate laboratory biosafety level criteria, requirements and recommendations including specific "BSL" limitations, standards, practices, safety equipment and facility requirements for the applicable BSL level pursuant to the Center for Disease Control and otherwise consistent with good scientific and medical practice (and in no event shall Tenant's use or occupancy involve activities that would qualify or be characterized or categorized as BSL 3 or BSL 4. Information can be found at: https://www.cdc.gov/biosafety/publications/bmbl5/bmbl5_sect_iv.pdf.

D. Any increase in the premium for necessary insurance on the Leased Premises, the Building or Project which arises directly from Tenant's use and/or storage of these Hazardous Materials shall be solely at Tenant's expense. Tenant shall procure and maintain at its sole expense such additional insurance as may be necessary to comply with any requirement of any federal, state or local government agency with jurisdiction.

E. Prior to the expiration of each of the Lease Term and Second Amendment Lease Term (or within thirty (30) days after any earlier termination), Tenant shall clean and otherwise decommission all interior surfaces (including floors, walls, ceilings, and counters), piping, supply lines, waste lines, pH neutralization system, and plumbing in and/or exclusively serving the applicable portion of the Leased Premises, and all exhaust or other ductwork in and/or exclusively serving the applicable portion of the Leased Premises, in each case which has carried or released or been exposed to any Hazardous Material, and shall otherwise clean the applicable portion of the Leased Premises (to the point of ceiling penetration) so as to permit the report hereinafter called for by this Section 4.17 to be issued. Prior to the expiration of each of the Lease Term and Second Amendment Lease Term (or within thirty (30) days after any earlier termination), Tenant, at Tenant's expense, shall obtain for Landlord a report (the "**Decommissioning Report**") addressed to Landlord and Landlord's designees (and, at Tenant's election, Tenant and Tenant's designees) by a reputable licensed environmental engineer or certified industrial hygienist that, in either case, is designated by Tenant and acceptable to Landlord in Landlord's reasonable discretion, which Decommissioning Report shall be based on the environmental engineer's or industrial hygienist's inspection of the applicable portion of the Leased Premises and shall show: that the Hazardous Materials, to the extent, if any, existing prior to such decommissioning, have been removed as necessary so that the interior surfaces of the applicable portion of the Leased Premises (including but not limited to floors, walls, ceilings, and counters), piping, supply lines, waste lines and plumbing, and all such exhaust or other ductwork in and/or exclusively serving the applicable portion of the Leased Premises, may be reused by a subsequent tenant or disposed of in compliance with applicable Environmental Laws without taking any special precautions for Hazardous Materials, without incurring special costs or undertaking special procedures for demolition, disposal, investigation, assessment, cleaning or removal of Hazardous Materials and without incurring regulatory compliance requirements or giving notice in connection with Hazardous Materials; and that the applicable portion of the Leased Premises may be reoccupied for office, research or laboratory use, demolished or renovated without taking any special precautions for Hazardous Materials, without incurring special costs or undertaking special procedures for disposal, investigation, assessment, cleaning or removal of Hazardous Materials and without incurring regulatory requirements or giving notice in connection with Environmental Substances. Further, for purposes of this Section 4.17: "special costs" or "special procedures" shall mean costs or procedures, as the case may be, that would not be incurred but for the nature of the Hazardous Materials as Hazardous Materials instead of non-hazardous materials. The Decommissioning Report shall include reasonable detail concerning the clean-up location, the tests run and the analytic results. In addition, to the extent Tenant (or any party taking by or through Tenant) used, stored, generated or disposed of any radioactive or radiological substances on or about the Leased Premises, such decommissioning shall also be conducted in accordance with the regulations of the U.S. Nuclear Regulatory Commission and/or the Massachusetts Department of Public Health for the control of radiation, and cause the Leased Premises to be released for unrestricted use by the Radiation Control Program of the Massachusetts Department of Public Health for the control of radiation, and deliver to Landlord the report of a certified industrial hygienist stating that he or she has examined the Leased Premises (including visual inspection, Geiger counter evaluation and airborne and surface monitoring) and found no evidence that such portion contains Hazardous Materials or

is otherwise in violation of any Environmental Law. If Tenant fails to perform its obligations under this Section 4.17, without limiting any other right or remedy, Landlord may, on not less than five (5) Business Days' prior written notice to Tenant perform such obligations at Tenant's expense, and Tenant shall promptly reimburse Landlord upon demand for all costs and expenses reasonably incurred together with an administrative charge of 5% of the cost thereof. Tenant's obligations under this Section 4.17 shall survive the expiration or earlier termination of the Lease. All amounts owed to Landlord under this Section 4.17 shall be payable as Additional Rent, and if not paid on or before the date when due shall incur interest at the rate set forth in Section 7.5 below, until paid in full.

F. Prior to the expiration of each of the Lease Term and Second Amendment Lease Term (or within thirty (30) days after any earlier termination), Tenant shall provide to Landlord a copy of its most current chemical waste removal manifest and a certification from Tenant executed by an officer of Tenant that no Hazardous Materials or other potentially dangerous or harmful chemicals brought onto the applicable portion of the Leased Premises from and after the date that Tenant first took occupancy of the applicable portion of the Leased Premises remain in the applicable portion of the Leased Premises.

G. Tenant hereby represents and warrants to Landlord that (i) neither Tenant nor any of its legal predecessors has been required by any prior landlord, lender or governmental authority at any time to take remedial action in connection with Hazardous Materials contaminating a property which contamination was permitted by Tenant of such predecessor or resulted from Tenant's or such predecessor's action or use of the property in question, and (ii) Tenant is not subject to any enforcement order issued by any governmental authority in connection with the use, storage, handling, treatment, generation, release or disposal of Hazardous Materials (including, without limitation, any order related to the failure to make a required reporting to any governmental authority). If Landlord determines that this representation and warranty was not true as of the date of the Lease, Landlord shall have the right to terminate the Lease in Landlord's sole and absolute discretion.

H. Landlord shall have the right to conduct an annual test of the Leased Premises to determine whether any contamination of the Leased Premises, the Building or the Project has occurred as a result of Tenant's use (or more frequently if Landlord has a reasonable basis to suspect that a violation of this Section 4.17 may have occurred). Tenant shall be required to pay the cost of such annual test of the Leased Premises if there is violation of this Section 4.17 or if contamination for which Tenant is responsible under this Section 4.17 is identified; provided, however, that if Tenant conducts its own tests of the Leased Premises using third party contractors and test procedures reasonably acceptable to Landlord which tests are certified to Landlord, Landlord shall accept such tests in lieu of seeking payment from Tenant for any corresponding annual test conducted by Landlord.

I. Tenant hereby covenants and agrees to indemnify, defend and hold Landlord and its employees, partners, agents, contractors, lenders and ground lessors (said persons and entities are hereinafter collectively referred to as the "**Indemnified Parties**") harmless from any and all liabilities, losses, costs, damages, claims, loss of rents, liens, judgments, penalties, fines, settlement costs, investigation costs, the cost of consultants and experts, attorney's fees,

court costs and other legal expenses, the effects of environmental contamination, the cost of environmental testing, the removal, remediation and/or abatement of Hazardous Materials or Medical Waste), insurance policy deductibles and other expenses (collectively "**Losses**") arising out of or related to an Indemnified Matter. For purposes of this Section 4.17(I), an "**Indemnified Matter**" shall mean any matter for which one or more of the Indemnified Parties incurs liability or damages if the liability or damages arise out of or involve, directly or indirectly, (i) the presence of any Hazardous Material or Medical Waste on or about the Leased Premises (or the Building), the presence of which is caused or permitted by Tenant or its employees, agents, contractors or invitees during the Lease Term (all of said persons or entities are hereinafter collectively referred to as "**Tenant Parties**"), (ii) the Tenant Parties' use or occupancy of the Leased Premises, the Building or the Project relating to Hazardous Materials the presence of which is caused or permitted by Tenant or any Tenant Parties, (iii) Tenant's failure to perform any of its obligations under this Section 4.17 or any other provision relating to Hazardous Materials, (iv) the existence, use or disposal of any Hazardous Substance or Medical Waste brought on to the Building by a Tenant Party, or (v) any other matters for which Tenant has agreed to indemnify Landlord or any Indemnified Party pursuant to any other provision of the Lease relating to Hazardous Materials. Tenant's obligations hereunder shall include, but shall not be limited to compensating the Indemnified Parties for Losses arising out of Indemnified Matters within thirty (30) days after written demand from an Indemnified Party and providing a defense, with counsel reasonably satisfactory to the Indemnified Party, at Tenant's sole expense, within thirty (30) days after written demand from the Indemnified Party, of any claims, action or proceeding arising out of or relating to an Indemnified Matter whether or not litigated or reduced to judgment and whether or not well founded. This indemnification of the Indemnified Parties by Tenant includes, without limitation, reasonable costs incurred in connection with any investigation of site conditions or any cleanup, remedial, removal or restoration work required by any federal, state or local governmental agency or political subdivision because of Hazardous Material present in the soil or ground water on or under the Leased Premises based upon the circumstances identified herein. Without limiting the foregoing, if the presence of any Hazardous Material in the Building or otherwise in, on, at or under the Land caused or permitted by any Tenant Party results in any contamination of the Leased Premises, Tenant shall promptly take all actions at its sole expense as are necessary to return the Leased Premises to a condition which complies with all Environmental Laws; provided that Landlord's approval of such actions shall first be obtained, which approval shall not be unreasonably withheld, conditioned or delayed so long as such actions, in Landlord's reasonable discretion, would not potentially have any materially adverse long-term or short- term effect on the Leased Premises, and, in any event, Landlord shall not withhold its approval of any proposed actions which are required by applicable Environmental Laws. If Tenant is obligated to compensate an Indemnified Party for Losses arising out of an Indemnified Matter, Landlord shall have the immediate and unconditional right, but not the obligation, without notice or demand to Tenant, to pay the damages and Tenant shall, upon thirty (30) days' advance written notice from Landlord, reimburse Landlord for the costs incurred by Landlord. By way of example, and not limitation, Landlord shall have the immediate and unconditional right to cause any damages to the Common Areas, another tenant's premises or to any other part of the Building or Project to be repaired and to compensate other tenants of thereof or other persons or entities for Losses arising out of an Indemnified Matter. The Indemnified

Parties need not first pay any Losses to be indemnified hereunder. This indemnity is intended to apply to the fullest extent permitted by applicable law.

J. The provisions of this Section 4.17 shall survive the expiration or termination of the Lease unless specifically waived in writing by Landlord after said expiration or termination.

17. Hazardous Materials List. Exhibit G attached to this Amendment is hereby inserted as a new Exhibit H to the Original Lease.

18. Insurance. Section 5.3 of the Original Lease is hereby deleted and the following inserted in its place:

Section 5.3 Insurance.

A. Landlord agrees to maintain in full force and effect throughout the Lease Term the insurance required by the Prime Lessor and any mortgagee holding a first mortgage on the Project or, in absence of any such mortgagee, as would be required by an institutional mortgagee holding a first mortgage on the Project. Landlord shall not be obligated to insure any of Tenant's goods, Trade Fixtures, furniture or any other property placed in or incorporated in the Leased Premises.

B. Tenant shall, at its sole cost and expense, procure, and maintain and comply with during the Lease Term (a) Commercial General Liability Insurance applicable to the Leased Premises and its appurtenances to provide contractual liability, personal injury liability, and property damage coverages, with limits of not less than One Million Dollars ($1,000,000) per occurrence and Two Million Dollars ($2,000,000) general aggregate; (b) Property Insurance written on a Special Perils form, with coverage for broad form water damage including sprinkler leakage, at 100% replacement cost value covering all of Tenant's business and Trade Fixtures, equipment, movable partitions, furniture, merchandise and other personal property within the Leased Premises and any Leasehold Improvements performed by or for the benefit of Tenant; whether paid by Tenant or Landlord; (c) Business Interruption Insurance for a period of twelve (12) months; (d) If alcohol or other distilled beverages are provided, or otherwise available in the Leased Premises, Tenant shall carry host liquor liability coverage in amounts reasonably required by Landlord; (e) Workers' Compensation Insurance in amounts required by Law; and (f) Employers Liability Coverage of at least $1,000,000 (One Million Dollars) bodily injury for each accident, $1,000,000 (One Million Dollars) bodily injury by disease for each employee, and $1,000,000 (One Million Dollars) bodily injury disease aggregate; (g) Automobile Liability Insurance with a minimum combined single limit of liability of at least One Million Dollars ($1,000,000) including coverage for owned, non-owned and hired vehicles; and (h) Umbrella Insurance excess of all liability insurance listed above, except for workers compensation, with limits of not less than Five Million Dollars ($5,000,000) annual aggregate. In addition to the foregoing, Tenant shall procure and maintain during the Lease Term, from and after the date on which Tenant first brings Hazardous Materials onto the Property (excepting only, in connection with the performance of Tenant's Work, Hazardous Materials customarily used in the ordinary course of construction) and for no fewer than three

(3) years thereafter, a stand-alone (covering pollution conditions on, at, under or migrating from the Project) pollution legal liability insurance policy covering Tenant's operations for claims relating to clean-up, bodily injury, and property damage, with limits of not less than Two Million Dollars ($2,000,000) per occurrence and in the aggregate with a deductible of not more than $25,000, with respect to environmental contamination and pollution caused by Tenant. Such coverage shall have no exclusions for medical, special or biohazardous waste, mold, microbial matter, bacteria, viruses, or fungi particles expected to be handled and/or generated by Tenant in the course of Tenant's operations and occupancy. Such policy shall include (i) full terrorism coverage, (ii) coverage for any above-ground storage tanks, where applicable, and (iii) coverage for radioactive materials if such materials are part of Tenant's operations; and (iv) that this Lease and the indemnification requirements herein are included and scheduled as an insured contract on the pollution legal liability policy. Tenant's Insurance shall be issued by a company that is licensed to do business in the Commonwealth of Massachusetts and have an A.M. Best rating of not less than A-VIII. All such policies of insurance shall name Landlord and parties designated in writing by Landlord as additional insureds with respect to the liability insurance coverage, and as loss payees, as their interests may appear, with respect to the property insurance and shall be primary and non-contributory with respect to any policies carried by Landlord or any additional insureds.

C. All policies of insurance required to be maintained by Tenant shall provide that the Landlord shall be given at least thirty (30) days' prior written notice of any cancellation or non- renewal of any such policy. A duly executed certificate of insurance with respect to each such policy will be deposited with Landlord by Tenant on or before the Commencement Date, and a duly executed certificate of insurance with respect to each subsequent policy shall be deposited with the Landlord at least fifteen (15) days prior to the expiration of the preceding such policy.

D. Tenant shall not do or permit anything to be done in or about the Leased Premises nor bring nor keep nor permit anything to be brought to or kept therein, which will in any way increase the existing rate of or affect any fire or other insurance which Landlord carries upon any part of the Building or any of its contents, or cause the cancellation or invalidation of any such insurance. If the annual premium to be paid by Landlord with respect to any insurance obtained by Landlord covering any part of the Building or any of its contents shall exceed the standard rates because Tenant's operations, contents of the Leased Premises or improvements with respect to the Leased Premises result in extra hazardous exposure, Tenant shall pay the excess amount of the premium upon demand by Landlord.

E. All insurance carried by either Landlord or Tenant covering losses arising out of destruction or damage to the Leased Premises or its contents or to other portions of the Building, or to Tenant's occupancy and operation of the Leased Premises shall provide for a waiver of rights of subrogation against Prime Lessor, Landlord and Tenant on the part of the insurance carrier, to the extent that the same is permitted under the laws and regulations governing the writing of insurance within the Commonwealth of Massachusetts. Anything in this Lease to the contrary notwithstanding and so long as the following does not invalidate any policy of insurance, Landlord and Tenant each hereby waive to the extent of insurance carried by either party any and all rights of recovery, claims, actions, or causes of action against the

other, its agent, officers or employees, or any loss or damage that may occur to the Leased Premises or the Building, or any improvements thereto, which is insured against or should have been insured against under the terms of any insurance policy required to be maintained pursuant to this Section. The waivers set forth in the immediately preceding sentence shall be in addition to, and not in substitution for, any other waivers, indemnities or exclusions of liability set forth in this Lease, including without limitation Sections 5.5 and 5.6 of this Lease.

F. Tenant shall have the right to satisfy its pollution legal liability insurance obligations under this Lease by means of self-insurance to the extent of all or part of the insurance required hereunder, but only so long as: (a) such self-insurance is permitted under all laws applicable to Tenant and/or the Building at the time in question; (b) such self-insurance is in compliance with any minimum insurance requirements imposed upon Landlord by Landlord's lender(s); (c) Tenant maintains a net worth (as shown by its financial statements audited in accordance with generally accepted accounting principles) of not less than Five Hundred Million Dollars ($500,000,000.00); (d) unless such information is already generally available to the public, Tenant shall, not less than annually, provide Landlord an audited financial statement, prepared by an independent certified public accountant in accordance with generally accepted accounting principles consistently applied, showing the required net worth; and (e) such self-insurance provides for loss reserves that are actuarially derived in accordance with accepted standards of the insurance industry and accrued (i.e., charged against earnings) or otherwise funded. "**Self-insure**" shall mean that Tenant is itself acting as though it were the third-party insurer providing the insurance required under the provisions of this Lease, and Tenant shall pay any amounts due in lieu of insurance proceeds because of self-insurance, which amounts shall be treated as insurance proceeds for all purposes under this Lease. To the extent Tenant chooses to provide the pollution legal liability insurance required by this Lease by "self-insurance," then Tenant shall have all of the obligations and liabilities of an insurer, and the protection afforded Landlord, Landlord's lender, and the Building shall be the same as if provided by a third-party insurer under the coverages required under this Lease. Without limiting the generality of the foregoing, all amounts which Tenant pays or is required to pay and all losses or damages resulting from risks for which Tenant has elected to self-insure shall be subject to the waiver of subrogation provisions of this Lease, and shall not limit Tenant's indemnification obligations pursuant to this Lease. In the event that Tenant elects to self-insure and an event or claim occurs for which a defense and/or coverage would have been available from a third-party insurer, Tenant shall undertake the defense of any such claim, including a defense of Landlord, at Tenant's sole cost and expense, and use its own funds to pay any claim or replace any property or otherwise provide the funding which would have been available from insurance proceeds but for such election by Tenant to self-insure. In the event that Tenant elects to self-insure, prior to the implementation of such self-insurance, Tenant shall provide Landlord and Landlord's lender with certificates of self-insurance specifying the extent of self- insurance coverage. Tenant shall, within the period of time that proceeds of insurance would have been available from a standard third-party insurer (but no later than 30 days from valid proof of loss being provided for any portion of the damage or destruction), pay to Landlord the proceeds of any self-insurance coverage, and shall use its best efforts to cause the proceeds of any third party property insurance coverage to be provided to Landlord as soon as practicable, regardless of when the damage or destruction occurs in relation to the expiration or earlier

termination date of this Lease. In no event shall Tenant have the right to self-insure any of the insurance coverages required under this Lease other than pollution legal liability insurance.

19. Deleted Provisions; Inapplicable Provisions. Section 2 of the First Amendment (Expansion Premises) and Section 4 of the First Amendment (Building Remeasurement) are hereby deleted in their entirety and are null and void and of no further force or effect. The obligation of Landlord set forth in 2.1(B) of the Original Lease to provide Tenant with cooling capacity from the Building's main condenser unit shall be inapplicable with respect to the Second Amendment Premises and the 21 Drydock Rooftop Equipment described in Section 6 of this Amendment.

20. Notice Addresses. Notwithstanding any provision contained in the Existing Lease to the contrary, for all purposes under the Lease, all notices and other written communications to Landlord and Tenant shall be sent to the following addresses:

If to Landlord: c/o Related Fund Management 30 Hudson Yards
New York, NY 10001 Attn: Patrick Sweeney
Emails:
patrick.sweeney@related.com;
JKaminetsky@Related.com

– and –

c/o JAMESTOWN, L.P.
Ponce City Market
675 Ponce de Leon Avenue NE 7th Floor
Atlanta, Georgia 30308
Attention: General Counsel; Asset Manager, IDB Seaport
Email: legal@jamestownlp.com;
danagriffin@jamestownlp.com

With copies to: IDB 17-19 Drydock Limited Partnership c/o Related Beal
177 Milk Street, 2nd Floor Boston, MA 02109
Emails: sfaber@relatedbeal.com;
eorpik@relatedbeal.com

and

Goulston & Storrs PC 400 Atlantic Avenue

Boston, Massachusetts 02110-3333 Attention: Amy Moody McGrath, Esq. Email: amcgrath@goulstonstorrs.com

If to Tenant: c/o Ginkgo Bioworks, Inc., a Delaware corporation
27 Drydock Avenue, 8th Floor Boston, MA 02210
Attn: Jason Ng
Email: jasonng@ginkgobioworks.com

With a copy to: Gingko Bioworks, Inc.
27 Drydock Ave, 8th Floor Boston MA 02210
Attn: Barry Canton
Email: barry@ginkgobioworks.com

and

Melvin R. Shuman, Esq. 189 Eliot Street
Chestnut Hill, MA 02467 Email:
ms@melshumanlaw.com

and with a copy by e-mail to:

legal@ginkgobioworks.com

21. Brokers. Tenant warrants and represents to Landlord, and Landlord warrants and represents to Tenant, that it has dealt with no broker or agent in connection with this Amendment, other than JLL (representing Landlord) and Columbia Group Realty Advisors (representing Tenant). Each of Tenant and Landlord shall indemnify and hold harmless the other from and against any and all loss, cost and expense (including attorneys' fees) arising out of or resulting from any breach of said warranty and representation by the indemnifying party, including any claims for a brokerage commission, finder's fee or similar compensation made by any person other

than JLL or Columbia Group Realty Advisors arising out of or in connection with this Amendment. Landlord shall be responsible for payment of all fees payable to JLL and Columbia Group Realty Advisors in connection with this Amendment pursuant to a separate agreement(s).

22. Miscellaneous. This Amendment may be executed by electronic signature, which shall be considered as an original signature for all purposes and shall have the same force and effect as an original signature. Without limitation, in addition to electronically produced signatures, "electronic signature" shall include electronically scanned and transmitted versions

(e.g., via PDF and/or DocuSign) of an original signature. This Amendment may be executed in multiple counterparts (which counterparts may be executed and delivered by PDF, DocuSign, or another file sent by email) which shall together constitute a single document. Any executed counterpart of this Amendment delivered by PDF, DocuSign or another file sent by email shall be equally effective as an original counterpart for all purposes. Tenant hereby represents and warrants to Landlord as follows: (i) the execution and delivery of this Amendment by Tenant has been duly authorized by all requisite action; (ii) neither the Existing Lease nor the interest of Tenant therein has been assigned, sublet, encumbered or otherwise transferred; (iii) to the best knowledge of Tenant, there are no defenses or counterclaims to the enforcement of the Existing Lease or the liabilities and obligations of Tenant thereunder; (iv) Tenant is not entitled to any offset, abatement or reduction of rent under the Existing Lease, except as expressly set forth therein; (v) to the best knowledge of Tenant, neither Landlord or Tenant is in breach or default of any its respective obligations under the Existing Lease; (vi) Landlord has performed all work and constructed all improvements required pursuant to the Existing Lease, and, excepting only the Landlord's Additional Construction Loan with respect to the Phase IV Premises and the Original Premises Allowance (as defined in the First Amendment), has provided all allowances and contributions required pursuant to the Existing Lease (as amended by Section 3(d) above to provide Landlord's Second Amendment Contribution in lieu of the Expansion Premises Allowance (as defined in the First Amendment)); and (vii) Landlord has made no representations or warranties, except as expressly and specifically set forth in this Amendment. The submission of drafts of this document for examination and negotiation does not constitute an offer, or a reservation of or option for, the Second Amendment Premises, or any of the other terms and conditions set forth in this Amendment, and this Amendment shall not be binding upon Landlord or Tenant unless and until Landlord shall have executed and delivered a fully executed copy of this Amendment to Tenant. Except as expressly and specifically set forth in this Amendment, the Existing Lease is hereby ratified and confirmed, and all of the terms, covenants, agreements and provisions of the Existing Lease shall remain unaltered and unmodified and in full force and effect throughout the balance of the term of the Lease, as extended hereby. Except as expressly set forth herein, all of the covenants, representations and warranties made by Tenant contained in the Existing Lease are hereby remade, reaffirmed and ratified as of the date hereof.

(Signatures on following page.)

IN WITNESS WHEREOF, Landlord and Tenant have executed this Amendment as of the day and year first above written.

"**LANDLORD**"

IDB 21-25 DRYDOCK LIMITED PARTNERSHIP,
a Delaware limited partnership

By: IDB 21-25 GP Corp.,
a Delaware corporation, its general partner

By: /s/ Dana Griffin
Name: Dana Griffin
Title: Authorized Signatory

"**TENANT**"

GINKGO BIOWORKS, INC.,
a Delaware corporation

By: /s/ Barry Canton
Name: Barry Canton
Title: CTO

**Exhibit 31.1**

**CERTIFICATION 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, Jason Kelly, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Ginkgo Bioworks Holdings, 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)) 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) [Paragraph omitted pursuant to SEC Release Nos. 33-8238/34-47986 and 33-8392/34-49313];

   (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 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 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: August 15, 2022

By: /s/ Jason Kelly

Jason Kelly

*Chief Executive Officer*
*(Principal Executive Officer)*

**Exhibit 31.2**

**CERTIFICATION 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, Mark Dmytruk, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Ginkgo Bioworks Holdings, 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)) 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) [Paragraph omitted pursuant to SEC Release Nos. 33-8238/34-47986 and 33-8392/34-49313];

   (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 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 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: August 15, 2022

By: /s/ Mark Dmytruk

Mark Dmytruk

*Chief Financial Officer*

*(Principal Financial Officer)*

**Exhibit 32.1**

**CERTIFICATION PURSUANT TO**
**18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO**
**SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the filing of the Quarterly Report on Form 10-Q of Ginkgo Bioworks Holdings, Inc. (the "Company") for the quarterly period ended June 30, 2022 with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 15, 2022

By: /s/ Jason Kelly

Jason Kelly

*Chief Executive Officer*
*(Principal Executive Officer)*

**Exhibit 32.2**

**CERTIFICATION PURSUANT TO**
**18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO**
**SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the filing of the Quarterly Report on Form 10-Q of Ginkgo Bioworks Holdings, Inc. (the "Company") for the quarterly period ended June 30, 2022 with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 15, 2022

By: /s/ Mark Dmytruk

Mark Dmytruk

*Chief Financial Officer*

*(Principal Financial Officer)*