UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 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 March 31, 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: 001-34207

Dynavax Technologies Corporation
(Exact name of registrant as specified in its charter)

Delaware	**33-0728374**
(State or other jurisdiction of incorporation or organization)	**(IRS Employer Identification No.)**

2100 Powell Street, Suite 900
Emeryville, CA 94608
(510) 848-5100
(Address, including Zip Code, and telephone number, including area code, of the registrant's principal executive offices)

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

Title of each class:	**Trading symbol(s):**	**Name of each exchange on which registered:**
Common Stock, $0.001 par value	DVAX	The Nasdaq Stock Market LLC

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 registration 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, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer", "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☒	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 Act). Yes ☐ No ☒

As of May 2, 2022, the registrant had outstanding 126,312,469 shares of common stock.

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DYNAVAX TECHNOLOGIES CORPORATION

FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, which are subject to a number of risks and uncertainties. All statements that are not historical facts are forward-looking statements, including statements about the direct and indirect impact of the ongoing COVID-19 global pandemic on our business and operations, including sales of HEPLISAV-B®, our ability to successfully commercialize HEPLISAV-B, CpG 1018 adjuvant or any future product, our anticipated market opportunity and level of sales of HEPLISAV-B and CpG 1018 adjuvant, our ability to manufacture sufficient supply of HEPLISAV-B to meet future demand, our business, collaboration and regulatory strategy, our ability to successfully support the development, manufacture and commercialization of other vaccines containing our CpG 1018 adjuvant, including any current or potential vaccine or vaccine candidate for COVID-19 that stem from any of our collaborations, our ability to manufacture sufficient supply of CpG 1018 to meet potential future demand in connection with new vaccines, including COVID-19 vaccines, our ability to develop and expand our clinical research pipeline, our ability to meet regulatory requirements, uncertainty regarding our capital needs and future operating results and profitability, anticipated sources of funds, liquidity and cash needs, as well as our plans, objectives, strategies, expectations and intentions. These statements appear throughout this Quarterly Report on Form 10-Q and can be identified by the use of forward-looking language such as "may," "will," "should," "expect," "plan," "anticipate," "believe," "estimate," "predict," "future," or "intend," or the negative of these terms or other variations or comparable terminology.

Actual results may vary materially from those in our forward-looking statements as a result of various factors that are identified in "Item 1A —Risk Factors" and "Item 2—Management's Discussion and Analysis of Financial Condition and Results of Operations" and elsewhere in this document. No assurance can be given that the risk factors described in this Quarterly Report on Form 10-Q are all of the factors that could cause actual results to vary materially from the forward-looking statements. All forward-looking statements speak only as of the date of this Quarterly Report on Form 10-Q. Readers should not place undue reliance on these forward-looking statements and are cautioned that any such forward-looking statements are not guarantees of future performance. We assume no obligation to update any forward-looking statements.

This Quarterly Report on Form 10-Q includes trademarks and registered trademarks of Dynavax Technologies Corporation. Products or service names of other companies mentioned in this Quarterly Report on Form 10-Q may be trademarks or registered trademarks of their respective owners. References herein to "we," "our," "us," "Dynavax" or the "Company" refer to Dynavax Technologies Corporation and its subsidiaries.

RISK FACTOR SUMMARY

Below is a summary of material factors that make an investment in our securities speculative or risky. Importantly, this summary does not address all of the risks and uncertainties that we face. Additional discussion of the risks and uncertainties summarized in this risk factor summary, as well as other risks and uncertainties that we face, can be found in the more detailed discussion that follows this summary, and the below summary is qualified in its entirety by that more complete discussion of such risks and uncertainties. You should consider carefully the risks and uncertainties described herein as part of your evaluation of an investment in our securities:

- HEPLISAV-B has been launched in the United States, and approved in the European Union, and there is significant competition in these marketplaces. Since this is our first marketed product, the timing of uptake and distribution efforts are unpredictable and there is a risk that we may not achieve and sustain commercial success for HEPLISAV-B.
- Our business and operations have been and may continue to be adversely affected by the ongoing COVID-19 global pandemic. We have entered into collaborative relationships to develop vaccines utilizing our CpG 1018 adjuvant, including collaborations to develop vaccines for COVID-19. These collaborations may not be successful. If the combination of patents, trade secrets and other proprietary rights that we rely on to protect our intellectual property rights in CpG 1018 adjuvant or otherwise are inadequate, we may be unable to realize recurring commercial benefit from the development of any vaccines containing CpG 1018 adjuvant.
- Our financial results may vary significantly from quarter to quarter or may fall below the expectations of investors or securities analysts, each of which may adversely affect our stock price.
- We face uncertainty regarding coverage, pricing and reimbursement and the practices of third-party payors, which may make it difficult or impossible to sell certain of our products or product candidates on commercially reasonable terms.
- We are subject to ongoing United States Food and Drug Administration (“FDA”) and European Medicines Agency (“EMA”) post-marketing obligations concerning HEPLISAV-B, which may result in significant additional expense, and we may be subject to penalties if we fail to comply with regulatory requirements or experience unanticipated regulatory issues with HEPLISAV-B.
- If HEPLISAV-B or any products we develop are not accepted by the market or if regulatory agencies limit our labeling indications, require labeling content that diminishes market uptake of HEPLISAV-B or any other products we develop, or limit our marketing claims, we may be unable to generate significant revenues, if any.
- Many of our competitors have greater financial resources and expertise than we do. If we are unable to successfully compete with existing or potential competitors as a result of these disadvantages, we may be unable to generate sufficient or any revenues and our business will be harmed.
- Servicing our debt requires a significant amount of cash, and we may not have sufficient cash flow from our business to pay our substantial debt. Conversion of our Convertible Notes (defined below) may dilute the ownership interest of our stockholders or may otherwise depress the price of our common stock.
- Despite recent profitability, we have incurred annual net losses in most years since our inception and anticipate that we could continue to incur significant losses for the foreseeable future unless we can successfully commercialize HEPLISAV-B and/or continue to sell significant quantities of our CpG 1018 adjuvant, and if we are unable to sustain profitability, the market value of our common stock will likely decline. Until we are able to generate significant revenues or achieve profitability through product sales on a consistent basis, we may require substantial additional capital to finance our operations.
- We may develop, seek regulatory approval for and market HEPLISAV-B or any other product candidates we may develop outside the U.S. or Europe, requiring a significant commitment of resources. Failure to successfully manage our international operations could result in significant unanticipated costs and delays in regulatory approval or commercialization of our products or product candidates.
- Clinical trials for our commercial product and product candidates are expensive and time consuming, may take longer than we expect or may not be completed at all, and may have uncertain outcomes.
- As a biopharmaceutical company, we engage clinical research organizations (“CROs”) to conduct clinical studies, and failure by us or our CROs to conduct a clinical study in accordance with good clinical practice standards and other applicable regulatory requirements could result in disqualification of the applicable clinical trial from consideration in support of approval of a potential product.

- Regulatory authorities may require more clinical trials for our product candidates than we currently expect or are conducting before granting regulatory approval, if regulatory approval is granted at all. Our clinical trials may be extended which may lead to substantial delays in the regulatory approval process for our product candidates and may impair our ability to generate revenue from such product candidates.
- HEPLISAV-B and most of our earlier stage programs rely on oligonucleotide toll-like receptor ("TLR") agonists. In the event of serious adverse event data relating to TLR agonists, we may be required to reduce the scope of, or discontinue, our operations, or reevaluate the viability of strategic alternatives.
- As we plan for broader commercialization of HEPLISAV-B and for expanded capacity to manufacture our CpG 1018 adjuvant, our financial commitments to increase supply capacity might outpace actual demand for our products. Also, if we are unable to maintain our production operations in Düsseldorf, Germany, and our existing suppliers for CpG 1018 adjuvant, we would have to establish alternate qualified manufacturing capabilities, which could result in significant additional operating costs and delays in developing and commercializing HEPLISAV-B and any approved or potential vaccine utilizing CpG 1018. There can be no assurance that we, our existing suppliers, or other third parties will be able to produce CpG 1018 at a cost, quantity and quality sufficient to support our existing or any future collaborations.
- We rely on our facility in Düsseldorf, Germany and third parties to supply materials or perform processes necessary to manufacture HEPLISAV-B. We rely on a limited number of suppliers to produce the oligonucleotides we require for development and commercialization. Additionally, we and our collaborators have limited experience in manufacturing our products and product candidates in commercial quantities. With respect to HEPLISAV-B, we use a pre-filled syringe presentation of the vaccine and our ability to meet future demand will depend on our or our contract manufacturer's ability to provide sufficient supply in this presentation.
- As we continue to grow as a commercial organization and enter into supply agreements with customers and collaborators, those supply agreements will have obligations to deliver product for which we are reliant upon third parties to manufacture on our behalf.
- HEPLISAV-B is subject to regulatory obligations and continued regulatory review, and if we receive regulatory approval for our other product candidates, we will be subject to ongoing FDA and foreign regulatory obligations and continued regulatory review for such products.
- A key part of our business strategy for products in development is to establish collaborative relationships to help fund or manage development and commercialization of our product candidates and research programs. We may not succeed in establishing and maintaining collaborative relationships, which may significantly limit our ability to continue to develop and commercialize those products and programs, if at all. These relationships may not succeed on expected timelines, or at all.
- We rely on CROs and clinical sites and investigators for our clinical trials. If these third parties do not fulfill their contractual obligations or meet expected deadlines, our planned clinical trials may be delayed and we may fail to obtain the regulatory approvals necessary to commercialize our product candidates.
- As we focus on commercialization of HEPLISAV-B, we may encounter difficulties in managing our commercial growth and expanding our operations successfully.
- The loss of key personnel could delay or prevent achieving our objectives. In addition, our continued growth to support commercialization may result in difficulties in managing our growth and expanding our operations successfully.
- If third parties successfully assert that we have infringed their patents and proprietary rights or challenge our patents and proprietary rights, we may become involved in intellectual property disputes and litigation that would be costly, time consuming and delay or prevent development or commercialization of our product candidates.
- Future sales of our common stock or the perception that such sales may occur in the public market could cause our stock price to fall.

PART I. FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

Dynavax Technologies Corporation
Condensed Consolidated Balance Sheets
(In thousands, except per share amounts)

	March 31, 2022 (unaudited)	December 31, 2021 (Note 1)
Assets		
Current assets:		
Cash and cash equivalents	$ 179,421	$ 436,189
Marketable securities available-for-sale	323,795	109,761
Accounts receivables, net	133,968	116,216
Other receivables	2,968	15,600
Inventories, net	79,038	61,335
Prepaid manufacturing	138,330	159,655
Prepaid expenses and other current assets	82,995	73,764
Total current assets	940,515	972,520
Property and equipment, net	36,407	35,020
Operating lease right-of-use assets	26,310	25,964
Goodwill	2,082	2,125
Restricted cash	214	219
Other assets	3,447	3,398
Total assets	$ 1,008,975	$ 1,039,246
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 20,194	$ 2,600
Accrued research and development	6,359	4,688
CEPI accrual	107,370	128,848
Accrued liabilities	16,108	49,796
Warrant liability	-	18,016
Deferred revenue	313,203	349,864
Other current liabilities	2,969	2,590
Total current liabilities	466,203	556,402
Convertible Notes, net of debt discount of $4,741 and $5,010 at March 31, 2022 and December 31, 2021, respectively	220,759	220,490
Long-term portion of lease liabilities	34,253	34,316
Other long-term liabilities	276	5,664
Total liabilities	721,491	816,872
Commitments and contingencies (Note 5)		
Stockholders' equity:		
Common stock: $0.001 par value; 278,000 shares authorized at March 31, 2022 and December 31, 2021; 126,297 shares and 122,945 shares issued and outstanding at March 31, 2022 and December 31, 2021, respectively	126	123
Additional paid-in capital	1,476,013	1,441,868
Accumulated other comprehensive loss	(4,163)	(2,266)
Accumulated deficit	(1,184,492)	(1,217,351)
Total stockholders' equity	287,484	222,374
Total liabilities and stockholders' equity	$ 1,008,975	$ 1,039,246

See accompanying notes.

Dynavax Technologies Corporation
Condensed Consolidated Statements of Operations
(In thousands, except per share amounts)
(Unaudited)

	Three Months Ended March 31,	
	2022	2021
Revenues:		
Product revenue, net	$ 112,327	$ 82,885
Other revenue	1,665	450
Total revenues	113,992	83,335
Operating expenses:		
Cost of sales - product	39,962	24,625
Research and development	11,095	7,758
Selling, general and administrative	32,172	22,423
Total operating expenses	83,229	54,806
Income from operations	30,763	28,529
Other income (expense):		
Interest income	261	47
Interest expense	(1,680)	(4,712)
Sublease income	1,609	2,022
Change in fair value of warrant liability (Note 10)	1,801	(25,552)
Other	105	557
Net income	32,859	891
Net income per share attributable to common stockholders		
Basic	$ 0.26	$ 0.01
Diluted	$ 0.22	$ 0.01
Weighted-average shares used in computing net income per share attributable to common stockholders:		
Basic	124,555	112,035
Diluted	149,425	113,469

Condensed Consolidated Statements of Comprehensive Loss
(In thousands)
(Unaudited)

	Three Months Ended March 31,	
	2022	2021
Net income	$ 32,859	$ 891
Other comprehensive loss, net of tax:		
Change in unrealized gain (loss) on marketable securities available-for-sale	(1,272)	(9)
Foreign currency translation adjustments	(625)	(1,390)
Total other comprehensive loss	(1,897)	(1,399)
Total comprehensive income	$ 30,962	$ (508)

See accompanying notes.

Dynavax Technologies Corporation
Condensed Consolidated Statements of Stockholders' Equity
(In thousands)
(Unaudited)

Three Months Ended March 31, 2022	Common Stock Shares	Common Stock Par Amount	Preferred Stock Shares	Preferred Stock Par Amount	Additional Paid-In Capital	Accumulated Other Comprehensive (Loss) Income	Accumulated Deficit	Total Stockholders' Equity
Balances at December 31, 2021	122,945	$ 123	-	$ -	$ 1,441,868	$ (2,266)	$ (1,217,351)	$ 222,374
Issuance of common stock upon exercise of stock options and/or release of restricted stock awards, net	1,391	1	-	-	1,121	-	-	1,122
Issuance of common stock upon exercise of warrants	1,879	2	-	-	24,668	-	-	24,670
Issuance of common stock under Employee Stock Purchase Plan	82	-	-	-	710	-	-	710
Stock compensation expense	-	-	-	-	7,646	-	-	7,646
Total other comprehensive loss	-	-	-	-	-	(1,897)	-	(1,897)
Net income	-	-	-	-	-	-	32,859	32,859
Balances at March 31, 2022	126,297	$ 126	-	$ -	$ 1,476,013	$ (4,163)	$ (1,184,492)	$ 287,484

Three Months Ended March 31, 2021	Common Stock Shares	Common Stock Par Amount	Preferred Stock Shares	Preferred Stock Par Amount	Additional Paid-In Capital	Accumulated Other Comprehensive (Loss) Income	Accumulated Deficit	Total Stockholders' Equity
Balances at December 31, 2020	110,190	$ 110	4	$ -	$ 1,352,374	$ 273	$ (1,294,064)	$ 58,693
Issuance of common stock upon exercise of warrants	750	1	-	-	7,927	-	-	7,928
Issuance of common stock upon exercise of stock options and/or release of restricted stock awards, net	640				387			387
Issuance of common stock under Employee Stock Purchase Plan	104	-	-	-	383	-	-	383
Issuance of common stock, net of issuance costs, in conjunction with an At Market Sales Agreement (see Note 10)	2,879	3	-	-	28,153	-	-	28,156
Stock compensation expense	-	-	-	-	4,723	-	-	4,723
Total other comprehensive income	-	-	-	-	-	(1,399)	-	(1,399)
Net income	-	-	-	-	-	-	891	891
Balances at March 31, 2021	114,563	$ 114	4	$ -	$ 1,393,947	$ (1,126)	$ (1,293,173)	$ 99,762

See accompanying notes.

Dynavax Technologies Corporation
Condensed Consolidated Statements of Cash Flows
(In thousands)
(Unaudited)

	Three Months Ended March 31,	
	2022	**2021**
Operating activities		
Net income	$ 32,859	$ 891
Adjustments to reconcile net income to net cash (used in) provided by operating activities:		
Depreciation and amortization	985	1,106
Amortization of right-of-use assets and loss on disposal of property and equipment	743	653
(Accretion of discounts) amortization of premium on marketable securities	(181)	221
Change in fair value of warrant liability	(1,801)	25,552
Stock compensation expense	7,646	4,723
Non-cash interest expense	1,680	414
Changes in operating assets and liabilities:		
Accounts and other receivables, net	(5,120)	(61,333)
Inventories, net	(17,703)	(5,157)
Prepaid manufacturing	21,325	(3,219)
Prepaid expenses and other current assets	(9,231)	(171)
Other assets	(49)	(95)
Accounts payable	16,938	(295)
CEPI accrual	(21,478)	-
Lease liabilities	(806)	(751)
Deferred revenue	(36,661)	78,340
Accrued liabilities and other liabilities	(39,589)	(2,847)
Net cash (used in) provided by operating activities	(50,443)	38,032
Investing activities		
Purchases of marketable securities	(250,375)	(72,016)
Proceeds from maturities and redemptions of marketable securities	35,250	51,130
Purchases of property and equipment, net	(1,358)	(1,747)
Net cash used in investing activities	(216,483)	(22,633)
Financing activities		
Proceeds from issuance of common stock, net	-	28,156
Proceeds from warrants exercises	8,455	3,377
Proceeds from exercise of stock options and/or release of restricted stock awards, net	1,122	387
Proceeds from Employee Stock Purchase Plan	710	383
Net cash provided by financing activities	10,287	32,303
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(134)	(731)
Net (decrease) increase in cash, cash equivalents and restricted cash	(256,773)	46,971
Cash, cash equivalents and restricted cash at beginning of period	436,408	32,310
Cash, cash equivalents and restricted cash at end of period	$ 179,635	$ 79,281
Supplemental disclosure of cash flow information		
Cash paid during the period for income taxes	$ 87	$ -
Cash paid during the period for interest	$ -	$ 4,296
Non-cash investing and financing activities:		
Purchases of property and equipment, not yet paid	$ 2,007	$ 411
Right-of-use assets obtained in exchange of lease liabilities (modification)	$ 1,173	$ -

See accompanying notes.

1. Organization and Summary of Significant Accounting Policies

Dynavax Technologies Corporation (“we,” “our,” “us,” “Dynavax” or the “Company”), is a commercial stage biopharmaceutical company focused on developing and commercializing innovative vaccines. Our first marketed product, HEPLISAV-B® (Hepatitis B Vaccine (Recombinant), Adjuvanted) is approved in the United States and the European Union for prevention of infection caused by all known subtypes of hepatitis B virus in adults age 18 years and older. We also manufacture and sell CpG 1018®, the adjuvant used in HEPLISAV-B, and have established a portfolio of global commercial supply agreements in the development of COVID-19 vaccines across a variety of vaccine platforms. Additionally, we are advancing a multi-program clinical pipeline leveraging CpG 1018 adjuvant to develop improved vaccines in indications with unmet medical needs including phase 1 clinical trials in Tdap and shingles, and a phase 2 clinical trial in plague in collaboration with and fully funded by the U.S. Department of Defense ("DoD").

Basis of Presentation

Our accompanying unaudited condensed consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles (“GAAP”) for interim financial information and pursuant to the instructions to Form 10-Q and Article 10 of Regulation S-X. In our opinion, these unaudited condensed consolidated financial statements include all adjustments, consisting of normal recurring adjustments, which we consider necessary to present fairly our financial position and the results of our operations and cash flows. As permitted under those rules, certain footnotes or other financial information that are normally required by GAAP have been condensed or omitted. Interim-period results are not necessarily indicative of results of operations or cash flows to be expected for a full-year period or any other interim-period. The condensed consolidated balance sheet as of December 31, 2021 has been derived from audited financial statements at that date, but excludes disclosures required by GAAP for complete financial statements.

The unaudited condensed consolidated financial statements and these notes should be read in conjunction with the audited consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2021, as filed with the Securities and Exchange Commission (the “SEC”).

The unaudited condensed consolidated financial statements include the accounts of Dynavax and our wholly-owned subsidiaries, Dynavax GmbH located in Düsseldorf, Germany and Dynavax India LLP in India. All significant intercompany accounts and transactions among these entities have been eliminated from the condensed consolidated financial statements. We operate in one business segment: discovery, development and commercialization of novel vaccines.

Use of Estimates

The preparation of condensed consolidated financial statements in conformity with GAAP requires management to make informed estimates and assumptions that may affect the amounts reported in the condensed consolidated financial statements and accompanying notes, including amounts of revenues and expenses during the reported periods. Management’s estimates are based on historical information available as of the date of the condensed consolidated financial statements and various other assumptions we believe are reasonable under the circumstances. On an ongoing basis, we evaluate our estimates, judgments and methodologies. Significant estimates and assumptions in the condensed consolidated financial statements include those related to revenue recognition; accounts receivable; useful lives of long-lived assets, impairment of long-lived assets, including goodwill; valuation procedures for right-of-use assets and operating lease liabilities; valuation of inventory; fair value of warrants; balance sheet classification of Convertible Notes; income taxes, including the valuation allowance for deferred tax assets; research and development expenses; contingencies and share-based compensation. We base our estimates on historical experience and on various other assumptions that are believed to be reasonable, the results of which form the basis for making judgments about the carrying values of assets and liabilities. Actual results may differ materially from these estimates under different assumptions or conditions and could be further impacted by the COVID-19 pandemic. Changes in estimates are reflected in reported results in the period in which they become known.

Summary of Significant Accounting Policies

Revenue Recognition

We recognize revenue when the customer obtains control of promised goods or services, in an amount that reflects the consideration which we expect to receive in exchange for those goods or services. To determine revenue recognition for arrangements that we determine are within the scope of Accounting Standards Codification (“ASC”) 606, we perform the following five steps: (i)

identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) we satisfy a performance obligation. We only apply the five-step model to contracts when it is probable that we will collect the consideration we are entitled to in exchange for the goods or services we transfer to the customer. At contract inception, once the contract is determined to be within the scope of ASC 606, we assess the goods or services promised within each contract and determine those that are performance obligations, and assess whether each promised good or service is distinct. We then recognize as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) the performance obligation is satisfied.

Product Revenue, Net – HEPLISAV-B

We sell HEPLISAV-B to a limited number of wholesalers and specialty distributors in the U.S. (collectively, our "Customers").

Revenues from product sales are recognized when we have satisfied our performance obligation, which is the transfer of control of our product upon delivery to the Customer. The timing between the recognition of revenue for product sales and the receipt of payment is not significant. Because our standard credit terms are short term and we expect to receive payment in less than one-year, there is no significant financing component on the related receivables. Taxes collected from Customers relating to product sales and remitted to governmental authorities are excluded from revenues. Since our performance obligation is part of a contract that has an original expected duration of one year or less, we elect not to disclose the information about our remaining performance obligations.

Overall, product revenue, net, reflects our best estimates of the amount of consideration to which we are entitled based on the terms of the contract. The amount of variable consideration is included in the net sales price only to the extent that it is probable that a significant reversal in the amount of the cumulative revenue recognized will not occur in a future period. If our estimates differ significantly from actuals, we will record adjustments that would affect product revenue, net in the period of adjustment.

Reserves for Variable Consideration

Revenues from product sales are recorded at the net sales price, which includes estimates of variable consideration such as product returns, chargebacks, discounts, rebates and other fees that are offered within contracts between us and our Customers, healthcare providers, pharmacies and others relating to our product sales. We estimate variable consideration using either the most likely amount method or the expected value method, depending on the type of variable consideration and what method better predicts the amount of consideration we expect to receive. We take into consideration relevant factors such as industry data, current contractual terms, available information about Customers' inventory, resale and chargeback data and forecasted customer buying and payment patterns, in estimating each variable consideration. The variable consideration is recorded at the time product sales is recognized, resulting in a reduction in product revenue and a reduction in accounts receivable (if the Customer offsets the amount against its accounts receivable) or as an accrued liability (if we pay the amount through our accounts payable process). Variable consideration requires significant estimates, judgment and information obtained from external sources. The amount of variable consideration is included in the net sales price only to the extent that it is probable that a significant reversal in the amount of the cumulative revenue recognized will not occur in a future period. If our estimates differ significantly from actuals, we will record adjustments that would affect product revenue, net in the period of adjustment. If we were to change any of these judgments or estimates, it could cause a material increase or decrease in the amount of revenue that we report in a particular period. We evaluate our estimates of variable considerations including, but not limited to, product returns, chargebacks and rebates, periodically or when there is an event or change in circumstances that may indicate that our estimates may change. For the three months ended March 31, 2022 and 2021, there were no material adjustments to these estimates recognized.

Product Returns: Consistent with industry practice, we offer our Customers a limited right of return based on the product's expiration date for product that has been purchased from us. We estimate the amount of our product sales that may be returned by our Customers and record this estimate as a reduction of revenue in the period the related product revenue is recognized. We consider several factors in the estimation of potential product returns including expiration dates of the product shipped, the limited product return rights, available information about Customers' inventory and other relevant factors.

Chargebacks: Our Customers subsequently resell our product to healthcare providers, pharmacies and others. In addition to distribution agreements with Customers, we enter into arrangements with qualified healthcare providers that provide for chargebacks and discounts with respect to the purchase of our product. Chargebacks represent the estimated obligations resulting from contractual commitments to sell product to qualified healthcare providers at prices lower than the list prices charged to Customers who directly purchase the product from us. Customers charge us for the difference between what they pay for the product and the ultimate selling price to the qualified healthcare providers. These reserves are established in the same period that the related revenue is recognized, resulting in a reduction of product revenue and accounts receivable. Chargeback amounts are determined at the time of resale to the qualified healthcare providers by Customers, and we issue credits for such amounts generally within a few weeks of the Customer's notification to us of the resale. Reserves for chargebacks consists of credits that we expect to issue for units that remain in the

distribution channel inventories at each reporting period end that we expect will be sold to the qualified healthcare providers, and chargebacks for units that our Customers have sold to the qualified healthcare providers, but for which credits have not been issued.

Trade Discounts and Allowances: We provide our Customers with discounts which include early payment incentives that are explicitly stated in our contracts, and are recorded as a reduction of revenue in the period the related product revenue is recognized.

Distribution Fees: Distribution fees include fees paid to certain Customers for sales order management, data and distribution services. Distribution fees are recorded as a reduction of revenue in the period the related product revenue is recognized.

Rebates: Under certain contracts, customers may obtain rebates for purchasing minimum volumes of our product. We estimate these rebates based upon the expected purchases and the contractual rebate rate and record this estimate as a reduction in revenue in the period the related revenue is recognized.

Product Revenue, Net – CpG 1018

We also sell our innovative adjuvant, CpG 1018, to our collaboration partners for use in their development and/or commercialization of COVID-19 vaccines. We have determined that our collaboration partners meet the definition of customers under ASC 606. Therefore, we accounted for our CpG 1018 adjuvant sales under ASC 606. Revenues from product sales are recognized when we have satisfied our performance obligation, which is the transfer of control of our product to the customer. Because the timing between the recognition of revenue for product sales and the receipt of payment is less than one year, there is no significant financing component on the related receivables. Since our performance obligation is part of a contract that has an original expected duration of one year or less, we elect not to disclose the information about our remaining performance obligations.

Overall, product revenue, net, reflects our best estimates of the amount of consideration to which we are entitled based on the terms of the contract. The amount of consideration is included in the net sales price only to the extent that it is probable that a significant reversal in the amount of the cumulative revenue recognized will not occur in a future period. If our estimates differ significantly from actuals, we will record adjustments that would affect product revenue, net in the period of adjustment.

Other Revenue

Other revenue includes revenue from our agreement with the DoD, grant, collaboration and manufacturing service revenue. We have entered into grant agreements, collaborative arrangements and arrangements to provide manufacturing services to other companies. Such arrangements may include promises to customers which, if capable of being distinct, are accounted for as separate performance obligations. For agreements with multiple performance obligations, we allocate estimated revenue to each performance obligation at contract inception based on the estimated transaction price of each performance obligation. Revenue allocated to each performance obligation is then recognized when we satisfy the performance obligation by transferring control of the promised good or service to the customer.

Inventories, net

HEPLISAV-B Inventories, net

Inventory is stated at the lower of cost or estimated net realizable value, on a first-in, first-out ("FIFO") basis. We primarily use actual costs to determine our cost basis for inventories. Our assessment of market value requires the use of estimates regarding the net realizable value of our inventory balances, including an assessment of excess or obsolete inventory. We determine excess or obsolete inventory based on multiple factors, including an estimate of the future demand for our products, product expiration dates and current sales levels. Our assumptions of future demand for our products are inherently uncertain and if we were to change any of these judgments or estimates, it could cause a material increase or decrease in the amount of inventory reserves that we report in a particular period. For the three months ended March 31, 2022 and 2021, there were no inventory reserves recognized.

We consider regulatory approval of product candidates to be uncertain and product manufactured prior to the required regulatory approval may not be sold unless regulatory approval is obtained. As such, the manufacturing costs for product candidates incurred prior to regulatory approval are not capitalized as inventory but are expensed as research and development costs. We begin capitalization of these inventory related costs once regulatory approval is obtained.

CpG 1018 Inventories, net

Inventory is stated at the lower of cost or estimated net realizable value, on a FIFO basis. We primarily use actual costs to determine our cost basis for inventories. Our assessment of market value requires the use of estimates regarding the net realizable value of our inventory balances, including an assessment of excess or obsolete inventory. We determine excess or obsolete inventory based on multiple factors, including an estimate of the future demand for our products, product expiration dates and current sales levels. Our assumptions of future demand for our products are inherently uncertain and if we were to change any of these judgments or estimates, it could cause a material increase or decrease in the amount of inventory reserves that we report in a particular period.

Convertible Notes

We account for our 2.50% convertible senior notes due 2026 (“Convertible Notes”), see Note 7, as a long-term liability equal to the proceeds received from issuance, including the embedded conversion feature, net of the unamortized debt issuance and offering costs on the condensed consolidated balance sheets. We evaluate all conversion, repurchase and redemption features contained in a debt instrument to determine if there are any embedded features that require bifurcation as a derivative. The conversion feature is not required to be accounted for separately as an embedded derivative. We amortize debt issuance and offering costs over the contractual term of the Convertible Notes, using the effective interest method, as interest expense on the condensed consolidated statements of operations.

Capped Calls

We evaluate financial instruments under ASC 815. The capped call transactions purchased in connection with the Convertible Notes financing ("Capped Calls") cover the same number of shares of common stock that initially underlie the Convertible Notes (subject to anti-dilution and certain other adjustments). The Capped Calls meet the definition of derivative under ASC 815. In addition, the Capped Calls meet the conditions in ASC 815 to be classified in stockholders’ equity and are not subsequently remeasured as long as the conditions for the equity classification continue to be met.

Recent Accounting Pronouncements

Accounting Standards Update 2016-13

In June 2016, the Financial Accounting Standards Board (“FASB”) issued ASU No. 2016-13, Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses of Financial Instruments. The standard changes the methodology for measuring credit losses on financial instruments and the timing of when such losses are recorded. For public business entities, excluding smaller reporting companies, this ASU is effective for fiscal years beginning after December 15, 2019. Furthermore, the one-time determination of whether an entity is eligible to be a smaller reporting company shall be based on an entity’s most recent determination as of November 15, 2019, in accordance with SEC regulations. Because we were a smaller reporting company based on the most recent determination as of November 15, 2019, this ASU and its subsequent updates, will be effective for fiscal years beginning after December 15, 2022. We are currently evaluating the impact this standard will have on our condensed consolidated financial statements.

2. Fair Value Measurements

We measure fair value as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. The accounting standard describes a fair value hierarchy based on three levels of inputs, of which the first two are considered observable and the last unobservable, that may be used to measure fair value which are the following:

- Level 1—Observable inputs, such as quoted prices in active markets for identical assets or liabilities;
- Level 2—Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities; and
- Level 3—Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities; therefore, requiring an entity to develop its own valuation techniques and assumptions.

Assets and liabilities are classified based on the lowest level of input that is significant to the fair value measurements. We review the fair value hierarchy classification on a quarterly basis. Changes in the ability to observe valuation inputs may result in a reclassification of levels for certain assets or liabilities within the fair value hierarchy. There were no transfers between Level 1, 2 and 3 during the three months ended March 31, 2022.

The carrying amounts of cash equivalents, accounts and other receivables, accounts payable and accrued liabilities are considered reasonable estimates of their respective fair value because of their short-term nature.

Recurring Fair Value Measurements

The following table represents the fair value hierarchy for our financial assets (cash equivalents and marketable securities) and liabilities measured at fair value on a recurring basis (in thousands):

	Level 1	Level 2	Level 3	Total
March 31, 2022				
Assets				
Money market funds	$ 146,046	$ -	$ -	$ 146,046
U.S. treasuries	-	25,076	-	25,076
U.S. government agency securities	-	16,519	-	16,519
Corporate debt securities	-	307,189	-	307,189
Total assets	$ 146,046	$ 348,784	$ -	$ 494,830

	Level 1	Level 2	Level 3	Total
December 31, 2021				
Assets				
Money market funds	$ 429,194	$ -	$ -	$ 429,194
U.S. treasuries	-	4,004	-	4,004
U.S. government agency securities	-	26,548	-	26,548
Corporate debt securities	-	79,209	-	79,209
Total assets	$ 429,194	$ 109,761	$ -	$ 538,955
Liabilities				
Warrant liability	$ -	$ -	$ 18,016	$ 18,016

Money market funds are highly liquid investments and are actively traded. The pricing information on these investment instruments is readily available and can be independently validated as of the measurement date. This approach results in the classification of these securities as Level 1 of the fair value hierarchy.

U.S. treasuries, U.S. government agency securities and corporate debt securities are measured at fair value using Level 2 inputs. We review trading activity and pricing for these investments as of each measurement date. When sufficient quoted pricing for identical securities is not available, we use market pricing and other observable market inputs for similar securities obtained from various third-party data providers. These inputs represent quoted prices for similar assets in active markets or these inputs have been derived from observable market data. This approach results in the classification of these securities as Level 2 of the fair value hierarchy.

Warrants were issued in connection with the underwritten public offering in August 2019 and are accounted for as a derivative liability at fair value (see Note 10). As of March 31, 2022, all 1,882,600 of the outstanding warrants as of December 31, 2021 have been exercised or expired.

The following table provides a summary of changes in the fair value warrant liability for the three months ended March 31, 2022 (in thousands):

Balance at December 31, 2021	$ 18,016
Decrease in fair value of warrants exercised and/or expired	(1,801)
Warrants exercised and/or expired	(16,215)
Balance at March 31, 2022	$ -

Convertible Notes

As of March 31, 2022, the fair value of the Convertible Notes was $303.1 million. The fair value was estimated using a reputable third-party valuation model based on observable inputs and is considered Level 2 in the fair value hierarchy (see Note 7).

3. Cash, Cash Equivalents, Restricted Cash and Marketable Securities

The following table provides a reconciliation of cash, cash equivalents and restricted cash reported within the condensed consolidated balance sheets that sum to the total of the same amounts shown in the condensed consolidated statements of cash flows (in thousands):

	March 31, 2022	December 31, 2021	March 31, 2021	December 31, 2020
Cash and cash equivalents	$ 179,421	$ 436,189	$ 79,055	$ 32,073
Restricted cash	214	219	226	237
Total cash, cash equivalents and restricted cash shown in the condensed consolidated statements of cash flows	$ 179,635	$ 436,408	$ 79,281	$ 32,310

Restricted cash balances relate to certificates of deposit issued as collateral to certain letters of credit issued as security to our facility leases (see Note 5).

Cash, cash equivalents and marketable securities consist of the following (in thousands):

	Amortized Cost	Unrealized Gains	Unrealized Losses	Estimated Fair Value
March 31, 2022				
Cash and cash equivalents:				
Cash	$ 8,386	$ -	$ -	$ 8,386
Money market funds	146,046	-	-	146,046
Corporate debt securities	24,988	1	-	24,989
Total cash and cash equivalents	179,420	1	-	179,421
Marketable securities available-for-sale:				
U.S. treasuries	25,087	-	(11)	25,076
U.S. government agency securities	16,533	-	(14)	16,519
Corporate debt securities	283,447	-	(1,247)	282,200
Total marketable securities available-for-sale	325,067	-	(1,272)	323,795
Total cash, cash equivalents and marketable securities	$ 504,487	$ 1	$ (1,272)	$ 503,216
December 31, 2021				
Cash and cash equivalents:				
Cash	$ 6,995	$ -	$ -	$ 6,995
Money market funds	429,194	-	-	429,194
Total cash and cash equivalents	436,189	-	-	436,189
Marketable securities available-for-sale:				
U.S. treasuries	4,005	-	(1)	4,004
U.S. government agency securities	26,555	-	(7)	26,548
Corporate debt securities	79,200	9	-	79,209
Total marketable securities available-for-sale	109,760	9	(8)	109,761
Total cash, cash equivalents and marketable securities	$ 545,949	$ 9	$ (8)	$ 545,950

The maturities of our marketable securities available-for-sale are as follows (in thousands):

	March 31, 2022	
	Amortized Cost	Estimated Fair Value
Mature in one year or less	$ 325,067	$ 323,795
Mature after one year through two years	-	-
	$ 325,067	$ 323,795

We have classified our entire investment portfolio as available-for-sale and available for use in current operations and accordingly have classified all investments as short-term. Available-for-sale securities are carried at fair value based on inputs that are observable, either directly or indirectly, such as quoted market prices for similar securities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the securities, with unrealized gains and losses included in accumulated other comprehensive loss in stockholders' equity. Realized gains and losses and declines in value, if any, judged to be other than temporary on available-for-sale securities are included in interest income or expense. The cost of securities sold is based on the specific identification method. Management assesses whether declines in the fair value of investment securities are other than temporary. In determining whether a decline is other than temporary, management considers the following factors:

- whether the investment has been in a continuous unrealized loss position for over 12 months;
- the duration to maturity of our investments;
- our intention and ability to hold the investment to maturity and if it is not more likely than not that we will be required to sell the investment before recovery of the amortized cost bases;
- the credit rating, financial condition and near-term prospects of the issuer; and
- the type of investments made.

There were no realized gains or losses from the sale of marketable securities during the three months ended March 31, 2022 and 2021. Investments with unrealized losses longer than 12 months were insignificant as of March 31, 2022. We do not intend to sell, and are not required to sell, the investments that are in an unrealized loss position before recovery of their amortized cost basis. As such, there have been no declines in fair value that have been identified as other than temporary.

4. Inventories, net

The following table presents inventories, net (in thousands):

	March 31, 2022	December 31, 2021
Raw materials	$ 27,758	$ 26,637
Work-in-process	22,793	14,748
Finished goods	28,487	19,950
Total	$ 79,038	$ 61,335

As of March 31, 2022 and December 31, 2021, included in finished goods inventory was $13.5 million and $18.6 million of HEPLISAV-B inventory, respectively. The remaining balance in finished goods inventory was CpG 1018 adjuvant for our collaboration partners.

We recorded prepaid manufacturing costs related to prepayments made to third-party manufacturers of CpG 1018 adjuvant, of $138.3 million and $159.7 million as of March 31, 2022 and December 31, 2021, respectively. We expect these costs to be converted into inventory within the next twelve months.

5. Commitments and Contingencies

Leases

We lease our facilities in Emeryville, California and Düsseldorf, Germany.

In July 2019, we entered into a sublease for office space located at 2100 Powell Street, Suite 900, Emeryville, California (the "Powell Street Sublease") for our corporate headquarters. Under the terms of the Powell Street Sublease, we are leasing 23,976 square feet at the rate of $3.90 per square foot, paid on a monthly basis. Rent is subject to scheduled annual increases, and we are responsible for certain operating expenses and taxes throughout the life of the Powell Street Sublease. The Powell Street Sublease will continue until June 30, 2022. There is no option to extend the sublease term.

In March 2022, we entered into a lease agreement ("Powell Street Lease") for office space located at 2100 Powell Street, Suite 720, Emeryville, California. The purpose of the Powell Street Lease is to replace the Powell Street Sublease which expires June 30, 2022. The Powell Street Lease will commence on the later of (a) June 1, 2022 or (b) the date the landlord delivers the premise to us in

the required condition ("Powell Street Commencement Date"). Under the Powell Street Lease, we are leasing 8,053 square feet at the rate of $4.65 per square foot, paid on a monthly basis. The first two monthly rent payments following the Powell Street Commencement Date will be abated. Rent is subject to scheduled annual increases, and we are responsible for certain operating expenses and taxes throughout the life of the Powell Street Lease. The Powell Street Lease will continue until July 31, 2025. There is no option to extend the lease term.

In September 2018, we entered into a lease ("Horton Street Master Lease") for office and laboratory space located at 5959 Horton Street, Emeryville, California ("Horton Street Premises"). Under the terms of the Horton Street Master Lease, we are leasing 75,662 square feet at the rate of $4.75 per square foot, paid on a monthly basis, starting on April 1, 2019 ("Horton Street Commencement Date"). Rent is subject to scheduled annual increases, and we are also responsible for certain operating expenses and taxes throughout the life of Horton Street Master Lease. In connection with the Horton Street Master Lease, we have received tenant improvement allowance totaling $8.1 million through March 31, 2022. The Horton Street Master Lease has an initial term of 12 years, following the Horton Street Commencement Date with an option to extend the lease for two successive five-year terms. The optional periods were not included in the lease term used in determining the right-of-use asset or the lease liability as we did not consider it reasonably certain that we would exercise the options. The operating lease right-of-use assets and liabilities on our March 31, 2022 condensed consolidated balance sheets primarily relate to the Horton Street Master Lease. Lease expense related to the Horton Street Master Lease is included in operating expense in our condensed consolidated statements of operations.

In connection with the organizational restructuring in May 2019, we did not occupy the Horton Street Premises and in July 2019, we entered into an agreement to sublease the Horton Street Premises to a third party ("Horton Street Sublease"). Under the terms of the Horton Street Sublease, we are subleasing the entire 75,662 rentable square feet at the rate of $5.50 per square foot, paid on a monthly basis. Rent is subject to scheduled annual increases and the subtenant ("Horton Street Subtenant") is responsible for certain operating expenses and taxes throughout the life of the Horton Street Sublease. The Horton Street Sublease term is until March 31, 2031, unless earlier terminated, concurrent with the term of our Horton Street Master Lease. The Horton Street Subtenant has no option to extend the sublease term. Sublease income for the three months ended March 31, 2022 and 2021 were $1.6 million and $2.0 million, respectively. Sublease income is included in other income (expense) in our condensed consolidated statements of operations.

Under the terms of the Horton Street Master Lease, rent received from the Horton Street Subtenant in excess of rent paid to the landlord shall be shared by paying the landlord 50% of the excess rent. The excess rent is considered a variable lease payment and the total estimated payments are being recognized as additional rent expense on a straight-line basis.

In September 2021, we entered into a commercial lease agreement in Düsseldorf, Germany (the "New Düsseldorf Lease") for the same space that we were previously leasing in Düsseldorf, Germany with the same landlord. The New Düsseldorf Lease became effective on January 1, 2022. The New Düsseldorf Lease has an initial term of 10 years, beginning on January 1, 2022, with an option to extend the lease for two successive five-year terms. The optional periods were not included in the lease term used in determining the right-of-use assets and liabilities as we did not consider it reasonably certain that we would exercise the options. Beginning on January 1, 2024, the base rent is subject to an annual increase at the same percentage of Consumer Price Index of Germany. We are also responsible for certain operating expenses and taxes throughout the life of the New Düsseldorf Lease.

Our lease expense comprises of the following (in thousands):

	Three Months Ended March 31,	
	2022	2021
Operating lease expense	$ 1,607	$ 1,560

Cash paid for amounts included in the measurement of lease liabilities for each of the three months ended March 31, 2022 and 2021 was $1.7 million and was included in change in lease liabilities in our condensed consolidated statement of cash flows.

The balance sheet classification of our operating lease liabilities was as follows (in thousands):

	March 31, 2022	December 31, 2021
Operating lease liabilities:		
Current portion of lease liabilities (included in other current liabilities)	$ 2,969	$ 2,577
Long-term portion of lease liabilities	34,253	34,316
Total operating lease liabilities	$ 37,222	$ 36,893

As of March 31, 2022, the maturities of our sublease income and operating lease liabilities were as follows (in thousands):

Years ending December 31,	Sublease Income	Operating Lease Liabilities
2022 (remaining)	$ 4,033	$ 4,865
2023	5,518	6,311
2024	5,684	6,469
2025	5,854	6,093
2026	6,030	5,899
Thereafter	27,712	27,350
Total	$ 54,831	56,987
Less:		
Present value adjustment		(19,765)
Total		$ 37,222

The weighted average remaining lease term and the weighted average discount rate used to determine the operating lease liability were as follows:

	March 31, 2022	December 31, 2021
Weighted average remaining lease term	8.5 years	9.1 years
Weighted average discount rate	10.1%	10.1%

Commitments

As of March 31, 2022, our material non-cancelable purchase and other commitments, for the supply of HEPLISAV-B and CpG 1018, totaled $158.8 million.

As of March 31, 2022, the aggregate principal amount of our Convertible Notes was $225.5 million, excluding debt discount of $4.7 million (see Note 7). The Convertible Notes mature on May 15, 2026, unless converted, redeemed or repurchased prior to such date.

During 2004, we established a letter of credit with Deutsche Bank as security for our Düsseldorf lease in the amount of €0.2 million (Euros). The letter of credit remained outstanding through March 31, 2022 and is collateralized by a certificate of deposit for €0.2 million, which has been included in restricted cash in the condensed consolidated balance sheets as of March 31, 2022.

In conjunction with our agreement with Symphony Dynamo, Inc. and Symphony Dynamo Holdings LLC (“Holdings”) in November 2009, we agreed to make contingent cash payments to Holdings equal to 50% of the first $50 million from any upfront, pre-commercialization milestone or similar payments received by us from any agreement with any third party with respect to the development and/or commercialization of cancer and hepatitis C therapies originally licensed to Symphony Dynamo, Inc., including our immune-oncology compound, SD-101. In July 2020, we sold assets related to SD-101 to Surefire Medical, Inc. d/b/a TriSalus Life Sciences (“TriSalus”). We paid $2.5 million to Holdings in August 2020. In September 2021, we received payment of $1.0 million from TriSalus because it met a pre-commercialization milestone and paid Holdings $0.5 million. No liability has been recorded under this agreement as of March 31, 2022.

Contingencies

From time to time, we may be involved in claims, suits, and proceedings arising from the ordinary course of our business, including actions with respect to intellectual property claims, commercial claims, and other matters. Such claims, suits, and proceedings are inherently uncertain and their results cannot be predicted with certainty. Regardless of the outcome, such legal proceedings can have an adverse impact on us because of legal costs, diversion of management resources, and other factors. In addition, it is possible that a resolution of one or more such proceedings could result in substantial damages, fines, penalties or orders requiring a change in our business practices, which could in the future materially and adversely affect our financial position, results of operations, or cash flows in a particular period.

6. Collaboration, Development and Supply Agreements

Coalition for Epidemic Preparedness Innovations

In January 2021, we entered into an agreement (the "CEPI Agreement") with Coalition for Epidemic Preparedness Innovations ("CEPI") for the manufacture and reservation of a specified quantity of CpG 1018 adjuvant ("CpG 1018 Materials"). The CEPI Agreement enables CEPI to direct the supply of CpG 1018 Materials to CEPI partner(s). CEPI partner(s) would purchase CpG 1018 Materials under separately negotiated agreements. The CEPI Agreement also allows us to sell CpG 1018 Materials to third parties if not purchased by a CEPI partner within a two-year term.

In exchange for reserving CpG 1018 Materials and agreeing to sell CpG 1018 Materials to CEPI partner(s) at pre-negotiated prices, CEPI agreed to provide payments in the form of an interest-free, unsecured, forgivable loan (the "Advance Payments") of up to $99.0 million. We are obligated to repay the Advance Payments, in proportion to quantity sold, if and to the extent we receive payments from sales of CpG 1018 Materials reserved under the CEPI Agreement. If the vaccine programs pursued by CEPI partner(s) are unsuccessful and no alternative use is found for CpG 1018 Materials reserved under the CEPI Agreement, the applicable Advance Payments will be forgiven at the end of the two-year term.

In May 2021, we entered into the first Amendment to the CEPI Agreement. This Amendment provided for the manufacture and reservation of an additional specified quantity of CpG 1018 adjuvant. In exchange for reserving an additional specified quantity of CpG 1018 adjuvant, CEPI agreed to provide additional Advance Payments of up to $77.4 million, together with the initial CEPI Agreement, for total Advance Payments of up to $176.4 million.

We determined that the accounting of the Advance Payments is under the scope of ASC 606. The Advance Payments are to cover the costs of manufacture and to reserve CpG 1018 Materials, which is an output of our ordinary activities. As such, the Advance Payments are initially classified as long-term deferred revenue in our condensed consolidated balance sheets. We are obligated to repay CEPI, in proportion to quantity sold and within a certain period, upon receipt of payment from CEPI partner(s). Thus, when we deliver CpG 1018 Materials to CEPI partner(s) or when we receive payment from CEPI partner(s), we reclassify the Advanced Payments from long-term deferred revenue to accrued liabilities. We recognize the Advance Payments as revenue when the amount (or a portion thereof) is forgiven by CEPI when (i) the CpG 1018 Materials are not sold through to CEPI partner(s), (ii) there is no alternative use and (iii) the CpG 1018 Materials are destroyed.

Through March 31, 2022, we have received Advance Payments totaling approximately $175.1 million pursuant to the CEPI Agreement, as amended. As of March 31, 2022, advance payments totaling $107.4 million and $0.4 million were recorded as CEPI accrual and deferred revenue, respectively in our condensed consolidated balance sheets. As of December 31, 2021, advance payments totaling $128.8 million and $5.4 million were recorded as CEPI accrual and in other long-term liabilities, respectively in our condensed consolidated balance sheets. There was no CEPI receivable balance recorded as of March 31, 2022. As of December 31, 2021, we recorded $14.6 million in CEPI receivable which is included in other receivables in our condensed consolidated balance sheets.

Zhejiang Clover Biopharmaceuticals, Inc. and Clover Hong Kong Inc.

In June 2021, we entered into an agreement with Zhejiang Clover Biopharmaceuticals, Inc. and Clover Hong Kong Inc. (collectively, "Clover"), for the commercial supply of CpG 1018 adjuvant, for use with Clover's COVID-19 vaccine candidate, SCB-2019 (the "Clover Supply Agreement"). Under the Clover Supply Agreement, Clover has committed to purchase specified quantities of CpG 1018 adjuvant, at pre-negotiated prices pursuant to the CEPI Agreement, as amended, for use in Clover's commercialization of vaccines containing SCB-2019 and CpG 1018 adjuvant ("Clover Product"). The Clover Supply Agreement also provides terms for Clover to order additional quantities of CpG 1018 adjuvant beyond the quantities reserved by CEPI.

Pricing for CpG 1018 adjuvant is variable depending on the destination where Clover ultimately sells Clover Product to. Pursuant to the Clover Supply Agreement, our initial invoicing is at the lowest price tier, with a true-up mechanism to issue additional invoice for the difference between the initial invoice price and the higher tiered price, if any. In addition, if the net selling price of such Clover Product exceeds a threshold specified in the Clover Supply Agreement, we are entitled to a royalty calculated as a percentage of the excess portion of such net selling price.

For CpG 1018 adjuvant reserved for Clover under the CEPI Agreement, as amended, Clover is obligated to pay the purchase price upon the earliest of (i) the true-up exercise, (ii) within a specified period after Clover delivers Clover Product to a customer, or (iii) Clover's receipt of payment for Clover Product from a customer. For CpG 1018 adjuvant ordered by Clover outside the CEPI Agreement, as amended, Clover is obligated to pay a specified percentage of the purchase price, as set forth in a purchase order submitted by Clover, upon our acceptance of such purchase order, and the remainder of the purchase price upon the release of such CpG 1018 adjuvant.

We recognize revenue at the lowest price tier upon transfer of control of CpG 1018 adjuvant to Clover. The potential true-up amount and royalties are considered constrained. There is no significant financing component, as the timing between shipment and payment is expected to be within twelve months. Payments received or invoices issued before we transfer control of CpG 1018 adjuvant are recorded as deferred revenue. When we transfer control of CpG 1018 adjuvant that is reserved under the CEPI Agreement, as amended, we recognize product revenue and a corresponding contract asset as our right to consideration is contingent on something other than the passage of time, as outlined above.

As of March 31, 2022 and December 31, 2021, our contract asset balance of $70.9 million and $62.5 million, respectively was included in other current assets in our condensed consolidated balance sheets. As of March 31, 2022 and December 31, 2021, we recorded accounts receivable balance of $6.9 million and $2.1 million from Clover, respectively. As of March 31, 2022 and December 31, 2021, we recognized approximately $184.1 million and $191.1 million, respectively, in deferred revenue for a portion of Clover's binding commitment to purchase CpG 1018 adjuvant outside the CEPI Agreement, as amended. There was no deferred revenue recognized for a portion of Clover's binding commitment to purchase CpG 1018 adjuvant that was reserved for Clover under the CEPI Agreement, as amended. For the three months ended March 31, 2022, we recognized CpG 1018 adjuvant net product revenue of $22.3 million from Clover. There was no product revenue recognized under the Clover Supply Agreement for the three months ended March 31, 2021.

Biological E. Limited

In July 2021, we entered into an agreement (the "Bio E Supply Agreement") with Biological E. Limited ("Bio E"), for the commercial supply of CpG 1018 adjuvant, for use with Bio E's subunit COVID-19 vaccine candidate, CORBEVAX™. Under the Bio E Supply Agreement, Bio E has committed to purchase specified quantities of CpG 1018 adjuvant, at pre-negotiated prices pursuant to the CEPI Agreement, as amended, for use in Bio E's commercialization of its CORBEVAX vaccine ("Bio E Product") with specified delivery dates in 2021 and the first quarter of 2022. The Bio E Supply Agreement also provides terms for Bio E to order additional quantities of CpG 1018 adjuvant beyond the quantities reserved by CEPI.

Pricing for CpG 1018 adjuvant is variable depending on the destination where Bio E ultimately sells Bio E Product to. Pursuant to the Bio E Supply Agreement, our initial invoicing will be at the lowest price tier, with a true-up mechanism to issue additional invoice for the difference between the initial invoice price and the higher tiered price, if any. In addition, if the net selling price of such Bio E Product exceeds a threshold specified in the Bio E Supply Agreement, we are entitled to a royalty calculated as a percentage of the excess portion of such net selling price.

For CpG 1018 adjuvant reserved for Bio E under the CEPI Agreement, as amended, Bio E is obligated to pay, in full, the aggregate purchase price, as set forth in a purchase order submitted by Bio E, upon delivery of CpG 1018 adjuvant. For CpG 1018 adjuvant ordered by Bio E outside the CEPI Agreement, as amended, Bio E is obligated to pay a specified percentage of the purchase price, as set forth in a purchase order submitted by Bio E, upon our acceptance of such purchase order, and the remainder of the purchase price upon the delivery of such CpG 1018 adjuvant.

We recognize revenue at the lowest price tier upon transfer of control of CpG 1018 adjuvant to Bio E. The potential true-up amount and royalties are considered constrained. There is no significant financing component, as the timing between shipment and payment is expected to be within twelve months. Payments received or invoices issued before we transfer control of CpG 1018 adjuvant are recorded as deferred revenue.

As of March 31, 2022 and December 31, 2021, we recorded accounts receivable balance of $104.3 million and $96.1 million from Bio E, respectively. As of March 31, 2022 and December 31, 2021, we recognized approximately $73.2 million and $103.3 million, respectively, in deferred revenue for a portion of Bio E's binding commitment to purchase CpG 1018 adjuvant outside the CEPI Agreement, as amended. There was no deferred revenue recognized for a portion of Bio E's binding commitment to purchase CpG 1018 adjuvant that was reserved for Bio E under the CEPI Agreement, as amended. For the three months ended March 31, 2022, we recognized CpG 1018 adjuvant net product revenue of $67.3 million from Bio E. There was no product revenue recognized under the Bio E Supply Agreement for the three months ended March 31, 2021.

Medigen Vaccine Biologics

In February 2021, we entered into a Supply Agreement ("Medigen Supply Agreement") with Medigen Vaccine Biologics ("Medigen") to manufacture and supply specified quantities of CpG 1018 adjuvant for use in the development and commercialization of Medigen's COVID-19 vaccine for delivery in the first and second quarters of 2021.

In August 2021, we entered into a second supply agreement ("Medigen Supply Agreement No. 2") to manufacture and supply additional specified quantities of CpG 1018 adjuvant for delivery in the third and fourth quarter of 2021.

Under Medigen Supply Agreement No. 2, pricing for CpG 1018 adjuvant is variable depending on the destination where Medigen ultimately sells Medigen Product to. Pursuant to the Medigen Supply Agreement No. 2, we invoice Medigen based on the highest-tier price, with a true-up mechanism to issue credit to Medigen for the difference between the initial invoice price and the lower tiered price, if any. We invoice Medigen a specified percentage of the aggregate price of the order upon acceptance of the order and the remaining upon delivery. In addition, we are entitled to a royalty calculated as a percentage of the adjusted net sales.

We recognize revenue upon transfer of control of CpG 1018 adjuvant to Medigen at the highest-tiered price. The potential royalties are considered constrained. There is no significant financing component, as the timing between shipment and payment is expected to be within twelve months. Payments received or invoices issued before we transfer control of CpG 1018 adjuvant are recorded as deferred revenue.

There was no accounts receivable balance from Medigen recorded as of March 31, 2022. As of December 31, 2021, we recorded accounts receivable balance of $2.4 million from Medigen. There was no product revenue recognized from Medigen for the three months ended March 31, 2022. For the three months ended March 31, 2021, we recognized CpG 1018 adjuvant net product revenue from Medigen of $6.9 million.

Valneva SE

In April 2020, we entered into a collaboration agreement ("Valneva Collaboration Agreement") with Valneva Scotland Limited (“Valneva”) to provide CpG 1018 adjuvant for use in the development of Valneva’s COVID-19 vaccine candidate ("VLA2001"). The Valneva Collaboration Agreement was amended in July 2020, to provide additional quantities of CpG 1018 adjuvant. In September 2020, we entered into a supply agreement (“Valneva Supply Agreement”) with Valneva to manufacture and supply specified quantities of CpG 1018 adjuvant for use in the commercialization of VLA2001.

We concluded that the Valneva Collaboration Agreement and the Valneva Supply Agreement were entered into at or near the same time, with the same customer and were negotiated as a package with a single commercial objective to provide CpG 1018 adjuvant to Valneva. Therefore, the Valneva Collaboration Agreement and the Valneva Supply Agreement should be combined and accounted for as a single arrangement.

In October 2021, we and Valneva entered into a letter agreement (the “Valneva Amendment”) modifying certain deliverables of the Valneva Supply Agreement. Specifically, the Valneva Amendment modifies the original Valneva Supply Agreement as follows: (1) cancels certain purchase orders for CpG 1018 adjuvant previously issued under the original Valneva Supply Agreement that had not been fulfilled as of the date of the Valneva Amendment; and (2) provides a future delivery schedule for commercial supply of CpG 1018 adjuvant through the end of 2022. As of the date of the Valneva Amendment, we had received non-refundable advance payments of approximately $55.4 million associated with the cancelled purchase orders.

In accordance with revenue recognition guidance in ASC 606, the Valneva Amendment was determined to be a contract modification and will be accounted for prospectively as one agreement with consideration allocated to future performance obligations. We have identified one remaining performance obligation which is the delivery of CpG 1018 adjuvant through the end of 2022. The total amount of consideration allocated to the remaining performance obligation includes approximately $55.4 million of advance payments received as of the date of the Valneva Amendment plus additional future consideration to be received in connection with final delivery of product. As of March 31, 2022, approximately $55.4 million of advance payments remain recorded as deferred revenue and will be recognized as product revenue when we satisfy our remaining performance obligation to deliver CpG 1018 adjuvant under the Valneva Amendment.

As of March 31, 2022 and December 31 2021, deferred revenue related to Valneva was $55.4 million. There was no product revenue recognized from Valneva for the three months ended March 31, 2022. For the three months ended March 31, 2021, we recognized CpG 1018 adjuvant net product revenue of $64.9 million.

U.S. Department of Defense

In September 2021, we entered into an agreement with the DoD for the development of a recombinant plague vaccine adjuvanted with CpG 1018 for approximately $22.0 million over two and a half years. Under the agreement, we will conduct a Phase 2 clinical trial combining our CpG 1018 adjuvant with the DoD's rF1V vaccine. We anticipate the Phase 2 trial will commence in 2022. For the three months ended March 31, 2022, we recognized revenue of $1.6 million which are included in other revenue in our condensed consolidated statements of operations. There was no revenue recognized under the DoD agreement for the three months ended March 31, 2021.

Serum Institute of India Pvt. Ltd.

In June 2017, we entered into an agreement to provide Serum Institute of India Pvt. Ltd. ("SIIPL") with technical support. In consideration, SIIPL agreed to pay us at an agreed upon hourly rate for services and reimburse certain out-of-pocket expenses. In addition, we have rights to commercialization of certain potential products manufactured at the SIIPL facility. For the three months ended March 31, 2022 and 2021, we recognized revenue of $39,456 and $0.2 million, respectively, which are included in other revenue in our condensed consolidated statements of operations.

7. Convertible Notes

In May 2021, we issued $200.0 million aggregate principal amount of 2.50% convertible senior notes due 2026 in a private placement. The purchasers also partially exercised their option to purchase additional Convertible Notes and we issued an additional $25.5 million of the Convertible Notes in May 2021. Total proceeds from the issuance of the Convertible Notes, net of debt issuance and offering costs of $5.7 million, were $219.8 million. We used $190.2 million of the net proceeds to retire our previous loan agreement with CRG Servicing LLC and $27.2 million of the net proceeds to pay the costs of the Capped Calls described below.

The Convertible Notes are general unsecured obligations and accrue interest at a rate of 2.50% per annum payable semiannually in arrears on May 15 and November 15 of each year. The Convertible Notes mature on May 15, 2026, unless converted, redeemed or repurchased prior to such date.

The Convertible Notes are convertible into cash, shares of our common stock or a combination of cash and shares of our common stock, at our election, at an initial conversion rate of 95.5338 shares of our common stock per $1,000 principal amount of the Convertible Notes, which is equivalent to an initial conversion price of approximately $10.47 per share of our common stock. The Convertible Notes are convertible at the option of the holders at any time prior to the close of business on the business day immediately preceding February 15, 2026, only under the following circumstances:

1. During any calendar quarter (and only during such calendar quarter), if the last reported sale price of our common stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day;
2. During the five business day period after any ten consecutive trading day period (the "measurement period"), in which the "trading price" (as defined the indenture governing the Convertible Notes) per $1,000 principal amount of the Convertible Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of our common stock and the conversion rate on each such trading day;
3. If we call such Convertible Notes for redemption, at any time prior to the close of business on the scheduled trading day immediately preceding the redemption date; or
4. Upon the occurrence of specified corporate events as set forth in the indenture governing the Convertible Notes.

On or after February 15, 2026 until the close of business on the second scheduled trading day immediately preceding the maturity date, holders of the Convertible Notes may convert all or any portion of their Convertible Notes regardless of the foregoing circumstances.

From January 1, 2022 through March 31, 2022, the conditions allowing holders of the Convertible Notes to convert were not met. As a result, the Convertible Notes are not convertible, in whole or in part, at the option of the holders during such period. Since we have the election of repaying the Convertible Notes in cash, shares of our common stock, or a combination of both, we continued to classify the Convertible Notes as long-term debt on the condensed consolidated balance sheets as of March 31, 2022.

We may redeem for cash all or any portion of the Convertible Notes (subject to the partial redemption limitation described in the indenture governing the Convertible Notes), at our option, on or after May 20, 2024 and prior to the 31st scheduled trading day immediately preceding the maturity date, if the last reported sale price of our common stock has been at least 130% of the conversion price then in effect for at least 20 trading days (whether or not consecutive) during any 30 consecutive trading day period (including the last trading day of such period) ending on the trading day immediately preceding the date on which we provide notice of redemption, at a redemption price equal to 100% of the principal amount of the Convertible Notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date.

If we undergo a fundamental change (as set forth in the indenture governing the Convertible Notes), noteholders may require us to repurchase for cash all or any portion of their Convertible Notes at a repurchase price equal to 100% of the principal amount of the notes to be repurchased, plus accrued and unpaid interest to, but excluding, the fundamental change repurchase date. In addition, following certain corporate events (as set forth in the indenture governing the Convertible Notes) or if we deliver a notice of redemption prior to the maturity date, we will, in certain circumstances, adjust the conversion rate for a noteholder who elects to convert its notes in connection with such a corporate event or such notice of redemption.

As a result of adopting ASU 2020-06, we accounted for the Convertible Notes as a single liability. As of March 31, 2022, the Convertible Notes were recorded at the aggregate principal amount of $225.5 million less unamortized issuance costs of $4.7 million as a long-term liability on the condensed consolidated balance sheets. As of March 31, 2022, the fair value of the Convertible Notes was $303.1 million. See Note 2. The debt issuance costs are amortized to interest expense over the contractual term of the Convertible Notes at an effective interest rate of 3.1%.

The following table presents the components of interest expense related to Convertible Notes (in thousands):

	Three Months Ended March 31,	
	2022	2021
Stated coupon interest	$ 1,409	$ -
Amortization of debt issuance cost	269	-
Total interest expense	$ 1,678	$ -

Capped Calls

In connection with the issuance of the Convertible Notes, we entered into capped call transactions with one of the initial purchasers of the Convertible Notes and other financial institutions (the "Option Counterparties"), totaling $27.2 million (the “Capped Calls”). The Capped Calls cover, subject to customary adjustments, the number of shares of our common stock that initially underlie the Convertible Notes (or 21,542,871 shares of our common stock). The Capped Calls have an initial strike price and an initial cap price of $10.47 per share and $15.80 per share, respectively, subject to certain adjustments under the terms of the Capped Calls. The Capped Call Transactions are freestanding and are considered separately exercisable from the Convertible Notes. The Capped Calls are expected to offset the potential dilution to our common stock as a result of any conversion of the Convertible Notes, subject to a cap based on the cap price.

For accounting purposes, the Capped Calls are considered separate financial instruments and not part of the Convertible Notes. As the Capped Calls transactions meet certain accounting criteria, we recorded the cost of the Capped Calls, totaling $27.2 million, as a reduction to additional paid-in capital within the condensed consolidated statements of stockholders’ equity.

8. Revenue Recognition

Disaggregation of Revenues

The following table disaggregates our product revenue, net by product and geographic region and disaggregates our other revenues by geographic region (in thousands):

	Three Months Ended March 31, 2022			Three Months Ended March 31, 2021		
	U.S.	Non U.S.	Total	U.S.	Non U.S.	Total
Product revenue, net						
HEPLISAV-B	$ 20,810	$ -	$ 20,810	$ 8,303	$ -	$ 8,303
CpG 1018	-	91,517	91,517	-	74,582	74,582
Total product revenue, net	$ 20,810	$ 91,517	$ 112,327	$ 8,303	$ 74,582	$ 82,885
Other revenue	1,606	59	1,665	-	450	450
Total revenues	$ 22,416	$ 91,576	$ 113,992	$ 8,303	$ 75,032	$ 83,335

Revenues from Major Customers and Collaboration Partners

The following table summarizes HEPLISAV-B product revenue from each of our three largest Customers (as a percentage of total HEPLISAV-B net product revenue):

	Three Months Ended March 31,	
	2022	2021
Largest Customer	25%	28%
Second largest Customer	20%	26%
Third largest Customer	16%	21%

The following table summarizes CpG 1018 product revenue from each of our three largest collaboration partners (as a percentage of total CpG 1018 adjuvant net product revenue):

	Three Months Ended March 31,	
	2022	2021
Largest collaboration partner	74%	87%
Second largest collaboration partner	24%	9%
Third largest collaboration partner	2%	2%

Contract Balances

The following table summarizes balances and activities in HEPLISAV-B product revenue allowance and reserve categories for the three months ended March 31, 2022 (in thousands):

	Balance at Beginning of Period	Provisions related to current period sales	Credit or payments made during the period	Balance at End of Period
Three months ended March 31, 2022:				
Accounts receivable reserves(1)	$ 3,823	$ 5,807	$ (4,698)	$ 4,932
Revenue reserve accruals(2)	8,253	4,273	(4,893)	7,633

(1) Reserves are for chargebacks, discounts and other fees.
(2) Accruals are for returns, rebates and other fees.

When we transfer control of CpG 1018 adjuvant that is reserved under the CEPI Agreement, as amended, to Clover, we recognize product revenue and a corresponding contract asset as our right to consideration is conditioned on something other than the passage of time. See Note 6 for further discussion. The following table summarizes balances and activities in our contract asset account (in thousands):

	Balance at Beginning of Period	Additions (1)	Subtractions	Balance at End of Period
Three months ended March 31, 2022				
Contract asset	$ 62,525	$ 8,817	$ -	$ 71,342

(1) Additions are revenues recognized for CpG 1018 adjuvant transferred to Clover that is reserved under the CEPI Agreement, as amended.

Payments received or invoices issued before we satisfy our performance obligations are recorded as deferred revenue until we satisfy such performance obligations. Our deferred revenue activities are related to CpG 1018 adjuvant product sales. The following table summarizes balances and activities in our deferred revenue accounts for the three months ended March 31, 2022 (in thousands):

	Balance at Beginning of Period	Additions (1)	Subtractions (2)	Revenue recognized in the current period included in deferred revenue balance at the beginning of the period	Balance at End of Period
Three months ended March 31, 2022:					
Deferred revenue	$ 349,864	$ 368	$ -	$ (37,029)	$ 313,203
Long-term deferred revenue	5,385	6,582	(11,967)	-	-

(1) Additions are primarily payments received or invoices issued before we satisfy our performance obligations.
(2) Subtractions are primarily revenues recognized in the period included in deferred revenue during the period and reclassification from long-term deferred revenue to accrued liabilities.

9. Net Income Per Share

We compute net income per share of common stock using the two-class method required for participating securities. We consider warrants to be participating securities because holders of such shares have dividend rights in the event of our declaration of a dividend for common shares. Undistributed earnings allocated to participating securities are subtracted from net income in determining net income attributable to common stockholders.

Basic net income per share is computed by dividing net income attributable to common stockholders by the weighted-average number of shares of our common stock outstanding.

For the calculation of diluted net income per share, net income attributable to common stockholders for basic net income per share is adjusted by the effect of dilutive securities, including awards under our equity compensation plans and change in fair value of warrant liability. Diluted net income per share attributable to common stockholders is computed by dividing the resulting net income attributable to common stockholders by the weighted-average number of fully diluted common shares outstanding.

The numerators and denominators of the basic and diluted net income per share computations for our common stock are calculated as follows (in thousands):

	Three Months Ended March 31,	
	2022	2021
Numerator		
Net income	$ 32,859	$ 891
Less: undistributed earnings allocated to participating securities	(131)	(70)
Net income attributable to common stockholders, basic	32,728	821
Add: undistributed earnings allocated to participating securities	131	-
Less: removal of change in fair value of warrant liability	(1,801)	-
Add: interest expense on convertible notes	1,259	-
Net income attributable to common stockholders, diluted	$ 32,317	$ 821
Denominator		
Weighted average common stock outstanding, basic	124,555	112,035
Effect of dilutive shares:		
Stock-based compensation plans	3,001	1,434
Dilutive warrants	326	-
Convertible Notes (as converted to common stock)	21,543	-
Weighted average common stock outstanding, diluted	149,425	113,469

The following were excluded from the calculation of diluted net (loss) income per share as the effect of their inclusion would have been anti-dilutive (in thousands).

	Three months ended March 31,	
	2022	2021
Outstanding securities not included in diluted net income per share calculation:		
Stock options and stock awards	8,415	7,915
Series B Convertible Preferred Stock (as converted to common stock)	-	4,140
Warrants (as exercisable into common stock)	-	5,091
Total	8,415	17,146

10. Common Stock, Preferred Stock and Warrants

Common Stock

As of March 31, 2022, there were 126,296,892 shares of our common stock outstanding.

In August 2019, we sold 18,525,000 shares of our common stock, par value $0.001 per share, 4,840 shares of our Series B Convertible Preferred Stock, par value $0.001 per share ("Series B Preferred Stock") and warrants to purchase up to an aggregate of 5,841,250 shares of our common stock in an underwritten public offering (the "Offering") for aggregate net proceeds of approximately $65.6 million. Investment funds associated with Bain Capital Life Sciences Investors, LLC ("Bain Capital Life Sciences") purchased approximately $35.0 million of common stock, Series B Preferred Stock and warrants in the Offering on the same terms as the other investors in the Offering. Following the Offering, Andrew A. F. Hack, M.D., Ph.D., a Managing Director of Bain Capital Life Sciences, was appointed to our board of directors.

On August 6, 2020, we entered into an at-the-market Sales Agreement (the "2020 ATM Agreement") with Cowen and Company, LLC ("Cowen"), under which we may offer and sell from time to time, at our sole discretion, shares of our common stock having an aggregate offering price of up to $150 million through Cowen as our sales agent. We agreed to pay Cowen a commission of up to 3% of the gross sales proceeds of any common stock sold through Cowen under the 2020 ATM Agreement. As of March 31, 2022, we had $120.5 million remaining under the 2020 ATM Agreement.

Preferred Stock

In August 2021, all of the 4,140 shares of Series B Preferred Stock were converted into 4,140,000 shares of common stock. As of March 31, 2022, there were no shares of Series B Preferred Stock outstanding.

Warrants

During the three months ended March 31, 2022, all of the 1,882,600 outstanding warrants as of December 31, 2021 were exercised or expired resulting in cash proceeds totaling $8.5 million. For the three months ended March 31, 2022, we recognized the decrease in the estimated fair value of warrant liability exercised or expired of $1.8 million as income in other income (expense) in our condensed consolidated statements of operations. For the three months ended March 31, 2021, we recognized the increase in the estimated fair value of warrant liability of $25.6 million as expense in other income (expense) in our condensed consolidated statements of operations.

11. Equity Plans and Stock-Based Compensation

As of March 31, 2022, the 2018 Equity Incentive Plan, as amended ("Amended 2018 EIP"), the Amended 2021 Inducement Plan and the Amended and Restated 2014 Employee Stock Purchase Plan are our active plans. Under the Amended 2018 EIP, the aggregate number of shares of our common stock that may be issued to employees and directors (subject to adjustment for certain changes in capitalization) is 22,517,869.

The Amended 2018 EIP is administered by our Board of Directors, or a designated committee of the Board of Directors, and awards granted under the Amended 2018 EIP have a term of 7 years unless earlier terminated by the Board of Directors. As of March 31, 2022, there were 785,592 shares of common stock reserved for issuance under the Amended 2018 EIP.

Activity under our stock plans is set forth below:

	Shares Underlying Outstanding Options (in thousands)	Weighted-Average Exercise Price Per Share	Weighted-Average Remaining Contractual Term (years)	Aggregate Intrinsic Value (in thousands)
Balance as of December 31, 2021	10,399	$ 11.55	4.16	42,756
Options granted	1,793	12.70		
Options exercised	(155)	7.24		
Options cancelled:				
Options forfeited (unvested)	(25)	9.40		
Options expired (vested)	(38)	35.48		
Balance as of March 31, 2022	11,974	$ 11.71	4.58	$ 20,270
Vested and expected to vest as of March 31, 2022	11,494	$ 11.70	4.31	$ 19,947
Exercisable as of March 31 2022	6,473	$ 12.48	3.09	$ 13,042

Restricted stock unit activity under our stock-based compensation plans during the three months ended March 31, 2022 was as follows (in thousands except per share amounts):

	Number of Shares (in thousands)	Weighted-Average Grant-Date Fair Value Per Share
Non-vested as of December 31, 2021	2,651	$ 8.30
Granted	1,761	12.65
Vested	(999)	8.25
Forfeited	(24)	11.49
Non-vested as of March 31, 2022	3,389	$ 10.56

We granted performance-based restricted stock unit ("PSU") to certain executives. These PSUs vest upon a specified market condition. The summary of PSU activities for the three months ended March 31, 2022 is as follows:

	Number of Shares (in thousands)	Weighted-Average Grant-Date Fair Value Per Share
Non-vested as of December 31, 2021	237	$ 8.40
Granted	193	11.62
Vested	(237)	8.40
Non-vested as of March 31, 2022	193	$ 11.62

The fair value-based measurement of each option is estimated on the date of grant using the Black-Scholes option valuation model. The fair value of each RSU is determined at the date of grant using our closing stock price. The fair value of each PSU is estimated using the Monte Carlo simulation method on the date of grant. The weighted-average assumptions used in the calculations of these fair value measurements are as follows:

	Stock Options		Market-Based Performance Stock Unit ("PSUs")
	Three Months Ended March 31,		Three Months Ended March 31,
	2022	2021	2022
Weighted-average fair value per share	$ 8.05	$ 6.72	$ 11.62
Risk-free interest rate	1.9%	0.5%	1.7%
Expected life (in years)	4.5	4.5	2.9
Volatility	0.8	1.0	0.9

The components of stock-based compensation expense were as follows (in thousands):

	Three Months Ended March 31,	
	2022	2021
Research and development	$ 1,276	$ 872
Selling, general and administrative	5,427	3,144
Cost of sales - product	160	170
Inventory	783	537
Total	$ 7,646	$ 4,723

Compensation expense is based on awards ultimately expected to vest and reflects estimated forfeitures.

12. Income Taxes

We are subject to U.S. federal, state and foreign income taxes. We recorded no income tax provision and our effective tax rate was 0% for the three months ended March 31, 2022 and March 31, 2021, respectively. The primary difference between the effective tax rate and the federal statutory rate is due to the benefit of net operating losses utilized during the periods and the full valuation allowance we established on our federal, state, and certain foreign deferred tax assets.

The tax benefit of net operating losses, temporary differences and credit carryforwards is required to be recorded as an asset to the extent that management assesses that realization is "more likely than not." Realization of the future tax benefits is dependent on our ability to generate sufficient taxable income within the carryforward period. A high degree of judgment is required to determine if, and the extent to which, valuation allowances should be recorded against deferred tax assets. In making such determination, we consider all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax planning strategies and recent financial operations. Based on all available evidence as of March 31, 2022, both positive and negative, and the weight of that evidence to the extent such evidence can be objectively verified, management believes that recognition of the deferred tax assets arising from the above-mentioned future tax benefits is currently not more likely than not to be realized, and, accordingly, has provided a valuation allowance.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following Management's Discussion and Analysis of Financial Condition and Results of Operations contains forward-looking statements that involve a number of risks and uncertainties. Our actual results could differ materially from those indicated by forward-looking statements as a result of various factors, including but not limited to, the period for which we estimate our cash resources are sufficient, the availability of additional funds, as well as those set forth under "Risk Factors" and those that may be identified from time to time in our reports and registration statements filed with the Securities and Exchange Commission.

The following discussion and analysis is intended to provide an investor with a narrative of our financial results and an evaluation of our financial condition and results of operations. This discussion should be read in conjunction with the unaudited Condensed Consolidated Financial Statements and related Notes included in Item 1 of this Quarterly Report on Form 10-Q and the Consolidated Financial Statements and the related Notes and Part II, Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" contained in our Annual Report on Form 10-K for the year ended December 31, 2021.

Overview

We are a commercial stage biopharmaceutical company focused on developing and commercializing innovative vaccines. Our first marketed product, HEPLISAV-B® (Hepatitis B Vaccine (Recombinant), Adjuvanted) is approved in the United States and the European Union for prevention of infection caused by all known subtypes of hepatitis B virus in adults age 18 years and older. We also manufacture and sell CpG 1018, the adjuvant used in HEPLISAV-B, and have established a portfolio of global commercial supply agreements in the development of COVID-19 vaccines across a variety of vaccine platforms. Additionally, we are advancing a multi-program clinical pipeline leveraging CpG 1018 adjuvant to develop improved vaccines in indications with unmet medical needs including phase 1 clinical trials in Tdap and shingles, and a phase 2 clinical trial in plague in collaboration with and fully funded by the U.S. Department of Defense ("DoD").

In Phase 3 trials, HEPLISAV-B demonstrated faster and higher rates of protection with two doses in one month compared to another currently approved hepatitis B vaccine which requires three doses over six months, with a similar safety profile. HEPLISAV-B is the only two-dose hepatitis B vaccine for adults approved in the U.S. and the European Union.

We have worldwide commercial rights to HEPLISAV-B and we market it in the United States. There are four other vaccines approved for the prevention of hepatitis B in the U.S.: Engerix-B and Twinrix® from GlaxoSmithKline plc, Recombivax-HB® from Merck & Co and PreHevbrio™ from VBI Vaccines Inc. We received Marketing Authorization approval of HEPLISAV-B in February 2021 from the European Commission for prevention of infection caused by all known subtypes of hepatitis B virus in adults age 18 years and older. In May 2021, we entered into a commercialization agreement with Bavarian Nordic for the marketing and distribution of HEPLISAV-B in Germany.

All of our HEPLISAV-B sales are to certain wholesalers and specialty distributors in the U.S. whose principal customers include independent hospitals and clinics, integrated delivery networks, public health clinics and prisons, the Departments of Defense and Veterans Affairs and retail pharmacies. For the three months ended March 31, 2022, HEPLISAV-B product revenue, net was $20.8 million.

In January 2021, we entered into an agreement (the "CEPI Agreement") with Coalition for Epidemic Preparedness Innovations ("CEPI") for the manufacture and reservation of a specified quantity of CpG 1018 adjuvant. In May 2021, we entered into the first amendment (the "Amendment") to the CEPI Agreement. The CEPI Agreement, as amended, enables CEPI to direct the supply of CpG 1018 adjuvant to CEPI partner(s). In exchange for reserving CpG 1018 adjuvant, CEPI has agreed to provide advance payments in the form of an interest-free, unsecured, forgivable loan of up to $176.4 million. As of March 31, 2022, advance payments totaling $107.4 million and $0.4 million were recorded as CEPI accrual and deferred revenue, respectively in our condensed consolidated balance sheets.

In July 2021, we entered into an agreement (the "Bio E Supply Agreement") with Biological E. Limited ("Bio E"), for the commercial supply of CpG 1018 adjuvant, for use with Bio E's subunit COVID-19 vaccine candidate, CORBEVAX™. Under the Bio E Supply Agreement, Bio E has committed to purchase specified quantities of CpG 1018 adjuvant, at pre-negotiated prices pursuant to the CEPI Agreement, as amended, for use in Bio E's commercialization of its CORBEVAX vaccine. The Bio E Supply Agreement also provides terms for Bio E to order additional quantities of CpG 1018 adjuvant beyond the quantities reserved by CEPI. Bio E has received Emergency Use Authorization ("EUA") from the Drugs Controller General of India ("DCGI") for CORBEVAX for adults in December 2021, for adolescents aged 12 to less than 18 years of age in February 2022, and for use in children ages from 5 to 12 in April 2022.

In June 2021, we entered into an agreement (the “Clover Supply Agreement”) with Zhejiang Clover Biopharmaceuticals, Inc. and Clover Hong Kong Inc. (collectively, “Clover”), for the commercial supply of CpG 1018 adjuvant, for use with its protein-based COVID-19 vaccine candidate, SCB-2019. Under the Clover Supply Agreement, Clover has committed to purchase specified quantities of CpG 1018 adjuvant, at pre-negotiated prices pursuant to the CEPI Agreement, as amended, for use in Clover’s commercialization of vaccines containing SCB-2019 and CpG 1018 adjuvant (“Clover Product”). The Clover Supply Agreement also provides terms for Clover to order additional quantities of CpG 1018 adjuvant beyond the quantities reserved by CEPI. Clover has reported it is in the process of submitting conditional regulatory approval applications for SCB-2019 utilizing Dynavax’s CpG 1018 adjuvant. Clover anticipates that its submissions are to be completed in mid-2022 for the China's National Medical Products Administration ("NMPA") and by the third quarter of 2022 for the World Health Organization ("WHO") and European Medicines Agency ("EMA").

In 2021, we entered into supply agreements with Medigen Vaccine Biologics (“Medigen”) to manufacture and supply specified quantities of CpG 1018 adjuvant for use in the development and commercialization of Medigen’s COVID-19 vaccine, adjuvanted with our CpG 1018 adjuvant, MVC-COV1901, for delivery throughout the life of the agreements. In August 2021, Medigen launched MVC-COV1901 after Medigen received Taiwan Emergency Use Authorization and approval for inclusion in Taiwan's COVID-19 vaccine immunization program. In February 2022, Medigen received Emergency Use Authorization for MVC-COV1901 from Paraguay’s National Directorate of Health Surveillance ("DINAVISA").

In the third quarter of 2020, we announced a commercial supply agreement (the “Valneva Supply Agreement”) with Valneva Scotland Limited (“Valneva”) to cover the supply of CpG 1018 adjuvant for its SARS-COV-2 vaccine candidate, VLA2001, in support of its supply agreement with the United Kingdom Government and subject to the terms of such agreement. In September 2021, Valneva received a termination notice from the United Kingdom Government in relation to such supply agreement. However, Valneva continues the clinical development of VLA2001 and the pivotal Phase 3 trial for VLA2001, COV-COMPARE, remains ongoing at Public Health England. In April 2022, Valneva announced that the Medicines and Healthcare products Regulatory Agency ("MHRA") of the United Kingdom has granted Conditional Marketing Authorization ("CMA") for VLA2001. Valneva also reported that it now expects a decision from Committee for Medicinal Products for Human Use ("CHMP") on its recommendation for potential conditional approval by the European Medicines Agency ("EMA") in the second quarter of 2022.

In October 2021, we and Valneva entered into a letter agreement (the “Valneva Amendment”) modifying certain deliverables of the Valneva Supply Agreement. Specifically, the Valneva Amendment modifies the original Valneva Supply Agreement as follows: (1) cancels certain purchase orders for CpG 1018 adjuvant previously issued under the original Valneva Supply Agreement that had not been fulfilled as of the date of the Valneva Amendment; and (2) provides a future delivery schedule for commercial supply of CpG 1018 adjuvant through 2022. As of the date of the Valneva Amendment, we had received non-refundable advance payments of approximately $55.4 million associated with the cancelled purchase orders. As of March 31, 2022, approximately $55.4 million of advance payments remain recorded as deferred revenue and will be recognized as product revenue when we satisfy our remaining performance obligation to deliver CpG 1018 adjuvant under the Valneva Amendment.

For the three months ended March 31, 2022, CpG 1018 product revenue, net, was $91.5 million.

We expect to drive future innovation through our clinical pipeline and discovery efforts. Currently, we have four clinical development programs, and additional pre-clinical and clinical collaborations:

- Tetanus, diphtheria, and acellular pertussis (“Tdap”) vaccine program: Interim adult data from the ongoing Phase 1 study evaluating a new Tdap vaccine candidate utilizing CpG 1018 adjuvant demonstrated it was safe and well tolerated with immunogenicity data supporting continued advancement. Adolescent data from the same trial is expected in the second half of 2022.
- Shingles vaccine program: Topline data from an ongoing Phase 1 study evaluating the safety, tolerability, and immunogenicity in adults compared to Shingrix, the leading marketed shingles vaccine in the U.S., is anticipated by the end of 2022.
- Plague vaccine Phase 2 study: In collaboration with, and funded by, the DoD, we plan to initiate a Phase 2 clinical trial in the second half of 2022.

In May 2021, we issued $225.5 million aggregate principal amount of 2.50% convertible senior notes due 2026 (the “Convertible Notes”) in a private placement. Total proceeds from the issuance of the Convertible Notes, net of debt issuance and offering costs of $5.7 million, were $219.8 million. We used $190.2 million of the net proceeds to repay, in full, our outstanding debt and other obligations under our previous loan agreement with CRG Servicing LLC ("Loan Agreement") and $27.2 million of the net proceeds to pay the costs of the Capped Calls (defined below).

In connection with the issuance of the Convertible Notes, we entered into capped call transactions with one of the initial purchasers and other financial institutions, totaling $27.2 million (the “Capped Calls”). The Capped Calls have an initial strike price and an initial cap price of $10.47 per share and $15.80 per share, respectively, subject to certain adjustments under the terms of the Capped Calls. The Capped Calls are freestanding and are considered separately exercisable from the Convertible Notes. The Capped Calls are expected to offset the potential dilution to our common stock as a result of any conversion of the Convertible Notes, subject to a cap based on the cap price.

COVID-19 Update

The ongoing COVID-19 global pandemic has presented a substantial public health and economic challenge around the world and is affecting our employees, patients, communities and business operations, as well as the U.S. economy and financial markets. The full extent to which the COVID-19 pandemic will directly or indirectly impact our business, results of operations and financial condition will depend on future developments that are highly uncertain and cannot be accurately predicted, including new information that may emerge concerning COVID-19 virus or current or newly discovered variants, the actions taken to contain it or treat its impact and the economic impact on local, regional, national and international markets. We continue to assess the potential evolving impact of the COVID-19 pandemic on our business and operations.

To date, we and our distribution partners have been able to continue to supply HEPLISAV-B throughout the United States, and currently do not anticipate any interruptions in supply. Due to the ongoing COVID-19 global pandemic, most medical centers began restricting access to their facilities and focused on providing care to only the most severely affected patients, beginning in March 2020. As states began phasing out restrictions in the middle of 2020, medical centers have been operating under limited capacity or with strict social distancing rules. There has been a significant reduction in the utilization of adult vaccines (other than COVID-19 vaccines) since the end of the first quarter of 2020, including a reduction in the utilization of HEPLISAV-B which has impacted sales of HEPLISAV-B. While adult hepatitis B vaccine utilization rates have continued to stay below pre-pandemic levels, we have been seeing a gradual recovery in such utilization above all-time lows, but still well below pre-pandemic levels. Moreover, HEPLISAV-B continues to gain market share in the U.S. hepatitis B adult vaccine market.

We are continuing to closely monitor the impact of the COVID-19 pandemic on our business and are taking proactive efforts to help protect the health and safety of our workforce, patients and healthcare professionals, and to continue our business operations and advance our goal of bringing important new vaccines to patients as rapidly as possible. To help protect the health and safety of our workforce, we implemented a mandatory work-from-home policy for employees who can perform their jobs offsite. More recently we have downsized our office space and are embracing a flexible work environment where many employees will be allowed, but not necessarily required, to be remote permanently as restriction eventually lift. In the conduct of our business activities, we are also taking actions to help protect the safety of patients and healthcare professionals. In the early stages of the pandemic, our field-based personnel reduced in-person customer interactions in healthcare settings and primarily used electronic communication, such as emails, phone calls and video conferences. Many health care and contracting professionals at hospitals and other medical institutions with whom our field-based personnel interact began conducting a greater proportion of their work from their homes and are facing additional demands on their time during the COVID-19 pandemic. While the different quality of electronic interactions as compared with in-person interactions, as well as the reduced quantity of interactions during the COVID-19 pandemic, impacted the effectiveness of our sales personnel, we have gradually moved back to in-person interactions in many cases. With the rise of new variants, and related precautions, however, our customers’ procurement activities and those of our collaborators continue to be impacted which could negatively affect our overall product sales. It is possible that we may have to limit in-person engagement again in the future.

Our HEPLISAV-B post-marketing follow-up has been completed. In April 2021, we announced the results of the post-marketing study assessing the rates of occurrence of acute myocardial infarction ("AMI") in persons receiving HEPLISAV-B compared with Engerix-B. The results provided evidence there is no increased risk of AMI associated with vaccination with HEPLISAV-B compared to Engerix-B. We expect data from the autoimmune portion of our observational study to be available in the first quarter of 2022. Our HEPLISAV-B dialysis study has also been completed. Final immunogenicity results included a seroprotection rate of 89.3% with high levels of anti-HBs antibodies. Safety data showed HEPLISAV-B was well tolerated and no safety concerns were observed.

The extent of the impact of the COVID-19 pandemic on our ability to generate sales and revenues, our regulatory efforts, our corporate development objectives and the value of, and market for, our common stock, will depend on future developments that are highly uncertain and cannot be predicted with confidence at this time. Because of the above and other factors, our results of operations may vary substantially from year to year, and from quarter to quarter, and as a result we believe that period-to-period comparisons of our operating results may not be meaningful and should not be relied upon as being indicative of our future performance. For additional information on the various current and future potential risks posed by the COVID-19 pandemic, please read Item 1A. Risk Factors, included herein.

We have actively pursued opportunities to collaborate with other organizations on the development of a COVID-19 vaccine, by leveraging CpG 1018 adjuvant, our toll-like receptor 9 (“TLR9”) agonist, which is also used in our HEPLISAV-B product. Since the first half of 2021, we announced multiple collaborations focused on COVID-19 and we continue to work to identify other programs where CpG 1018 adjuvant can be utilized to enhance the immune response to a coronavirus vaccine or other vaccines. To date, three of our collaborators have received emergency use authorizations for their COVID-19 vaccines, and we anticipate that another could be announced during 2022. We and our contract manufacturers have been developing and implementing plans to help scale-up activities to support pandemic-level of production of our CpG 1018 adjuvant, as necessary to support these and any future collaborations. There can be no assurance we will be successful in our efforts to help develop or supply adjuvanted COVID-19 vaccines or other vaccines over the long term.

Critical Accounting Estimates

We prepare our condensed consolidated financial statements in accordance with U.S. generally accepted accounting principles. In doing so, we are required to make estimates and assumptions. Our critical accounting estimates are those estimates that involve a significant level of uncertainty at the time the estimate was made, and changes in them have had or are reasonably likely to have a material effect on our financial condition or results of operations. Actual results could differ materially from our estimates. We base our estimates on past experience and other assumptions that we believe are reasonable under the circumstances, and we evaluate these estimates on an ongoing basis

We believe that there have been no significant changes in our critical accounting policies during the three months ended March 31, 2022, as compared with those disclosed in Part II, Item 7 "Management’s Discussion and Analysis of Financial Condition and Results of Operations" in our Annual Report on Form 10-K for the year ended December 31, 2021.

Results of Operations

Revenues

Revenues consist of amounts earned from product sales and other revenues. Product revenue, net, includes sales of HEPLISAV-B and CpG 1018 adjuvant.

Revenue from HEPLISAV-B product sales is recorded at the net sales price, which includes estimates of product returns, chargebacks, discounts, rebates and other fees. We sell our CpG 1018 adjuvant to our collaboration partners for use in their development and/or potential commercialization of COVID-19 vaccines. Overall, product revenue, net, reflects our best estimates of the amount of consideration to which we are entitled based on the terms of the contract.

Actual amounts of consideration ultimately received may differ from our estimates. If actual results in the future vary from our estimates, we will adjust these estimates, which would affect net product revenue and earnings in the period such variances become known.

The following is a summary of our revenues (in thousands, except for percentages):

	Three Months Ended March 31,		Increase from 2021 to 2022	
Revenues:	**2022**	**2021**	**$**	**%**
HEPLISAV-B	$ 20,810	$ 8,303	$ 12,507	151 %
CpG 1018	91,517	74,582	16,935	23 %
Total product revenue, net	$ 112,327	$ 82,885	$ 29,442	36 %
Other revenue	1,665	450	1,215	270 %
Total revenues	$ 113,992	$ 83,335	$ 30,657	37 %

HEPLISAV-B product revenue for the three months ended March 31, 2022 increased, compared to the same period in 2021, primarily due to higher volume driven by continued improvement in market share and utilization of adult vaccines.

The increase in CpG 1018 adjuvant product revenue for the three months ended March 31, 2022, compared to the same period in 2021, was due to an increase in sales volume as we entered into supply and collaboration agreements with major collaboration partners in the second and third quarter of 2021 and we continued to manufacture and ship CpG 1018 adjuvant pursuant to such supply and collaboration agreements.

Other revenue includes revenue from our agreement with the DoD and collaboration revenue related to services performed under a collaboration agreement with Serum Institute of India Pvt. Ltd. The increase in other revenue for the three months ended March 31, 2022, compared to the same period of 2021, was due to $1.6 million revenue recognized from our agreement with the DoD.

Cost of Sales – Product

Cost of sales - product consists primarily of raw materials, certain fill, finish and overhead costs and any inventory adjustment charges for pre-filled syringes (“PFS”) of HEPLISAV-B and inventory costs to produce CpG 1018 adjuvant for our collaboration partners.

The following is a summary of our cost of sales - product (in thousands, except for percentages):

	Three Months Ended March 31,		Increase from 2021 to 2022	
Cost of Sales - Product	**2022**	**2021**	**$**	**%**
HEPLISAV-B	$ 5,977	$ 2,745	$ 3,232	118 %
CpG 1018	33,985	21,880	12,105	55 %
Total cost of sales - product	$ 39,962	$ 24,625	$ 15,337	62 %

For the three months ended March 31, 2022, HEPLISAV-B cost of sales-product increased, compared to the same period in 2021, primarily due to higher volume driven by continued improvement in market share and utilization of adult vaccines.

The increase in CpG 1018 adjuvant cost of sales-product for the three months ended March 31, 2022, compared to the same period in 2021, was due to an increase in sales volume as we entered into supply and collaboration agreements with major collaboration partners in the second and third quarter of 2021 and we continued to manufacture and ship CpG 1018 adjuvant pursuant to such supply and collaboration agreements.

Research and Development Expense

Research and development expenses are tracked on a program-by-program basis and consist primarily of costs incurred for the continued research and development of HEPLISAV-B and CpG 1018 adjuvant, clinical product candidates and preclinical studies, which include but are not limited to, compensation and related personnel costs (which include benefits, recruitment and travel costs), expenses incurred under agreements with contract research organizations, contract manufacturing organizations and service providers that assist in conducting clinical studies and costs associated with our preclinical activities, development activities and regulatory operations. We do not allocate stock-based compensation or facility expenses to specific programs because these costs are deployed across multiple programs.

The following is a summary of our research and development expense (in thousands, except for percentages). Certain prior period amounts have been reclassified for consistency with the current year presentation. These reclassifications had no effect on the total research and development expenses:

	Three Months Ended March 31,		Increase (Decrease) from 2021 to 2022	
Program expenses:	**2022**	**2021**	**$**	**%**
HEPLISAV-B development	$ 1,239	$ 3,134	$ (1,895)	(60)%
CpG 1018 adjuvant development	1,133	1,388	(255)	(18)%
Tetanus, diphtheria, and acellular pertussis	1,565	1,159	406	35 %
Shingles	2,933	52	2,881	5540 %
Plague (1)	752	-	752	NM
Other (2)	1,829	757	1,072	142 %
Other research and development expenses:				
Facility costs	368	396	(28)	(7)%
Non-cash stock-based compensation	1,276	872	404	46 %
Total research and development	$ 11,095	$ 7,758	$ 3,337	43 %

(1) In September 2021, we entered into an agreement with the DoD for the development of a recombinant plague vaccine adjuvanted with CpG 1018. Under the agreement, we will conduct a Phase 2 clinical trial combining our CpG 1018 adjuvant with the DoD's

rF1V vaccine. We are being fully reimbursed by the DoD for the costs of this study which is recorded in other revenue in our condensed consolidated statements of operations.

(2) Other research and development expenses includes approximately $0.9 million in final close-out costs associated with the divestment of our immuno-oncology portfolio in 2019.

NM = Not meaningful

Research and development expenses increased by $3.3 million for the three months ended March 31, 2022 compared to the same period in 2021. The increase was primarily due to $5.1 million of continued investment in our product candidates with CpG 1018 adjuvant through pre-clinical and clinical collaborations and additional discovery efforts. We expect these costs to continue to increase for the remaining period of 2022 in line with the progression of our clinical trials through the year. This is offset by a $2.2 million decrease in HEPLISAV-B and CpG 1018 adjuvant development costs. HEPLISAV-B development costs for three months ended March 31, 2021 included activities associated with increasing production yields at our Düsseldorf manufacturing facility. CpG 1018 adjuvant development costs for the three months ended March 31, 2021 included CpG 1018 adjuvant production scale-up costs.

Non-cash stock-based compensation for the three months ended March 31, 2022 increased, compared to the same period in 2021, primarily due to higher headcount to support investment in our clinical vaccine programs.

Selling, General and Administrative Expense

Selling, general and administrative expense consists primarily of compensation and related costs for our commercial support personnel, medical education professionals and personnel in executive and other administrative functions, including legal, finance and information technology; costs for outside services such as sales and marketing, post-marketing studies of HEPLISAV-B, accounting, commercial development, consulting, business development, investor relations and insurance; legal costs that include corporate and patent-related expenses; allocated facility costs and non-cash stock-based compensation.

The following is a summary of our selling, general and administrative expenses (in thousands, except for percentages):

	Three Months Ended March 31,		Increase (Decrease) from 2021 to 2022	
Selling, General and Administrative:	**2022**	**2021**	**$**	**%**
Compensation and related personnel costs	$ 13,181	$ 9,204	$ 3,977	43%
Outside services	10,066	6,588	3,478	53%
Legal costs	708	486	222	46%
Facility costs	2,790	3,001	(211)	(7)%
Non-cash stock-based compensation	5,427	3,144	2,283	73%
Total selling, general and administrative	$ 32,172	$ 22,423	$ 9,749	43%

For the three months ended March 31, 2022, compensation and related personnel costs increased, as compared to the same period in 2021, due to higher headcount primarily due to the expansion of our field sales force in July 2021, increase in business travel as COVID-19 travel restrictions were easing and increase in recruiting expenses.

For the three months ended March 31, 2022, outside services increased, as compared to the same period in 2021 primarily due to an overall increase in sales and marketing activities.

The increase in non-cash stock-based compensation for the three months ended March 31, 2022, compared to the same period in 2021, was primarily due to higher headcount in connection with the expansion of our field sales force in July 2021.

Other Income (Expense)

Interest income is reported net of amortization of premiums and discounts on marketable securities and includes realized gains on investments. Interest expense includes the stated interest and accretion of discount and end of term fee related to our terminated long-term debt agreement and Convertible Notes. Sublease income is recognized in connection with our sublease of office and laboratory space. Change in fair value of warrant liability reflects the changes in fair value of warrants issued in connection with

equity financing in August 2019. Other includes gains and losses on foreign currency transactions and disposal of property and equipment.

The following is a summary of our other income (expense) (in thousands, except for percentages):

	Three Months Ended March 31,		Increase (Decrease) from 2021 to 2022	
	2022	2021	$	%
Interest income	$ 261	$ 47	$ 214	455 %
Interest expense	$ (1,680)	$ (4,712)	$ (3,032)	(64)%
Sublease income	$ 1,609	$ 2,022	$ (413)	(20)%
Change in fair value of warrant liability	$ 1,801	$ (25,552)	$ 27,353	107 %
Other	$ 105	$ 557	$ (452)	(81)%

Interest income for the three months ended March 31, 2022 increased, as compared to the same period in 2021, primarily due to higher yields on our marketable securities portfolio. Interest expense for the three months ended March 31, 2022 decreased, as compared to the same period in 2021, due to the repayment of our long-term debt in May 2021, replaced by the issuance of Convertible Notes in May 2021 at a lower effective interest rate. Sublease income for the three months ended March 31, 2022 included a common area credit for 2021 that we received from the landlord. The change in the fair value of warrant liability is primarily due to the decrease in our stock price from January 1, 2022 through the expiration date of the warrants on February 12, 2022. There were no warrants outstanding as of March 31, 2022. The change in other is primarily due to foreign currency transactions and related fluctuations in the value of the Euro compared to the U.S. dollar.

Income Taxes

We recorded no income tax provision and our effective tax rate was 0% for the three months ended March 31, 2022 and March 31, 2021, respectively. The primary difference between the effective tax rate and the federal statutory rate is due to the benefit of net operating losses utilized during the periods and the full valuation allowance we established on our federal, state, and certain foreign deferred tax assets.

Liquidity and Capital Resources

As of March 31, 2022, we had $503.2 million in cash, cash equivalents and marketable securities. Since our inception, we have relied primarily on the proceeds from public and private sales of our equity securities, borrowings, government grants and revenues from product sales and collaboration agreements to fund our operations. Our funds are currently invested in money market funds, U.S. treasuries, U.S. government agency securities and corporate debt securities. We currently anticipate that our cash, cash equivalents and short-term marketable securities as of March 31, 2022, and anticipated revenues from HEPLISAV-B and CpG 1018, will be sufficient to fund our operations for at least the next 12 months from the date of this filing and in the longer term.

Advanced payments received from CEPI to reserve a specified quantity of CpG 1018 are initially accounted for as long-term deferred revenue. When we deliver CpG 1018 adjuvant to CEPI partner(s) or when we receive payment from CEPI partner(s), we reclassify the advanced payments from long-term deferred revenue to accrued liabilities. As of March 31, 2022, advance payments totaling $107.4 million and $0.4 million were recorded as CEPI accrual and deferred revenue, respectively in our condensed consolidated balance sheets.

As of March 31, 2022, the aggregate principal amount of our Convertible Notes was $225.5 million, excluding debt discount of $4.7 million. The Convertible Notes bear interest at a rate of 2.50% per year, payable semiannually in arrears on May 15 and November 15 of each year, beginning on November 15, 2021. The Convertible Notes mature on May 15, 2026, unless converted, redeemed or repurchased in accordance with their terms prior to such date.

2022 versus 2021

During the three months ended March 31, 2022, we used $50.4 million of cash from our operations primarily due to our net income of $32.9 million, of which $9.1 million consisted of non-cash items which included stock-based compensation, change in fair value of warrant liability, non-cash interest expense, depreciation and amortization, amortization of right-of-use assets and accretion and amortization on marketable securities. By comparison, during the three months ended March 31, 2021, we generated $38.0

million of cash from our operations primarily due to our net income of $0.9 million, of which $32.7 million consisted of non-cash items which included change in fair value of warrant liability, stock-based compensation, depreciation and amortization, amortization of right-of-use assets, non-cash interest expense and accretion and amortization on marketable securities. Cash used in our operations during the first three months of 2022 decreased by $88.5 million. For the three months ended March 31, 2022, we invested approximately $21.3 million in prepaid manufacturing. We expect prepaid manufacturing to be converted into CpG 1018 adjuvant inventory within the next twelve months. Net cash used in operating activities is also impacted by changes in our operating assets and liabilities due to timing of cash receipts and expenditures.

During the three months ended March 31, 2022 and 2021, net cash used in investing activities was $216.5 million and $22.6 million, respectively. During the first three months of 2022 and 2021, net purchases of marketable securities were $215.1 million and $20.9 million, respectively.

During the three months ended March 31, 2022 and 2021, net cash provided by financing activities was $10.3 million and $32.3 million, respectively. Cash provided by financing activities for the three months ended March 31, 2022 included net proceeds of $8.5 million from warrants exercised and $1.8 million proceeds from options exercised and employee stock purchase plan. Cash provided by financing activities for the first three months of 2021 primarily included net proceeds of $28.2 million from our 2020 At Market Sales Agreement with Cowen and Company, LLC ("2020 ATM Agreement") and $3.4 million from warrants exercised.

As of March 31, 2022, we had $120.5 million remaining pursuant to the 2020 ATM Agreement.

Prior to January 1, 2021, we incurred net losses in each year since our inception. For the three months ended March 31, 2022, we recorded net income of $32.9 million. We cannot be certain that sales of our products, and the revenue from our other activities are sustainable. Further, we expect to continue to incur substantial expenses as we continue to invest in commercialization of HEPLISAV-B, development of our CpG 1018 adjuvant and clinical trials and other development. If we cannot generate a sufficient amount of revenue from product sales, we will need to finance our operations through strategic alliance and licensing arrangements and/or future public or private debt and equity financings. Raising additional funds through the issuance of equity or debt securities could result in dilution to our existing stockholders, increased fixed payment obligations, or both. In addition, these securities may have rights senior to those of our common stock and could include covenants that would restrict our operations.

Our ability to raise additional capital in the equity and debt markets, should we choose to do so, is dependent on a number of factors, including, but not limited to, the market demand for our common stock, which itself is subject to a number of development and business risks and uncertainties, our creditworthiness and the uncertainty that we would be able to raise such additional capital at a price or on terms that are favorable to us. In addition, our ability to raise additional funds may be adversely impacted by deteriorating global economic conditions and the recent or future disruptions to and volatility in the credit and financial markets in the United States and worldwide resulting from the ongoing COVID-19 pandemic or otherwise. Adequate financing may not be available to us on acceptable terms, or at all. If adequate funds are not available when needed, we may need to significantly reduce our operations while we seek strategic alternatives, which could have an adverse impact on our ability to achieve our intended business objectives.

Contractual Obligations

As of March 31, 2022, our material non-cancelable purchase commitments, for the supply of HEPLISAV-B and CpG 1018 adjuvant totaled $158.8 million for the next 12 months.

There were no other material changes to the contractual obligations previously disclosed in Part II, Item 7 “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in our Annual Report on Form 10-K for the year ended December 31, 2021.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

During the three months ended March 31, 2022, there were no material changes to our market risk disclosures as set forth in Part II, Item 7A, "Quantitative and Qualitative Disclosures About Market Risk" in our Annual Report on Form 10-K for the year ended December 31, 2021.

ITEM 4. CONTROLS AND PROCEDURES

(a) Evaluation of disclosure controls and procedures

We maintain disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act")) that are designed to ensure that information required to be disclosed in our Exchange Act reports is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission rules and forms and that such information is accumulated and communicated to our management, including our Principal Executive Officer and Principal Financial Officer, as appropriate, to allow for timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can only provide reasonable, not absolute, assurance of achieving the desired control objectives.

Based on their evaluation of the effectiveness of the design and operation of our disclosure controls and procedures as of the end of the period covered by this report, our management, with participation of our Chief Executive Officer and our Chief Financial Officer, concluded that our disclosure controls and procedures are effective and were operating at the reasonable assurance level to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission rules and forms.

(b) Changes in internal controls

There have been no changes in our internal controls over financial reporting as defined in Rule 13a-15(f) under the Exchange Act during our most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal controls over financial reporting.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

From time to time in the ordinary course of business, we receive claims or allegations regarding various matters, including employment, vendor and other similar situations in the conduct of our operations. We are not currently aware of any material legal proceedings involving the Company.

ITEM 1A. RISK FACTORS

Various statements in this Quarterly Report on Form 10-Q are forward-looking statements, including, but not limited to, statements concerning the direct and indirect impact of the ongoing COVID-19 pandemic on our business, our future efforts to obtain regulatory approval, advance our collaborations, manufacture and commercialize approved products, or expectations about our anticipated expenses, revenues, liquidity and cash needs, as well as our plans and strategies. These forward-looking statements are based on current expectations and we assume no obligation to update this information. Numerous factors could cause our actual results to differ significantly from the results described in these forward-looking statements, including those in the risk factors that follow. We have marked with an asterisk (*) those risks described below that reflect material changes from, or additions to, the risks described under Part 1, Item 1A "Risk Factors" included in our Annual Report on Form 10-K for the year ended December 31, 2021 that was filed with the Securities and Exchange Commission on February 28, 2022.

Risks Related to our Business and Capital Requirements

HEPLISAV-B has been launched in the United States, and approved in the European Union, and there is significant competition in these marketplaces. Since this is our first marketed product, the timing of uptake and distribution efforts are unpredictable and there is a risk that we may not achieve and sustain commercial success for HEPLISAV-B.

We have established sales, marketing and distribution capabilities and commercialized HEPLISAV-B in the U.S. Successful commercialization of HEPLISAV-B in the U.S. or elsewhere will require significant resources and time and, while our personnel are experienced with respect to marketing of healthcare products, because HEPLISAV-B is our first marketed product, the potential uptake of the product in distribution and the timing for growth in sales, if any, is unpredictable and we may not be successful in commercializing HEPLISAV-B in the long term. Additionally, while we have received European approval for HEPLISAV-B and we entered a commercialization agreement for the marketing and distribution of HEPLISAV-B in Germany in May 2021, we have never launched a product in the European Union before and there can be no certainty that we will succeed in our European launch efforts. In particular, successful commercialization of HEPLISAV-B will require that we continue to negotiate and enter into contracts with wholesalers, distributors, group purchasing organizations, and other parties, and that we maintain those contractual relationships. There is a risk that we may fail to complete or maintain some or all of these important contracts on favorable terms or at all, or that in a potentially evolving reimbursement environment, our efforts may fail to overcome established competition at favorable pricing or at all.

We converted our contracted U.S. field sales team into full-time employees in the second quarter of 2019. Before then we had not previously employed an in-house field sales team, and thus have limited experience in overseeing and managing an employed salesforce. In 2021 we significantly expanded our field sales force. It will take time for this expanded team to generate significant sales momentum, if it does so at all. In addition, retention of capable sales personnel may be more difficult as we focus on a single product offering and we must retain our salesforce in order for HEPLISAV-B to establish a commercial presence.

Moreover, we expect that significant resources will need to be invested in order to successfully market, sell and distribute HEPLISAV-B for use with diabetes patients, one of our targeted patient populations. Although the Centers for Disease Control and Prevention ("CDC") and the CDC's Advisory Committee on Immunization Practices ("ACIP") recommend that all adults aged 19-59, including patients with diabetes, receive hepatitis B vaccinations, we are unable to predict how many of those patients may actually receive HEPLISAV-B.

In addition to the risks with employing and maintaining our own commercial capabilities and with contracting, other factors that may inhibit our efforts to successfully commercialize HEPLISAV-B include:

- whether we are able to recruit and retain adequate numbers of effective sales and marketing personnel;
- whether we are able to access key health care providers to discuss HEPLISAV-B;
- whether we can compete successfully as a relatively new entrant in established distribution channels for vaccine products; and

- whether we will maintain sufficient financial resources to cover the costs and expenses associated with creating and sustaining a capable sales and marketing organization and related commercial infrastructure.

If we are not successful, we may be required to collaborate or partner HEPLISAV-B with a third-party pharmaceutical or biotechnology company with existing products. To the extent we collaborate or partner, the financial value will be shared with another party and we will need to establish and maintain a successful collaboration arrangement, and we may not be able to enter into these arrangements on acceptable terms or in a timely manner in order to establish HEPLISAV-B in the market. To the extent that we enter into co-promotion or other arrangements, any revenues we receive will depend upon the efforts of third parties, which may not be successful and are only partially in our control. In that event, our product revenues may be lower than if we marketed and sold our products directly with the highest priority, and we may be required to reduce or eliminate much of our commercial infrastructure and personnel as a result of such collaboration or partnership.

We are continuing to closely monitor the impact of the COVID-19 global pandemic on our business and are taking proactive actions to protect the health and safety of our workforce, patients and healthcare professionals, and to continue our business operations and advance our goal of bringing important new vaccines to patients as rapidly as possible. We implemented measures to protect the health and safety of our workforce, including a mandatory work-from-home policy for employees who can perform their jobs offsite. In the conduct of our business activities, we are also taking actions to protect the safety of patients and healthcare professionals. Our field-based personnel previously paused in-person customer interactions in healthcare settings and generally used electronic communication, such as emails, phone calls and video conferences. We may be required to do again so in the future. Many healthcare and contracting professionals at hospitals and other medical institutions with whom our field-based personnel interact are working a greater proportion of their working schedule from home and are facing additional demands on their time during the COVID-19 pandemic. The different quality of electronic interactions as compared with in-person interactions, as well as the reduced quantity of interactions during the COVID-19 pandemic, may reduce the effectiveness of our sales personnel, our customers' procurement activities, as well as those of our collaborators, which could negatively affect our product sales.

In addition, due to the ongoing COVID-19 global pandemic, most medical centers initially restricted access to their facilities and focused on providing care to only the most severely affected patients beginning in March 2020. As states began phasing out these restrictions, medical centers began operating under limited capacity and strict social distancing rules. The overall impact has generally resulted in significantly reduced utilization of all adult vaccines (other than COVID-19 vaccines) since the end of the first quarter of 2020, including a reduction in the utilization of HEPLISAV-B. This reduced utilization has significantly impacted sales and is likely to continue to impact us until restrictions affecting us are lifted and the U.S. returns to more normal conditions. There can be no assurance of the timing or likelihood for adult vaccine utilization rates to return to pre-pandemic levels.

Governments influence the price of medicinal products in the European Union through their pricing and reimbursement rules and control of national healthcare systems that fund a large part of the cost of those products to consumers. Even though we have been granted a marketing authorization in the European Union for HEPLISAV-B, we have yet to obtain reimbursements and pricing approval in any European Union member state. Some jurisdictions operate positive and negative list systems under which products may only be marketed once a reimbursement price has been agreed. To obtain reimbursement or pricing approval, some of these countries may require the completion of clinical trials that compare the cost-effectiveness of a particular product candidate to currently available therapies. Other European Union member states allow companies to fix their own prices for medicines, but monitor and control company profits. Any delay in being able to market our products in the European Union or elsewhere will adversely affect our business and financial condition.

If we, or our partners, are not successful in setting our marketing, pricing and reimbursement strategies, recruiting and maintaining effective sales and marketing personnel or building and maintaining the infrastructure to support commercial operations in the U.S. and elsewhere, we will have difficulty successfully commercializing HEPLISAV-B, which would adversely affect our business and financial condition.

Our business and operations have been, and may continue to be, adversely affected by the evolving and ongoing COVID-19 global pandemic.*

Our business has been, and may continue to be, adversely affected by the effects of the ongoing COVID-19 pandemic and its variants. The COVID-19 pandemic has resulted in travel and other restrictions in order to reduce the spread of the disease. We are continuing to closely monitor the impact of the COVID-19 pandemic on our business and are taking proactive efforts to help protect the health and safety of our workforce, including a mandatory work-from-home policy for employees who can perform their jobs offsite.

The COVID-19 pandemic, and government measures taken in response, have had a significant impact, both direct and indirect, on businesses and commerce, as significant reductions in business-related activities have occurred, supply chains have been disrupted,

and manufacturing and clinical development activities have been curtailed or suspended. The principal purchasers of HEPLISAV-B, including independent hospitals and clinics, integrated delivery networks, public health clinics and prisons, the Departments of Defense and Veterans Affairs and retail pharmacies, have all curtailed their day-to-day activities to some extent and at times have ceased allowing or significantly reduced access to their facilities for non-COVID-19 related business. Thus, our field sales and medical science employees are working a greater proportion of their working schedule from home and are facing additional demands on their time during the COVID-19 pandemic. The different quality of electronic interactions as compared with in-person interactions, as well as the reduced quantity of interactions during the COVID-19 pandemic, may reduce the effectiveness of our sales personnel, our customers' procurement activities, as well as those of our collaborators.

The overall impact has generally resulted in significantly reduced utilization of all adult vaccines, (other than COVID-19 vaccines), including HEPLISAV-B, since the end of the first quarter of 2020. This shift has significantly and adversely impacted our sales of HEPLISAV-B and our business and operating results since March 2020 and continues to pose a headwind for our HEPLISAV-B business. This reduced HEPLISAV-B utilization is likely to continue to impact us until restrictions affecting us are lifted, and the U.S. returns to more normal conditions.

We also cannot predict to what extent the COVID-19 pandemic may continue to disrupt demand for HEPLISAV-B, but the overall magnitude of the disruption to our business will depend, in part, on the length and ongoing severity of the restrictions, and other limitations on our ability to conduct our business in the ordinary course. Utilization rates for adult vaccines (other than COVID-19 vaccines) are well below pre-pandemic levels. Prolonged disruptions would likely materially and negatively impact our business, operating results and financial condition.

If the effect of any quarantines, shelter-in-place, executive and similar government orders related to COVID-19 increase, they could impact personnel at our manufacturing facility in Germany and third-party manufacturing facilities in the United States or abroad. This could adversely affect our ability to maintain and distribute a consistent supply of HEPLISAV-B or CpG 1018 adjuvant sufficient to meet demand.

The spread of COVID-19, which has caused a broad impact globally, has resulted in changes to our business and operations which has impacted our business and operations and may materially affect us economically in the future. While the potential economic impact, and the duration of such impact, brought by the COVID-19 pandemic may be difficult to assess or predict, a widespread pandemic could also potentially result in significant disruption of global financial markets, reducing our ability to access capital, which could in the future negatively affect our liquidity. In addition, a recession or market correction resulting from the spread of COVID-19 could materially affect our business and the value of our common stock.

The COVID-19 pandemic continues to rapidly evolve, and new variants of the virus continue to emerge. While some vaccines have been approved, it is not clear whether, which, or to what extent these vaccines will protect against current or future variants of the virus. The extent to which the COVID-19 pandemic impacts our business, our future sales of HEPLISAV-B, sales of CpG 1018 adjuvant and our total revenue will depend on future developments that are highly uncertain and cannot be predicted with confidence, such as the ultimate geographic spread of the disease, the duration and severity of the outbreak including current and future variants, travel restrictions, quarantines, social distancing requirements and business closures in the United States and elsewhere, business disruptions and the effectiveness of actions taken in the U.S. and elsewhere to contain and treat the disease. Accordingly, we do not yet know the full extent of potential delays or impacts on our business, operations or the global economy as a whole. However, these impacts could continue to adversely impact our business, financial condition, results of operations and growth prospects.

In addition, to the extent the ongoing COVID-19 pandemic adversely affects our business and results of operations, it may also have the effect of heightening many of the other risks and uncertainties described elsewhere in this "Risk Factors" section.

As we continue to focus on the commercialization of our HEPLISAV-B vaccine and our CpG 1018 adjuvant, we may encounter difficulties in managing our commercial growth and expanding our operations successfully.

As our commercial operations expand, we expect that we will also need to manage additional relationships with various third parties, including sole source suppliers, distributors, wholesalers and hospital customers. Future growth will impose significant added responsibilities on our organization, in particular on management. Our future financial performance and our ability to successfully commercialize our HEPLISAV-B vaccine and CpG 1018 adjuvant, and to compete effectively will depend, in part, on our ability to manage any future growth effectively. To that end, we may not be able to manage our growth efforts effectively, and hire, train, retain and integrate additional management, administrative and sales and marketing personnel, or secure sufficient or timely supply from third party service and product providers, and our failure to accomplish any of these activities could prevent us from successfully growing or our company or maintaining the same level of commercial growth.

As we plan for broader commercialization of our HEPLISAV-B vaccine and for expanded capacity to manufacture our CpG 1018 adjuvant, our financial commitments to increase supply capacity might outpace actual demand for our products.

As we plan to scale up production capabilities for HEPLISAV-B as well as production capabilities for our CpG 1018 adjuvant, to support market share gains or potential vaccine collaborations in response to COVID-19 and other initiatives, we have been, and in the future will be, required to make significant financial commitments to reserve manufacturing capacity at our contract manufacturing organizations ("CMOs"). Under ordinary circumstances we would make these commitments close in time and with some level of certainty that we have customers making similar commitments to us. Because of long lead times on manufacturing, uncertainty about who will ultimately buy adjuvant from us and in what quantities, if any, as well as the need to book manufacturing capacity in advance, the financial commitments we make to our CMOs to support manufacturing may not be recovered in its entirety, or at all, if our collaborators or customers do not ultimately purchase from us. Capacity reservation fees are generally not recoverable if we do not use the capacity we have reserved as a result of lower than expected demand, or otherwise. As a result, we could end up making financial commitments that we never recover if demand for the adjuvant or any other product does not materialize in the volumes we are expecting or at all.

As we continue to grow as a commercial organization and enter into supply agreements with customers, those supply agreements will have obligations to deliver product that we are reliant upon third parties to manufacture on our behalf.

As our commercial business begins to expand in connection with commercial sales of HEPLISAV-B and CpG 1018 adjuvant, the contracts we enter into with our customers will generally carry delivery obligations that require us to deliver product in certain quantities and meet certain quality thresholds, among other things, all within specified timeframes. If, for any reason, whether due to reliance on third-party manufacturers or otherwise, we are unable to deliver timely, compliant products to our customers in quantities that meet our contractual obligations, we could be subject to lost revenue, contractual penalties, suits for damages, harm to our reputation or other problems that could materially and adversely affect our business.

Our financial results may vary significantly from quarter to quarter or may fall below the expectations of investors or securities analysts, each of which may adversely affect our stock price.*

A substantial portion of our revenue for the foreseeable future may depend on sales of CpG 1018 adjuvant, which are difficult to predict. For example, as of March 31, 2022, we received advanced payments from certain of our customers to purchase specified quantities of CpG 1018 adjuvant which were recorded as deferred revenue until we deliver the adjuvant and meet all criteria to recognize revenue. In accordance with our stated revenue policy, we expect to record revenue for these contracts upon meeting all of the criteria for revenue recognition under Accounting Standards Codification 606, which includes, among other criteria, the transfer of control for CpG 1018 adjuvant to our customer. The occurrence and timing of such transfer of control can be difficult to predict, and the recognition of revenue can vary widely depending on timing of product deliveries and satisfaction of other obligations. We expect that our visibility into future revenue relating to sales of CpG 1018 adjuvant, including volumes, prices and timing, will continue to be limited and could result in significant, unexpected fluctuations in our quarterly and annual operating results.

Numerous factors, many of which are outside our control, may cause or contribute to significant fluctuations in our quarterly and annual operating results. For example, during the three months ended March 31, 2022, sales of CpG 1018 accounted for 80% of our overall revenue, and one CpG 1018 customer accounted for 59% of our revenue. If orders from our top customers or the number of CpG 1018 collaborations are reduced or discontinued, or orders or payments are delayed, our revenue and/or cash flow in future periods may materially decrease or deviate from stated expectations. As our CpG 1018 customers rely on government orders and payments for their approved vaccines, delays in government funding or budget approval processes can exacerbate these issues. Fluctuations in our operating results may make financial planning and forecasting difficult. In addition, these fluctuations may result in unanticipated decreases in our available cash, which could negatively affect our business and prospects. Similarly, our revenue or operating expenses in one period may be disproportionately higher or lower relative to the others. Accordingly, comparing our operating results on a period-to-period basis may not be meaningful, and investors should not rely on any particular past results as an indication of our future performance. If such fluctuations occur or if our operating results deviate from our expectations or the expectations of investors or securities analysts, our stock price may be adversely affected.

We rely on our facility in Düsseldorf, Germany and third parties to supply materials or perform processes necessary to manufacture our products and our product candidates. We rely on a limited number of suppliers to produce the oligonucleotides we require for development and commercialization. Additionally, we have limited experience in manufacturing our products or product candidates in commercial quantities. With respect to HEPLISAV-B, we use a pre-filled syringe presentation of the vaccine and our ability to meet future demand will depend on our ability to manufacture or have manufactured sufficient supply in this presentation.*

We rely on our facility in Düsseldorf and third parties to perform the multiple processes involved in manufacturing HEPLISAV-B surface antigens, the combination of the oligonucleotide and the antigens, and formulation, fill and finish. The FDA approved our pre-filled presentation of HEPLISAV-B in 2018 and we expect such presentation will be the sole presentation for HEPLISAV-B going forward. We have limited experience in manufacturing and supplying this presentation and rely on a contract manufacturer to do so. Our contract manufacturer is the only approved provider that we have, and there can be no assurance that we or they can successfully manufacture sufficient quantities of pre-filled syringes in compliance with good manufacturing practice ("GMP") in order to meet market demand, whether because of our supplier's own operations, operations of its sub-suppliers, issues with downstream supply chains or otherwise. If our contract manufacturer is unable to source components needed to complete fill and finish of our pre-filled syringes, we may be required to identify a second source which would have associated costs and regulatory requirements. If we are unable to do all this, on a timely basis or at all, our HEPLISAV-B sales could be materially and adversely impacted.

Historically, we have also relied on a limited number of suppliers to produce oligonucleotides for clinical trials and a single supplier to produce (i) our CpG 1018 adjuvant for HEPLISAV-B and for our collaborators and (ii) our pre-filled syringe presentation. Recently, we qualified a second supplier to manufacture CpG 1018 adjuvant, but have a limited operating relationship with them. To date, we have manufactured only small quantities of oligonucleotides ourselves for development purposes. If we were unable to maintain our existing suppliers for CpG 1018 adjuvant, we would have to establish an alternate qualified manufacturing capability ourselves, which would result in significant additional operating costs and delays in manufacturing HEPLISAV-B, or CpG 1018 adjuvant, and developing and commercializing our and our collaborators' product candidates. We or other third parties may not be able to produce product at a cost, quantity and quality that are available from our current third-party suppliers, or at all.

In countries outside of the U.S., we may not be able to comply with ongoing and comparable foreign regulations, and our manufacturing process may be subject to delays, disruptions or quality control/quality assurance problems. Noncompliance with these regulations or other problems with our manufacturing process may limit or disrupt the commercialization of our products or our and our collaborators' product candidates and could result in significant expense.

We have entered into collaborative relationships to develop vaccines utilizing our CpG 1018 adjuvant, including collaborations to develop vaccines for COVID-19. These collaborations may not be successful. If the combination of patents, trade secrets and other proprietary rights that we rely on to protect our intellectual property rights in CpG 1018 adjuvant or otherwise are inadequate, we may be unable to realize recurring commercial benefit from the development of any vaccines containing CpG 1018 adjuvant.*

As part of our business, we are working to develop our CpG 1018 adjuvant as a premier vaccine adjuvant through research collaborations and partnerships. Current collaborations are focused on adjuvanted vaccines for COVID-19, plague, Tdap, seasonal influenza, universal influenza and shingles. There are risks and uncertainties inherent in vaccine research and development, including the timing of completing vaccine development, the results of clinical trials, whether a vaccine will be approved for use, the extent of competition, government actions and whether a vaccine can be successfully manufactured and commercialized. As a result, these collaborative efforts may not be as successful as we expect, or at all.

In addition, our collaborators have primary responsibility for the development, conduct of clinical trials, and for seeking and obtaining regulatory approval of potential vaccines, including any potential vaccine for COVID-19 containing our adjuvant. We have limited or no control over our collaborators' decisions, including the amount and timing of resources that any of these collaborators will dedicate to such activities. Our collaborators may not purchase as much adjuvant as we anticipate, and they may delay placing orders or delay taking certain deliveries under certain circumstances which can affect our revenue recognition. If a collaborator fails to conduct collaborative activities successfully, the development and commercialization of a vaccine could be delayed, and may not occur at all. For example, as of March 31, 2022, only three of our collaborators have received emergency use authorization from an applicable regulatory authority for any vaccine for COVID-19 containing our adjuvant and none had received a full approval. We have historically relied on a single supplier to produce our CpG 1018 adjuvant, and only recently have qualified an alternate supplier to produce the adjuvant with whom we have a limited operating relationship. If we were unable to maintain our existing suppliers for the adjuvant, we would have to establish and maintain an alternate qualified manufacturing capability, which would result in significant additional operating costs and delays in developing and commercializing any potential adjuvanted vaccines by our third-party collaborators. We or other third parties may not be able to produce sufficient adjuvant at a cost, quantity and quality similar to that available from our current third-party suppliers, or at all, and even if we are successful in adding an additional supplier, there is no guarantee such supplier will be able to manufacture compliant supplemental quantities sufficient to support commercial demand, to the extent it materializes, and in the timeframes required.

Our adjuvant has no composition of matter patent protection. We have filed patent applications claiming compositions and methods of use of CpG 1018 adjuvant for COVID-19 and other vaccines, some of which are co-owned with various collaborators. Such patent applications may or may not be allowed, granted or issued. In addition, we rely on trade secret protection and confidentiality and other agreements to protect our interests in proprietary know-how related to CpG 1018 adjuvant. If we are unable to adequately obtain, protect or enforce our proprietary rights relating to CpG 1018 adjuvant, we may be unable to realize recurring commercial benefit from the development of a vaccine containing CpG 1018 adjuvant, and we may not have the ability to prevent others from developing or commercializing a vaccine containing the adjuvant. Disputes or litigation may also arise with our collaborators (with us and/or with one or more third parties), including disputes over ownership rights to intellectual property, know-how or technologies developed with our collaborators.

Furthermore, restrictive government actions related to potential waivers of intellectual property rights in the case of national emergencies or in other circumstances, such as imposition of compulsory licenses related to COVID-19 vaccines, as well as other regulatory initiatives, may result in a general weakening of our or our collaborators' intellectual property protection or otherwise diminish or eliminate our or our collaborators' ability to realize any commercial benefit from the development of a COVID-19 vaccine containing CpG 1018. This may, in turn, adversely impact the demand for CpG 1018, which would have a material adverse effect on our business, results of operations, and financial condition.

We face uncertainty regarding coverage, pricing and reimbursement and the practices of third-party payors, which may make it difficult or impossible to sell certain of our products or product candidates on commercially reasonable terms.

In both domestic and foreign markets, our ability to achieve profitability will depend in part on the negotiation of a favorable price, as well as the availability of coverage and adequate reimbursement, from third-party payors, in particular for HEPLISAV-B, where existing products are already marketed. In the U.S., pricing for hepatitis B vaccines is currently stable and reimbursement is favorable as we believe private and public payors recognize the value of prophylaxis in this setting given the high costs of potential morbidity and mortality, and we have achieved coverage with most third-party payors. However, there is a risk that some payors may limit coverage to specific products on an approved list, also known as a formulary, which might not include HEPLISAV-B. Thus, there can be no assurance that HEPLISAV-B will achieve and sustain stable pricing and favorable reimbursement. Even if favorable coverage and reimbursement status is attained for one or more products for which we or our collaborators receive regulatory approval, less favorable coverage policies and reimbursement rates may be implemented in the future. Our ability to successfully obtain and retain market share and achieve and sustain profitability will be significantly dependent on the market's acceptance of a price for HEPLSIAV-B sufficient to achieve profitability, and future acceptance of such pricing.

Third-party payors are increasingly challenging the price and cost-effectiveness of medical products and services, and pricing, as well as coverage and reimbursement decisions, may not allow our future products to compete effectively with existing competitive products. Because we intend to offer products, if approved, that involve new technologies and new approaches to treating disease, the willingness of third-party payors to reimburse for our products is uncertain. We will have to charge a price for our products that is sufficient to enable us to recover our considerable investment in product development and our operating costs. Further, coverage policies and third-party reimbursement rates may change at any time. Therefore, even if favorable coverage and reimbursement status is attained, less favorable coverage policies and reimbursement rates may be implemented in the future. Adequate third-party payor reimbursement may not be available to enable us to maintain price levels sufficient to achieve profitability, and such unavailability could harm our future prospects and reduce our stock price.

We have applied for, and in some cases have received, grants to help fund the scale-up of CpG 1018 production, and such grants, if and when received, may involve pricing or other restrictions.

In order to help fund potential scale-up of production of CpG 1018 adjuvant that may be required in the event that our CpG 1018 adjuvant is included in any approved and commercially-available novel vaccine, whether a COVID-19 vaccine or otherwise, we have applied for, and in some cases have received grants from various charitable and philanthropic organizations. We may seek such grants in the future. These grants and others, if and when received, may come with certain pricing requirements, global access requirements or reporting or other covenants to ensure that any funded product is made available by us worldwide and on a nondiscriminatory basis. Such covenants may limit the price we can charge for any funded product and may involve a license to use technology we own that is included in the funded products if we do not comply. Such price limitations or licenses, if invoked, could serve to limit the prices we charge, or our control over the manufacturing and distribution of grant-funded products. Failure to agree with such requirements, may result in us not receiving some or all of the grant.

We are subject to ongoing FDA and EMA post-marketing obligations concerning HEPLISAV-B, which may result in significant additional expense, and we may be subject to penalties if we fail to comply with regulatory requirements or experience unanticipated regulatory issues with HEPLISAV-B.

Our HEPLISAV-B regulatory approval in the United States is subject to certain post-marketing obligations and commitments to the FDA. For example, we were required to conduct an observational comparative study of HEPLISAV-B to Engerix-B to assess occurrence of acute myocardial infarction. This study was initiated in August 2018, concluded in November 2020 and the final study report has been submitted to the FDA. We are also committed to conducting an observational surveillance study to evaluate the incidence of new onset immune-mediated diseases, herpes zoster and anaphylaxis; and we are required to establish a pregnancy registry to provide information on outcomes following pregnancy exposure to HEPLISAV-B. These studies will require significant effort and resources, and failure to timely conduct and/or complete these studies to the satisfaction of the FDA could result in withdrawal of our biologics license application approval, which would have a material adverse effect on our business, results of operations, financial condition and prospects. The results of post-marketing studies may also result in additional warnings or precautions for the HEPLISAV-B label or expose additional safety concerns that may result in product liability and withdrawal of the product from the market, any of which would have a material adverse effect on our business, results of operations, financial condition and prospects.

Similar post-marketing obligations and commitments exist in the European Union. For example, we are required to submit periodic safety update reports to the EMA and to keep an up to date risk management plan that takes into account new information that may lead to a significant change in the risk/benefit profile of HEPLISAV-B. Non-compliance with European Union requirements regarding safety monitoring or pharmacovigilance can result in significant financial penalties.

In addition, the manufacturing processes, labelling, packaging, distribution, adverse event reporting, storage, advertising, promotion and recordkeeping for HEPLISAV-B are subject to extensive and ongoing regulatory requirements in the United States and the European Union. These requirements include submissions of safety and other post-marketing information and reports, registration, as well as continued compliance with current good manufacturing practices ("cGMP"), good clinical practices ("GCP"), International Conference on Harmonization guidelines, and good laboratory practices ("GLP"). If we are not able to meet and maintain regulatory compliance, we may lose marketing approval and be required to withdraw our product. Withdrawal of our product would have a material adverse effect on our business.

If HEPLISAV-B or any products we develop are not accepted by the market or if regulatory agencies limit our labeling indications, require labeling content that diminishes market uptake of HEPLISAV-B or any other products we develop, or limit our marketing claims, we may be unable to generate significant revenues, if any.

Even if we obtain regulatory approval for our product candidates, such as the U.S. and European approvals of HEPLISAV-B and are able to commercialize them as we have with HEPLISAV-B, our products may not gain market acceptance among physicians, patients, healthcare payors and the medical community.

The degree of market acceptance of HEPLISAV-B and any of our future approved products will depend upon a number of factors, including:

- the indication for which the product is approved and its approved labeling;
- the presence of other competing approved therapies;
- the potential advantages of the product over existing and future treatment methods;
- the relative convenience and ease of administration of the product;
- the strength of our sales, marketing and distribution support;
- the price and cost-effectiveness of the product; and
- third-party coverage and adequate reimbursement and the willingness of patients to pay out-of-pocket in the absence of sufficient reimbursement by third-party payors.

The FDA or other regulatory agencies could limit the labeling indication for which our product candidates may be marketed or could otherwise limit marketing efforts for our products. If we are unable to achieve approval or successfully market any of our product candidates, or marketing efforts are restricted by regulatory limits, our ability to generate revenues could be significantly impaired.

Many of our competitors have greater financial resources and expertise than we do. If we are unable to successfully compete with existing or potential competitors as a result of these disadvantages, we may be unable to generate sufficient, or any, revenues and our business will be harmed.

We compete with pharmaceutical companies, biotechnology companies, academic institutions and research organizations, in developing and marketing vaccines and adjuvants. For example, HEPLISAV-B competes in the U.S. with established hepatitis B vaccines marketed by Merck and GlaxoSmithKline plc ("GSK") and, if commercialized outside the U.S., with vaccines from those companies as well as several additional established pharmaceutical companies who market abroad. There are also modified schedules of conventional hepatitis B vaccines for limited age ranges that are approved in the European Union and United States. In addition, HEPLISAV-B competes against Twinrix, a bivalent vaccine marketed by GSK for protection against hepatitis B and hepatitis A. A three-dose HBV vaccine manufactured by VBI Vaccines Inc. ("VBI") is approved in Israel and the U.S.

We are also in competition with companies developing vaccines and vaccine adjuvants, generally including, among others, GSK, Pfizer, Inc., Sanofi S.A., Merck, Novartis International AG, Agenus, Inc., Emergent BioSolutions, Inc., Novavax, Inc., Medicago Inc., Valneva, AstraZeneca plc, Moderna, Inc., Johnson & Johnson and VBI. We will likely compete with several of these companies in the hepatitis space, Tdap space, shingles space and other spaces occupied by any other product candidates we ultimately choose to advance through our pipeline in the future.

Products in our clinical pipeline, if approved, will also face competition from competitors who have competing clinical programs or already approved products. Existing and potential competitors or other market participants may also compete with us for qualified commercial, scientific and management personnel, as well as for technology that would otherwise be advantageous to our business. Our success in developing marketable products and achieving a competitive position will depend, in part, on our ability to attract and retain qualified personnel in the near-term, particularly with respect to HEPLISAV-B commercialization. If we do not succeed in attracting new personnel and retaining and motivating existing personnel, our operations may suffer and we may be unable to obtain financing as needed, enter into collaborative arrangements, sell our product candidates or generate revenues.

Despite recent profitability, we have incurred annual net losses in most years since our inception and anticipate that we could continue to incur significant losses for the foreseeable future unless we can successfully commercialize HEPLISAV-B and/or continue to sell significant quantities of our CpG 1018 adjuvant, and if we are unable to sustain profitability, the market value of our common stock will likely decline.*

We have generated limited revenue from the sale of products and, prior to January 1, 2021, have incurred losses in each year since we commenced operations in 1996. Our net income for the year ended December 31, 2021 was $76.7 million compared to net loss of $75.2 million for the year ended December 31, 2020. Our net income for the three months ended March 31, 2022 was $32.9 million compared to net income of $0.9 million for the three months ended March 31, 2021. As of March 31, 2022, we had an accumulated deficit of $1.2 billion.

With our investment in the launch and commercialization of HEPLISAV-B in the U.S., we have in the past, and could in the future, incur operating losses. Our expenses have increased substantially as we established and maintain our HEPLISAV-B commercial infrastructure, including investments in internal infrastructure to support our field sales force and investments in manufacturing and supply chain commitments to maintain commercial supply of HEPLISAV-B. While new sales of CpG 1018 adjuvant have generated significant revenue during the pandemic, there is no guarantee that such revenues will be sustainable in the long term. The timing for uptake of our products in the U.S. and abroad may further affect costs or losses related to commercialization. Due to the numerous risks and uncertainties associated with developing and commercializing vaccine products or other products we may choose to offer in the future, we are unable to predict the extent of any future losses or when, if ever, we will become profitable on an annual basis, or, that if we are able to reach consistent profitability that it will be sustainable for any period of time.

Until we are able to generate significant revenues or achieve profitability through product sales on a consistent basis, we may require substantial additional capital to finance our operations.*

As of March 31, 2022, we had $503.2 million in cash, cash equivalents and marketable securities. Prior to January 1, 2021, we incurred net losses in each year since our inception. For the three months ended March 31, 2022, we recorded a net income of $32.9 million. As of March 31, 2022, we had an accumulated deficit of $1.2 billion. We cannot be certain that sales of our products, and the revenue from our other activities are sustainable and past results are not a reliable indicator of future performance. Further, we expect to continue to incur substantial expenses as we continue to invest in the commercialization and development of HEPLISAV-B and our CpG 1018 adjuvant, clinical trials for our pipeline candidates, and other development. If we cannot generate a sufficient amount of revenue from product sales, we will need to finance our operations through strategic alliance and licensing arrangements and/or future public or private debt and equity financings. Raising additional funds through the issuance of equity or debt securities could result in dilution to our existing stockholders, increased fixed payment obligations, or both. In addition, these securities may have rights senior to those of our common stock and could include covenants that would restrict our operations.

Our ability to raise additional capital in the equity and debt markets, should we choose to do so, is dependent on a number of factors, including, but not limited to, the market demand for our common stock, which itself is subject to a number of development and business risks and uncertainties, our creditworthiness and the uncertainty that we would be able to raise such additional capital at a price or on terms that are favorable to us. In addition, our ability to raise additional funds may be adversely impacted by deteriorating global economic conditions and the recent disruptions to and volatility in the credit and financial markets in the United States and worldwide resulting from the ongoing COVID-19 pandemic or otherwise. Adequate financing may not be available to us on acceptable terms, or at all. If adequate funds are not available when needed, we may need to significantly reduce our operations while we seek strategic alternatives, which could have an adverse impact on our ability to achieve our intended business objectives.

Regulatory authorities may require more clinical trials for our product candidates than we currently expect or are conducting before granting regulatory approval, if regulatory approval is granted at all. Our clinical trials may be extended which may lead to substantial delays in the regulatory approval process for our product candidates and may impair our ability to generate revenues.

Our registration and commercial timelines depend on further discussions with regulatory agencies and requirements and any requests that they may make for additional data or completion of additional clinical trials. Any such requirements or requests could:

- adversely affect our ability to timely and successfully commercialize or market these product candidates;
- result in significant additional costs;
- potentially diminish any competitive advantages for those products;
- potentially limit the markets for those products;
- adversely affect our ability to enter into collaborations or receive milestone payments or royalties from potential collaborators;
- cause us to abandon the development of the affected product candidate; or
- limit our ability to obtain additional financing on acceptable terms, if at all.

We may develop, seek regulatory approval for and market HEPLISAV-B or any other product candidates outside of the U.S. and Europe, requiring a significant commitment of resources. Failure to successfully manage our international operations could result in significant unanticipated costs and delays in regulatory approval or commercialization of our products or product candidates.

We may seek to introduce HEPLISAV-B, or any other product candidates we may develop, to various additional markets outside of the U.S. and Europe. Developing, seeking regulatory approval for and marketing our product candidates outside of the U.S. and Europe could impose substantial costs, as well as burdens on our personnel resources, in addition to potential diversion of management's attention from domestic operations. International operations are subject to risk, including:

- the difficulty of managing geographically distant operations, including recruiting and retaining qualified employees, locating adequate facilities and establishing useful business support relationships in the local community;
- compliance with varying international regulatory requirements, laws and treaties;
- securing international distribution, marketing and sales capabilities upon favorable terms;
- adequate protection of our intellectual property rights;
- obtaining regulatory and pricing approvals at a level sufficient to justify commercialization;
- legal uncertainties and potential timing delays associated with tariffs, export licenses and other trade barriers;
- foreign tax compliance and diverse tax consequences;
- the fluctuation of conversion rates between foreign currencies and the U.S. dollar; and
- regional and geopolitical risks.

In the event that we determine to pursue commercialization of HEPLISAV-B outside the United States and the European Union, our opportunity will depend upon our receiving regulatory approval, which can be costly and time consuming, and there is a risk that one or more regulatory bodies may require that we conduct additional clinical trials and/or take other measures which will take time and require that we incur significant additional expense. In addition, there is the risk that we may not receive approval in one or more jurisdictions, even if we undertake these efforts.

The results of clinical trials conducted to support regulatory approval in one or more jurisdictions, and any failure or delay in obtaining regulatory approval in one or more jurisdictions, may have a negative effect on the regulatory approval process in other jurisdictions, including our regulatory approval in the United States. If we are unable to successfully manage our international operations, we may incur significant unanticipated costs and delays in regulatory approval or commercialization of our product candidates, which would impair our ability to generate revenues.

Clinical trials for our commercial product and product candidates are expensive and time consuming, may take longer than we expect or may not be completed at all, and have uncertain outcomes.

Clinical trials, including post-marketing studies, to generate sufficient data to meet FDA (and other regulatory agency) requirements are expensive and time consuming, may take more time to complete than expected or may not be completed, and may not have favorable outcomes if they are completed. In addition, results from smaller, earlier stage clinical studies may not be representative of larger, controlled clinical trials that would be required in order to obtain regulatory approval of a product candidate.

Each of our clinical trials requires the investment of substantial planning, expense and time and the timing of the commencement, continuation and completion of these clinical trials may be subject to significant delays relating to various causes, including scheduling conflicts with participating clinicians and clinical institutions, difficulties in identifying and enrolling participants who meet trial eligibility criteria, failure of participants to complete the clinical trial, delay or failure to obtain Institutional Review Board ("IRB") or regulatory approval to conduct a clinical trial at a prospective site, unexpected adverse events and shortages of available drug supply. Participant enrollment is a function of many factors, including the size of the relevant population, the proximity of participants to clinical sites, the eligibility criteria for the trial, the existence of competing clinical trials and the availability of alternative or new treatments.

As a biopharmaceutical company, we engage clinical research organizations ("CROs") to conduct clinical studies, and failure by us or our CROs to conduct a clinical study in accordance with GCP standards and other applicable regulatory requirements could result in disqualification of the applicable clinical trial from consideration in support of approval of a potential product.

We are responsible for conducting our clinical trials consistent with GCP standards and for oversight of our vendors to ensure that they comply with such standards. We depend on medical institutions and CROs to conduct our clinical trials in compliance with GCP. To the extent that we or they fail to comply with GCP standards, fail to enroll participants for our clinical trials, or are delayed for a significant time in the execution of our trials, including achieving full enrollment, we may be affected by increased costs, program delays or both, which may harm our business.

Clinical trials must be conducted in accordance with FDA or other applicable foreign government guidelines and are subject to oversight by the FDA, other foreign governmental agencies and IRBs at the medical institutions where the clinical trials are conducted. In addition, clinical trials must be conducted with supplies of our product candidates produced under GMP and other requirements in foreign countries, and may require large numbers of participants.

In addition, we obtain guidance from regulatory authorities on certain aspects of our clinical development activities and seek to comply with written guidelines provided by the authorities. These discussions and written guidelines are not binding obligations on the part of the regulatory authorities and the regulatory authorities may require additional patient data or studies to be conducted. Regulatory authorities may revise or retract previous guidance during the course of a clinical trial or after completion of the trial. The authorities may also disqualify a clinical trial from consideration in support of approval of a potential product if they deem the guidelines have not been met. The FDA or foreign regulatory agencies may determine our clinical trials or other data regarding safety, efficacy or consistency of manufacture or compliance with GMP regulations are insufficient for regulatory approval.

The FDA or other foreign regulatory agencies or we ourselves could delay, suspend or halt our clinical trials of a product candidate for numerous reasons, including with respect to our product candidates and those of our partners in combination agent studies:

- deficiencies in the trial design;
- deficiencies in the conduct of the clinical trial including failure to conduct the clinical trial in accordance with regulatory requirements or clinical protocols;
- deficiencies in the clinical trial operations or trial sites resulting in the imposition of a clinical hold;
- a product candidate may have unforeseen adverse side effects, including fatalities, or a determination may be made that a clinical trial presents unacceptable health risks;
- the time required to determine whether a product candidate is effective may be longer than expected;

- fatalities or other adverse events arising during a clinical trial that may not be related to clinical trial treatments;
- a product candidate or combination study may appear to be no more effective than current therapies;
- the quality or stability of a product candidate may fail to conform to acceptable standards;
- the inability to produce or obtain sufficient quantities of a product candidate to complete the trials;
- our inability to reach agreement on acceptable terms with prospective CROs and trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- our inability to obtain IRB approval to conduct a clinical trial at a prospective site;
- the inability to obtain regulatory approval to conduct a clinical trial;
- lack of adequate funding to continue a clinical trial, including the occurrence of unforeseen costs due to enrollment delays, requirements to conduct additional trials and studies and increased expenses associated with the services of our CROs and other third parties;
- the inability to recruit and enroll individuals to participate in clinical trials for reasons including competition from other clinical trial programs for the same or similar indications; or
- the inability to retain participants who have initiated a clinical trial but may withdraw due to side effects from the therapy, lack of efficacy or personal issues, or who are otherwise unavailable for further follow-up.

In addition, we may experience significant setbacks in advanced clinical trials, even after promising results in earlier trials, such as unexpected adverse events that occur when our product candidates are combined with other therapies and drugs or given to larger patient populations, which often occur in later-stage clinical trials, or less favorable clinical outcomes. Moreover, clinical results are frequently susceptible to varying interpretations that may delay, limit or prevent regulatory approvals.

Negative or inconclusive results or adverse medical events, including participant fatalities that may be attributable to our product candidates, during a clinical trial may necessitate that it be redesigned, repeated or terminated. Further, some of our clinical trials may be overseen by a Data Safety Monitoring Board (“DSMB”), and the DSMB may determine to delay or suspend one or more of these trials due to safety or futility findings based on events occurring during a clinical trial. Any such delay, suspension, termination or request to repeat or redesign a trial could increase our costs and prevent or significantly delay our ability to commercialize our product candidates. Even if we complete all such activities without issue, final results may not actually support approval of a particular product candidate.

HEPLISAV-B and most of our earlier stage programs rely on oligonucleotide TLR agonists. In the event of serious adverse event data relating to TLR agonists, we may be required to reduce the scope of, or discontinue, our operations, or reevaluate the viability of strategic alternatives.

Most of our programs, including HEPLISAV-B, incorporate TLR9 agonist CpG oligonucleotides. If any of our product candidates in clinical trials or similar products from competitors produce serious adverse event data, we may be required to delay, discontinue or modify our clinical trials or our clinical trial strategy, or significantly reevaluate strategic alternatives. If a safety risk based on mechanism of action or the molecular structure were identified, it may hinder our ability to develop our product candidates or enter into potential collaboration or commercial arrangements. Rare diseases and a numerical imbalance in cardiac adverse events have been observed in patients in our clinical trials. If adverse event data are found to apply to our TLR agonist and/or inhibitor technology as a whole, we may be required to significantly reduce or discontinue our operations.

HEPLISAV-B is subject to regulatory obligations and continued regulatory review, and if we receive regulatory approval for our other product candidates, we will be subject to ongoing FDA and foreign regulatory obligations and continued regulatory review for such products.

With respect to HEPLISAV-B and our other product candidates in development, we and our third-party manufacturers and suppliers are required to comply with applicable GMP regulations and other international regulatory requirements. The regulations require that our products and product candidates be manufactured and records maintained in a prescribed manner with respect to manufacturing, testing and quality control/quality assurance activities. Manufacturers and suppliers of key components and materials must be named in a BLA submitted to the FDA for any product candidate for which we are seeking FDA approval. Additionally, third-party manufacturers and suppliers and any manufacturing facility must undergo a pre-approval inspection before we can obtain marketing authorization for any of our product candidates. Even after a manufacturer has been qualified by the FDA, the manufacturer must continue to expend time, money and effort in the area of production and quality control to ensure full compliance with GMP.

Manufacturers are subject to regular, periodic inspections by the FDA following initial approval. Further, to the extent that we contract with third parties for the manufacture of our products or product candidates, our ability to control third-party compliance with FDA requirements will be limited to contractual remedies and rights of inspection.

If, as a result of the FDA's inspections, it determines that the equipment, facilities, laboratories or processes do not comply with applicable FDA regulations and conditions of product approval, the FDA may not approve the product or may suspend the manufacturing operations. If the manufacturing operations of any of the suppliers for our products or product candidates are suspended, we may be unable to generate sufficient quantities of commercial or clinical supplies of product to meet market demand, which would harm our business. In addition, if delivery of material from our suppliers were interrupted for any reason, we might be unable to ship our approved product for commercial supply or to supply our products in development for clinical trials. Significant and costly delays can occur if the qualification of a new supplier is required.

Failure to comply with regulatory requirements could prevent or delay marketing approval or require the expenditure of money or other resources to correct. Failure to comply with applicable requirements may also result in warning letters, fines, injunctions, civil penalties, recall or seizure of products, total or partial suspension of production, refusal of the government to renew marketing applications and criminal prosecution, any of which could be harmful to our ability to generate revenues and to our stock price.

Any regulatory approvals that we receive for our product candidates are likely to contain requirements for post-marketing follow-up studies, which may be costly. Product approvals, once granted, may be modified based on data from subsequent studies or commercial use. As a result, limitations on labeling indications or marketing claims, or withdrawal from the market may be required if problems occur after approval and commercialization.

A key part of our business strategy for products in development is to establish collaborative relationships to help fund or manage development and commercialization of our product candidates and research programs. We may not succeed in establishing and maintaining collaborative relationships, which may significantly limit our ability to continue to develop and commercialize those products and programs, if at all.

We have and may in the future need to establish collaborative relationships to obtain domestic and/or international sales, marketing, research, development and distribution capabilities for our product candidates and our discovery research programs. Failure to obtain a collaborative relationship for those product candidates and programs or HEPLISAV-B in markets outside the U.S. requiring extensive sales efforts, may significantly impair the potential for those products and programs and we may be required to raise additional capital to continue them. The process of establishing and maintaining collaborative relationships is difficult and time-consuming, and even if we establish such relationships, they may involve significant uncertainty, including:

- our partners may seek to renegotiate or terminate their relationships with us due to unsatisfactory clinical results, manufacturing issues, a change in business strategy, a change of control or other reasons;
- our shortage of capital resources may impact the willingness of companies to collaborate with us;
- our contracts for collaborative arrangements are terminable at will on written notice and may otherwise expire or terminate and we may not have alternative funding available;
- our partners may choose to pursue alternative technologies, including those of our competitors;
- we may have disputes with a partner that could lead to litigation or arbitration;
- we have limited control over the decisions of our partners and they may change the priority of our programs in a manner that would result in termination of the agreement or add significant delay in the partnered program;
- our ability to generate future payments and royalties from our partners depends upon the abilities of our partners to establish the safety and efficacy of product candidates, obtain regulatory approvals and successfully manufacture and commercialize the products developed from product candidates;
- we or our partners may fail to properly initiate, maintain or defend our intellectual property rights, where applicable, or a party may use our proprietary information in such a way as to invite litigation that could jeopardize or potentially invalidate our proprietary information or expose us to potential liability;
- our partners may not devote sufficient capital or resources towards our product candidates; and
- our partners may not comply with applicable government regulatory requirements.

Supporting diligence activities conducted by potential collaborators and negotiating the financial and other terms of a collaboration agreement are long and complex processes with uncertain results. Even if we are successful in entering into one or more collaboration agreements, collaborations may involve greater uncertainty for us, as we may have less control over certain aspects of our collaborative programs than we do over our proprietary development and commercialization programs, and the financial terms upon which collaborators may be willing to enter into such an arrangement cannot be certain.

If any collaborator fails to fulfill its responsibilities in a timely manner, or at all, our research, clinical development, manufacturing or commercialization efforts pursuant to that collaboration could be delayed or terminated, or it may be necessary for us to assume responsibility for expenses or activities that would otherwise have been the responsibility of our collaborator. Despite our efforts, we may be unable to secure collaborative arrangements. If we are unable to establish and maintain collaborative relationships on acceptable terms or to successfully transition terminated collaborative agreements, we may have to delay or discontinue further development of one or more of our product candidates, undertake development and commercialization activities at our own expense or find alternative sources of capital.

We rely on CROs and clinical sites and investigators for our clinical trials. If these third parties do not fulfill their contractual obligations or meet expected deadlines, our planned clinical trials may be delayed and we may fail to obtain the regulatory approvals necessary to commercialize our product candidates.

We rely on CROs, clinical sites and investigators for our clinical trials. If these third parties do not perform their obligations or meet expected deadlines our planned clinical trials may be extended, delayed, modified or terminated. While we maintain oversight over our clinical trials and conduct regular reviews of the data, we are dependent on the processes and quality control efforts of our third-party contractors to ensure that clinical trials are conducted properly and that detailed, quality records are maintained to support the results of the clinical trials that they are conducting on our behalf. Any extension, delay, modification or termination of our clinical trials or failure to ensure adequate documentation and the quality of the results in the clinical trials could delay or otherwise adversely affect our ability to commercialize our product candidates and could have a material adverse effect on our business and operations.

If we fail to comply with the extensive requirements applicable to biopharmaceutical manufacturers and marketers under the healthcare fraud and abuse, anticorruption, privacy, transparency and other laws of the jurisdictions in which we conduct our business, we may be subject to significant liability.

Our activities, and the activities of our agents, including some contracted third parties, are subject to extensive government regulation and oversight both in the U.S. and in foreign jurisdictions. Our interactions with physicians and others in a position to prescribe or purchase our products are subject to a legal regime designed to prevent healthcare fraud and abuse and off-label promotion. We also are subject to laws pertaining to transparency of transfers of value to healthcare providers; privacy and data protection; compliance with industry voluntary compliance guidelines; and prohibiting the payment of bribes. Relevant U.S. laws include:

- the federal Anti-Kickback Statute, which prohibits persons from, among other things, knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, in exchange for or to induce either the referral of an individual for, or the purchase, order or recommendation of, any good or service for which payment may be made under federal health care programs, such as the Medicare and Medicaid programs;
- federal false claims laws, including the False Claims Act, and Civil Monetary Penalties Law, which prohibit individuals or entities from, among other things, knowingly presenting, or causing to be presented, claims for payment to the government or its agents that are false or fraudulent;
- the Federal Food, Drug and Cosmetic Act and governing regulations which, among other things, prohibit off-label promotion of prescription drugs;
- the federal Physician Payments Sunshine Act created under the Patient Protection and Affordable Care Act of 2010, as amended by the Health Care and Education and Reconciliation Act of 2010 (collectively, “ACA”) which requires certain manufacturers of drugs, devices, biologics and medical supplies to report annually to the Centers for Medicare & Medicaid Services (“CMS”), information related to payments and other transfers of value to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors), other health care professionals (such as physician assistants and nurse practitioners), and teaching hospitals, and ownership and investment interests held by such physicians and their immediate family members;
- the federal Health Insurance Portability and Accountability Act of 1996 (“HIPAA”), which created, among other things, new federal criminal statutes that prohibit executing a scheme to defraud any healthcare benefit program and making false statements relating to healthcare matters;

- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, and their implementing regulations, which imposes certain requirements on “covered entities,” including certain healthcare providers, health plans, and healthcare clearinghouses, and their respective “business associates” that create, receive, maintain or transmit individually identifiable health information for or on behalf of a covered entity as well as their covered subcontractors relating to the privacy, security, and transmission of individually identifiable health information;
- the Foreign Corrupt Practices Act, which prohibits the payment of bribes to foreign government officials and requires that a company’s books and records accurately reflect the company’s transactions; and
- foreign and state law equivalents of each of the federal laws described above, such as anti-kickback and false claims laws which may apply to items or services reimbursed by state health insurance programs or any third-party payor, including commercial insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry’s voluntary compliance guidelines and the applicable compliance guidance promulgated by the federal government; state laws that require drug manufacturers to report information on the pricing of certain drugs; state and local laws that require the registration of pharmaceutical sales representatives; and state and foreign laws governing the privacy and security of health information, many of which differ from each other in significant ways and often are not preempted by HIPAA.

The Office of Inspector General for the Department of Health and Human Services, the Department of Justice, states’ Attorneys General and other governmental authorities actively enforce the laws and regulations discussed above. These entities also coordinate extensively with the FDA, using legal theories that connect violations of the Federal Food, Drug and Cosmetic Act (such as off-label promotion) to the eventual submission of false claims to government healthcare programs. Prosecution of such promotion cases under the False Claims Act provides the potential for private parties (qui tam relators, or “whistleblowers”) to initiate cases on behalf of the government and provides for significantly higher penalties upon conviction.

In the U.S., pharmaceutical and biotechnology companies have been the target of numerous government prosecutions and investigations alleging violations of law, including claims asserting impermissible off-label promotion of pharmaceutical products, payments intended to influence the referral of federal or state health care business, submission of false claims for government reimbursement, or submission of incorrect pricing information.

Violations of any of the laws described above or any other applicable governmental regulations and other similar foreign laws may subject us, our employees or our agents to significant criminal, civil and administrative penalties, including fines, civil monetary penalties, exclusion from participation in government health care programs (including Medicare and Medicaid), disgorgement, imprisonment, additional reporting requirements and oversight if we become subject to a corporate integrity agreement or similar agreement to resolve allegations of non-compliance with these laws and the restriction or restructuring of our operations, any of which could adversely affect our ability to operate our business and our financial results. Additionally, whether or not we have complied with the law, an investigation into alleged unlawful conduct may cause us to incur significant expense, cause reputational damage, divert management time and attention, and otherwise adversely affect our business. While we have developed and instituted a corporate compliance program, we cannot guarantee that we, our employees, our consultants, contractors, or other agents are or will be in compliance with all applicable U.S. or foreign laws.

It remains unclear how various state, federal, and international privacy and cybersecurity law will affect our business. For example, we don’t know how the California Consumer Privacy Act of 2018 ("CCPA") will be interpreted, but as currently written, it will likely impact our business activities and exemplifies the vulnerability of our business to not only cyber threats but also the evolving regulatory environment related to personal data. As we expand our operations, the CCPA may increase our compliance costs and potential liability. Some observers have noted that the CCPA could mark the beginning of a trend toward more stringent privacy legislation in the United States. Other states are beginning to pass similar laws.

Internationally, the General Data Protection Regulation (“GDPR”) requires us to make more detailed disclosures to data subjects, requires disclosure of the legal basis on which we can process personal data, makes it harder for us to obtain valid consent for processing, will require the appointment of data protection officers when sensitive personal data, such as health data, is processed on a large scale, provides more robust rights for data subjects, introduces mandatory data breach notification through the EU, imposes additional obligations on us when contracting with service providers and requires us to adopt appropriate privacy governance including policies, procedures, training and data audit. If we do not comply with our obligations under the GDPR, we could be exposed to fines of up to the greater of €20 million or up to 4% of our total global annual revenue in the event of a significant breach. In addition, we may be the subject of litigation and/or adverse publicity, which could adversely affect our business, results of operations and financial condition. Also, mechanisms for legally transferring information under the GDPR remain unclear. At present, there are few if any viable alternatives to the standard contractual clauses so future developments may necessitate further expenditures on local infrastructure, changes to internal business processes, or may otherwise affect or restrict sales and operations.

Enacted or future legislation, including potentially unfavorable pricing regulations or other healthcare reform initiatives, may have an adverse effect on our operations and business.

We expect there will continue to be federal and state laws and/or regulations, proposed and implemented, that could impact our operations and business. For example, the ACA, among other things, imposes a significant annual fee on companies that manufacture or import branded prescription drug products. It also contains substantial provisions intended to broaden access to health insurance, reduce or constrain the growth of healthcare spending, and impose additional health policy reforms, any or all of which may affect our business. There have been executive, legal and political challenges to certain aspects of ACA. For example, President Trump signed several executive orders and other directives designed to delay, circumvent, or loosen certain requirements mandated by ACA. Concurrently, Congress considered legislation that would repeal or repeal and replace all or part of ACA. While Congress has not passed comprehensive repeal legislation, several bills affecting the implementation of certain taxes under the ACA have been signed into law. The Tax Cuts and Jobs Act of 2017 included a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate". In addition, the 2020 federal spending package permanently eliminated, effective January 1, 2020, the ACA-mandated "Cadillac" tax on high-cost employer-sponsored health coverage and medical device tax and, effective January l, 2021, also eliminated the health insurer tax. The Bipartisan Budget Act of 2018 among other things, amended the ACA, effective January 1, 2019, to increase from 50 percent to 70 percent the point-of-sale discount that is owed by pharmaceutical manufacturers who participate in Medicare Part D and close the coverage gap in most Medicare drug plans, commonly referred to as the "donut hole." On June 17, 2021, the U.S. Supreme Court dismissed a challenge on procedural grounds that argued the ACA is unconstitutional in its entirety because the "individual mandate" was repealed by Congress. Thus, the ACA will remain in effect in its current form. Further, prior to the U.S. Supreme Court ruling, on January 28, 2021, President Biden issued an executive order that initiated a special enrollment period for purposes of obtaining health insurance coverage through the ACA marketplace, which began on February 15, 2021 and will remain open through August 15, 2021. The executive order also instructed certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the ACA. It is possible that the ACA will be subject to judicial or Congressional challenges in the future. It is unclear how such challenges and healthcare reform measures will impact the ACA and our business.

Other legislative changes have also been proposed and adopted since the ACA was enacted. For example, the Budget Control Act of 2011 resulted in aggregate reductions in Medicare payments to providers of up to two percent per fiscal year, starting in 2013 and, due to subsequent legislative amendments to the statute, will remain in effect through 2031 unless additional Congressional action is taken. However, COVID-19 relief support legislation suspended the 2% Medicare sequester from May 1, 2020 through March 31, 2022. Under current legislation, the actual reduction in Medicare payments will vary from 1% in 2022 to up to 3% in the final fiscal year of this sequester. Additionally, on March 11, 2021, President Biden signed the American Rescue Plan Act of 2021 into law, which eliminates the statutory Medicaid drug rebate cap, currently set at 100% of a drug's average manufacturer price, for single source and innovator multiple source drugs, beginning January 1, 2024. In addition, the American Taxpayer Relief Act of 2012, among other things, reduced Medicare payments to several types of providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. Such laws, and others that may affect our business that have been recently enacted or may in the future be enacted, may result in additional reductions in Medicare and other healthcare funding.

Also, there has been heightened governmental scrutiny recently in the U.S. over pharmaceutical pricing practices in light of the rising cost of prescription drugs and biologics. Such scrutiny has resulted in several recent Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for products. At the federal level, the Trump administration used several means to propose or implement drug pricing reform, including through federal budget proposals, executive orders and policy initiatives. For example, on July 24, 2020 and September 13, 2020, the Trump administration announced several executive orders related to prescription drug pricing that attempt to implement several of the administration's proposals. The FDA concurrently released a final rule and guidance in September 2020, implementing a portion of the importation executive order providing pathways for states to build and submit importation plans for drugs from Canada. Further, on November 20, 2020, the U.S. Department of Health and Human Services ("HHS") finalized a regulation removing safe harbor protection for price reductions from pharmaceutical manufacturers to plan sponsors under Part D, either directly or through pharmacy benefit managers, unless the price reduction is required by law. The implementation of the rule has been delayed by the Biden administration from January 1, 2022 to January 1, 2023 in response to ongoing litigation. The rule also creates a new safe harbor for price reductions reflected at the point-of-sale, as well as a new safe harbor for certain fixed fee arrangements between pharmacy benefit managers and manufacturers, the implementation of which have also been delayed until January 1, 2023. On November 20, 2020, CMS issued an interim final rule implementing President Trump's Most Favored Nation executive order, which would tie Medicare Part B payments for certain physician-administered drugs to the lowest price paid in other economically advanced countries, effective January 1, 2021. As a result of litigation challenging the Most Favored Nation model, on December 27, 2021, CMS

published a final rule that rescinded the Most Favored Nation Model interim final rule. In July 2021, the Biden administration released an executive order, "Promoting Competition in the American Economy," with multiple provisions aimed at prescription drugs. In response to Biden's executive order, on September 9, 2021, HHS released a Comprehensive Plan for Addressing High Drug Prices that outlines principles for drug pricing reform and sets out a variety of potential legislative policies that Congress could pursue to advance these principles. In addition, Congress is considering drug pricing as part of other reform initiatives. At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, and restrictions on certain product access. In some cases, such legislation and regulations have been designed to encourage importation from other countries and bulk purchasing.

We cannot predict the initiatives that may be adopted in the future or the effect any such initiatives may have on our business. However, in the future, there will likely continue to be additional proposals relating to the reform of the U.S. healthcare system, some of which could further limit coverage and reimbursement of products, including our product candidates. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability or commercialize our products. Further, it is possible that additional governmental action is taken in response to the COVID-19 pandemic.

In connection with our work with the U.S. Department of Defense, we have become a defense contractor, and are therefore subject to new administrative burdens and control requirements in connection with the maintenance of that relationship.

In September of 2021, we entered into an agreement with the U.S. Department of Defense ("DoD") relating to the conduct of a clinical trial in connection with the development of an improved plague vaccine. In connection with this agreement, we became subject to new administrative and control requirements, including certain reporting obligations as well as a requirement to develop, implement and maintain an International Traffic in Arms Regulations ("ITAR") compliance program, among other things. Further, if our efforts result in an improved plague vaccine and we enter into a supply agreement for finished plague vaccines with the DoD, we expect that such a supply contract would impose additional administrative, control, compliance and other obligations. We have limited experience developing and administering such programs. Development and maintenance of such programs can be burdensome and costly and there can be no guarantee that we will be able to maintain compliance with all of the terms of such an agreement. Failure to comply with these requirements could have a significant reputational or financial impact on our business and on our stock price.

We face product liability exposure, which, if not covered by insurance, could result in significant financial liability.

While we have not experienced any product liability claims to date, the use of any of our product candidates in clinical trials and the sale of any approved products, including HEPLISAV-B, will subject us to potential product liability claims and may raise questions about a product's safety and efficacy. As a result, we could experience a delay in our ability to commercialize one or more of our product candidates or reduced sales of any approved product candidates. In addition, a product liability claim may exceed the limits of our insurance policies and exhaust our internal resources. We have obtained limited clinical trial liability and umbrella insurance coverage for our clinical trials. This coverage may not be adequate or may not continue to be available in sufficient amounts, at an acceptable cost, or at all. While we have obtained product liability insurance coverage for HEPLISAV-B, there is a risk that this coverage may not be adequate or may not continue to be available in sufficient amounts, at an acceptable cost or at all. We also may not be able to obtain commercially reasonable product liability insurance for any product approved for marketing in the future. A product liability claim, product recalls or other claims, as well as any claims for uninsured liabilities or in excess of insured liabilities, would divert our management's attention from our business and could result in significant financial liability.

Risks Related to our Intellectual Property

If third parties successfully assert that we have infringed their patents and proprietary rights or challenge our patents and proprietary rights, we may become involved in intellectual property disputes and litigation that would be costly, time consuming and delay or prevent development or commercialization of our product candidates.*

We may be exposed to future litigation or other dispute by third parties based on claims that our products, product candidates or proprietary technologies infringe their intellectual property rights, or we may be required to enter into litigation to enforce patents issued or licensed to us or to determine the ownership, scope or validity of our or another party's proprietary rights, including a challenge as to the validity of our issued and pending claims. From time to time we have been, and in the future may become, involved in various administrative proceedings related to our intellectual property which can cause us to incur certain legal expenses. If we become involved in any litigation and/or other significant proceedings related to our intellectual property or the intellectual property of others, we will incur substantial additional expenses and it will divert the efforts of our technical and management personnel.

If we or our collaborators are unsuccessful in defending or prosecuting our issued and pending claims or in defending potential claims against our products, for example, as may arise in connection with the commercialization of HEPLISAV-B or any similar or other product candidate, we or our collaborator could be required to pay substantial damages or be unable to commercialize our product candidates or use our proprietary technologies without a license from such third party. A license may require the payment of substantial fees or royalties, require a grant of a cross-license to our intellectual property or technologies or may not be available on acceptable terms, if at all. Any of these outcomes could require us to change our business strategy and could materially impact our business, operations or financial condition.

If the combination of patents, trade secrets and contractual provisions that we rely on to protect our intellectual property is inadequate, the value of our products or product candidates will decrease, and we may be unable to realize any commercial benefit from the development of a vaccine containing our CpG 1018 adjuvant.

Our success depends on our ability to:

- obtain and protect commercially valuable patents or the rights to patents both domestically and abroad;
- operate without infringing upon the proprietary rights of others; and
- prevent others from successfully challenging or infringing our proprietary rights.

We will be able to protect our proprietary rights from unauthorized use only to the extent that these rights are covered by valid and enforceable patents for a commercially sufficient term or are otherwise effectively maintained as trade secrets. We try to protect our proprietary rights by filing and prosecuting U.S. and foreign patent applications. However, in certain cases such protection may be limited, depending in part on existing patents held by third parties, or other disclosures which impact patentability, which may only allow us to obtain relatively narrow patent protection, if any at all. In the U.S., legal standards relating to the validity and scope of patent claims in the biopharmaceutical field can be highly uncertain, are still evolving and involve complex legal and factual questions for which important legal principles remain unresolved.

For example, our HEPLISAV-B and CpG 1018 adjuvant have no composition of matter patent protection in the United States or elsewhere. We must therefore rely primarily on the protection afforded by method of use patent claims relating to HEPLISAV-B and the use of CpG 1018 in vaccines, and trade secret protection and confidentiality and other agreements to protect our interests in proprietary know-how related to HEPLISAV-B and CpG 1018. We have three issued U.S. patents relating to certain uses of HEPLISAV-B that are projected to expire in 2032. We have filed patent applications claiming compositions and methods of use of CpG 1018 for COVID-19 and other vaccines, but we cannot provide any assurances that we will receive an issued patent for any of these patent applications or that, if issued, any of these patents will provide adequate protection for any intended use of CpG 1018 in vaccines. In addition, we are or may be subject to co-ownership of the underlying intellectual property with our collaborators and, therefore, may not be the sole owner. If we are unable to adequately obtain patent protection or enforce our other proprietary rights relating to CpG 1018, we may be unable to realize any recurring commercial benefit from the development of a vaccine containing CpG 1018, and we may not have the ability to prevent others from developing or commercializing a vaccine containing CpG 1018.

The biopharmaceutical patent environment outside the U.S. is also uncertain. We may be particularly affected by this uncertainty since several of our product candidates or our collaborators' vaccine candidates may initially address market opportunities outside the U.S., where we may only be able to obtain limited patent protection, if any at all. For example, while many countries such as the U.S. permit method of use patents or patent claims relating to the use of drug products, in some countries the law relating to patentability of such use claims is evolving, or may prohibit certain activities, and may be unfavorably interpreted to prevent us from successfully prosecuting some or all of our pending patent applications relating to the use of CpG 1018. There are some countries that currently do not allow such method of use patents or patent claims, or that significantly limit the types of uses, claims or subject matter that are patentable.

The risks and uncertainties that we face with respect to our patents and other proprietary rights include the following:

- we may not receive an issued patent for any of our patent applications or for any patent applications that we may have exclusively licensed, now or in the future;
- the pending patent applications we have filed or to which we have exclusive rights may take longer than we expect to result in issued patents;
- the claims of any patents that are issued may not provide meaningful protection or may not be valid or enforceable;
- we might not be able to develop additional proprietary technologies that are patentable;
- the patents licensed or issued to us or our collaborators may not provide a competitive advantage;

- patents issued to other parties may limit our intellectual property protection or harm our ability to do business;
- other parties may independently develop similar or alternative technologies or duplicate our technologies and commercialize discoveries that we attempt to patent;
- other parties may design around technologies we have licensed, patented or developed; and
- pending patent applications or issued patents may be challenged by third parties in litigation or other proceedings, such as inter partes reviews, pre- and post-grant oppositions, reexaminations, derivation proceedings and and post-grant review, in the U.S or abroad.

We also rely on trade secret protection and confidentiality agreements to protect our interests in proprietary know-how that is not patentable and for processes for which patents are difficult to enforce. We cannot be certain that we will be able to protect our trade secrets or other proprietary know-how adequately. Any disclosure of confidential data in the public domain or to third parties could allow our competitors to learn our trade secrets. If we are unable to adequately obtain or enforce proprietary rights, we may be unable to commercialize or continue to commercialize our products, enter into or maintain collaborations, generate revenues or maintain any advantage we may have with respect to existing or potential competitors.

We have in the past, and may in the future, rely on licenses to intellectual property from third parties. Impairment of these licenses or our inability to obtain or maintain them could severely harm our business.

Our current or future research and development efforts may depend in part upon our license arrangements for certain intellectual property owned by or co-owned with third parties. Our dependence on these licenses could subject us to numerous risks, such as disputes regarding the use of the licensed intellectual property and the creation and ownership of new discoveries under such license agreements. In addition, these license arrangements could require us to make timely payments to maintain our licenses and typically contain diligence or milestone-based termination provisions. Our failure to meet any obligations pursuant to such agreements could allow licensors to terminate our agreements or undertake other remedies such as converting exclusive to non-exclusive licenses if we are unable to cure or obtain waivers for such failures or amend such agreements on terms acceptable to us or at all. In addition, license agreements may be terminated or may expire by their terms, and we may not be able to maintain the exclusivity of these licenses or any rights to the underlying intellectual property. If we cannot obtain and maintain licenses that are advantageous or necessary to the development or the commercialization of our products or product candidates, we may be required to expend significant time and resources to develop or license similar technology or to find other alternatives to maintaining the competitive position of our products or product candidates. If such alternatives are not available to us in a timely manner or on acceptable terms, we may be unable to develop or commercialize certain of our products or product candidates. In the absence of a current license, we may be required to redesign our technology so it does not infringe a third-party's intellectual property (including patents), which may not be possible or could require substantial funds and time.

Risks Related to our Common Stock

Our stock price is subject to volatility, and your investment may suffer a decline in value.

The market prices for securities of biopharmaceutical companies have in the past been, and are likely to continue in the future, to be, very volatile. The market price of our common stock is subject to substantial volatility depending upon many factors, many of which are beyond our control, including:

- impact of the COVID-19 pandemic on our HEPLISAV-B vaccine, CpG 1018 adjuvant, or other product revenue;
- progress or results of any of our clinical trials or regulatory or manufacturing efforts, in particular any announcements regarding the progress or results of our planned trials and BLA filing and communications, from the FDA or other regulatory agencies;
- our ability to receive timely regulatory approval for our product candidates;
- our ability to establish and maintain collaborations for the development and commercialization of our product candidates;
- our ability to raise additional capital to fund our operations;
- technological innovations, new commercial products or drug discovery efforts and preclinical and clinical activities by us or our competitors;
- changes in our intellectual property portfolio or developments or disputes concerning the proprietary rights of our products or product candidates;

- our ability to obtain component materials and successfully enter into manufacturing relationships for our products or product candidates or establish manufacturing capacity on our own;
- our ability to establish and maintain licensing agreements for intellectual property necessary for the development of our product candidates;
- changes in government regulations, general economic conditions or industry announcements;
- changes in the structure of healthcare payment systems;
- issuance of new or changed securities analysts' reports or recommendations;
- actual or anticipated fluctuations in our quarterly financial and operating results;
- the volume of trading in our common stock;
- investor perceptions or negative announcements by our customers, competitors or suppliers regarding their own performance; and
- industry conditions and general financial, economic and political instability, as well as developments with respect to the COVID-19 global pandemic, including but not limited to regulatory initiatives, such as the imposition of compulsory licenses related to COVID-19 vaccines, that may result in a general weakening of intellectual property protections.

The stock markets in general, and the markets for biotechnology and pharmaceutical stocks in particular, have historically experienced significant volatility that has often been unrelated or disproportionate to the operating performance of particular companies, including recently in connection with the ongoing COVID-19 pandemic, which has resulted in decreased market prices, notwithstanding the lack of a fundamental change in the underlying business models or prospects of those companies. These broad market fluctuations have adversely affected and may in the future adversely affect the market price of our common stock. In this regard, worsening economic conditions, interest rate increases and/or other tapering policies from the government, and other adverse effects or developments relating to the ongoing COVID-19 pandemic or general economic environment may negatively affect the market price of our common stock, regardless of our actual operating performance.

One or more of these factors could cause a substantial decline in the price of our common stock. In addition, securities class action and shareholder derivative litigation has often been brought against a company following a decline in the market price of its securities. We have in the past been, and we may in the future be, the target of such litigation. Securities and shareholder derivative litigation could result in substantial costs, and divert management's attention and resources, which could harm our business, operating results and financial condition.

Future sales of our common stock or the perception that such sales may occur in the public market could cause our stock price to fall.

Sales of a substantial number of shares of our common stock in the public market, or the perception that these sales might occur, could depress the market price of our common stock and could impair our ability to raise capital through the sale of additional equity securities.

Under our universal shelf registration statement, we may sell any combination of common stock, preferred stock, debt securities and warrants in one or more offerings, including pursuant to our sales agreement with Cowen & Company, LLC, under which we can offer and sell our common stock from time to time up to aggregate sales proceeds of $150 million. As of March 31, 2022, we had $120.5 million remaining under our sales agreement with Cowen & Company, LLC. The sale or issuance of our securities, including those issuable upon exercise of the outstanding warrants or conversion of the preferred stock, as well as the existence of outstanding options and shares of common stock reserved for issuance under our option and equity incentive plans also may adversely affect the terms upon which we are able to obtain additional capital through the sale of equity securities.

Risks Related to Our Outstanding Convertible Notes

Servicing our debt requires a significant amount of cash, and we may not have sufficient cash flow from our business to pay our substantial debt.

Our ability to make scheduled payments of the principal of, to pay interest on or to refinance our indebtedness, including the $225.5 million in 2.50% convertible senior notes due 2026 ("Convertible Notes"), depends on our future performance, which is subject to economic, financial, competitive and other factors beyond our control. Our business may not continue to generate cash flow from operations in the future sufficient to service our debt and make necessary capital expenditures. If we are unable to generate such

cash flow, we may be required to adopt one or more alternatives, such as selling assets, restructuring debt or obtaining additional equity capital on terms that may be onerous or highly dilutive. Our ability to refinance our indebtedness will depend on the capital markets and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on our debt obligations.

We may not have the ability to raise the funds necessary to settle conversions of the Convertible Notes in cash or to repurchase the notes for cash upon a fundamental change, and our future debt may contain limitations on our ability to pay cash upon conversion or repurchase of the Convertible Notes.

Holders of the Convertible Notes will have the right, subject to certain conditions and limited exceptions, to require us to repurchase all or a portion of their Convertible Notes upon the occurrence of a fundamental change at a fundamental change repurchase price equal to 100% of the principal amount of the Convertible Notes to be repurchased, plus accrued and unpaid interest, if any, to, but excluding, the fundamental change repurchase date. In addition, upon conversion of the Convertible Notes, unless we elect to deliver solely shares of our common stock to settle such conversion (other than paying cash in lieu of delivering any fractional share), we will be required to make cash payments in respect of the Convertible Notes being converted. Moreover, we will be required to repay the Convertible Notes in cash at their maturity unless earlier converted, redeemed or repurchased. However, we may not have enough available cash or be able to obtain financing at the time we are required to make repurchases of Convertible Notes surrendered therefor or pay cash with respect to Convertible Notes being converted. In addition, our ability to repurchase the Convertible Notes or to pay cash upon conversions of the Convertible Notes may be limited by law, by regulatory authority or by agreements governing our future indebtedness. Our failure to repurchase Convertible Notes at a time when the repurchase is required by the indenture governing the Convertible Notes or to pay any cash payable on future conversions of the Convertible Notes as required by the indenture governing the Convertible Notes would constitute a default under the indenture governing the Convertible Notes. A default under the indenture governing the Convertible Notes or the occurrence of a fundamental change itself could also lead to a default under agreements governing our future indebtedness. Moreover, the occurrence of a fundamental change under the indenture governing the Convertible Notes could constitute an event of default under any agreements governing our future indebtedness. If the repayment of the related indebtedness were to be accelerated after any applicable notice or grace periods, we may not have sufficient funds to repay the indebtedness and repurchase the Convertible Notes or make cash payments upon conversions thereof.

The conditional conversion feature of the Convertible Notes may adversely affect our financial condition and operating results.*

From January 1, through March 31, 2022, the conditions allowing holders to convert all or any portion of their Convertible Notes were not met. In the event the conditional conversion feature of the Convertible Notes is triggered, holders of Convertible Notes will be entitled to convert their Convertible Notes at any time during specified periods at their option. If one or more holders elect to convert their Convertible Notes, unless we elect to satisfy our conversion obligation by delivering solely shares of our common stock (other than paying cash in lieu of delivering any fractional share), we would be required to settle a portion or all of our conversion obligation through the payment of cash, which could adversely affect our liquidity. In addition, even if holders do not elect to convert their Convertible Notes, we could be required under applicable accounting rules to reclassify all or a portion of the outstanding principal of the Convertible Notes as a current rather than long-term liability, which would result in a material reduction of our net working capital.

Conversion of the Convertible Notes may dilute the ownership interest of our stockholders or may otherwise depress the price of our common stock.*

From January 1, through March 31, 2022, the conditions allowing holders to convert all or any portion of their Convertible Notes have not been met. In the event the conditional conversion feature of the Convertible Notes is triggered, the conversion of some or all of the Convertible Notes to shares of common stock may dilute the ownership interests of our stockholders. Upon conversion of the Convertible Notes, we have the option to pay or deliver, as the case may be, cash, shares of our common stock, or a combination of cash and shares of our common stock. If we elect to settle our conversion obligation in shares of our common stock or a combination of cash and shares of our common stock, any sales in the public market of our common stock issuable upon such conversion could adversely affect prevailing market prices of our common stock. In addition, the existence of the Convertible Notes may encourage short selling by market participants because the conversion of the Convertible Notes could be used to satisfy short positions, or anticipated conversion of the Convertible Notes into shares of our common stock could depress the price of our common stock.

Certain provisions in the indenture governing the Convertible Notes may delay or prevent an otherwise beneficial takeover attempt of us.

Certain provisions in the indenture governing the Convertible Notes may make it more difficult or expensive for a third party to acquire us. For example, the indenture governing the Convertible Notes will require us, subject to certain exceptions, to repurchase the Convertible Notes for cash upon the occurrence of a fundamental change and, in certain circumstances, to increase the conversion rate for a holder that converts its Convertible Notes in connection with a make-whole fundamental change. A takeover of us may trigger the requirement that we repurchase the Convertible Notes and/or increase the conversion rate, which could make it more costly for a potential acquirer to engage in such takeover. Such additional costs may have the effect of delaying or preventing a takeover of us that would otherwise be beneficial to investors.

The Capped Calls may affect the value of the Convertible Notes and our common stock.

In connection with the issuance of the Convertible Notes, we have entered into capped call transactions with the option counterparties totaling $27.2 million (the "Capped Calls"). The Capped Calls cover, subject to customary adjustments under the terms of the Capped Calls, the number of shares of common stock that initially underlie the Capped Calls. The Capped Calls are expected to offset the potential dilution to our common stock as a result of any conversion of the Convertible Notes, subject to a cap based on the cap price.

In connection with establishing their initial hedges of the Capped Calls, we have been advised that the option counterparties and/or their respective affiliates entered into various derivative transactions with respect to our common stock concurrently with or shortly after the pricing of the Convertible Notes and/or purchased shares of our common stock concurrently with or shortly after the pricing of the Convertible Notes. In addition, the option counterparties and/or their respective affiliates may modify their hedge positions by entering into or unwinding various derivatives with respect to our common stock and/or purchasing or selling our common stock or other securities of ours in secondary market transactions following the pricing of the Convertible Notes and prior to the maturity of the Convertible Notes (and are likely to do so on each exercise date of the Capped Calls, which are expected to occur during the 30 trading day period beginning on the 31st scheduled trading day prior to the maturity date of the Convertible Notes, or following any termination of any portion of the Capped Calls in connection with any repurchase, redemption or early conversion of the Convertible Notes). This activity could also cause or avoid an increase or a decrease in the market price of our common stock or the Convertible Notes.

We are subject to counterparty risk with respect to the capped call transactions.

The option counterparties are financial institutions, and we will be subject to the risk that any or all of them might default under the Capped Calls. Our exposure to the credit risk of the option counterparties will not be secured by any collateral.

If an option counterparty becomes subject to insolvency proceedings, we will become an unsecured creditor in those proceedings with a claim equal to our exposure at that time under the capped call transactions with such option counterparty. Our exposure will depend on many factors but, generally, an increase in our exposure will be correlated to an increase in the market price and in the volatility of our common stock. In addition, upon a default by an option counterparty, we may suffer adverse tax consequences and more dilution than we currently anticipate with respect to our common stock. We can provide no assurances as to the financial stability or viability of the option counterparties.

General Risk Factors

The loss of key personnel could delay or prevent achieving our objectives. In addition, our continued growth to support commercialization may result in difficulties in managing our growth and expanding our operations successfully.

We depend on our senior executive officers, as well as other key scientific personnel. Our commercial and business efforts could be adversely affected by the loss of one or more key members of our commercial or management staff, including our senior executive officers. We currently have no key person insurance on any of our employees.

As our operations expand, we expect that we will need to manage additional relationships with various vendors, partners, suppliers and other third parties. Future growth will impose significant added responsibilities on members of management. Our future financial performance and our ability to successfully commercialize HEPLISAV-B and to compete effectively will depend, in part, on our ability to manage any future growth effectively. To that end, we must be able to effectively manage our commercialization efforts, research efforts and clinical trials and hire, train and integrate additional regulatory, manufacturing, administrative, and sales and marketing personnel. We may not be able to accomplish these tasks, and our failure to accomplish any of them could prevent us from successfully growing our company and achieving profitability.

Our business operations are vulnerable to interruptions by natural disasters, health epidemics (such as the ongoing COVID-19 pandemic) and other catastrophic events beyond our control, the occurrence of which could materially harm our manufacturing, distribution, sales, business operations and financial results.

Our business operations are subject to interruption by natural disasters and other catastrophic events beyond our control, including, but not limited to, earthquakes, hurricanes, fires, droughts, tornadoes, electrical blackouts, public health crises and pandemics, war, terrorism, and geo-political unrest and uncertainties. We have not undertaken a systematic analysis of the potential consequences to our business that might result from any such natural disaster or other catastrophic event and have limited recovery plans in place. If any of these events occur, our manufacturing and supply chain, distribution, sales and marketing efforts and other business operations could be subject to business shutdowns or disruptions and financial results could be adversely affected. We cannot presently predict the scope and severity of any potential business shutdowns or disruptions resulting from these events, but if we or any of the third parties with whom we engage, including the suppliers, contract manufacturers, distributors and other third parties with whom we conduct business, were to experience shutdowns or other business disruptions, our ability to conduct our business in the manner and on the timelines presently planned could be materially and adversely affected in a number of ways, some of which are not predicable.

Our business could be adversely affected by health epidemics in regions where we have manufacturing facilities, sales activities or other business operations. For example, outbreaks of epidemic or pandemic diseases, such as the ongoing COVID-19 pandemic, or the fear of such events, have and could again in the future cause restrictions on supply chains, restrict access to workplaces and affect employee health and availability.

Although we maintain inventories of HEPLISAV-B and its components, our ability and those of our contractors and distributors to produce and distribute HEPLISAV-B could be adversely affected. A pandemic or similar health challenge could severely impact the U.S. healthcare system, which may have an adverse effect on usage and sales of HEPLISAV-B. In addition, any such event could result in widespread global health crisis that could adversely affect global economies and financial markets resulting in an economic downturn that could affect the demand for HEPLISAV-B and future revenue and operating results and our ability to raise additional capital when needed on acceptable terms, if at all. For example, the COVID-19 pandemic has generally resulted in significantly reduced utilization of all adult vaccines (other than the COVID-19 vaccines) since the end of the first quarter of 2020, including a reduction in the utilization of HEPLISAV-B.

Additionally, our corporate headquarters in Emeryville, California, is located in a seismically active region that also is subject to possible electrical shutdowns and wildfires. Because we do not carry earthquake insurance for earthquake-related losses and significant recovery time could be required to resume operations, our financial condition and operating results could be materially adversely affected in the event of a major earthquake or catastrophic event. We carry only limited business interruption insurance that would compensate us for actual losses from interruption of our business that may occur, and any losses or damages incurred by us in excess of insured amounts could adversely affect our business and operations.

Significant disruptions of information technology systems or breaches of data security could adversely affect our business.

Our business is increasingly dependent on critical, complex and interdependent information technology systems, including internet-based systems, to support business processes as well as internal and external communications. In addition, the COVID-19 pandemic has intensified our dependence on information technology systems as many of our critical business activities are currently being conducted remotely. The size and complexity of our computer systems make them potentially vulnerable to breakdown, malicious intrusion and computer viruses that may result in the impairment of key business processes.

In addition, our systems are potentially vulnerable to data security breaches—whether by employees or others—that may expose sensitive data to unauthorized persons. Such data security breaches could lead to the loss of trade secrets or other intellectual property, or could lead to the public exposure of personally identifiable information (including sensitive personal information) of our employees, collaborators, clinical trial patients, and others. A data security breach or privacy violation that leads to disclosure or modification of or prevents access to patient information, including personally identifiable information or protected health information, could harm our reputation, compel us to comply with federal, state and/or international data breach notification laws, subject us to mandatory corrective action, require us to verify the correctness of database contents and otherwise subject us to liability under laws and regulations that protect personal data, including, but not limited to, HIPAA, similar state data protection regulations, and the GDPR, resulting in significant penalties; increased costs; loss of revenue; expenses of computer or forensic investigations; material fines and penalties; compensatory, special, punitive or statutory damages; litigation; consent orders regarding our privacy and security practices; requirements that we provide notices, credit monitoring services and/or credit restoration services or other relevant services to impacted individuals; adverse actions against our licenses to do business; or injunctive relief. News reports have also highlighted COVID research-specific hacking and phishing attempts. Because we and our collaborators are working on vaccines, including potential COVID vaccines, we may be at higher-than-average risk for such attempts.

Compliance with these and any other applicable privacy and data security laws and regulations is a rigorous and time-intensive process, and we may be required to put in place additional mechanisms ensuring compliance with the new data protection rules. If we fail to comply with any such laws or regulations, we may face significant fines and penalties that could adversely affect our business, financial condition and results of operations. Furthermore, the laws are not consistent, and compliance in the event of a widespread data breach is costly.

U.S. and international authorities have been warning businesses of increased cybersecurity threats from actors seeking to exploit the COVID-19 pandemic. In 2020, we experienced a cybersecurity incident known as a phishing e-mail scam, and although we do not consider its impact on us to be material, if we are unable to prevent this or other such data security breaches or privacy violations or implement satisfactory remedial measures, our operations could be disrupted, and we may suffer loss of reputation, financial loss and other regulatory penalties because of lost or misappropriated information, including sensitive patient data. Moreover, failure to maintain effective internal accounting controls related to data security breaches and cybersecurity in general could impact our ability to produce timely and accurate financial statements and could subject us to regulatory scrutiny. In addition, these breaches and other inappropriate access can be difficult to detect, and any delay in identifying them may lead to increased harm of the type described above. Moreover, the prevalent use of mobile devices that access confidential information increases the risk of data security breaches, which could lead to the loss of confidential information, trade secrets or other intellectual property. While we have implemented security measures that are intended to protect our data security and information technology systems, such measures may not prevent such events.

Such disruptions and breaches of security could have a material adverse effect on our business, financial condition and results of operations.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

None.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 4. MINE SAFETY DISCLOSURES

None.

ITEM 5. OTHER INFORMATION

None.

ITEM 6. EXHIBITS

Exhibit Number	Document	Incorporated by Reference				Filed Herewith
		Exhibit Number	Filing	Filing Date	File No.	
3.1	Sixth Amended and Restated Certificate of Incorporation	3.1	S-1/A	February 5, 2004	333-109965	
3.2	Certificate of Amendment of Amended and Restated Certificate of Incorporation	3.1	8-K	January 4, 2010	001-34207	
3.3	Certificate of Amendment of Amended and Restated Certificate of Incorporation	3.1	8-K	January 5, 2011	001-34207	
3.4	Certificate of Amendment of Amended and Restated Certificate of Incorporation	3.6	8-K	May 30, 2013	001-34207	
3.5	Certificate of Amendment of the Sixth Amended and Restated Certificate of Incorporation	3.1	8-K	November 10, 2014	001-34207	
3.6	Certificate of Amendment of the Sixth Amended and Restated Certificate of Incorporation	3.1	8-K	June 2, 2017	001-34207	
3.7	Certificate of Amendment of the Sixth Amended and Restated Certificate of Incorporation	3.1	8-K	July 31, 2017	001-34207	
3.8	Certificate of Amendment of the Sixth Amended and Restated Certificate of Incorporation	3.1	8-K	May 29, 2020	001-34207	
3.9	Amended and Restated Bylaws	3.8	10-Q	November 6, 2018	001-34207	
4.1	Reference is made to Exhibits 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, and 3.9					
4.2	Form of Specimen Common Stock Certificate	4.2	S-1/A	January 16, 2004	333-109965	
4.3	Form of Warrant to Purchase Common Stock	4.1	8-K	August 8, 2019	001-34207	
4.4	Indenture between Company and U.S. Bank National Association, as trustee, dated May 13, 2021	4.1	8-K	May 13, 2021	001-34207	
4.5	Form of Global Note, representing Dynavax Technologies Corporation's 2.5% Convertible Senior Notes due 2026	4.2	8-K	May 13, 2021	001-34207	
10.1	Lease Agreement dated March 15, 2022 by and between the Company and SPUS8 2100 Powell, L.P.					X
31.1*	Certification of Principal Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
31.2*	Certification of Principal Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
32.1*	Certification of Principal Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X
32.2*	Certification of Principal Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X

EX—101.INS	Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
EX—101.SCH	Inline XBRL Taxonomy Extension Schema Document
EX—101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
EX—101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase
EX—101.LAB	Inline XBRL Taxonomy Extension Labels Linkbase Document
EX—101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
EX—104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101)

+ Indicates management contract, compensatory plan or arrangement.

^ Pursuant to Item 601(b)(10) of Regulation S-K, certain portions of this exhibit have been omitted by means of marking such portions with asterisks because the Registrant has determined that the information is both not material and is the type that the Registrant treats as private or confidential.

* The certifications attached as Exhibits 32.1 and 32.2 that accompany this Quarterly Report on Form 10-Q, are not deemed filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of this Form 10-Q), irrespective of any general incorporation language contained in such filing.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Emeryville, State of California.

DYNAVAX TECHNOLOGIES CORPORATION

Date: May 5, 2022

By: /s/ RYAN SPENCER
Ryan Spencer
Chief Executive Officer
(Principal Executive Officer)

Date: May 5, 2022

By: /s/ KELLY MACDONALD
Kelly MacDonald
Chief Financial Officer
(Principal Financial Officer)

Date: May 5, 2022

By: /s/ JUSTIN BURGESS
Justin Burgess
Controller, Chief Accounting Officer
(Principal Accounting Officer)

Exhibit 10.1

OFFICE LEASE

by and between SPUS8 2100 POWELL, LP,

a Delaware limited partnership, as Landlord

and

DYNAVAX TECHNOLOGIES CORPORATION, a Delaware corporation, as Tenant,

Premises: 2100 Powell Street Suite 720 Emeryville, California 94608

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OFFICE LEASE

This Lease is effective upon the full execution hereof and dated for identification purposes only as of this 15th day of March, 2022, and is made by the parties hereinafter identified as Landlord and Tenant and upon the following terms and conditions:

ARTICLE 1
BASIC LEASE PROVISIONS

1.01 Landlord's Address for Notice: SPUS8 2100 POWELL, LP (Landlord's Management Agent) c/o CBRE Investment Management

2100 Powell Street, Suite 125
Emeryville, CA 94608 ATTN: Property Manager

With a copy of all notices going to: SPUS8 2100 Powell, LP (Landlord) c/o CBRE Investment Management

601 S. Figueroa Street 49th Floor
Los Angeles, California 90017 Attn: Asset Manager – 2100 Powell

Rent payment address: SPUS8 2100 Powell, LP

P.O. Box 743525
Los Angeles, CA 90074-3525

1.02 Tenant and Address for Notice: DYNAVAX TECHNOLOGIES CORPORATION

2100 Powell Street, Suite 900
Emeryville, CA 94608 Attn: Attn: Jeff Coon

At all times with a copy to:
DYNAVAX TECHNOLOGIES CORPORATION
2100 Powell Street, Suite 900
Emeryville, CA 94608 Attn: John Slebir

Following the Commencement Date:

DYNAVAX TECHNOLOGIES CORPORATION
2100 Powell Street, Suite 720
Emeryville, CA 94608 Attn: Jeff Coon

At all times with a copy to:
DYNAVAX TECHNOLOGIES CORPORATION
2100 Powell Street, Suite 720
Emeryville, CA 94608 Attn: Jeff Coon
Attn: John Slebir

1.03 Guarantor(s): None.

1.04 Premises: Suite 720, as shown as Ste. A on the floor plan attached hereto as **Exhibit A**. The Premises contains approximately 8,053 rentable square feet, which is the final agreement of the parties. Neither the rentable square footage of the Premises or Tenant's Share (as hereinafter defined) shall be subject to increase during the initial Lease Term.

1.05 Building: The building and improvements located at 2100 Powell Street, Emeryville, California 94608, together with the land parcel on which it is constructed and all appurtenances thereto. The Building contains approximately 349,379 rentable square feet of space, which is the final agreement of the parties. The Building, parking facilities, and other improvements serving the Building, garage, and land shall be the "Complex."

1.06 Term: Thirty-eight (38) full calendar months and any partial month.

1.07 Commencement Date: The later of (a) June 1, 2022 and (b) the date Landlord delivers the Premises to Tenant with the plumbing, electrical, and mechanical systems serving the Premises in good working order and condition. Promptly following the Commencement Date, Landlord shall deliver to Tenant a Confirmation of Lease Terms and Dates substantially in the form attached hereto as **Exhibit C**, and Tenant shall have ten (10) business days thereafter to execute and remit the same to Landlord. Notwithstanding the foregoing, upon full execution of this Lease, Tenant shall have the right to access and use for Premises for the purpose of installing its furniture, furnishings, fixtures, equipment (including, without limitation, a supplement HVAC unit), cabling, signage, and otherwise preparing the Premises for Tenant's occupancy and use ("Preparation Work"). Any such period of early occupancy shall be subject to all the terms and conditions of this Lease, except that Tenant shall have no obligation to pay Rent (as hereinafter defined). In the event that Landlord has not delivered exclusive possession of the Premises to Tenant on or before April 1, 2022 (as may be extended due to a Tenant Delay or force majeure), ("Delivery Deadline") Tenant shall be entitled to one day of free Base Rent for every two (2) days of such delay after the Delivery Deadline.

1.08 Expiration Date: July 31, 2025.

1.09 Base Rent:

Months	Monthly Base Rent / RSF	Monthly Installment of Base Rent
Commencement Date – Month 2	$4.65	$ 0.00*
Month 3 – Month 12	$4.65	$37,446.45
Month 13 – Month 24	$4.79	$38,573.87
Month 25 – Month 36	$4.93	$39,701.29
Month 37 – Expiration Date	$5.08	$40,909.24

* Notwithstanding anything herein to the contrary (including the table above), Landlord shall abate one hundred percent (100%) of the first two (2) full installments of Base Rent following the Commencement Date (the "Abatement"). If the Commencement Date is other than the first day of a calendar month, then the first and last months of the rental abatement period shall be prorated for the partial calendar months so that Tenant receives two (2) full months of Base Rent abatement. Such Abatement shall apply solely to payment of the monthly installments of Base Rent, but shall not be applicable to any other charges, expenses or costs payable by Tenant under this Lease. In the event that Tenant defaults under the terms and conditions of the Lease beyond any applicable notice and cure period and Landlord elects to terminate this Lease or recovers possession of the Premises through judicial means, the unamortized portion of all conditionally abated rental shall become fully liquidated and immediately due and payable as of the date of Landlord's termination.

1.10 Tenant's Share: The fraction determined by dividing the number of rentable square feet within the Premises by the number of rentable square feet within the Building. Tenant's Share is 2.30% as of the Commencement Date. Any shared expenses between the Building and Complex will be equitably apportioned.

(a) Expense Base Year: Calendar year 2022.
(b) Tax Base Year: Calendar year 2022.

1.11 Security Deposit: Forty Thousand Nine Hundred Nine and 24/100ths Dollars ($40,909.24).

1.12 Brokers: Landlord's Broker: CBRE, Inc.
Tenant's Broker: Cresa Partners

1.14 Allowance: None.

1.15 Permitted Uses: General office and ancillary uses thereto.

1.16 Parking Spaces: Tenant shall have the right, but not the obligation, to lease up to Twenty-Four (24) parking spaces in such areas of the parking facilities associated with the Building (which are in the garage connected to the Building) as may be reasonably designated by Landlord from time to time (i.e., 3.0 parking spaces per 1,000 rentable square feet of space in the Premises). None of the Parking Spaces shall be assigned or reserved. In the event that Tenant surrenders any of the Parking Spaces, Tenant's right to re-lease the surrendered spaces shall be subject to availability. The Parking Spaces may only be used by Tenant's employees, guests, visitors, sublessees, assignees, or Shared Users (as hereinafter defined), each of whom shall be required to enter into any commercially reasonable agreement regarding the Parking Spaces required by any third-party vendor of Landlord (and Tenant shall cooperate with such vendor and comply with any commercially reasonable rules and regulations promulgated by such vendor and provided to Tenant in writing that are generally applicable to all persons parking in the parking areas associated with the Building); provided that such contract does not adversely affect Tenant's rights under this Lease or require Tenant to incur additional charges.

1.17 Monthly Parking Rent: Tenant shall pay the standard parking rate per Parking Space, which is currently $125.00 per month per unreserved Parking Space (subject to change upon thirty (30) days' advance written notice to Tenant), payable as Rent. Tenant shall be liable for any taxes on paid parking spaces. Parking access cards are initially provided to Tenant at no charge, but Tenant shall pay a Building standard charge for each replacement parking access card (currently $15.00 per card).

1.18 Initial Payment: Simultaneously with the delivery of this Lease to Landlord, Tenant shall deliver to Landlord the following amounts:

Item	Amount
Security Deposit:	$40,909.24
Base Rent for Month 3:	$37,446.45
Total due on execution:	$78,355.69

The words identified in this Article 1 shall have the meanings ascribed to them in this Article 1 for all purposes of this Lease.

ARTICLE 2: DEMISE AND TERM. Landlord hereby leases to Tenant and Tenant hereby leases from Landlord the Premises in its present "as is" condition for the Term and upon the terms, covenants and conditions set forth in this Lease. Landlord represents that, as of the Commencement Date, all structural elements and systems serving the Premises are in good working order and condition. In the event of a breach of the foregoing representation, and Tenant, within six (6) months following the Commencement Date delivers written notice to Landlord setting forth in

reasonable detail a description of the breach, Landlord shall rectify the same at Landlord's sole cost and expense. The term of this Lease shall commence on the Commencement Date and expire on the Expiration Date. Landlord shall provide and install standard suite signage on multi-tenant floors. Subsequent changes to signage shall be at the sole expense of Tenant and subject to Landlord's review and approval, not to be unreasonably withheld.

ARTICLE 3: RENT; OPERATING EXPENSES; TAXES; AND ELECTRICITY

1.01 **Payment of Rent**. Tenant shall pay Base Rent, Operating Expenses, Taxes and other amounts accruing under this Lease (all amounts due hereunder being referred to collectively as "Rent"). Except as specifically provided in this Lease, Rent shall be paid without abatement, deduction or set off of any kind, it being the intention of the parties that, to the full extent permitted by law, Tenant's covenant to pay Rent shall be independent of all other covenants contained in this Lease, including Tenant's continued occupancy of the Premises. Base Rent, estimated Operating Expenses and estimated Taxes shall be payable monthly, in advance, on the first day of each calendar month during the Term. Rent shall be pro-rated for any partial month.

1.02 **Operating Expenses**.

(a) "Operating Expenses" shall mean and include all reasonable amounts, expenses and costs of whatever nature that Landlord incurs or pays because of or in connection with the ownership, security, insurance, control, operation, administration, repair, management, replacement or maintenance of the Building, as applicable, all related improvements thereto or thereon and all machinery, equipment, landscaping, fixtures and other facilities, including personal property, as may now or hereafter exist in or on the Building. Operating Expenses may also include the sum of the amortized costs of the Permitted Capital Expenditures payable by Landlord during the year in question. "Permitted Capital Expenditures" are those capital improvements, equipment, or devices installed or paid for by Landlord in connection with the management, operation, maintenance, replacement and repair of the Building (i) reasonably intended to produce a reduction in Operating Expenses, or (ii) to conform with any change in laws, rules, regulations or requirements of any governmental or quasi-governmental authority having jurisdiction not applicable to the Building as of the Commencement Date. Such Permitted Capital Expenditures shall be amortized on a straight- line basis over the useful life of such capital improvement, equipment, or device (as reasonably determined by Landlord). Notwithstanding anything to the contrary, Operating Expenses shall not include: (A) Taxes (which are separately defined below); (B) legal fees, brokers' commissions or other costs incurred in the negotiation, termination, or extension of leases or in proceedings involving a specific tenant; (C) depreciation; (D) amortization and interest payments, except as provided herein and except on materials, tools, supplies and vendor-type equipment purchased by Landlord to enable Landlord to supply services Landlord might otherwise contract for with a third party where such depreciation, amortization and interest payments would otherwise have been included in the charge for such third party's services, all as determined in accordance with generally accepted accounting principles, consistently applied, and when depreciation or amortization is permitted or required, the item shall be amortized over its reasonably anticipated useful life; (E) the cost of capital improvements or capital expenditures, except for the amortized costs of Permitted Capital Expenditures payable by Landlord during the year in question as set forth above; (F) costs (including permit, license, and inspection costs) incurred in renovating or otherwise improving, decorating, or redecorating rentable space for other tenants or vacant rentable space; (G) costs incurred due to the violation by Landlord of any applicable laws or the terms and conditions of any lease of space in the Building; (H) costs of overhead or profit increment paid to Landlord or to subsidiaries or affiliates of Landlord for services in or in connection with the Building to the extent the same exceeds the costs of overhead and profit increment included in the costs of such services which could be obtained from third parties on a competitive basis; (I) rental under any ground or underlying lease or under any lease or sublease assumed, directly or indirectly, by Landlord; (J) costs of repairs and maintenance to the extent actually reimbursed by any other party, including, without limitation, other tenants, insurance providers, and under warranties; (K) attorneys' fees and other costs incurred in attempting to collect rent, evict tenants, or enforce other remedies for nonpayment of rent or other defaults or breaches under their lease(s); (L) expenses in connection with services or other benefits of a type that are not provided to Tenant and do not generally benefit the Building or Complex; (M) costs incurred by Landlord as a result of the gross negligence or willful misconduct of Landlord; (N) charitable or political contributions; (O) costs of repairs and other work occasioned by fire, windstorm, or other

casualty to the extent insurance proceeds are received by Landlord or in the event Landlord has elected to self-insure for such perils; (P) the cost of correcting any building code, violation of applicable laws, or other violations which were violations prior to the Commencement Date of this Lease; (Q) the cost of containing, removing, or otherwise remediating any contamination of the Complex (including, without limitation, the underlying land and ground water), Building or Premises by any Hazardous Substances (hereinafter defined) where such contamination was not caused by Tenant; and (R) costs for sculpture, paintings, or other objects of art (and insurance thereon or extraordinary security in connection therewith) (excepting commercially reasonable amounts for holiday decorations, which shall be permitted Operating Expenses). Subject to the provisions of this definition, the determination of Operating Expenses shall otherwise be made in accordance with sound accounting and management principles consistently applied. In the calculation of any expenses hereunder, it is understood that no expense shall be charged more than once. Landlord shall use its best efforts in good faith to affect an equitable proration of bills for services rendered to the Building and to any other property owned by Landlord or an affiliate of Landlord. Landlord shall not recover more than one hundred percent (100%) of Operating Expenses actually incurred by Landlord.

(b) Assessments required under any declarations, easements or similar shared expense structures shall be included in Operating Expenses. Operating Expenses shall be reasonably determined by Landlord in accordance with the terms of this Lease. If at any time the Building is less than 95% occupied or Landlord is not supplying services to 95% or more of the rentable areas of the Building during an entire calendar year, including the Expense Base Year, then Landlord shall adjust actual Operating Expenses to Landlord's estimate of that amount, which would have been paid or incurred by Landlord as Operating Expenses had the Building been 95% or more occupied or serviced, and the Operating Expenses as so adjusted shall be deemed to be the actual Operating Expenses for such calendar year. The provisions of the preceding sentences will apply only to those Operating Expenses that either vary with occupancy or by reason of one or more tenants not receiving goods or services the cost of which constitutes all or part of such Operating Expenses. In addition to Operating Expenses, Tenant shall pay any and all separately metered utilities (either to the applicable provider or to Landlord, as directed in writing by Landlord) and/or above-standard services provided by Landlord (at actual cost, without any administrative charges for such above- standard services). For those utilities and services that Tenant pays directly, the same shall not be included within Operating Expenses.

1.04 **Taxes**. "Taxes" shall mean and include all federal, state and local government taxes, assessments and charges of any kind or nature, whether general, special, ordinary or extraordinary, paid by Landlord in a calendar year with respect to the Building; provided, real estate taxes and special assessments (except as provided below) shall be included in Taxes for a calendar year only to the extent such taxes and assessments are paid during or attributable to such calendar year, regardless of when assessed. Tenant shall be liable for any taxes on its personal property or paid parking spaces, if any. Notwithstanding the foregoing, Taxes shall not include: (i) any state, local, federal, personal or corporate income tax measured by the income of Landlord or Landlord's capitalization or net worth; (ii) any gift, estate, succession, inheritance, franchise, or capital stock, or excess profits taxes; (iii) any transfer taxes; or (iv) interest on taxes or penalties resulting from Landlord's failure to pay taxes. Landlord shall not recover more than 100% of the real estate taxes, assessments and insurance premiums actually incurred by Landlord.

1.05 **Adjustment Year; Expense Adjustment; Tax Adjustment**. "Adjustment Year" shall mean each calendar year or part thereof during the Term. In addition to Base Rent, and commencing on January 1, 2023, Tenant shall pay with respect to each Adjustment Year (i) an amount equal to Tenant's Share of Operating Expenses for the Adjustment Year as reasonably estimated by Landlord ("Expense Adjustment") over and above the Expense Base Year, and (ii) an amount equal to Tenant's Share of Taxes for the Adjustment Year as reasonably estimated by Landlord ("Tax Adjustment") over and above the Tax Base Year. As to any Adjustment Year during the Term which does not begin on January 1st or does not end on December 31st, Expense Adjustment and Tax Adjustment (hereinafter collectively, "Adjustments") with respect to such Adjustment Year shall be prorated on a per diem basis. Adjustments with respect to each Adjustment Year shall be paid in monthly installments in advance on the first day of each calendar month during such Adjustment Year. If Landlord does not deliver a notice of the amount of such estimated Adjustments as most recently communicated by Landlord to Tenant prior to the commencement of any Adjustment Year, Tenant shall continue to pay estimated Adjustments. If, during any Adjustment Year, Landlord reasonably

determines that Taxes or Operating Expenses for such Adjustment Year have increased or will increase, Landlord may deliver to Tenant an updated estimate of Adjustments for such Adjustment Year, provided that such estimate shall not be updated more than once per calendar year. In addition, Tenant shall pay to Landlord within thirty (30) days after receipt of any such estimate of Adjustments, the amount, if any, by which the aggregate installments of the Adjustments provided in such estimate of Adjustments exceeds the aggregate installments of the Adjustments paid by Tenant with respect to such prior months. Within one hundred twenty (120) days after the end of the Base Year and each Adjustment Year, Landlord shall send to Tenant a written statement ("Statement") accompanied by reasonable backup detail showing (i) the calculation of the Adjustments for such Adjustment Year, (ii) the aggregate amount of the Adjustments previously paid by Tenant for such Adjustment Year, and (iii) the amount, if any, by which the aggregate amount of the installments of Adjustments paid by Tenant with respect to such Adjustment Year exceeds or is less than the actual Adjustments for such Adjustment Year. Tenant shall pay the amount of any deficiency to Landlord within thirty (30) days after Tenant's receipt of such Statement. Any excess shall be credited by Landlord against the next payment or payments of Rent due under this Lease, except that if a credit is due to Tenant after termination of this Lease, Landlord shall pay to Tenant any excess remaining within thirty (30) days after Tenant's receipt of the Statement.

1.05 **Tenant's Review of Landlord's Books and Records.** So long as Tenant is not then in default of any term or condition of this Lease beyond any applicable notice and cure period, Tenant shall have the right to conduct a Tenant's Review, as hereinafter defined, at Tenant's sole cost and expense (including, without limitation, photocopy and delivery charges), upon thirty (30) days' prior written notice to Landlord. "Tenant's Review" shall mean a review of Landlord's books and records relating to (and only relating to) Operating Expenses and Taxes payable by Tenant hereunder for the most recently completed calendar year as reflected on the Statement; provided, however, Tenant shall have the right to review said books and records relating to the Base Year for two (2) calendar years after Tenant's receipt of a Statement therefor. Tenant's Review must be performed by either an employee of Tenant or by a Certified Public Accountant ("CPA"). Tenant must elect to perform a Tenant's Review by written notice of such election received by Landlord within one hundred twenty (120) days following Tenant's receipt of the Statement for the most recently completed calendar year. In the event that Tenant fails to make such election in the required time and manner required, then Landlord's calculation of Operating Expenses shall be final and binding on Tenant. Tenant hereby acknowledges and agrees that even if it has elected to conduct a Tenant's Review, Tenant shall nonetheless pay all Operating Expense payments to Landlord, subject to readjustment. Tenant further acknowledges that Landlord's books and records relating to the Building may not be copied in any manner, are confidential, and may only be reviewed at a location reasonably designated by Landlord; but Landlord will make such records available within the metropolitan area in which the Premises is located. Tenant shall provide to Landlord a copy of Tenant's Review as soon as reasonably possible after the date of such Review. If Tenant's Review reflects a reimbursement owing to Tenant by Landlord, and if Landlord disagrees with Tenant's Review, then Tenant and Landlord shall jointly appoint an auditor to conduct a review ("Independent Review"), which Independent Review shall be deemed binding and conclusive on both Landlord and Tenant. If Tenant's Review (which Landlord does not disagree with) or the Independent Review results in a reimbursement owing to Tenant equal to five percent (5%) or more of the amounts reflected in the Statement, the costs of the Tenant's Review and, if appliable, the Independent Review shall be paid by Landlord, but otherwise Tenant shall pay the costs of Tenant's Review and the Independent Review. Under no circumstances shall Tenant conduct a review of Landlord's books and records whereby the auditor operates on a contingency fee or similar payment arrangement. Any such reviewer must sign a commercially reasonable non- disclosure, non-solicitation, and confidentiality agreement. Tenant agrees to use reasonable efforts to keep the results of its audit confidential, except for such disclosures to Tenant's agents, employees, attorneys, accountants, financial advisors, officers, directors, members and contractors, and except for such disclosures as may be required by law, compelled by judicial process or which may be necessary to enforce the terms and provisions of this Lease.

1.06 **Electric.** Electricity used by Tenant in the Premises shall be paid for as Operating Expenses. Without the consent of Landlord, Tenant's use of electrical service shall not exceed the Building standard usage, per square foot, as reasonably determined by Landlord, based upon the Building standard electrical design load. For purposes hereof, the Building "electrical standard" is 6 watts per usable square foot of connected load to the Premises, exclusive of Base Building HVAC. Landlord shall have the right to measure electrical usage by commonly accepted methods, including the installation of measuring devices such as submeters and check meters. If it is determined that Tenant is using electricity in such quantities or during such periods as to cause the total cost of Tenant's electrical usage, on a monthly, per-rentable-square-foot basis, to materially exceed that electrical standard (as described above), Tenant shall pay Landlord Additional Rent for the actual cost of such excess electrical usage and, if applicable, for the cost of purchasing and installing the measuring device(s).

ARTICLE 4: SECURITY DEPOSIT. Landlord shall not be obligated to hold the Security Deposit in a separate fund and may commingle the Security Deposit with its other funds. No interest shall be payable with respect to the Security Deposit. In the event of any default by Tenant hereunder which continues beyond all applicable notice and cure periods, Landlord shall have the right, but shall not be obligated, to apply or retain all or any portion of the Security Deposit in payment of Tenant's obligations hereunder, but any such application or retention shall not have the effect of curing any such default. Upon expiration or earlier termination of the Term hereof, the Security Deposit (or the undisputed balance thereof) shall be returned to Tenant no later than forty-five (45) days following such expiration. Landlord or any owner of the Building may transfer or assign the Security Deposit to any new owner of the Building or may credit the Security Deposit against the purchase price of the Building and upon such transfer or credit all liability of the transferor or assignor shall cease and come to an end, so long as the transferee assumes all obligations hereunder. No Mortgagee (as hereinafter defined) or person or entity who acquires legal or beneficial title to the Building from such Mortgagee shall be liable for the return of the Security Deposit unless such funds are actually received by such Mortgagee or purchaser.

ARTICLE 5: USE; RULES AND REGULATIONS. Tenant may only use the Premises for the Permitted Use. Tenant shall not commit any annoyance, waste, nuisance, act or thing against public policy, or which may unreasonably disturb the quiet enjoyment of Landlord or any other tenant or occupant of the Building or Complex. Tenant and or its agents, employees or contractors shall not deface or damage the Building or Complex in any manner. Tenant shall comply, and shall cause its employees, agents, clients, customers, guests and invitees to comply, with all applicable laws as well as the rules and regulations attached hereto as **Exhibit D**, and such reasonable revised or reasonable additional rules and regulations adopted by Landlord during the Term and provided to Tenant in writing. In the event of a conflict between the terms of this Lease and the terms of said rules and regulations, the terms of this Lease shall control. Subject to Landlord's obligation to provide any services required under this Lease, Tenant shall, at its own expense, keep the Premises clean, safe and in good repair and condition. Tenant shall have access to the Premises twenty-four (24) hours per day, seven (7) days per week. Notwithstanding anything to the contrary, Tenant shall not be required to make modifications of a structural or capital nature to the Premises or any other area required by any law, ordinance, or regulation that was in effect prior to the Commencement Date except to the extent necessitated, in whole or in part, by (i) Tenant's use or occupancy of, or business (excluding general office use) conducted in, the Premises, (ii) any acts or omissions of Tenant, its employees, agents, or contractors, or (iii) alterations made by Tenant.

ARTICLE 6: SERVICES PROVIDED. Landlord shall maintain the common areas, landscaped areas, parking areas, Building systems, and structural components of the Building (including, without limitation, the structural elements within the Premises) in good condition and repair and substantially consistent with similar Class A office buildings in the submarket surrounding the Complex. Landlord shall furnish to the Building common areas and the Premises Building-standard services in a manner and quantity consistent with those provided by landlords of Similar Building, including, without limitation, (i) HVAC service (weekdays: 8:00 a.m. to 6:00 p.m., except holidays, which are currently the following: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day), (ii) janitorial service, (iii) hot and cold water at all times, (iv) passenger elevator service permitting access to the Premises at all times, except in the event of an emergency, and (v) other applicable utilities substantially consistent with the services provided by similar class-A office buildings in the applicable submarket ("Similar Buildings"). Any above-standard services or services requested to be provided outside of Building-standard hours

may incur an extra cost to Tenant. Tenant shall be charged Landlord's standard overtime HVAC charge (currently $100.00 per hour) for each hour of use (with a minimum charge for four (4) hours of usage) of cooled or heated air outside of normal operating hours (which shall be no less than those hours stated above). Tenant shall notify property management, during normal operating hours, no less than twenty-four (24) hours prior to its intent to use heated or cooled air outside of normal operating hours. Landlord shall have exclusive control over all common areas of the Building and/or Complex, including the parking areas, and may take whatever actions as are commercially reasonable in exercising such control. Notwithstanding anything to the contrary, if: (i) Landlord ceases to furnish any service in the Building required to be provided under this Lease for a period in excess of five (5) consecutive days following Landlord's actual knowledge of the same or Landlord's receipt of written notice from Tenant of such interruption of service; (ii) such cessation does not arise as a result of an act or omission of Tenant; (iii) such cessation is not caused by a casualty or condemnation (as more fully set forth below); and (iv) as a result of such cessation, the Premises or a material portion thereof, is rendered untenantable and Tenant in fact ceases to use the Premises, or material portion thereof, then Tenant, as its sole remedy, shall be entitled to receive an abatement of Rent payable hereunder during the period beginning on the sixth (6^{th}) day of such cessation and ending on the day when the service in question has been restored. In the event the entire Premises has not been rendered untenantable by the cessation in service, the amount of abatement that Tenant is entitled to receive shall be prorated based upon the percentage of the Premises so rendered untenantable and not used by Tenant.

ARTICLE 7: ALTERATIONS. Tenant shall not permit any alteration, improvement, addition or installation in or to the Premises without the prior written consent of Landlord, which consent shall not be unreasonably withheld, conditioned or delayed. Hanging art customarily associated with standard offices shall not require Landlord's consent. Landlord shall respond to Tenant's written requests for consent within thirty (30) days after receipt of such written request from Tenant. If Landlord does not approve or disapprove within thirty (30) days of receipt of such written request, then Tenant may submit its request to Landlord a second time (including all supporting documentation). If Landlord does not approve or disapprove Tenant's request within five (5) days after such second request, Landlord shall be deemed to have granted its consent to such request. All Work shall comply with Landlord's reasonable requirements and Building standards (including, without limitation, energy and environmental standards), as well as any and all applicable municipal building codes and other applicable laws. All contractors and subcontractors must meet with Landlord's reasonable insurance requirements, as may be revised from time to time, and meet with the prior written approval of Landlord, which approval shall not be unreasonably withheld, conditioned or delayed. Tenant agrees not to allow any lien of any mechanic or materialman to be placed or filed against the Premises or the Building. In case any such lien shall be filed, Tenant shall satisfy and release such lien of record, or, at Tenant's sole cost and expense, provide a lien and completion bond in an amount equal to the estimated cost of such improvements, to insure Landlord against any liability for mechanic's liens and to insure completion of the work within ten (10) business days after written (or actual) notice of such lien. Tenant shall pay to Landlord Landlord's standard construction management fee of four percent (4%) of the hard and soft costs of all work, except for improvements that do not require Landlord's consent. Notwithstanding the foregoing, Landlord's consent shall not be required for, and the construction management fee shall not be applicable to, any alteration to the interior of the Premises that complies with the following requirements: (a) is non-structural in nature; (b) does not affect the roof or any area outside of the Premises;

(c)does not materially affect the electrical, plumbing, HVAC or mechanical systems in the Building or servicing the Premises, or the sprinkler or other life safety system; (d) costs less than $50,000.00 for each such alteration project in the aggregate; (e) Landlord receives five (5) business days' prior written notice (and entry of workers is coordinated with management); (f) Tenant is not then in monetary or material non-monetary default; (g) Landlord's insurance requirements are satisfied; and (h) Landlord receives "as built" plans, if applicable.

ARTICLE 8: SURRENDER. Upon the expiration or sooner termination of this Lease, Tenant shall surrender possession of the Premises to Landlord and deliver all keys to the Premises and all locks therein to Landlord and make known to Landlord the combination of all combination locks in the Premises, and shall return the Premises and all equipment and fixtures of Landlord therein to Landlord in broom clean condition and in as good condition as when Tenant originally took possession, ordinary wear and tear excepted, and all of Tenant's furniture, low voltage cabling (such as computer and telephone cables) and personal property removed, failing which Landlord may restore the Premises and such equipment and fixtures to such condition and Tenant shall pay the cost thereof to Landlord on

demand. Any property remaining in the Premises following the expiration or sooner termination of this Lease shall be deemed to be the property of Landlord and Landlord may dispose of the same (this Lease being a bill of sale therefor), and Landlord shall not be responsible for keeping confidential any computer records, personnel files or other items left by Tenant. Notwithstanding anything herein to the contrary, Tenant shall not be required to remove (a) any alterations, improvements, additions, or installations existing in the Premises prior to the Commencement Date, and
(b) if Landlord's consent was required, any alterations, improvements, additions, or installations made by or on behalf of Tenant unless Landlord informed Tenant, in writing, at the time Landlord approved the same that such item must be removed upon the expiration or earlier termination of this Lease (and if Landlord's consent was not required, such alteration or improvement shall be removed).

ARTICLE 9: DAMAGE OR DESTRUCTION. If the Premises or the Building shall be so damaged or destroyed by fire or other casualty so as to render them untenantable for a period of in excess of one hundred eighty (180) days, then Landlord, at its sole option, shall have the right to cancel and terminate this Lease. If not terminated, then Landlord shall repair and restore the Premises with all reasonable speed to substantially the same condition as immediately prior to such damage or destruction, and the Rent or a just and proportionate part thereof, according to Tenant's ability to utilize the Premises in its damaged condition, shall be abated from the date of the fire or other casualty until the Premises shall have been repaired and restored by Landlord. But if the Premises shall be so lightly damaged by fire or other casualty as not to be rendered untenantable, then Landlord agrees to repair the Premises with reasonable promptness and the rent accrued and accruing, shall not cease. "Untenantable" Premises shall be such as to not allow Tenant to transact and effectuate its operations efficiently in the ordinary course of business. If Landlord estimates that the Premises will remain untenantable for in excess of one hundred eighty (180) days, or if there is a casualty during the last twelve (12) months of the Term (as may be extended) and Landlord estimates that the Premises shall remain untenantable for in excess of thirty (30) days, then Tenant may elect to terminate this Lease by written notice delivered to Landlord within thirty (30) days following Landlord's delivery to Tenant of the estimated duration that the Premises will remain untenantable.

ARTICLE 10: EMINENT DOMAIN. In the event that the whole or a substantial part of the Premises shall be condemned or taken in any manner for any public or quasi-public use (or sold under threat of such taking), and as a result thereof, the remainder of the Premises cannot be used for the same purpose as prior to such taking, the Lease shall terminate as of the date possession is taken. Landlord shall be entitled to receive the entire award, including the damages for the property taken and damages to the remainder, with respect to any condemnation proceedings affecting the Building; however, Tenant may make a separate claim against the condemnor for any damage to its business or for relocation costs.

ARTICLE 11: INSURANCE; WAIVER OF SUBROGATION.

1.01 **Tenant's Insurance.** Tenant shall obtain and maintain during the entire term the following forms of insurance: (i) Commercial general liability insurance against any and all claims for bodily injury and property damage occurring in, or about the Premises arising out of Tenant's use and occupancy of the Premises (such insurance shall have a combined single limit of not less than One Million Dollars ($1,000,000) per occurrence with a Two Million Dollar ($2,000,000) aggregate limit and excess umbrella liability insurance in the amount of Two Million Dollars ($2,000,000)); (ii) Personal property insuring all equipment, trade fixtures, inventory, fixtures, and personal property located on or in the Premises for perils covered by the causes of loss - special form (all risk) and in addition, coverage for wind, and boiler and machinery (if applicable) (such insurance shall be written on a replacement cost basis in an amount equal to one hundred percent (100%) of the full replacement value of the aggregate of the foregoing); (iii) Business interruption and extra expense insurance in such amounts to reimburse Tenant for direct or indirect loss attributable to all perils commonly insured against by prudent tenants or attributable to prevention of access to the Premises or the Building as result of such perils; and (iv) Workers' compensation insurance in accordance with statutory law and employers' liability insurance with a limit of not less than One Million Dollars ($1,000,000) per accident, One Million Dollar ($1,000,000) disease policy limit and One Million Dollar ($1,000,000) disease limit each employee.

1.02 **General Requirements.** Such liability insurance shall be primary and not contributing to any insurance available to Landlord and Landlord's insurance shall be in excess thereto. In no event shall the limits of such insurance be considered as limiting the liability of Tenant under this Lease. The policies required to be maintained by Tenant shall be with companies rated A-VIII or better by A.M. Best. Insurers shall be licensed to do business in the state in which the Premises are located and domiciled in the USA. Any deductible amounts under any insurance policies required hereunder shall not exceed Twenty-Five Thousand Dollars ($25,000). Certificates of insurance shall be delivered to Landlord upon the full execution of this Lease and thereafter at least ten (10) days prior to the policy expiration date, each identifying Landlord, the applicable property management company and any applicable lender as additional insureds. Tenant shall endeavor to notify Landlord at least thirty (30) days prior to any cancellation or modification to reduce the insurance coverage. Landlord may, by notice to Tenant, require an increase in policy limits or require that Tenant carry other forms of insurance; provided that the same are commercially reasonable and in keeping with the insurance requirements of owners of Similar Buildings and such increase may not occur more than once every three (3) years. In the event Tenant does not purchase the insurance required by this Lease or keep the same in full force and effect, Landlord may, but shall not be obligated to purchase the necessary insurance and pay the premium following written notice a five (5) business day cure period and Tenant shall repay to Landlord, as Rent, the amount so paid within five (5) business days following written demand.

1.03 **Waiver of Subrogation.** Landlord and Tenant hereby mutually waive their respective rights of recovery against each other for any loss of, or damage to, either parties' property, to the extent that such loss or damage is insured by an insurance policy (or in the event either party elects to self-insure any property coverage required) required to be in effect at the time of such loss or damage. Each party shall obtain any special endorsements, if required by its insurer whereby the insurer waives its rights of subrogation against the other party. The provisions of this clause shall not apply in those instances in which waiver of subrogation would cause either party's insurance coverage to be voided or otherwise made uncollectible.

ARTICLE 12: TRANSFER OF LANDLORD'S INTEREST. As used in this Lease, the term "Landlord" means only the current owner of the fee title to the Building or the leasehold estate under a ground lease of the Building at the time in question. Each Landlord is obligated to perform the obligations of Landlord under this Lease only during the time such Landlord owns such interest or title. Any Landlord who transfers its title or interest in the Building is relieved of all liabilities for the obligations of Landlord under this Lease to be performed on or after the date of transfer. Tenant agrees to look solely to the transferee with respect to all matters in connection with this Lease.

ARTICLE 13: TRANSFER OF TENANT'S INTEREST. Tenant shall not sell, assign, encumber, mortgage or transfer this Lease or any interest therein, sublet or permit the occupancy or use by others of the Premises or any part thereof, or allow any transfer hereof of any lien upon Tenant's interest by operation of law or otherwise (collectively, a "Transfer") without the prior written consent of Landlord, which consent shall not be unreasonably withheld, conditioned or delayed. Without limitation to the generality of the reasons for which Landlord may withhold its consent, Landlord may withhold its consent if the proposed sublessee or assignee is a person or entity with whom Landlord is then negotiating to lease space in the Building or Complex or to another tenant or occupant of the Building or Complex (but only if Landlord has comparable space for lease in the Building for a comparable Term). Tenant shall pay to Landlord a flat fee of One Thousand Dollars ($1,000.00) for any request to Transfer. Tenant shall provide written notice of the proposed assignee, sublessee or transferee, as applicable, which notice shall provide Landlord with (i) the name and address of the proposed subtenant, assignee, pledgee, mortgagee or transferee, (ii) a reasonably detailed description of such person or entity's business, (iii) detailed financial references for such person or entity,

(iv) a true and complete copy (which may be unsigned) of the proposed sublease, assignment, pledge, mortgage or other conveyance and all related documentation, and (v) such other information as Landlord may reasonably require. Landlord shall, with thirty (30) days after receipt of Tenant's Transfer request, approve or disapprove the proposed Transfer. In the event of a disapproval, Landlord shall inform Tenant, in reasonable specificity, the reasons for disapproval. If Landlord does not approve or disapprove of the proposed Transfer within said thirty (30) days period, then Tenant may resubmit its request for a Transfer a second time (including all supporting documentation). If Landlord fails to approve or disapprove of the proposed Transfer within three (3) business days after such second written request, such proposed Transfer shall be deemed approved. Fifty percent (50%) of all excess Rent (or

additional consideration) shall be and become the property of Landlord and shall be paid to Landlord as it is received by Tenant, less Tenant's reasonable brokerage (excluding commissions paid to brokers who are Tenant's affiliates) costs, marketing costs, tenant improvement costs, legal and other expenses ("Tenant's Costs") incurred in connection with such assignment or, in the case of a sublease, less the monthly pro rata share of such Tenant's Costs as determined by dividing such Tenant's Costs by the number of months in the term of such sublease. If Tenant shall sublet the Premises or any part thereof, Tenant shall be responsible for all actions and neglect of the subtenant and its officers, partners, employees, agents, and guests as if such subtenant and such persons were employees of Tenant. Nothing in this Section shall be construed to relieve Tenant from the obligation to obtain Landlord's prior written consent to any proposed sublease. Tenant shall remain liable under this Lease (as may be amended) regardless of whether any Transfer was approved by Landlord or whether Landlord's approval was required. Landlord shall have the right, to be exercised by giving written notice to Tenant within ten (10) business days after receipt of Tenant's notice, to recapture the space described in Tenant's notice and such recapture notice shall, if given, cancel and terminate this Lease; provided, however, such right shall not apply in connection with a Transfer to a Permitted Transferee (as hereinafter defined). If Landlord shall elect to give the aforesaid recapture notice with respect thereto, then the Term shall expire and end on the date stated in Tenant's notice as fully and completely as if that date had been herein definitely fixed for the expiration of the Term.

Notwithstanding any provision of this Lease to the contrary, provided that Tenant remains liable on this Lease, provides Landlord with prior written notice and names of the applicable transferee and a copy of the applicable assignment or sublease agreement (unless Tenant is unable to do the foregoing because of confidentiality or legal requirements, in which event Tenant shall provide Landlord with written notice, name of the transferee, and such copy within ten (10) days after the effective date of the same), and Tenant is not then in default beyond any applicable notice and cure period, then the following transfers will not require Landlord's prior consent (each a "Permitted Transfer"):

(i) a transfer to any entity which is controlled by Tenant;

(ii) a transfer to any entity which controls Tenant ("Parent");

(iii) a transfer to any entity which is controlled (directly or indirectly) by Tenant's Parent; and

(iv) a reverse triangular merger or a transfer to any entity which merges with Tenant or purchases all or substantially all of Tenant's assets, provided that Tenant provides to Landlord financial statements evidencing that such transferee or surviving corporation has a credit rating and net worth (exclusive of intangible assets) at least as favorable as Tenant (which information may be provided within ten (10) days after the effective date of the transaction if Tenant is unable to provide the same due to confidentiality or legal requirements).

Further, notwithstanding anything to the contrary, the following shall not be deemed an assignment, sublease, or other Transfer and shall not require Landlord's consent or notice to Landlord: a sale or other transfer of corporate shares of capital stock (or any member interest if Tenant is a limited liability company) in Tenant in connection with a bona fide financing for the benefit of Tenant, or a sale of any stock on a nationally-recognized stock exchange.

Further, Tenant may permit up to fifteen percent (15%) of the rentable square footage of the Premises, in the aggregate, to be used for Office Sharing (as hereinafter defined), without the same constituting a Transfer. The term "Office Sharing" shall mean the use of portions of the Premises (including use of the Tenant's receptionist and conference rooms), without separate demising of walls by Tenant's consultants, strategic partners, clients, advisors, other professionals, or other third parties who have an ongoing professional or business relationship with Tenant (the "Shared Users"). Tenant agrees to notify Landlord, promptly upon Landlord's written request therefor, as to the approximate amount and the identity of the Shared Users. Each such Shared User shall be deemed an invitee of Tenant, and in no event shall the use or occupancy of any portion of the Premises by any Shared User be deemed to create a landlord/tenant relationship between Landlord and any Shared User or be deemed to vest in any Shared User any right or interest in this Lease, and Shared Users shall have no recourse directly against Landlord for any failure by Landlord

to perform any of its obligations under this Lease. In no event shall Landlord be required to send any notices to any Shared User.

ARTICLE 14: RELEASE, WAIVER AND INDEMNIFICATION.

1.01 **Tenant's Indemnification**. Subject to applicable waivers of subrogation and to the extent not expressly prohibited by law or due to the negligence of Landlord or its agents, employees or contractors, Tenant agrees to hold harmless and indemnify Landlord and Landlord's Related Parties from and against third-party claims, damages and liabilities, including reasonable attorneys' fees (but excluding consequential damages, except any such damages that arise out of a violation by Tenant of its obligations under Article 18 and such consequential damages specified in Article 17), for injuries to all persons and damage to or theft or misappropriation or loss of property, relating directly or indirectly to (i) the use or occupancy of the Premises by Tenant or its agents, employees or contractors, or otherwise occurring on or about the Premises, (ii) any breach or default on the part of Tenant in the performance of any covenant or agreement on the part of Tenant to be performed pursuant to the terms of this Lease beyond any applicable notice and cure period, or (iii) any negligence or willful misconduct of, or violation of any law by, Tenant, its agents, employees, or contractors. In the event any action or proceeding is brought against Landlord or Landlord's Related Parties by reason of any such claims, then, upon notice from Landlord, Tenant covenants to defend such action or proceeding by counsel reasonably satisfactory to Landlord (counsel selected by Tenant's insurers being deemed reasonably satisfactory to Landlord).

1.02 **Landlord's Indemnification**. Subject to applicable waivers of subrogation, releases, and limitations on liability, Landlord shall defend and hold Tenant and its officers, directors, partners and employees harmless from and against all liabilities, losses, demands, actions, expenses or claims, including reasonable attorneys' fees and court costs but excluding consequential damages, (i) for injury to or death of any person or for damage to any property to the extent such are determined to be caused by the negligence or willful misconduct of Landlord, its agents, employees, or contractors in or about the Premises or Building or Complex, or (ii) from any breach or default on the part of Landlord in the performance of any covenant or agreement on the part of Landlord to be performance pursuant to the terms of this Lease beyond any applicable notice and cure period. None of the events or conditions set forth in this paragraph shall be deemed a constructive or actual eviction or entitle Tenant to any abatement or reduction of Rent.

1.03 **Limitation on Landlord's Liability**. To the extent not expressly prohibited by law and except to the extent caused by the negligence or willful misconduct of Landlord, its agents, employees, contractors, or any of the Landlord's Related Parties, Tenant releases Landlord, its beneficiaries, mortgagees, stockholders, agents (including, without limitation, management agents), partners, officers, servants and employees, and their respective agents, partners, officers, servants and employees ("Related Parties"), from and waives all claims for damages to person or property sustained by Tenant or by any occupant of the Premises or the Building, or by any other person, resulting directly or indirectly from: (i) fire or other casualty (but the same shall not affect Landlord's obligations under Article 9 of this Lease); (ii) any existing or future condition, defect, matter or thing in the Premises, the Building or any part thereof, or from any equipment or appurtenance therein; (iii) any accident in or about the Building; or (iv) any act (including, without limitation, violation of rules) or neglect of any tenant or other occupant of the Building or of any other person, other than Landlord or its agents or Landlord's Related Parties. Landlord shall not be liable for any claim, loss or damage to person or property which is either covered by insurance or which Tenant is required to insure under this Lease. Tenant shall look to its property damage or business interruption insurance policies, and not to Landlord for any loss incurred as a result of damage to its property or interruption of its business unless such damage or interruption is a direct result of the negligence or willful misconduct of Landlord, its agents, employees, contractors, or any of the Landlord's Related Parties. Tenant agrees that in the event Tenant shall have any claim against Landlord or Landlord's Related Parties under this Lease arising out of the subject matter of this Lease, Tenant's sole recourse shall be against Landlord's interest in the Building, for the satisfaction of any claim, judgment or decree requiring the payment of money by Landlord or Landlord's Related Parties as a result of a breach hereof or otherwise in connection with this Lease, and no other property or assets of Landlord, Landlord's Related Parties or their successors or assigns, shall be subject to the levy, execution or other enforcement procedure for the satisfaction of any such claim, judgment,

injunction or decree. Under no circumstances shall either party be liable for, and each party hereby waives, consequential, punitive, special, or exemplary damages, or any damages similar thereto, excluding (i) any such damages that arise out of a violation by Tenant of its obligations pursuant to Article 18 hereof and (ii) such consequential damages specified in Article 17 hereof.

ARTICLE 15: SUBORDINATION; ATTORNMENT; ESTOPPEL CERTIFICATE.

1.01 **Subordination**. This Lease is subject and subordinate to any deeds to secure debt or underlying lease that may now or hereafter affect this Lease or the Building. In the event of a future subordination of this Lease and following receipt of a written request from Tenant, Landlord will use commercially reasonable efforts to obtain from the holder of any such mortgage, a written agreement on such mortgagee's standard form for the benefit of Tenant. Any costs charged by any Mortgage as a result of Tenant negotiating the terms of any applicable subordination and non-disturbance agreement shall be paid for by Tenant. The word "Mortgage" as used herein includes mortgages, deeds of trust and any sale leaseback transactions, or other similar instruments, and modifications, extensions, renewals, and replacements thereof. Tenant shall execute any applicable commercially reasonable subordination and non-disturbance agreement requested by Landlord's lender(s).

1.02 **Attornment**. If any Mortgage shall be foreclosed, (i) the liability of the Mortgagee shall exist only so long as such Mortgagee, purchaser or owner is the owner of the Building, and such liability with respect to claims or obligations arising after said transfer shall not continue or survive after further transfer of ownership; and (ii) Tenant will attorn, as Tenant under this Lease, to the purchaser at any foreclosure sale under any Mortgage, and Tenant will execute such commercially reasonable instruments as may be necessary or appropriate to evidence such attornment, provided that the same do no adversely affect Tenant's rights or obligations hereunder. Tenant waives the provisions of any statute or rule of law, now or hereafter in effect, that may give or purport to give Tenant any right to terminate or otherwise adversely affect Landlord's interest in this Lease or reduce or limit the obligations of Tenant hereunder in the event of the prosecution or completion of any such foreclosure proceeding. No Mortgagee or any purchaser at a foreclosure sale shall be liable for any act or omission of Landlord which occurred prior to such sale or conveyance, nor shall Tenant be entitled to any offset against or deduction from Rent due after such date by reason of any act or omission of Landlord prior to such date. Further, Tenant agrees that no Mortgagee shall be bound by the prepayment of Rent made in excess of thirty (30) days before the date on which such payment is due, or for the return of any Security Deposit, unless actually received by the Mortgagee.

1.03 **Mortgagee's Notice and Cure Rights**. Tenant agrees to give any lien holder of which Tenant has prior written notice a copy of any notice or claim of default served upon Landlord. Tenant further agrees that if Landlord shall have failed to cure such default within thirty (30) days after such notice to Landlord (or if such default cannot be cured or corrected within that time, then such additional time as may be necessary if Landlord has commenced within such thirty (30) days and is diligently pursuing the remedies or steps necessary to cure or correct such default), then the mortgagee shall have an additional thirty (30) days within which to cure or correct such default (or if such default cannot be cured or corrected within that time, then such additional time as may be necessary if such mortgagee has commenced within such thirty (30) days and is diligently pursuing the remedies or steps necessary to cure or correct such default, including the time necessary to obtain possession if possession is necessary to cure or correct such default) before Tenant may exercise any right or remedy which it may have on account of any such default of Landlord.

1.04 **Estoppel Certificate.** Tenant agrees that from time to time, upon not less than ten (10) business days' prior written request by Landlord, Tenant will promptly complete, execute and deliver to Landlord or any party or parties designated by Landlord a statement in writing certifying: (i) that this Lease is unmodified and in full force and effect (or if there have been modifications that the same are in full force and effect as modified and identifying the modifications); (ii) the dates to which the Rent and other charges have been paid; (iii) that the Premises have been unconditionally accepted by Tenant (or if not, stating with particularity the reasons why the Premises have, not been unconditionally accepted); (iv) the amount of any Security Deposit held hereunder; (v) that, so far as the party making the certificate knows, Landlord is not in default under any provisions of this Lease, if such is the case, and if not,

identifying all defaults with particularity; and (vi) any other factual matter reasonably requested by Landlord. Any purchaser or Mortgagee of any interest in the Building shall be entitled to rely on said statement. In the event that Tenant fails to provide Landlord with such estoppel certificate within such ten (10) business day period, Landlord shall provide Tenant with a second notice (the "Second Estoppel Notice") requesting such estoppel certificate. For each day that Tenant fails to remit the estoppel certificate, commencing on the fifth (5th) day after Tenant's receipt of the Second Estoppel Notice, Tenant shall pay a late fee of One Hundred Dollars ($100) per day until the day on which Tenant remits the estoppel certificate as set forth herein.

1.05 **Quiet Enjoyment**. Upon payment by Tenant of the rents herein provided, and upon the observance and performance of all the covenants, terms and conditions on Tenant's part to be observed and performed within the applicable notice and cure periods, Tenant shall peaceably and quietly hold and enjoy the Premises for the Term without hindrance or interruption by Landlord or any other person or persons lawfully or equitably claiming by, through or under Landlord, subject, nevertheless, to the terms and conditions of this Lease, and any mortgage and/or deed of trust to which this Lease is subordinate.

ARTICLE 16: LANDLORD'S RIGHT OF ACCESS. Landlord and its contractors and representatives shall have the right to enter the Premises at all reasonable times to perform janitorial and cleaning services and, after at least one

(1)business days' written notice (except in the case of emergencies), to inspect the same, to make necessary repairs, alterations and improvements, to maintain the Premises and the Building, specifically including, but without limiting the generality of the foregoing, to make repairs, additions or alterations within the Premises to mechanical, electrical and other facilities serving other premises in the Building, to post such reasonable notices as Landlord may desire to protect its rights, to exhibit the Premises to mortgagees and purchasers, and, during the one hundred eighty (180) days prior to the expiration of the Term, to exhibit the Premises to prospective tenants. Tenant shall permit Landlord to erect, use, maintain and repair pipes, cables, conduit, plumbing, vents and wires, in, to and through the Premises to the extent Landlord may now or hereafter deem necessary or appropriate for the proper operation, maintenance and repair of the Building and any portion of the Premises. In exercising its rights under this Article 16, Landlord will use commercially reasonable efforts to minimize any interference with Tenant's use or occupancy of the Premises, provided that Landlord will not be obligated to provide overtime labor or perform work after regular Building hours.

ARTICLE 17: HOLDING OVER. If Tenant retains possession of the Premises or any part thereof after the termination of the Term or any extension thereof, by lapse of time or otherwise, Tenant, unless Landlord otherwise elects, shall become a tenant at sufferance and shall pay Landlord monthly Rent at one hundred fifty percent (150%) of the rate of Base Rent in effect for the month immediately preceding said holding over, computed on a per month basis, for each month or part thereof (without reduction for any such partial month) that Tenant thus remains in possession. The provisions of this Article do not exclude Landlord's right of reentry or any other right hereunder. Tenant shall be liable for any damages suffered by Landlord due to Tenant's unauthorized holding over for more than thirty (30) days following a written notice to vacate, including, without limitation, abatement, late fees, interest or penalties charged by the next tenant resulting from Landlord's inability to timely deliver all or portion of the Premises.

ARTICLE 18: HAZARDOUS MATERIALS. The term "Hazardous Substances", as used in this Lease shall mean pollutants, contaminants, toxic or hazardous wastes, or any other substances, the use and/or the removal of which is required or the use of which is restricted, prohibited or penalized by any "Environmental Law", which term shall mean any federal, state or local law, ordinance or other statute of a governmental or quasi-governmental authority relating to pollution or protection of the environment. Tenant hereby agrees that no activity will be conducted on the Premises that will produce any Hazardous Substance, except for such activities that are part of the ordinary course of Tenant's business activities (the "Permitted Activities") provided said Permitted Activities are conducted in accordance with all Environmental Laws and have been approved in advance in writing by Landlord (Landlord hereby consents common operational tasks such as changing toners and replacing batteries); Tenant shall be responsible for obtaining any required permits and paying any fees and providing any testing required by any governmental agency in connection with such Permitted Activities. Should it be determined, in Landlord's reasonable opinion, that said Permitted Materials are being improperly stored, used, or disposed of, then Tenant shall immediately take such corrective action as requested by Landlord. Should Tenant fail to take such corrective action within twenty-four (24)

hours, Landlord shall have the right to perform such work and Tenant shall promptly reimburse Landlord for any and all costs associated with said work. Tenant agrees to indemnify, defend and hold harmless Landlord, its lenders, any managing agents and leasing agents of the Premises, and their respective agents, partners, officers, directors and employees, from all claims, demands, actions, liabilities, costs, expenses, damages (actual or punitive) and obligations of any nature arising from or as a result of any Hazardous Substances being brought into the Building or Premises by Tenant or its agents, employees, or contractors. Landlord will indemnify, defend and hold Tenant harmless from and against any claim, cost, damage, expense (including without limitation reasonable attorneys' fees and costs of defense but excluding indirect or consequential damages), loss, liability, or judgment now or hereafter arising as a result of any claim associated with any required clean-up or other actions arising from the existence, release or threatened release of Hazardous Substances on, in or under the Premises, to the extent not introduced or aggravated by the act or neglect of Tenant or Tenant's agents, employees or contractors, that is either (i) released by Landlord or its agents, employees or contractors, or (ii) accruing prior to the Commencement Date. The foregoing indemnifications and the responsibilities of Tenant and Landlord shall survive the termination or expiration of this Lease.

ARTICLE 19: RELOCATION. Landlord may, at any time, but on only one (1) occasion, relocate Tenant to another area of the Building (herein referred to as "new premises") providing the new premises shall be substantially similar in size, location (must be on the same floor or higher), utility, window line, quality, appearance, and use for Tenant's purposes. If Tenant is already occupying the Premises at the time Landlord exercises the rights granted by this Article, Landlord, at its expense, shall remove, relocate, and reinstall Tenant's equipment, furniture, and fixtures, including all wiring and cabling in the new premises and redecorate the new premises so that they will be substantially the same as the former Premises, all at Landlord's sole cost and expense. In addition, Landlord shall pay all reasonable out-of-pocket costs directly related to such relocation, including, without limitation, any other costs necessary to improve the new premises to the same level of finish as existed in the original Premises, wiring/cabling costs, moving costs, and the cost of stationery and similar items rendered useless by such relocation. Landlord shall give Tenant at least ninety (90) days' notice before making such change. Tenant shall cooperate with Landlord in all reasonable ways to facilitate the move. Tenant may elect to have the physical move occur during weekend or evening hours in order to minimize any effect on Tenant's business. Tenant shall not be required to physically move until such time as the new premises is ready for business to be conducted therefrom. If the new premises is larger than the original Premises, then (i) Tenant's Share shall be adjusted proportionately, and (ii) Base Rent shall be reduced so that, when combined with Tenant's Share of Operating Expenses and Taxes, the total amount due from Tenant in accordance with this Lease for Base Rent, Operating Expenses, and Taxes does not exceed the amounts that would have been payable for the original Premises. If the new premises are smaller than the original Premises, then Base Rent and Tenant's Share shall be reduced proportionately.

ARTICLE 20: DEFAULT. The occurrence of any one or more of the following matters constitutes a default ("Default") by Tenant under this Lease:

(a) Failure by Tenant to pay, within five (5) days after the due date, any Rent or any other amounts due and payable by Tenant under this Lease; provided, however, Tenant shall be entitled to written notice and a five (5) day cure period (i) on two (2) occasions during any twelve (12) month period with respect to recurring Rent and (ii) on each occasion with respect to nonrecurring Rent;

(b) Failure by Tenant to observe or perform any other covenant, agreement, condition or provision of this Lease, if such failure shall continue for thirty (30) days after written notice thereof to Tenant by Landlord; provided, however, Tenant may have a longer period to cure (not to exceed ninety (90) days) provided that Tenant promptly commences and diligently pursues such cure to completion;

(c) Tenant or any guarantor of this Lease becomes insolvent or bankrupt or admits in writing its inability to pay its debts as they mature, makes an assignment for the benefit of creditors, or applies for or consents to the appointment of a trustee or receiver for itself or for all or a part of its property; and

(d) Tenant shall repeatedly default in the timely payment of Rent or any other charges required to be paid to Landlord pursuant to this Lease, or shall repeatedly default in keeping, observing or performing any other covenant, agreement, condition or provision of this Lease, whether or not Tenant shall timely cure any such payment or other default. For the purposes of this subsection, the occurrence of the same default for which Tenant has received notice four (4) times during any twelve (12) month period shall constitute a repeated default.

Any notice periods provided for under this Article shall run concurrently with any statutory notice periods, and any notice given hereunder may be given simultaneously with or incorporated into any such statutory notice.

ARTICLE 21: REMEDIES.

1.01 Landlord's Remedies. If a Default occurs, Landlord shall have the following rights and remedies, which shall be distinct, separate and cumulative, and which may be exercised by Landlord concurrently or consecutively in any combination and which shall not operate to exclude or deprive Landlord of any other right or remedy which Landlord may have at law or in equity: (a) Landlord may terminate this Lease by giving to Tenant notice of Landlord's intention to do so, in which event the Term shall end, and all right, title and interest of Tenant hereunder shall expire, on the date stated in such notice; (b) Landlord may terminate the right of Tenant to possession of the Premises by any lawful means, without terminating this Lease. In such event, Tenant's obligations under this Lease shall continue in full force and effect and Landlord shall be entitled to recover from Tenant all damages incurred by Landlord by reason of Tenant's default, not limited to those set forth herein; and (c) Landlord may enforce the provisions of this Lease and may enforce and protect the rights of Landlord hereunder by a suit or suits in equity or at law for the specific performance of any covenant or agreement contained herein, or for the enforcement of any other appropriate legal or equitable remedy, including injunctive relief and recovery of all moneys due or to become due from Tenant under any of the provisions of this Lease.

1.02 Surrender of Possession. If Landlord exercises either of the remedies provided for in subparagraphs (a) and (b) of Article 21.01, Tenant shall surrender possession and vacate the Premises immediately and deliver possession thereof to Landlord, and Landlord may then, or at any time thereafter, re-enter and take complete and peaceful possession of the Premises, full and complete license so to do being granted to Landlord, and Landlord may remove all property therefrom, without being deemed in any manner guilty of trespass, eviction or forcible entry and detainer and without relinquishing Landlord's right to Rent or any other right given to Landlord hereunder or by operation of law.

1.03 Damages. If Landlord terminates the right of Tenant to possession of the Premises without terminating this Lease, such termination of possession shall not release Tenant, in whole or in part, from Tenant's obligation to pay the Rent hereunder for the full stated Term. Alternatively, at Landlord's option, Landlord shall have the right, from time to time, to recover from Tenant, and Tenant shall remain liable for, all Base Rent and additional Rent and any other sums then due under this Lease during the period from the date of such notice or termination of possession to the end of the Term. Landlord may file suit from time to time to recover any such sums and no suit or recovery by Landlord of any such sums or portion thereof shall be a defense to any subsequent suit brought for any other sums due under this Lease. Alternatively, if Landlord elects to terminate this Lease, Landlord shall be entitled to recover from Tenant all Base Rent and additional Rent accrued and unpaid for the period up to and including such termination date, as well as all other additional sums payable by Tenant hereunder. In addition, Landlord shall be entitled to recover, as damages for loss of the benefit of its bargain and not as a penalty, the sum of (x) the unamortized cost to Landlord, computed and determined in accordance with generally accepted accounting principles, of any tenant improvements provided by Landlord at its expense, (y) the aggregate sum which at the time of such termination represents the excess, if any, or the present value of the aggregate Base Rent and additional Rent (as reasonably estimated by Landlord) for the remainder of the Term over the then present value of the then aggregate fair rental value of the Premises for the balance of the Term, immediately prior to such termination, such present worth to be computed in each case on the basis of a six percent (6%) per annum discount from the respective dates upon which rentals would have been payable hereunder had the Term not been terminated, and (z) any damages in addition thereto,

including reasonable attorneys' fees and court costs, which Landlord shall have sustained by reason of the Default of any of the covenants of this Lease other than for the payment of Rent.

1.04 **Reletting**. In the event Landlord terminates the right of Tenant to possession of the Premises without terminating this Lease as aforesaid, Landlord shall use commercially reasonable efforts to relet the Premises or any part thereof for the account of Tenant for such rent, for such time (which may be for a term extending beyond the Term) and upon such terms as Landlord in Landlord's reasonable discretion shall determine (including concessions of free rent and other inducements to prospective tenants), and Landlord shall not be required to accept any tenant offered by Tenant or to observe any instructions given by Tenant relative to such reletting and may give the leasing of any unleased space in the Building priority over the reletting of the Premises. Also, in any such event, Landlord may make repairs, alterations and additions in or to the Premises and redecorate the same to the extent deemed by Landlord necessary, and, in connection therewith, change the locks to the Premises, and Tenant shall upon demand pay the reasonable cost thereof together with Landlord's reasonable expenses of reletting. Landlord may collect the rents from any such reletting and apply the same first to the payment of the expenses of re-entry, redecoration, repair and alterations and the expense of reletting (including without limitation brokers' commissions and reasonable attorneys' fees) and second to the payment of Rent herein provided to be paid by Tenant. Any excess or residue shall operate only as an offsetting credit against the amount of Rent as the same theretofore became or thereafter becomes due and payable hereunder, but the use of such offsetting credit to reduce the amount of Rent due Landlord, if any, shall not be deemed to give Tenant any right, title or interest in or to such excess or residue and any such excess or residue shall belong solely to Landlord. No such re-entry or repossession, repairs, alterations and additions, or reletting shall be construed as an eviction or ouster of Tenant, an election on Landlord's part to terminate this Lease or an acceptance of a surrender of this Lease, unless a written notice of such intention be given to Tenant, or shall operate to release Tenant in whole or in part from any of Tenant's obligations hereunder. Landlord may, at any time and from time to time, sue and recover judgment for any deficiencies remaining after the application of the proceeds of any such reletting.

1.05 **Removal of Tenant's Property**. All property removed from the Premises by Landlord pursuant to any provisions of this Lease or of law shall be handled, removed or stored by Landlord at the cost, expense and risk of Tenant, and Landlord, shall in no event be responsible for the value, preservation or safekeeping thereof. Tenant shall pay Landlord upon demand for all expenses incurred by Landlord in such removal and storage.

1.06 **Costs**. Tenant shall pay all costs, charges and expenses, including, without limitation, court costs and reasonable attorneys' fees incurred by Landlord or its beneficiaries in enforcing Tenant's obligations under this Lease due to a Tenant Default, in the exercise by Landlord of any of its remedies in the event of a Default, in any litigation, negotiation or transactions in which Tenant causes Landlord, without Landlord's fault, to become involved or concerned, or in consideration of any request for approval of or consent to any action by Tenant which is prohibited by this Lease or which may be done only with Landlord's approval or consent, whether or not such approval or consent is given.

1.07 **Late Charges and Interest**. Tenant shall pay a late payment fee equal to five percent (5%) of the amount due if any payment of Rent is not paid when due. In addition, any amount due hereunder shall bear interest after default in the payment thereof at the annual rate of Prime plus five percent (5%). "Prime" means the prime interest rate per annum for commercial loans (as published from time to time by The Wall Street Journal (http://www.wsj.com/mdc/public/page/2_3020-moneyrate.html), and with any changes in such rate to be effective on the date such change is published), provided that in no event shall such interest rate exceed the highest legal interest rate for business loans. Notwithstanding the foregoing, Landlord shall waive the late charge and interest on the first late payment of Rent during each calendar year provided that Tenant pays the late amount, in full, within five (5) business days after Tenant's receipt of written notice thereof.

1.08 **Landlord's Right to Perform Tenant's Duties**. If Tenant fails timely to perform any of its duties under this Lease, Landlord shall have the right (but not the obligation), after the expiration of any grace period specifically provided by this Lease, to perform such duty on behalf and at the expense of Tenant without further notice

to Tenant, and all sums expended or expenses incurred by Landlord in performing such duty shall be deemed to be Rent under this Lease and shall be due and payable to Landlord upon demand by Landlord.

1.09 **Cumulative Rights**. All of Landlord's rights and remedies under this Lease shall be cumulative with and in addition to any and all rights and remedies which Landlord may have at law or in equity. Any specific remedy provided for in any provision of this Lease shall not preclude the concurrent or consecutive exercise of a remedy provided for in any other provision hereof.

ARTICLE 22: MISCELLANEOUS.

1.01 **Benefit**. All terms, covenants and conditions on this Lease shall be binding upon and inure to the benefit of and shall apply to the respective heirs, executors, administrators, successors, assigns and legal representatives of Landlord and Tenant.

1.02 **Execution and Delivery**. The execution of this Lease by Tenant and delivery of the same to Landlord or Landlord's Management Agent do not constitute a reservation of or option to lease the Premises or an agreement by Landlord to enter into a Lease, and this Lease shall become effective only if and when Landlord executes and delivers a counterpart hereof to Tenant. Tenant acknowledges and agrees that by executing and delivering this Lease to Landlord or Landlord's agent Tenant has made an offer to Landlord which offer may not be revoked, altered or modified for a period of five (5) business days and, thereafter, only if Landlord has failed to countersign a copy of this Lease prior to Landlord's receipt of a written revocation from Tenant.

1.03 **Applicable Law**. This Lease shall be governed by and construed in accordance with the laws of the State of California, and the parties agree that venue is proper in and hereby submit themselves to the jurisdiction of the courts located in California.

1.04 **Non-Waiver of Defaults**. No waiver of any provision of this Lease shall be implied by any failure of Landlord to enforce any remedy on account of the violation of such provision, even if such violation be continued or repeated subsequently, and no express waiver shall affect any provision other than the one specified in such waiver and in that event only for the time and in the manner specifically stated. No endorsement or statement on any check or any letter accompanying any check or payment of Rent shall be deemed an accord and satisfaction. Landlord may accept any such check or payment without prejudice to Landlord's right to recover the balance due of any installment or payment of Rent or pursue any other remedies available to Landlord with respect to any existing defaults. None of the terms, covenants or conditions of this Lease can be waived by either Landlord or Tenant except by appropriate written instrument.

1.05 **Force Majeure**. Neither Landlord nor Tenant shall be deemed in default with respect to the failure to perform any of the terms, covenants and conditions of this Lease on the performing party's part to be performed, if such failure is due in whole or in part to any strike, lockout, labor dispute (whether legal or illegal), civil disorder, inability to procure materials, failure of power, restrictive governmental laws and regulations, riots, insurrections, war, fuel shortages, accidents, casualties, Acts of God, acts caused directly or indirectly by the other party (or the other party's agents, employees, guests or invitees), or any other cause beyond the reasonable control of the performing party. In such event, the time for performance by the performing party shall be extended by an amount of time equal to the period of the delay so caused. Nothing in this Section 22.05 shall apply to any monetary obligation owed by one party to the other, or to either party's obligation to carry the insurance coverages required under this Lease.

1.06 **Financial Statements**. Tenant shall, within ten (10) business days after request by Landlord from time to time, furnish a true and accurate audited statement of its financial condition prepared in conformity with generally accepted accounting principles. The terms and conditions of this paragraph shall not be applicable if Tenant reports its financial condition to the United States Securities and Exchange Commission or if the financial statements of Tenant are readily available to the public.

1.07 **Relationship of Parties**. Nothing contained in this Lease shall create any relationship between the parties hereto other than that of Landlord and Tenant, and it is acknowledged and agreed that Landlord shall not be deemed to be a partner of Tenant in the conduct of its business, or a joint venturer or a member of a joint or common enterprise with Tenant.

1.08 **Amendments**. This Lease contains and embodies the entire agreement of the parties hereto, and no representation, inducements or agreements, oral or otherwise, not contained in this Lease shall be of any force or effect. This Lease may not be modified in whole or in part in any manner other than by an instrument in writing duly signed by both parties hereto.

1.09 **Confidentiality**. Tenant shall specifically not release any information about lease rates, concessions, options or rights to any current or prospective tenant or occupant of the Building or Complex, except in connection with Tenant's Permitted Transfers or proposed Transfers or as required by applicable law (e.g. 8-K and 10-K filings).

1.10 **Construction**. The language in all parts of this Lease shall in all cases be construed as a whole according to its fair meaning and neither strictly for nor against either Landlord or Tenant. Article and Section headings in this Lease are for convenience only and are not to be construed as part of this Lease or in any way defining, limiting, amplifying, construing, or describing the provisions hereof. Time is of the essence of this Lease and every term, covenant and condition hereof. The words "Landlord" and "Tenant," as herein used, shall include the plural as well as the singular. In the event there is more than one person or entity which executes this Lease as Tenant, the obligations to be performed and liability of all such persons and entities shall be joint and several. All of the covenants of Tenant hereunder shall be deemed and construed to be "conditions" as well as "covenants" as though the words specifically expressing or importing conditions were used in each separate instance. Landlord and Tenant agree that in the event any term, covenant or condition herein contained (other than with respect to the payment of Rent) is held to be invalid or void by any court of competent jurisdiction, the invalidity of any such term, covenant or condition shall in no way affect any other term, covenant or condition herein contained.

1.11 **Brokers**. Landlord and Tenant represent and warrant unto each other that each has directly dealt with and only with Landlord's Manager and the Brokers, if any, identified in Article 1 of this Lease as broker in connection with this Lease, and agree to indemnify and hold harmless each other from and against any and all claims or demands, damages, liabilities and expenses of any type or nature whatsoever arising by reason of the incorrectness or breach of the aforesaid representation or warranty. Landlord shall be responsible for any commission or fees due to the Brokers pursuant to a separate written agreement between Landlord and Broker(s).

1.12 **Counterclaims and Waiver of Jury Trial**. EXCEPT FOR COMPULSORY OR MANDATORY COUNTERCLAIMS, Tenant hereby waives any right to plead any counterclaim, offset or affirmative defense in any action or proceedings brought by Landlord against Tenant for any eviction proceedings. This shall not, however, be construed as a waiver of Tenant's right to assert any claim in a separate action brought by Tenant against Landlord, subject, however, to the terms and conditions of Article 14 above. TO THE EXTENT PERMITTED BY LAW, LANDLORD AND TENANT AND THEIR RESPECTIVE OFFICERS, DIRECTORS, AGENTS AND EMPLOYEES AGREE THAT EACH SHALL, AND DO HEREBY, WAIVE TRIAL BY JURY IN ANY ACTION, PROCEEDING OR COUNTERCLAIM BROUGHT BY, BETWEEN OR AGAINST THE PARTIES HERETO OR THEIR SUCCESSORS OR ASSIGNS OR THEIR RESPECTIVE OFFICERS, DIRECTORS, AGENTS AND EMPLOYEES ON ANY MATTERS ARISING OUT OF OR IN ANY WAY CONNECTED WITH THIS LEASE, THE RELATIONSHIP OF LANDLORD AND TENANT, AND/OR TENANT'S USE OR OCCUPANCY OF THE PREMISES. THIS WAIVER IS MADE FREELY AND VOLUNTARILY, WITHOUT DURESS AND ONLY AFTER EACH OF THE PARTIES HERETO HAS HAD THE BENEFIT OF ADVICE FROM LEGAL COUNSEL ON THIS SUBJECT.

1.13 **Notices and Demands**. All notices, demands, approvals, consents, requests for approval or consent or other writings in this Lease provided to be given, made or sent by either party hereto to the other ("Notice") shall

be in writing and shall be deemed to have been fully given, made or sent when made by personal service or by nationally-recognized overnight courier, and properly addressed to the addresses set forth in Section 1 above. The address to which any Notice should be given, made or sent to either party may be changed by written notice given by such party as above provided.

1.14 **OFAC**. Tenant represents and warrants that, to the best of its knowledge, Tenant and all persons and entities having an ownership interest in Tenant, as well as all guarantors of all or any portion of the Lease: (i) are not, and shall not become, a person or entity with whom Lender is restricted from doing business with under regulations of the Office of Foreign Asset Control ("OFAC") of the Department of the Treasury (including, but not limited to, those named on OFAC's Specially Designated and Blocked Persons list) or under any statute, executive order (including, but not limited to, the September 24, 2001 Executive Order Blocking Property and Prohibiting Transactions With Persons Who Commit, Threaten to Commit, or Support Terrorism), or other governmental action;
(ii) are not knowingly engaged in, and shall not engage in, any dealings or transaction or be otherwise associated with such persons or entities described in (i) above; and (iii) are not, and shall not become, a person or entity whose activities are regulated by the International Money Laundering Abatement and Financial Anti-Terrorism Act of 2001 or the regulations or orders thereunder.

1.15 **Counterparts; Electronic Signatures**. This Lease may be executed in counterparts, including both counterparts that are executed on paper and counterparts that are in the form of electronic records and are executed electronically (including those executed using e-signature software such as DocuSign). An electronic signature means any electronic sound, symbol or process attached to or logically associated with a record and executed and adopted by a party with the intent to sign such record, including facsimile or e-mail electronic signatures. All executed counterparts shall constitute one agreement, and each counterpart shall be deemed an original. The parties hereby acknowledge and agree that electronic records and electronic signatures, as well as facsimile signatures, may be used in connection with the execution of this Lease and electronic signatures, facsimile signatures or signatures transmitted by electronic mail or via e-signature software (such as DocuSign) in so-called pdf format shall be legal and binding and shall have the same full force and effect as if a paper original of this Lease had been delivered and had been signed using a handwritten signature. Landlord and Tenant (i) agree that an electronic signature, whether digital or encrypted, of a party to this Lease is intended to authenticate this writing and to have the same force and effect as a manual signature, (ii) intend to be bound by the signatures (whether original, faxed or electronic) on any document sent or delivered by facsimile or, electronic mail, or other electronic means, (iii) are aware that the other party will rely on such signatures, and (iv) hereby waive any defenses to the enforcement of the terms of this Lease based on the foregoing forms of signature. If this Lease has been executed by electronic signature, all parties executing this document are expressly consenting under the Electronic Signatures in Global and National Commerce Act ("**E- SIGN**"), and Uniform Electronic Transactions Act ("**UETA**"), that a signature by fax, email or other electronic means shall constitute an Electronic Signature to an Electronic Record under both E-SIGN and UETA with respect to this specific transaction.

1.16 **IRC**. If Landlord is advised by its counsel at any time that any part of the payments by Tenant to Landlord under this Lease may be characterized as other than "rent from real property" under either Section 512(b)(3) of the United States Internal Revenue Code and its regulations (the "Code") or Section 856(d) of the Code or otherwise as unrelated business taxable income under the Code, then Tenant shall enter into any commercially reasonable amendment proposed by Landlord to avoid such income, so long as the amendment does not require Tenant to make more payments or accept fewer services from Landlord, than this Lease provides, or otherwise adversely affect Tenant's rights or obligations under this Lease or impose an undue burden on Tenant.

1.17 **Waiver of Statutory Provisions**. Each party waives the rights and provisions under California Civil Code §§ 1932(2), 1933(4) and 1945. Tenant waives (a) any rights under (i) California Civil Code §§ 1932(1), 1941, 1942, 1950.7 or any similar law, or (ii) California Code of Civil Procedure §§ 1263.260 or 1265.130; and (b) any right to terminate this Lease under California Civil Code § 1995.310.

1.18 **No Discrimination**. The lessee herein covenants by and for himself, his heirs, executors, administrators, and assigns, and all persons claiming under or through him, and this lease is made and accepted upon the subject to the following conditions: That there shall be no discrimination against or segregation of any person or group of persons, on account of race, religion, sex, or national origin, in the leasing, subleasing, transferring, use, occupancy, tenure, or enjoyment, of the premises herein leased, nor shall the lessee establish or permit any such practice or practices of discrimination or segregation with reference to the selection, location, number, use or occupancy of tenants, lessees, sublessees, subtenants, or vendees in the premises herein leased.

1.19 **Guaranty**. Intentionally Omitted.

1.20 **Energy and Environmental Initiatives; LEED; Well Building; IREM Certification; Sustainability.**

(a) The Landlord and the Tenant will share the ENERGY STAR Environmental Performance Data they hold relating to the Premises and/or the Building. As used herein, "**Environmental Performance Data**" shall mean reports, either in the form of utility bills or spreadsheets, which detail the space's electricity, steam, natural gas, fuel oil, water, and waste consumption over a given period of time, and "**ENERGY STAR**" shall mean the energy efficiency certification program for buildings and appliances/equipment administered by the U.S. EPA. Buildings and consumer products earn an ENERGY STAR label/rating if they are more efficient than similar buildings/products. This Environmental Performance Data will be shared on a regular basis but not less frequently than annually, with each other, with the Building's property manager and with any third party who the Landlord and the Tenant agree needs to receive such data. Save where they are under a statutory obligation of disclosure, the Landlord and the Tenant will keep confidential the Environmental Performance Data shared under this clause, and will only use such data for the purposes of:

(i) Monitoring and improving the Environmental Performance of the Premises and/or the Building; and/or

(ii) Measuring the Environmental Performance of the Premises and/or the Building against any agreed targets. The Landlord will procure that the Managing Agent is placed under a similar obligation to that set out in the above clause to keep any shared data confidential and to use it only for the purposes listed in that clause.

Where the Landlord or Tenant discloses any shared data to a third party, they will ensure that that third party is placed under a similar obligation to that set out in the above clause to keep any shared data confidential and to use it only for the purposes listed in that clause.

(b) Tenant shall use commercially reasonable efforts to help meet Building-wide energy use reduction goals and minimize unnecessary use of electricity, water, heating, and air conditioning, including recommended use of window shades and curtains to keep out summer heat and keep in winter warmth. Tenant agrees to reasonably cooperate with Landlord, and to abide by all reasonable requirements which Landlord may prescribe, to ensure the most effective and energy-efficient operation of the Building, and for the proper protection and functioning of its Building systems and the furnishing of the Building services. Tenant further agrees to cooperate with Landlord in any conservation effort pursuant to a program or procedure promulgated or recommended by the public utility serving the Building, or ASHRAE or any Requirements. The requirements imposed by Landlord shall not be reasonable if the same materially adversely affect Tenant's ability to use the Premises or operate its business from the Premises.

(c) General Objectives.

(1) Tenant acknowledges Landlord's intention to operate the Building so as to provide for: (i) a healthy indoor environment; (ii) the reduced use of energy and the use of renewable energy; (iii) the reduced use of water and the use of recycled water; (iv) the facilitation of alternate transportation to the Building; (v) the use of non-toxic, low-impact cleaning, pest control and other products used in the operation and maintenance of the Building; (vi) the installation and use of sustainable materials, furniture, equipment and improvements within the Building; and (vii) the recycling of daily operational waste that results from the activities of tenants, licensees and customers at the Building.

(2) Tenant also acknowledges that Landlord may operate, manage and maintain the Building so as to obtain or retain a certification or rating thereunder or obtain and maintain other Green Building Rating System accreditations, ratings or certifications as Landlord reasonably deems appropriate for the Building.

(d) Implementation. Tenant agrees to conduct its operations within the Premises and the Building in accordance with the following provisions:

(1) In performing all construction activities, Tenant and its employees, contractors, representatives and agents shall comply with the following provisions, as the same may be updated, augmented or replaced by Landlord in its reasonable discretion:

(i) Reasonable efforts shall be made to recycle at least 25% of all construction debris created during and as a result of the performance of any work by Tenant at the Premises. Tenant shall cause its contractors to document the disposal and recycling of construction debris and shall deliver such documentation to Landlord upon receipt.

(ii) An air quality approach equivalent to the Sheet Metal and Air Conditioning Contractors' National Association ("**SMACNA**") Indoor Air Quality Guidelines for occupied buildings under construction or other equivalent standard as required by Landlord shall be followed.

(iii) Such other reasonable requirements as shall be necessary to cause the Building to comply with the then-current Sustainability Guidelines.

(2) Tenant shall employ a low-environmental impact sustainable cleaning and maintenance program with respect to the Premises that complies with the then current Sustainability Guidelines, including:

(i) the use of sustainable cleaning chemicals;

(ii) the use of non-disposable or recyclable janitorial paper products and trash bags when price, quality and availability are comparable to conventional products;

(iii) training of maintenance personnel as to the hazards, use, maintenance and disposal of cleaning chemicals, dispensing equipment and packaging.

(3) Tenant shall, as feasible, limit use of hardscape cleaning through water pressure. Tenant shall collect all wastewater resulting from cleaning activities in the Premises and not permit such wastewater to runoff or otherwise migrate to the adjacent environment or landscaping. In addition, Tenant shall, if applicable and as feasible, use sustainable alternatives to road salts to address snow and ice on roadways, such as, in appropriate situations, snow/ ice melting products.

(4) All improvements, trade fixtures and equipment installed in the Premises by Tenant shall be in compliance with the following:

(i) Plumbing: All plumbing fixtures, including faucets, showerheads, toilets and urinals, installed by Tenant in the Premises shall be "low-flow" and shall meet flow-rates acceptable to Landlord or as required by the then-current Sustainability Guidelines.

(ii) Equipment and Appliances: If Tenant elects to install equipment and appliances in the Premises, Tenant shall install and use high-efficiency, ENERGY STAR rated (or equally efficient) equipment and appliances in the Premises. Tenant shall deliver to Landlord, such documentation regarding the equipment and appliances installed in the Premises as Landlord shall request.

(iii) Not applicable.

(iv) Lighting: Tenant shall endeavor to meet the lighting power density standards established by ASHRAE Standard 90.1-2010 (or equivalent or then-current standard) with respect to all lighting installed in the Premises by Tenant, including the use of high-efficiency lighting equipment and systems, daylighting measures, automatic dimmers and motion detectors/ occupancy sensors, where and to the extent appropriate.

(v) Materials: Tenant shall, as feasible and if the price, quality and availability are comparable to conventional products; incorporate into the Premises materials that have low or no volatile organic compounds (i.e., organic chemicals that have a high vapor pressure at ordinary room temperate) ("**VOC**"), high recycled content that are regionally sourced and rapidly renewable and, with respect to wood, are sourced from responsibly managed forests; provided that all paints, sealants, coatings, glues, adhesives, carpets, non- carpet finished floors and composite materials used within the Premises shall meet "low or no" VOC/ toxicity standards acceptable to Landlord or as required by the Sustainability Guidelines.

(5) Garbage Disposal and Recycling: Tenant shall comply with all Applicable Laws regarding the collection, sorting, separating and recycling of garbage, waste, trash and other refuse and with Landlord's reasonable recycling policies as promulgated from time to time and shall sort and separate its trash and recycling into separate receptacles as designated by Applicable Laws and/or Landlord. Tenant shall pay all costs, expenses, fines, penalties and damages that may be imposed on Landlord or Tenant as a result of Tenant's failure to comply with these requirements. If Tenant contracts directly for the collection, disposal and recycling of its waste, Tenant shall cause its contractors to document the disposal and recycling of same and shall deliver such documentation to Landlord upon request.

(i) Energy-Efficiency Practices: Tenant shall, as feasible, implement energy-efficient practices within the Premises, including closing all window shades facing the sun, turning off any unnecessary lights and equipment after the close of business each day and keeping the doors to the Premises closed during periods where there is a significant variation between indoor and outdoor temperatures and humidity levels.

(ii) Irrigation: Tenant, shall, as feasible and if applicable, implement a water- efficient irrigation system and practices and shall use recycled water for irrigation purposes provided and to the extent that recycled water is available at the Building.

(e) Assessment. Landlord and Tenant shall use good-faith efforts to achieve the objectives set forth above and those set forth, from time to time, in the then-current Sustainability Guidelines. Landlord and Tenant shall meet at least once annually to discuss and evaluate the extent to which these objectives have been achieved with respect to the Premises and the Building and any further actions that reasonably may be taken to facilitate the achievement of such objectives.

(f) Recycling. Landlord shall provide Building-wide infrastructure for materials recycling and supply recycling bins to Tenant for paper, metals, and plastics. Landlord shall also provide electronics disposal bins for computers and similar electronic equipment. Tenant shall use commercially reasonable to recycle by separating waste stream into paper, plastic, and metals, and dispose of all electronic items (cell phones, computers, batteries, etc.) in designated bins. Tenant shall, at its sole cost and expense, comply with all reasonable requirements with respect to the recycling or sorting of refuse and rubbish, and, without limiting the generality of the foregoing:

(1) shall recycle spent products, including toner cartridges, copier drums and fluorescent tubes;

(2) shall provide facilities in the Premises for separate storage and recycling of each of the following:

(i) paper products and cardboard;

(ii) aluminum, glass and plastic, and

(iii) food wastes and so-called “wet garbage.”

Tenant shall arrange and require its employees working in the Premises to participate in annual training regarding recycling and shall participate in Landlord-sponsored training programs regarding recycling. Landlord reserves the right to refuse to collect or accept from Tenant any refuse or rubbish which is not separated and sorted as required and to require Tenant to arrange for such collection, at Tenant’s sole cost and expense, using a contractor reasonably satisfactory to Landlord.

(g) Alterations. Tenant shall specify that all paints, sealants, and adhesives used or to be used within the Premises meet EcoLogo, Green Seal, South Coast Air Quality Management District regulations, MPI Green Performance Standards or equivalent so as to ensure no or low emissions of VOCs within the Building. Upon no less than two (2) business days’ prior written notice, Landlord may from time to time conduct tests to measure VOCs within the Premises. Any and all tenant improvement work and/or alterations will be performed in accordance with Landlord’s reasonable sustainability practices, including any agreed upon third-party rating system concerning the environmental compliance of the Building or the Premises, as the same may change from time to time. If Tenant is preparing plans and specifications for tenant improvement work or alterations, Tenant further agrees to engage a qualified third party LEED or Green Globe Accredited Professional or similarly qualified professional during the design phase through implementation of any tenant improvement work and/or alterations to review all plans, material procurement, demolition, construction and waste management procedures to ensure they are in full conformance to Landlord’s sustainability practices, as set forth above. Construction and alterations within the Premises shall comply with the following:

(1) All Alterations made by Tenant shall meet all applicable energy savings and/or energy efficient building code requirements. If there is a conflict between the building code requirements and those set forth in the Lease, the requirements calling for higher energy savings and efficiency shall apply.

(2) Tenant may only install in the Premises ENERGY STAR rated appliances, including dishwashers, refrigerators, vending machines and water coolers, and ENERGY STAR rated office equipment, including computers, monitors, printers, faxes and scanners.

(3) Tenant shall ensure that any lighting installed by Tenant in the Premises complies with ASHRAE Standard 90.1 2004 by either the space by space or building area method, including the following:

(i) Tenant shall use compact fluorescents or light emitting diodes in place of incandescent and halogen bulbs for accent lighting and down lighting. Alternative lighting with energy efficiencies equal to or greater than compact fluorescents may also be used.

(ii) High efficiency electronic ballasts shall be considered for fluorescent tubes. Fluorescents tube fixtures and down lighting fixtures shall also have interior reflective surfaces where possible.

(5) If Tenant elects to install new lighting in the Premises, Tenant shall install timers, dimmers or programmable lighting controls throughout the Premises, as follows:

(i) All lighting installed by or on behalf of Tenant shall be controlled by occupancy or motion sensors arranged to control open plan office areas of 1,000 square feet or less and within all individual offices, conference rooms and general use rooms.

(ii) In connection with lighting installed by or on behalf of Tenant, Tenant shall provide capacity to adjust light levels in all areas where natural light is available. In addition to occupancy or motion sensors, the zone extending from all glazed perimeter walls shall be additionally controlled by light level sensors coordinated with the occupancy or motion sensors and connected to dimmers adjusted to maintain appropriate office lighting levels at desk surface levels.

(h) Purchasing. Landlord and Tenant shall purchase ENERGY STAR or comparably efficient appliances for the Building and/or Premises, as applicable, and Landlord and Tenant shall protect indoor air quality by using low-VOC paints and carpets and requiring office cleaners to use “green” and non-toxic cleaning products and providing appropriate plants in common areas. Landlord and Tenant shall comply with the following environmentally preferable purchasing policy when procuring furniture, fixtures, carpeting, materials, supplies appliances, and equipment to be brought into the Building and Premises, which requires that each use, when reasonably practical:

(1) ENERGY STAR-qualified office equipment, electronics, appliances including refrigerators;

(2) products containing pre-consumers and post-consumer materials;

(3) Products containing rapidly renewal material;

(4) products containing Forest Stewardship Council-certified wood. “Forest Stewardship Council” shall mean the non-profit organization which certifies paper products for their sustainable harvesting practices;

(5) products harvested or processed, or extracted and processed within 500 miles of the Building;

(6) high-efficiency, low mercury-content lamps that maintain an overall average of less than 90 picograms of mercury per lumen hour of light output;

(7) compact fluorescent lamps that comply with the National Electric Manufacturers Association;

(8) low-or no VOC furniture, furnishing or composite wood products that contain no urea-formaldehyde, low or no VOC paints, adhesives, solvents or other such materials meeting Green Seal Standard GS-11 or equivalent. The use of sprayed paint is prohibited; and

(9) salvaged, refurbished or reused materials, furniture.

Nothing in this Section 22 shall require Tenant to perform any alterations or tenant improvement work or purchase any furniture, equipment, or other items.

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[SIGNATURE PAGE]

IN WITNESS WHEREOF, this Lease is effective on the date of the full execution hereof, and the parties hereto have identified this Lease as of the day and year set forth on the first page of this Lease.

LANDLORD:
SPUS8 2100 POWELL, LP,
a Delaware limited partnership

By: /s/ Brian Ma
Name: Brian Ma
Title: Authorized Signatory

Date: 3/16/2022

By: /s/ Diann Hsueh
Name: Diann Hsueh
Title: Vice President

Date: 3/16/2022

TENANT:
DYNAVAX TECHNOLOGIES CORPORATION,
a Delaware corporation

By: /s/ Kelly MacDonald
Name: Kelly MacDonald
Title: Chief Financial Officer
Date: 3/15/2022

RIDER TO LEASE

Landlord and Tenant hereby agree that the following provisions are hereby added to the Lease:

1.<u>California Civil Code Section 1938</u>. Pursuant to California Civil Code §1938(a), Landlord hereby states that the Premises have not undergone inspection by a Certified Access Specialist (CASp) (defined in California Civil Code § 55.52). Accordingly, pursuant to a California Civil Code § 1938(c), Landlord hereby further states as follows:

> A Certified Access Specialist (CASp) can inspect the subject premises and determine whether the subject premises comply with all of the applicable construction-related accessibility standards under state law. Although state law does not require a CASp inspection of the subject premises, the commercial property owner or lessor may not prohibit the lessee or tenant from obtaining a CASp inspection of the subject premises for the occupancy or potential occupancy of the lessee or tenant, if requested by the lessee or tenant. The parties shall mutually agree on the arrangements for the time and manner of the CASp inspection, the payment of the fee for the CASp inspection, and the cost of making any repairs necessary to correct violations of construction-related accessibility standards within the premises.

In accordance with the foregoing, Landlord and Tenant agree that if Tenant obtains a CASp inspection of the Premises, then Tenant shall pay (i) the fee for such inspection, and (ii) except as may be otherwise expressly provided in this Lease, the cost of making any repairs necessary to correct violations of construction-related accessibility standards within the Premises.

2.<u>Conflict</u>. In the event of any express conflict or inconsistency between the terms of this Rider and the terms of the Lease, the terms of this Rider shall control and govern.

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EXHIBIT A

(Floor Plan of Premises)

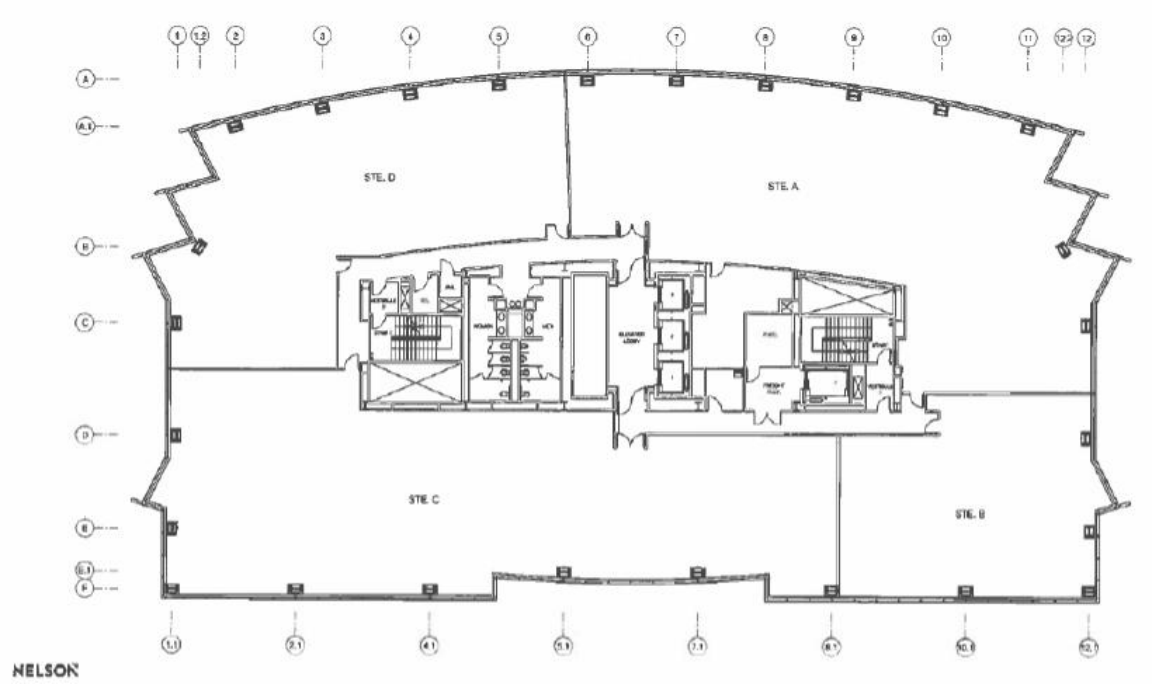

EXHIBIT B

(Work Letter)

None. Tenant accepts the Premises in its present “as-is” and “where-is” condition.

EXHIBIT C

(Confirmation of Lease Terms and Dates)

Re: Office Lease (the "Lease") dated January 25, 2022 between SPUS8 2100 POWELL, LP, a Delaware limited partnership ("Landlord"), and DYNAVAX TECHNOLOGIES CORPORATION, a Delaware corporation ("Tenant") for the premises located at 2100 Powell Street, Emeryville, California 94608 ("Premises").

The undersigned, as Tenant, hereby confirms as of this _____ day of _____, 20____, the following:

1.The Commencement Date is:_____

2.The Expiration Date is:_____

3.The rent schedule is:

Dates	Monthly Base Rent / RSF	Monthly Installment of Base Rent
_____—_____	$4.65	$ 0.00*
_____—_____	$4.65	$37,446.45
_____—_____	$4.79	$38,573.87
_____—_____	$4.93	$39,701.29
_____—_____	$5.08	$40,909.24

*See Lease for additional details regarding the terms of the Base Rent abatement.

4.To Tenant's knowledge, all alterations and improvements required to be performed by Landlord pursuant to the terms of the Lease to prepare the entire Premises for Tenant's initial occupancy have been satisfactorily completed. As of the date hereof, to Tenant's knowledge, Landlord has fulfilled all of its obligations under the Lease. The Lease is in full force and effect and has not been modified, altered, or amended. To Tenant's knowledge, there are no defaults by Landlord or, except as expressly set forth in the Lease, offsets, or credits against Rent.

TENANT:

Dynavax Technologies Corporation, a Delaware Corporation

By: _____
Name: _____
Title: _____

EXHIBIT D

(Rules and Regulations)

1. Any sign, lettering, picture, notice, or advertisement installed on or in any part of the Premises and visible from the exterior of the Building, or visible from the exterior of the Premises, shall be installed at Tenant's sole cost and expense, and in such manner, character and style as Landlord may approve in writing. In the event of a violation of the foregoing by Tenant, Landlord may remove the same without any liability and may charge the expense incurred by such removal to Tenant.
2. No awning or other projection shall be attached to the outside walls of the Building. No curtains, blinds, shades, or screens visible from the exterior of the Building or visible from the exterior of the Premises, shall be attached to or hung in, or used in connection with any window or door of the Premises without the prior written consent of Landlord, such consent not to be unreasonably withheld, conditioned, or delayed. Such curtains, blinds, shades, screens, or other fixtures must be of a quality, type, design and color, and attached in the manner reasonably approved by Landlord.
3. Tenant, its servants, employees, customers, invitees, and guests shall not obstruct sidewalks, entrances, passages, corridors, vestibules, halls, elevators, or stairways in and about the Building which are used in common with other tenants and their servants, employees, customers, guests, and invitees, and which are not a part of the Premises of Tenant. Tenant shall not place objects against glass partitions or doors or windows which would be unsightly from the Building corridors or from the exterior of the Building and will promptly remove any such objects upon notice from Landlord.
4. Tenant shall not make excessive noises, cause disturbances or vibrations or use or operate any electrical or mechanical devices that emit excessive sound or other waves or disturbances or create obnoxious odors, any of which may be offensive to the other tenants and occupants of the Building (as determined by Landlord in its reasonable discretion), or that would interfere with the operation of any device, equipment, radio, television broadcasting or reception from or within the Building or elsewhere and shall not place or install any projections, antennas, aerials, or similar devices inside or outside of the Premises or on the Building.
5. Tenant shall not waste electricity, water, or air conditioning and shall cooperate fully with Landlord to insure the most effective operation of the Building's heating and air conditioning systems and shall refrain from attempting to adjust any controls other than unlocked room thermostats, if any, installed for Tenant's use. Tenant shall keep corridor doors closed.
6. Tenant assumes full responsibility for protecting its space from theft, robbery, and pilferage, which includes keeping doors locked and other means of entry to the Premises closed and secured after normal business hours.
7. No person or contractor not employed by Landlord shall be used to perform janitorial work, window washing, cleaning, maintenance, repair, or similar work in the Premises without the written consent of Landlord which consent shall not be unreasonably withheld.
8. In no event shall Tenant bring into the Building firearms, inflammables, such as gasoline, kerosene, naphtha and benzine, or explosives, or any other article of intrinsically dangerous nature. If, by reason of the failure of Tenant to comply with the provisions of this subparagraph, any insurance premium for all or any part of the Building shall at any time be increased, Tenant shall make immediate payment of the whole of the increased insurance premium, without waiver of any of Landlord's other rights at law or in equity for Tenant's breach of this Lease.
9. Tenant shall comply with all applicable federal, state, and municipal laws, ordinances, and regulations, and building rules and shall not directly or indirectly make any use of the Premises which may be prohibited by any of the foregoing or which may be dangerous to persons or property or may increase the cost of insurance or require additional insurance coverage.
10. Intentionally Deleted.
11. The Premises shall not be used for cooking, lodging, sleeping, or for any immoral or illegal purpose, except that Tenant shall have the right to operate microwave ovens, toasters, and coffee makers exclusively for the benefit of its employees.
12. Tenant and Tenant's servants, employees, agents, visitors, and licensees shall observe faithfully and comply strictly with the foregoing rules and regulations and such other and further appropriate, reasonable rules and regulations as Landlord or Landlord's agent may from time to time adopt. Reasonable notice of any additional

reasonable and nondiscriminatory rules and regulations shall be given in such manner as Landlord may reasonably elect.

13. Unless expressly permitted by the Landlord, no additional locks or similar devices shall be attached to any door or window and no keys other than those provided by the Landlord shall be made for any door. If additional keys are required by the Tenant after Tenant's initial occupancy, the Landlord may provide the same upon payment by the Tenant. Upon termination of this Lease or of the Tenant's possession, the Tenant shall surrender all keys of the Premises and shall explain to the Landlord all combination locks on safes, cabinets and vaults.
14. Any carpeting cemented down by Tenant shall be installed with a releasable adhesive. In the event of a violation of the foregoing by Tenant, Landlord may charge the expense incurred by such removal to Tenant.
15. The water and wash closets, drinking fountains, and other plumbing fixtures shall not be used for any purpose other than those for which they were constructed, and no sweepings, rubbish, rags, coffee grounds, or other substances shall be thrown therein. All damages resulting from any misuse of the fixtures shall be borne by the Tenant who, or whose servants, employees, agents, visitors, or licensees shall have caused the same. No person shall waste water by interfering or tampering with the faucets or otherwise.
16. No electric circuits for any purpose shall be brought into the leased Premises without Landlord's written permission specifying the manner in which same may be done.
17. No bicycle or other vehicle, and no dog or other animal (other than guide dogs for sightless people) shall be allowed in offices, halls, corridors, or elsewhere in the building, except as required by law.
18. Tenant shall not throw anything out of the door or windows, or down any passageways or elevator shafts.
19. All loading, unloading, receiving, or delivery of goods or supplies, or disposal of garbage or refuse shall be made only through entryways and freight elevators provided for such purposes and indicated by Landlord. Tenant shall be responsible for any damage to the building or the property of its employees or others and injuries sustained by any person whomsoever resulting from the use or moving of such articles in or out of the Premises, and shall make all repairs and improvements required by Landlord or governmental authorities in connection with the use or moving of such articles.
20. All safes, equipment, or other heavy articles shall be carried in or out of the Premises only at such time and in such manner as shall be prescribed in writing by Landlord, and Landlord shall in all cases have the right to specify the proper position of any such safe, equipment, or other heavy article, which shall only be used by Tenant in a manner which will not interfere with or cause damage to the Premises or the Building in which they are located, or to the other tenants or occupants of said Building. Tenant shall be responsible for any damage to the Building or the property of its employees or others and injuries sustained by any person whomsoever resulting from the use or moving of such articles in or out of the Premises, and shall make all repairs and improvements required by Landlord or governmental authorities in connection with the use or moving of such articles.
21. Canvassing, soliciting, and peddling in the Building is prohibited and each Tenant shall cooperate to prevent the same.
22. Vending machines shall not be installed without permission of the Landlord, except for those vending machines used exclusively by Tenant's employees.
23. Wherever in these Building Rules and Regulations the word "tenant" occurs, it is understood and agreed that it shall mean Tenant's associates, agents, clerks, servants, and visitors. Wherever the word "Landlord" occurs, it is understood and agreed that it shall mean Landlord's assigns, agents, clerks, servants, and visitors.
24. Landlord shall have the right to enter upon the Premises at all reasonable hours for the purpose of inspecting the same upon one (1) business days' prior written notice to Tenant and in accordance with Tenant's security protocols.
25. Landlord shall have the right to enter the Premises at hours convenient to the Tenant for the purpose of exhibiting the same to prospective tenants within the six (6) month period prior to the expiration of this Lease.
26. At all times, Landlord's employees or management agent shall be in charge of the Building, and (a) persons may enter the Building only in accordance with Landlord's regulations, (b) persons entering or departing from the Building may be questioned as to their business in the Building, and the right is reserved to require the use of an identification card or other access device and the registering of such persons as to the hour of entry and departure, nature of visit, and other information deemed necessary for the protection of the Building, and (c) all entries into and departures from the Building will take place through such one or more entrances as Landlord shall from time to time designate; provided, however, anything herein to the contrary notwithstanding, Landlord shall not be liable for any lack of security in respect to the Building whatsoever. Landlord will normally not enforce clauses (a), (b), and (c)

above from 8:00 a.m. to 6:00 p.m., Monday through Friday, but it reserves the right to do so or not to do so at any time at its sole discretion. In case of invasions, mob, riot, public excitement, or other commotion, Landlord reserves the right to prevent access to the Building during the continuance of the same by closing the doors or otherwise, for the safety of the tenants or the protection of the Building and the property therein. Landlord shall in no case be liable for damages for any error or other action taken with regard to the admission to or exclusion from the Building of any person.

27. All entrance doors to the Premises shall be locked when the Premises is not in use. All corridor doors shall also be closed during times when the air conditioning equipment in the Building is operating so as not to dissipate the effectiveness of the system or place an overload thereon.
28. Landlord reserves the right at any time and from time to time to rescind, alter, or waive, in whole or in part, any of these Rules and Regulations when it is deemed necessary, desirable, or proper, in Landlord's reasonable judgment, for its best interest or for the best interest of the tenants of the Building; however such changes shall not become effective unless and until Landlord has provided Tenant with at least ten (10) days' written notice of the same.
29. Tenant, its servants, employees, customers, invitees, and guests shall not smoke in the Building.
30. Tenant may install a Wireless Fidelity Network (or similar system) ("Wi-Fi Network") for intranet, internet, or communications purposes within its Premises. Such Wi-Fi Network may not interfere with the use of any other space within the Building. Should any interference occur, Tenant shall take all necessary steps as soon as commercially practicable and no later than three (3) calendar days following such occurrence to correct such interference. Tenant acknowledges that Landlord has granted and/or may grant leases, licenses and/or other rights to other tenants and occupants of the Building and to telecommunication service providers.
31. Tenant shall cooperate with Landlord in any reasonable programs in which Landlord may elect to participate relating to the Building's (i) energy efficiency, management, and conservation; (ii) water conservation and management; (iii) environmental standards and efficiency; (iv) recycling and reduction programs; and/or (v) safety, which participation may include, without limitation, the Leadership in Energy and Environmental Design (LEED) program and related Green Building Rating System promoted by the U.S. Green Building Council, as well as the Energy Star program promoted by the U.S. Environmental Protection Agency and the U.S. Department of Energy.
32. At all times during the term of this Lease, Tenant shall ensure that all wiring and cabling that it installs within the Premises or Building complies with all provisions of local fire and safety codes, as well as with the National Electric Code. Further, upon the expiration or sooner termination of the Term, Tenant shall remove all wiring and cabling within the Premises and the Building (including the plenums, risers and rooftop) placed there by or at the direction of Tenant, unless excused in writing by Landlord.
33. Tenant will ensure that all deliveries to the Premises are coordinated with property management and made through such entrances, elevators and corridors and at such times as may from time to time be designated by Landlord. Such deliveries may not be made through any of the main entrances to the Building without Landlord's prior permission. Tenant will use or cause to be used, in the Building, hand trucks or other conveyances equipped with rubber tires and rubber side guards to prevent damage to the Building or property in the Building. Tenant will promptly pay Landlord the cost of repairing any damage to the Building caused by any person making deliveries on behalf of Tenant to the Premises.
34. Tenant will ensure that furniture and equipment and other bulky matter being moved to or from the Premises are moved through such entrances, elevators and corridors and at such times as may from time to time be designated by Landlord, and by movers or a moving company reasonably approved by Landlord. Tenant will promptly pay Landlord the cost of repairing any damage to the Building caused by any person moving any such furniture, equipment or matter to or from the Premises.
35. Tenant requirements and requests for services or work will be considered only following written application to property management. Building employees shall not be requested to perform, and shall not be requested by any tenant to perform, any work outside of regular duties, unless under specific instructions from Landlord.
36. No weapons, including firearms, are allowed in the Common Areas or within the Premises.
37. All vendors, suppliers, workers, service providers, movers and delivery personnel entering the Building at the request of Tenant or its agents must satisfy the Building's insurance requirements.

(Parking Rules)

(a) Cars must be parked entirely within the stall lines painted on the floor.
(b) All directional signs and arrows must be observed.
(c) The speed limit shall be five (5) miles per hour.
(d) Parking is prohibited in areas not striped for parking, aisles, areas where “No Parking” signs are posted, in cross hatched areas and in such other areas as may be designated by Landlord or Landlord’s agent(s) including, but not limited to, areas designated as “Visitor Parking” or reserved spaces not rented under this Agreement.
(e) Every Patron is required to park and lock his own car. All responsibility for damage to cars or persons or loss of personal possessions is assumed by the Patron.
(f) Spaces which are designated for small, intermediate or full-sized cars shall be so used. No intermediate or full-size cars shall be parked in parking spaces limited to compact cars.
(g) No overnight parking is allowed without the prior written consent of the Landlord.
(h) Tenant and patron(s) will immediately vacate the Parking Facilities and remove all vehicles upon Landlord’s request in order to facilitate evacuations during severe weather or other times of danger.

EXHIBIT E

[Reserved]

Exhibit 31.1

Rule 13a-14(a) Certification of Principal Executive Officer

CERTIFICATIONS

I, Ryan Spencer, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Dynavax Technologies Corporation (the "registrant");

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 and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer 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.

By: /s/ RYAN SPENCER

Ryan Spencer
Chief Executive Officer
(Principal Executive Officer)

Date: May 5, 2022

Exhibit 31.2

Rule 13a-14(a) Certification of Principal Financial Officer

CERTIFICATIONS

I, Kelly MacDonald, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Dynavax Technologies Corporation (the "registrant");

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 and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer 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.

By: /s/ KELLY MACDONALD

Kelly MacDonald
Chief Financial Officer
(Principal Financial Officer)

Date: May 5, 2022

Exhibit 32.1

Certification Pursuant to Section 1350 of Chapter 63
of Title 18 of the United States Code

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350), I, Ryan Spencer, Chief Executive Officer of Dynavax Technologies Corporation (the "Company"), hereby certify that, to the best of my knowledge:

(i) The Company's Quarterly Report on Form 10-Q for the period ended March 31, 2022 (the "Periodic Report"), to which this Certificate is attached as Exhibit 32.1, fully complies with the requirements of Section 13(a) or Section 15(d) of the Exchange Act; and

(ii) The information contained in the Periodic Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

In Witness Whereof, the undersigned has set his hand hereto as of the 5th day of May, 2022.

By: /s/ RYAN SPENCER

Ryan Spencer
Chief Executive Officer
(Principal Executive Officer)

This certification accompanies the Form 10-Q to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of Dynavax Technologies Corporation under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-Q), irrespective of any general incorporation language contained in such filing.

Exhibit 32.2

Certification Pursuant to Section 1350 of Chapter 63
of Title 18 of the United States Code

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350), I, Kelly MacDonald, Chief Financial Officer of Dynavax Technologies Corporation (the "Company"), hereby certify that, to the best of my knowledge:

(i) The Company's Quarterly Report on Form 10-Q for the period ended March 31, 2022 (the "Periodic Report"), to which this Certificate is attached as Exhibit 32.2, fully complies with the requirements of Section 13(a) or Section 15(d) of the Exchange Act; and

(ii) The information contained in the Periodic Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

In Witness Whereof, the undersigned has set her hand hereto as of the 5th day of May, 2022.

By: /S/ KELLY MACDONALD

Kelly MacDonald
Chief Financial Officer
(Principal Financial Officer)

This certification accompanies the Form 10-Q to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of Dynavax Technologies Corporation under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-Q), irrespective of any general incorporation language contained in such filing.