

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

**FORM 10-Q**

(Mark One)

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

**For the quarterly period ended March 31, 2024**

**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: 001-38942**



**ARCTURUS THERAPEUTICS HOLDINGS INC.**  
(Exact Name of Registrant as Specified in its Charter)

**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**10628 Science Center Drive, Suite 250**  
**San Diego, California**  
(Address of principal executive offices)

**32-0595345**  
(I.R.S. Employer  
Identification No.)

**92121**  
(Zip Code)

**(858) 900-2660**

(Registrant's telephone number, including area code)

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

| Title of each class                       | Trading<br>Symbol(s) | Name of each exchange on which registered |
|---|----------------------|---|
| Common Stock, par value \$0.001 per share | ARCT                 | 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 registrant was required to submit such files). Yes  No

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

|                         |                          |                           |                                     |
|-------------------------|--------------------------|---------------------------|-------------------------------------|
| Large accelerated filer | <input type="checkbox"/> | Accelerated filer         | <input checked="" type="checkbox"/> |
| Non-accelerated filer   | <input type="checkbox"/> | Smaller reporting company | <input type="checkbox"/>            |
| Emerging growth company | <input type="checkbox"/> |                           |                                     |

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

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

As of May 3, 2024, the registrant had 26,931,826 shares of voting common stock outstanding.

ARCTURUS THERAPEUTICS HOLDINGS INC. AND ITS SUBSIDIARIES

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### Special Note Regarding Forward-Looking Statements

This Quarterly Report on Form 10-Q (this “Quarterly Report”), including the section entitled “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” and the documents incorporated by reference herein may contain express or implied “forward-looking statements” within the meaning of the federal securities laws, Section 27A of the Securities Act of 1933, as amended and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth below under Part II, Item 1A, “Risk Factors” in this Quarterly Report. Except as required by law, we assume no obligation to update these forward-looking statements, whether as a result of new information, future events or otherwise. These statements, which represent our current expectations or beliefs concerning various future events, may contain words such as “may,” “will,” “expect,” “anticipate,” “intend,” “plan,” “believe,” “estimate” or other words indicating future results, though not all forward-looking statements necessarily contain these identifying words. Such statements may include, but are not limited to, statements concerning the following:

- our compliance, and ability to remain in compliance, with the requirements of our collaboration agreements, including our collaboration with Seqirus Inc. (“CSL Seqirus”);
- the anticipated benefits and success of our collaboration agreement with CSL Seqirus related to the licensure of our STARR<sup>®</sup> mRNA technology and LUNAR<sup>®</sup> lipid-mediated delivery, including our timely receipt of upfront and potential royalty and other payments thereunder;
- the continued development activities of the LUNAR-COV19 and LUNAR-FLU programs under our collaboration with CSL Seqirus;
- the status, success and benefits of our arrangements with private and governmental entities, some of which are subject to termination for convenience by our counterparties;
- our compliance, and ability to remain in compliance, with the stringent requirements of our current and potential government contracts, including our arrangements with the Biomedical Advanced Research and Development Authority, a division of the Office of the Assistant Secretary for Preparedness and Response within the U.S. Department of Health and Human Services and the Department of Defense;
- the initiation, design, cost, timing, progress, enrollment and results of, and our expected ability to undertake certain activities and accomplish certain goals with respect to, our research and development activities, preclinical studies and clinical trials, including those related to our therapeutics pipeline candidates ARCT-810 and ARCT-032;
- the potential safety, immunogenicity, efficacy or regulatory approval of any of our COVID-19 vaccine candidates as a booster or primary vaccination series;
- the potential effects and benefits of our technologies and product candidates on their own and in comparison to technologies, drugs or courses of treatment currently available or that may be developed by competitors;
- the likelihood that preclinical or clinical data will be predictive of future clinical results or efficacy or safety of a product candidate;
- the anticipated timing of enrollment, duration, milestones and announcements of results of clinical trials, and the submission of applications to conduct clinical trials;
- the likelihood that clinical data will be sufficient for regulatory approval or completed in time to submit an application for regulatory approval within a particular timeframe;
- the likelihood or timing of any regulatory approval, and the likelihood that the marketing approval of ARCT-154 in Japan will be predictive of any future marketing approvals in other countries or for other versions of our LUNAR-COV19 or other product candidates or of any commercial sales;
- the potential administration regimen or dosage, or ability to administer multiple doses of, any of our product candidates;
- our ability to obtain and maintain regulatory approval of our product candidates, and any related restrictions, limitations, and/or warnings in the label of an approved product candidate;
- our plans to research, develop and commercialize our product candidates;
- our ability to successfully commercialize, and our expectations regarding future therapeutic and commercial potential with respect to, our product candidates;
- the rate and degree of market acceptance of our product candidates;
- the success of competing therapies that are or may become available;

- the size and growth potential of the markets for our product candidates, and our ability to serve those markets and address unmet medical needs;
- our ability to obtain and maintain intellectual property protection for our product candidates;
- interactions with regulatory authorities in the United States and foreign countries;
- our ability to attract and retain experienced and seasoned scientific and management professionals;
- the performance of our third-party suppliers and manufacturers, including our ability to scale-up manufacturing levels as necessary;
- our strategic alliance partners' election to pursue development and commercialization of any programs or product candidates that are subject to our collaboration and license agreements with such partners;
- our ability to attract collaborators with relevant development, regulatory and commercialization expertise;
- future activities to be undertaken by our strategic alliance partners, collaborators and other third parties;
- our ability to develop sales and marketing capabilities, whether alone or with potential future collaborators;
- our ability to avoid, settle or be victorious at costly litigation with shareholders, former executives or others, should these situations arise;
- our ability to obtain and deploy funding for our operations and to efficiently use our financial and other resources;
- our ability to continue as a going concern; and
- the accuracy of our estimates regarding future expenses, future revenues, cash flows, capital requirements need for additional financing, and possible sources of revenue.

These and other forward-looking statements are only current predictions and are subject to known and unknown risks, uncertainties, and other factors that may cause our or our industry's actual results, levels of activity, performance or achievements to be materially different from those anticipated by the forward-looking statements. In addition, historic results of scientific research, preclinical and clinical trials do not guarantee that future research or trials will suggest the same conclusions, nor that historic results referred to herein will be interpreted in the same manner due to additional research, preclinical and clinical trial results or otherwise. The forward-looking statements contained in this Quarterly Report are subject to risks and uncertainties, including those discussed in our other filings with the United States Securities and Exchange Commission (the "Commission"). Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date hereof unless specifically stated otherwise. Although we currently believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance, or achievements.

PART I—FINANCIAL INFORMATION

Item 1. Financial Statements.

ARCTURUS THERAPEUTICS HOLDINGS INC. AND ITS SUBSIDIARIES  
CONDENSED CONSOLIDATED BALANCE SHEETS

| (in thousands, except par value information)   | March 31,<br>2024<br>(unaudited) | December 31,<br>2023 |
|--|----------------------------------|----------------------|
| <b>Assets</b>  |                                  |                      |
| Current assets:  |                                  |                      |
| Cash and cash equivalents  | \$ 288,396                       | \$ 292,005           |
| Restricted cash  | 55,000                           | 55,000               |
| Accounts receivable  | 27,057                           | 32,064               |
| Prepaid expenses and other current assets  | 5,335                            | 7,521                |
| Total current assets   | 375,788                          | 386,590              |
| Property and equipment, net  | 11,763                           | 12,427               |
| Operating lease right-of-use asset, net  | 29,413                           | 28,500               |
| Non-current restricted cash  | 1,885                            | 1,885                |
| Total assets   | <u>\$ 418,849</u>                | <u>\$ 429,402</u>    |
| <b>Liabilities and stockholders' equity</b>  |                                  |                      |
| Current liabilities:   |                                  |                      |
| Accounts payable   | \$ 9,144                         | \$ 5,279             |
| Accrued liabilities  | 34,770                           | 31,881               |
| Deferred revenue   | 71,516                           | 44,829               |
| Total current liabilities  | 115,430                          | 81,989               |
| Deferred revenue, net of current portion   | 11,795                           | 42,496               |
| Operating lease liability, net of current portion  | 27,652                           | 25,907               |
| Other non-current liabilities  | —                                | 497                  |
| Total liabilities  | 154,877                          | 150,889              |
| Stockholders' equity   |                                  |                      |
| Common stock, \$0.001 par value; 60,000 shares authorized; issued and outstanding shares were 26,917 at March 31, 2024 and 26,828 at December 31, 2023 | 27                               | 27                   |
| Additional paid-in capital   | 658,628                          | 646,352              |
| Accumulated deficit  | (394,683)                        | (367,866)            |
| Total stockholders' equity   | 263,972                          | 278,513              |
| Total liabilities and stockholders' equity   | <u>\$ 418,849</u>                | <u>\$ 429,402</u>    |

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

**ARCTURUS THERAPEUTICS HOLDINGS INC. AND ITS SUBSIDIARIES**  
**CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE (LOSS) INCOME**  
**(unaudited)**

| (in thousands, except per share data)  | Three Months Ended<br>March 31, |           |
|--|---------------------------------|-----------|
|  | 2024                            | 2023      |
| <b>Revenue:</b>  |                                 |           |
| Collaboration revenue  | \$ 32,598                       | \$ 79,729 |
| Grant revenue  | 5,414                           | 556       |
| Total revenue  | 38,012                          | 80,285    |
| <b>Operating expenses:</b>   |                                 |           |
| Research and development, net  | 53,573                          | 51,768    |
| General and administrative   | 14,851                          | 13,762    |
| Total operating expenses   | 68,424                          | 65,530    |
| (Loss) income from operations  | (30,412)                        | 14,755    |
| Loss from foreign currency   | (53)                            | (328)     |
| Gain on debt extinguishment  | —                               | 33,953    |
| Finance income, net  | 4,016                           | 2,477     |
| Net (loss) income before income taxes  | (26,449)                        | 50,857    |
| Provision for income taxes   | 368                             | 103       |
| Net (loss) income  | \$ (26,817)                     | \$ 50,754 |
| <b>(Loss) earnings per share</b>   |                                 |           |
| Basic  | \$ (1.00)                       | \$ 1.91   |
| Diluted  | \$ (1.00)                       | \$ 1.87   |
| <b>Weighted-average shares used in calculation of (loss) earnings per share:</b> |                                 |           |
| Basic  | 26,879                          | 26,555    |
| Diluted  | 26,879                          | 27,149    |
| <b>Comprehensive (loss) income:</b>  |                                 |           |
| Net (loss) income  | \$ (26,817)                     | \$ 50,754 |
| Comprehensive (loss) income  | \$ (26,817)                     | \$ 50,754 |

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

**ARCTURUS THERAPEUTICS HOLDINGS INC. AND ITS SUBSIDIARIES**  
**CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY**  
**(unaudited)**

| (in thousands)  | Common Stock  |              | Additional<br>Paid-In<br>Capital | Accumulated<br>Deficit | Total<br>Stockholders'<br>Equity |
|---|---------------|--------------|----------------------------------|------------------------|----------------------------------|
|   | Shares        | Amount       |                                  |                        |                                  |
| <b>BALANCE – December 31, 2023</b>                      | 26,828        | \$ 27        | \$ 646,352                       | \$ (367,866)           | \$ 278,513                       |
| Net loss  | —             | —            | —                                | (26,817)               | (26,817)                         |
| Share-based compensation expense                        | —             | —            | 10,088                           | —                      | 10,088                           |
| Issuance of common stock upon exercise of stock options | 89            | —            | 2,188                            | —                      | 2,188                            |
| <b>BALANCE – March 31, 2024</b>                         | <u>26,917</u> | <u>\$ 27</u> | <u>\$ 658,628</u>                | <u>\$ (394,683)</u>    | <u>\$ 263,972</u>                |

| (in thousands)                     | Common Stock  |              | Additional<br>Paid-In<br>Capital | Accumulated<br>Deficit | Total<br>Stockholders'<br>Equity |
|------------------------------------|---------------|--------------|----------------------------------|------------------------|----------------------------------|
|                                    | Shares        | Amount       |                                  |                        |                                  |
| <b>BALANCE – December 31, 2022</b> | 26,555        | \$ 27        | \$ 608,426                       | \$ (338,141)           | \$ 270,312                       |
| Net income                         | —             | —            | —                                | 50,754                 | 50,754                           |
| Share-based compensation expense   | —             | —            | 8,182                            | —                      | 8,182                            |
| <b>BALANCE – March 31, 2023</b>    | <u>26,555</u> | <u>\$ 27</u> | <u>\$ 616,608</u>                | <u>\$ (287,387)</u>    | <u>\$ 329,248</u>                |

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

**ARCTURUS THERAPEUTICS HOLDINGS INC. AND ITS SUBSIDIARIES**  
**CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS**  
(unaudited)

| (in thousands)   | Three Months Ended March 31, |            |
|--|------------------------------|------------|
|  | 2024                         | 2023       |
| <b>Operating activities</b>  |                              |            |
| Net (loss) income  | \$ (26,817)                  | \$ 50,754  |
| Adjustments to reconcile net (loss) income to net cash used in operating activities: |                              |            |
| Depreciation and amortization  | 904                          | 578        |
| Share-based compensation expense   | 10,088                       | 8,182      |
| Foreign currency transaction loss  | 53                           | 160        |
| Gain on debt extinguishment  | —                            | (33,953)   |
| Other non-cash expenses  | —                            | 502        |
| Changes in assets and liabilities:   |                              |            |
| Accounts receivable  | 5,007                        | (89,719)   |
| Prepaid expense and other assets   | 2,186                        | 4,549      |
| Right-of-use assets  | 1,823                        | 988        |
| Accounts payable   | 3,865                        | 11,788     |
| Accrued liabilities  | 2,339                        | 986        |
| Deferred revenue   | (4,014)                      | 10,343     |
| Lease liabilities  | (991)                        | (1,029)    |
| Net cash used in operating activities  | (5,557)                      | (35,871)   |
| <b>Investing activities</b>  |                              |            |
| Acquisition of property and equipment  | (240)                        | (691)      |
| Net cash used in investing activities  | (240)                        | (691)      |
| <b>Financing activities</b>  |                              |            |
| Proceeds from exercise of stock options  | 2,188                        | —          |
| Payments on debt obligations   | —                            | (27,364)   |
| Net cash provided by (used in) financing activities                                  | 2,188                        | (27,364)   |
| Net decrease in cash, cash equivalents and restricted cash                           | (3,609)                      | (63,926)   |
| Cash, cash equivalents and restricted cash at beginning of the period                | 348,890                      | 393,977    |
| Cash, cash equivalents and restricted cash at end of the period                      | \$ 345,281                   | \$ 330,051 |
|  |                              |            |
|  | Three Months Ended March 31, |            |
|  | 2024                         | 2023       |
| <b>Supplemental disclosure of cash flow information</b>                              |                              |            |
| Cash paid for interest   | \$ —                         | \$ 2,102   |
| <b>Non-cash investing activities</b>   |                              |            |
| Non-cash asset disposal  | \$ 473                       | \$ —       |
| Right-of-use assets acquired through operating leases                                | \$ 2,736                     | \$ —       |
| Purchase of property and equipment in accounts payable                               | \$ —                         | \$ 107     |

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



**ARCTURUS THERAPEUTICS HOLDINGS INC. AND ITS SUBSIDIARIES**  
**NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS**  
**(Unaudited)**

**Note 1. Description of Business, Basis of Presentation and Summary of Significant Accounting Policies**

**Description of Business**

Arcturus Therapeutics Holdings Inc. (the "Company" or "Arcturus") is a global messenger RNA medicines company focused on the development of infectious disease vaccines and significant opportunities within liver and respiratory rare diseases. The Company became a clinical stage company during 2020 when it announced that its Investigational New Drug ("IND") application for ornithine transcarbamylase ("OTC") deficiency and its Clinical Trial Application ("CTA") for candidate LUNAR-COV19 were approved by applicable health authorities.

**Basis of Presentation**

The accompanying condensed consolidated financial statements include the accounts of Arcturus and its subsidiaries and are unaudited. All intercompany accounts and transactions have been eliminated in consolidation. These condensed consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles ("GAAP") for interim financial information. Accordingly, they do not include all of the information and footnotes required by GAAP for complete financial statements. In management's opinion, the accompanying condensed consolidated financial statements reflect all adjustments, consisting of normal recurring adjustments, considered necessary for a fair presentation of the results for the interim periods presented.

Interim financial results are not necessarily indicative of results anticipated for the full year. These condensed consolidated financial statements should be read in conjunction with the audited consolidated financial statements and footnotes included in the Company's Annual Report on Form 10-K for the year ended December 31, 2023.

These condensed consolidated financial statements are prepared in accordance with GAAP, which requires management to make estimates and assumptions regarding the valuation of certain debt and equity instruments, share-based compensation, accruals for liabilities, income taxes, revenue and deferred revenue, leases, and other matters that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting periods. Although these estimates are based on management's knowledge of current events and actions the Company may undertake in the future, actual results may ultimately differ from these estimates and assumptions.

**Joint Ventures, Equity Method Investments and Variable Interest Entities**

Investments for which the Company exercises significant influence, but does not have control are accounted for under the equity method. Equity method investment activity is related to the Company's joint venture in ARCALIS, Inc. with Axcelead, Inc ("Axcelead"). The Company's share of the investee's results is presented as either income or loss from equity-method investment in the accompanying condensed consolidated statements of operations and comprehensive (loss) income.

**Liquidity**

The Company has incurred significant operating losses since its inception. As of March 31, 2024 and December 31, 2023, the Company had an accumulated deficit of \$394.7 million and \$367.9 million, respectively.

The Company's activities since inception have consisted principally of research and development activities, general and administrative activities, and raising capital. The Company's activities are subject to significant risks and uncertainties, including failing to secure additional funding before the Company achieves sustainable revenues and profit from operations. From the Company's inception through March 31, 2024, the Company has funded its operations principally with the proceeds from revenues earned through collaboration agreements, the sale of capital stock, expense reimbursements from government contracts and proceeds from long-term debt. At March 31, 2024, the Company's balance of cash and cash equivalents, including restricted cash, was \$345.3 million.

Management believes that it has sufficient working capital on hand to fund operations through at least the next twelve months from the date these condensed consolidated financial statements were available to be issued. There can be no assurance that the Company will be successful in securing additional funding, that the Company's projections of its future working capital needs will prove accurate, or that any additional funding would be sufficient to continue operations in future years.

## Segment Information

Operating segments are identified as components of an enterprise about which separate discrete financial information is available for evaluation by the chief operating decision-maker in making decisions regarding resource allocation and assessing performance. The Company and its chief operating decision-maker view the Company's operations and manage its business in one operating segment, which is the research and development of medical applications for the Company's nucleic acid-focused technology.

## Revenue Recognition

At contract inception, the Company analyzes its collaboration arrangements to assess whether such arrangements involve joint operating activities performed by parties that are both active participants in the activities and exposed to significant risks and rewards dependent on the commercial success of such activities and therefore within the scope of Accounting Standards Codification ("ASC") Topic 808, Collaborative Arrangements ("ASC 808"). For collaboration arrangements within the scope of ASC 808 that contain multiple elements, the Company first determines which elements of the collaboration reflect a vendor-customer relationship and are therefore within the scope of ASC 606.

The Company determines revenue recognition for arrangements within the scope of ASC 606 by performing the following five steps: (i) identify the contract; (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, the company satisfies a performance obligation.

The terms of the Company's revenue agreements include license fees, upfront payments, milestone payments, reimbursement for research and development activities, option exercise fees, consulting and related technology transfer fees and royalties on sales of commercialized products. The event-based milestone payments represent variable consideration, and the Company uses the most likely amount method to estimate this variable consideration because the Company will either receive the milestone payment or will not, which makes the potential milestone payment a binary event. The most likely amount method requires the Company to determine the likelihood of earning the milestone payment. Given the high degree of uncertainty around achievement of these milestones, the Company determines the milestone amounts to be fully constrained and does not recognize revenue until the uncertainty associated with these payments is resolved. The Company will recognize revenue from sales-based royalty payments when or as the sales occur. The Company will re-evaluate the transaction price in each reporting period as uncertain events are resolved and other changes in circumstances occur.

A performance obligation is a promise in a contract to transfer a distinct good or service to the collaborative partner and is the unit of account in ASC 606. A contract's transaction price is allocated to each distinct performance obligation based on relative standalone selling price and recognized as revenue when, or as, the performance obligation is satisfied.

For performance obligations that are recognized over time, the Company measures the progress using an input method. The input methods used are based on the effort expended or costs incurred toward the satisfaction of the performance obligation. The Company estimates the amount of effort expended, including the time estimated it will take to complete the activities, or costs incurred in a given period, relative to the estimated total effort or costs to satisfy the performance obligation. This approach requires the Company to make numerous estimates and use significant judgment. If estimates or judgments change over the course of the collaboration, a cumulative catch up of revenue is recognized in the period such changes are identified.

See "Note 2, Revenue" for specific details surrounding the Company's arrangements.

## Leases

The Company determines if an arrangement is a lease at inception. Lease right-of-use assets represent the Company's right to use an underlying asset for the lease term and lease liabilities represent the Company's obligation to make lease payments arising from the lease. For operating leases with an initial term greater than 12 months, the Company recognizes operating lease right-of-use assets and operating lease liabilities based on the present value of lease payments over the lease term at the commencement date. Operating lease right-of-use assets are comprised of the lease liability plus any lease payments made and excludes lease incentives. Lease terms include options to renew or terminate the lease when the Company is reasonably certain that the renewal option will be exercised or when it is reasonably certain that the termination option will not be exercised. For the Company's operating leases, if the interest rate used to determine the present value of future lease payments is not readily determinable, the Company estimates its incremental borrowing rate as the discount rate for the lease. The Company's incremental borrowing rate is estimated to approximate the interest rate on a collateralized basis with similar terms and payments, and in similar economic environments. Lease expense for lease payments is recognized on a straight-line basis over the lease term. The Company has elected the practical expedient to not separate lease and non-lease components.

See "Note 9, Commitments and Contingencies" for specific details surrounding the Company's leases.

## Research and Development Costs, Net

All research and development costs are expensed as incurred. Research and development costs consist primarily of salaries, employee benefits, costs associated with preclinical studies and clinical trials (including amounts paid to clinical research organizations and other professional services), in-process research and development expenses, pre-launch inventory and license agreement expenses. Research and development expenses are presented net of any grants. Payments made prior to the receipt of goods or services to be used in research and development are capitalized until the goods are received or the services are performed.

The Company records accruals for estimated research and development costs, comprising payments for work performed by third party contractors, laboratories, participating clinical trial sites, and others. Some of these contractors bill monthly based on actual services performed, while others bill periodically based upon achieving certain contractual milestones. For the latter, the Company accrues the expenses as goods or services are used or rendered.

Clinical trial activities performed by third parties are accrued and expensed based upon estimates of the proportion of work completed over the life of the individual clinical trial and patient enrollment rates in accordance with agreements established with Clinical Research Organizations ("CROs") and clinical trial sites. Estimates are determined by reviewing contracts, vendor agreements and purchase orders, and through discussions with internal clinical personnel and external service providers as to the progress or stage of completion of trials or services and the agreed-upon fee to be paid for such services.

## Pre-Launch Inventory

Prior to obtaining initial regulatory approval for an investigational product candidate, the Company expenses costs relating to production of inventory as research and development expense in its condensed consolidated statements of operations and comprehensive (loss) income, in the period incurred. When the Company believes regulatory approval and subsequent commercialization of an investigational product candidate is probable, and the Company also expects future economic benefit from the sales of the investigational product candidate to be realized, it will then capitalize the costs of production as inventory.

## Restricted Cash

Restricted cash includes collateral pledged and held at the Company's securities accounts pursuant to a security agreement with Wells Fargo Bank, National Association ("Wells Fargo") (Note 5). At March 31, 2024, such collateral amounted to \$55.0 million.

Restricted cash also includes cash required to be set aside as security for lease payments and to maintain a letter of credit for the benefit of the landlord for the Company's offices. At March 31, 2024 and 2023, the Company had restricted cash of \$1.9 million and \$2.1 million, respectively, in conjunction with property leases in San Diego, California, and such restriction is expected to be removed at the end of the lease term.

The following table provides a reconciliation of cash and cash equivalents and restricted cash reported within the condensed consolidated balance sheet to the total of the same such amounts shown in the condensed consolidated statement of cash flows:

| (in thousands)  | March 31, 2024    | March 31, 2023    |
|---|-------------------|-------------------|
| Cash and cash equivalents   | \$ 288,396        | \$ 327,935        |
| Restricted cash   | 55,000            | —                 |
| Non-current restricted cash   | 1,885             | 2,116             |
| Total cash, cash equivalents and restricted cash shown in the statement of cash flows | <u>\$ 345,281</u> | <u>\$ 330,051</u> |

## Net (Loss) Earnings per Share

Basic net (loss) earnings per share is calculated by dividing the net (loss) earnings by the weighted-average number of shares of common stock outstanding for the period, without consideration for common stock equivalents. Diluted net (loss) earnings per share is calculated by dividing the net (loss) earnings by the weighted-average number of shares of common stock and dilutive common stock equivalents outstanding for the period determined using the treasury-stock method. Dilutive shares of common stock for the three months ended March 31, 2024 were comprised of stock options and restricted stock units. Dilutive shares of common stock for the three months ended March 31, 2023 were comprised of stock options.

No dividends were declared or paid during the reported periods.

## Recently Issued Accounting Standards Not Yet Adopted

From time to time, new accounting pronouncements are issued by the Financial Accounting Standards Board or other standard setting bodies and adopted by the Company as of the specified effective date. Unless otherwise discussed, the Company believes that the impact of recently issued standards that are not yet effective will not have a material impact on the condensed consolidated financial statements and disclosures.

## Note 2. Revenue

The Company has entered into license agreements and collaborative research and development arrangements with pharmaceutical and biotechnology companies, as well as consulting, related technology transfer, product revenue and government grant agreements. Under these arrangements, the Company is entitled to receive license fees, consulting fees, product fees, technological transfer fees, upfront payments, milestone payments if and when certain research and development milestones, technology transfer milestones or success-based milestones are achieved, royalties on approved product sales and reimbursement for research and development activities. The Company's costs of performing these services are included within research and development expenses. The Company's milestone payments are typically defined by achievement of certain preclinical, clinical, and commercial success criteria. Preclinical milestones may include in vivo proof of concept in disease animal models, lead candidate identification, and completion of IND-enabling toxicology studies. Clinical milestones may, for example, include successful enrollment of the first patient in or completion of Phase 1, 2 and 3 clinical trials, and commercial milestones are often tiered based on net or aggregate sale amounts. The Company cannot guarantee the achievement of these milestones due to risks associated with preclinical and clinical activities required for development of nucleic acid medicine-based therapeutics and vaccines.

The following table presents changes during the three months ended March 31, 2024 in the balances of contract assets and liabilities as compared to what was disclosed in the Company's Annual Report.

| (in thousands)               | December 31, 2023 | Additions | Deductions  | March 31, 2024 |
|------------------------------|-------------------|-----------|-------------|----------------|
| <b>Contract Assets:</b>      |                   |           |             |                |
| Accounts receivable          | \$ 32,064         | \$ 34,068 | \$ (39,075) | \$ 27,057      |
| <b>Contract Liabilities:</b> |                   |           |             |                |
| Deferred revenue             | \$ 87,325         | \$ 33,998 | \$ (38,012) | \$ 83,311      |

The following table summarizes the Company's revenues for the periods indicated.

| (in thousands)                     | For the Three Months Ended March 31, |                  |
|------------------------------------|--------------------------------------|------------------|
|                                    | 2024                                 | 2023             |
| <b>Collaboration Revenue:</b>      |                                      |                  |
| CSL Seqirus                        | \$ 32,381                            | \$ 78,218        |
| Janssen                            | —                                    | 491              |
| Other collaboration revenue        | 217                                  | 1,020            |
| <b>Total collaboration revenue</b> | <b>\$ 32,598</b>                     | <b>\$ 79,729</b> |
| <b>Grant revenue:</b>              |                                      |                  |
| BARDA                              | \$ 5,414                             | \$ 556           |
| <b>Total grant revenue</b>         | <b>\$ 5,414</b>                      | <b>\$ 556</b>    |

The following paragraphs provide information regarding the nature and purpose of the Company's most significant collaboration and grant arrangements.

## CSL Seqirus

On November 1, 2022, the Company entered into a Collaboration and License Agreement (as amended, the “CSL Collaboration Agreement”) with Seqirus, Inc., a part of CSL Limited (“CSL Seqirus”), for the global exclusive rights to research, develop, manufacture, and commercialize vaccines. Under the terms of the CSL Collaboration Agreement, the Company provides CSL Seqirus with an exclusive global license to its mRNA technology (including STARR<sup>®</sup>) and LUNAR<sup>®</sup> lipid-mediated delivery, along with mRNA drug substance and drug product manufacturing process. CSL Seqirus will lead development and commercialization of vaccines under the collaboration. The collaboration plans to advance vaccines against SARS-CoV-2 (COVID-19), influenza, pandemic preparedness as well as three other respiratory infectious diseases.

The Company received a \$200.0 million upfront payment and is eligible to receive over \$1.3 billion in development milestones if all products are registered in the licensed fields and entitled to potentially receive up to \$3.0 billion in commercial milestones based on “net sale” of vaccines in the various fields. In addition, the Company is eligible to receive a 40% net profit share for COVID-19 vaccine products and up to low double-digit royalties for vaccines against flu, pandemic preparedness and three other respiratory pathogens. During the first quarter of 2024, the Company achieved a \$19.2 million development milestone related to the CSL Collaboration Agreement which was included in accounts receivable as of March 31, 2024.

In evaluating the CSL Collaboration Agreement in accordance with ASC 606, the Company concluded that CSL Seqirus is a customer. The Company identified all promised goods/services within the CSL Collaboration Agreement, and when combining certain promised goods/services, the Company concluded that there are five distinct performance obligations. The nature of the performance obligations consists of delivery of the vaccine license, research and development services for COVID and non-COVID vaccines and regulatory activities for COVID vaccines. For each performance obligation, the Company estimated the standalone selling price based on 1) in the case of the license, the fair value using costs to recreate plus margin method and 2) in the case of research and development services and regulatory activities, cost plus margin for estimated full-time equivalent (“FTE”) costs, direct costs including laboratory supplies, contractors, and other out-of-pocket expenses for research and development services and regulatory activities.

As of March 31, 2024, the transaction price consisted of upfront consideration received and milestones achieved. Additional variable consideration was not included in the transaction price at March 31, 2024 because the Company could not conclude that it is probable that including the variable consideration will not result in a significant revenue reversal.

The Company allocated the transaction price to the performance obligations in proportion to their standalone selling price. The vaccine license was recognized at the point in time it was transferred in 2022. The research and development and regulatory activities performance obligations are recognized over a period of time based on the percentage of services rendered using the input method, meaning actual costs incurred divided by total costs budgeted to satisfy the performance obligation. Any consideration related to sales-based royalties will be recognized when the amounts are probable of non-reversal, provided that the reported sales are reliably measurable and the Company has no remaining promised goods/services, as they are constrained and therefore have also been excluded from the transaction price. The revenue recognized in the first quarter of 2024 relates to the license delivered, milestones achieved and services performed through March 31, 2024.

Total deferred revenue as of March 31, 2024 and December 31, 2023 for the CSL Collaboration Agreement was \$83.3 million and \$87.1 million, respectively.

During 2023, the Company also received an advance payment of \$23.6 million for the manufacturing and supply of ARCT-154 drug product. The advance payment was for specified manufacturing runs of ARCT-154 which include the drug substance utilized, as well as the reservation fees and related manufacturing requirements. The Company concluded that the promise to manufacture and supply ARCT-154 drug product is a customer option as part of the CSL Collaboration Agreement and is accounted for as a separate contract. Approximately \$18.8 million remained in deferred revenue as of March 31, 2024 and will be recognized as revenue when the drug product is transferred to CSL Seqirus.

During 2023, the Company entered into an amendment to the CSL Collaboration Agreement, pursuant to which the Company agreed to sponsor and conduct a Phase I clinical study in the influenza field. As part of the amendment, the Company received \$17.5 million from CSL Seqirus. The amendment also provides for up to \$1.5 million in additional payments which are achievable upon meeting certain clinical milestones relating to the Phase I clinical study in the influenza field. The Company previously concluded that the expansion of research and development support services under the CSL Collaboration Agreement represented an option that was not a material right. Therefore the Company concluded the promise to sponsor and conduct the Phase I clinical study is a separate contract and the sole performance obligation under the new arrangement. During the quarter ended March 31, 2024, the Company recognized \$2.2 million related to the performance obligation and the remaining amount of \$12.9 million is included in deferred revenue.

During the fourth quarter of 2023, the Company received an advance payment of \$5.3 million from CSL Seqirus for manufacturing activities related to COVID-19 vaccine product. During the first quarter of 2024, the Company received an additional advance payment of \$5.1 million from CSL Seqirus for manufacturing activities related to COVID-19 vaccine product. The Company

concluded that the promise to perform manufacturing activities is a customer option as part of the CSL Collaboration Agreement and is accounted for as a separate contract. The advance payments are included in deferred revenue as of March 31, 2024 and will be recognized as revenue when the vaccine product is transferred to CSL Seqirus.

In March 2024, the Company entered into an amendment to the CSL Collaboration Agreement, pursuant to which the parties agreed to, among other things, adjust (i) the development plans for certain product candidates, (ii) various development milestones related to such product candidates, (iii) provisions of the CSL Collaboration Agreement related to specific royalty payments, (iii) provisions of the CSL Collaboration Agreement related to distributors, and (iv) proprietary payment calculations related to the foregoing.

#### BARDA Grant

In August 2022, the Company entered into a cost reimbursement contract with the Biomedical Advanced Research and Development Authority ("BARDA"), a division of the Office of the Assistant Secretary for Preparedness and Response (ASPR) within the U.S. Department of Health and Human Services (HHS) for an award of up to \$63.2 million for the development of a pandemic influenza vaccine using the Company's STARR® self-amplifying mRNA vaccine platform technology. The Company earns grant revenue for performing tasks under the agreement.

The Company determined that the agreement with BARDA is not in the scope of ASC 808 or ASC 606. Applying International Accounting Standards No. 20 ("IAS 20"), Accounting for Government Grants and Disclosure of Government Assistance, by analogy, the Company recognizes grant revenue from the reimbursement of direct out-of-pocket expenses, overhead allocations and fringe benefits for research costs associated with the grant. The costs associated with these reimbursements are reflected as a component of research and development expense in the Company's condensed consolidated statements of operations and comprehensive income (loss).

The Company recognized \$5.5 million and \$0.6 million of revenue during the three months ended March 31, 2024 and 2023, respectively. As of March 31, 2024, the remaining available funding net of revenue earned was \$48.4 million.

#### **Note 3. Fair Value Measurements**

The Company establishes the fair value of its assets and liabilities using the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The Company established a fair value hierarchy based on the inputs used to measure fair value.

The three levels of the fair value hierarchy are as follows:

Level 1: Quoted prices in active markets for identical assets or liabilities.

Level 2: Inputs, other than the quoted prices in active markets, that are observable either directly or indirectly.

Level 3: Unobservable inputs in which little or no market data exists and are therefore determined using estimates and assumptions developed by the Company, which reflect those that a market participant would use.

The carrying value of cash, restricted cash, accounts receivable, accounts payable, accrued liabilities and the Singapore Loan (as defined below) approximate their respective fair values due to their relative short maturities.

As of March 31, 2024 and December 31, 2023, all assets measured at fair value on a recurring basis consisted of cash equivalents and money market funds, which were classified within Level 1 of the fair value hierarchy. The fair value of these financial instruments was measured based on quoted prices.

#### **Note 4. Balance Sheet Details**

Property and equipment, net balances consisted of the following:

| <i>(in thousands)</i>                          | <b>March 31, 2024</b> | <b>December 31, 2023</b> |
|--|-----------------------|--------------------------|
| Research equipment                             | \$ 16,456             | \$ 16,046                |
| Computers and software                         | 1,131                 | 1,275                    |
| Office equipment and furniture                 | 703                   | 958                      |
| Leasehold improvements                         | 2,644                 | 2,655                    |
| Construction in progress                       | —                     | 233                      |
| Total  | <u>20,934</u>         | <u>21,167</u>            |
| Less accumulated depreciation and amortization | <u>(9,171)</u>        | <u>(8,740)</u>           |
| Property and equipment, net                    | <u>\$ 11,763</u>      | <u>\$ 12,427</u>         |

Depreciation and amortization expense was \$0.9 million for the three months ended March 31, 2024 and \$0.6 million for the three months ended March 31, 2023. Construction in progress is primarily comprised of research equipment not yet placed in service.

Accrued liabilities consisted of the following:

| (in thousands)                                  | March 31, 2024   | December 31, 2023 |
|---|------------------|-------------------|
| Accrued compensation                            | \$ 7,102         | \$ 5,918          |
| Cystic Fibrosis Foundation liability            | 7,649            | 7,633             |
| Income tax payable                              | 979              | 641               |
| Current portion of operating lease liability    | 4,270            | 4,309             |
| Clinical trial accruals                         | 1,234            | 2,333             |
| Vinbiocare contractual liabilities              | 2,993            | 2,514             |
| Other accrued research and development expenses | 10,543           | 8,533             |
| Total   | <u>\$ 34,770</u> | <u>\$ 31,881</u>  |

## Note 5. Debt

### *Wells Fargo Credit Agreement*

On April 21, 2023, the Company's wholly-owned subsidiary, Arcturus Therapeutics, Inc. entered into a credit agreement with Wells Fargo Bank, whereby Wells Fargo will make a \$50.0 million revolving credit line available to the Company (the "Loan") and each draw on the Loan evidenced by a revolving line of credit note (the "Note").

Borrowings under the agreement will bear interest at a rate of 1.00% above either the Daily Simple SOFR or Term SOFR (as such terms are defined in the Note), with "SOFR" being the rate per annum equal to the secured overnight financing rate as administered by the Federal Reserve Bank of New York. If an Event of Default (as defined in the agreement) occurs, then all Loans shall bear interest at a rate equal to 2.00% above the interest rate applicable immediately prior to the occurrence of the Event of Default.

The term of the agreement is two years, with an option for one-year renewals subject to Wells Fargo approval and the Company furnishing to Wells Fargo a non-refundable commitment fee equal to 0.25% of the Loan amount for each such renewal. There is no penalty for terminating the facility prior to the maturity date of the Note. As collateral, the Company has agreed to pledge \$55.0 million in cash to be held at the Company's securities accounts with Wells Fargo Securities, LLC, an affiliate of Wells Fargo, pursuant to a security agreement. No borrowings were outstanding as of March 31, 2024.

### *Termination of the Manufacturing Support Agreement with EDB*

On November 7, 2020, the Company's wholly-owned subsidiary, Arcturus Therapeutics, Inc., entered into a Manufacturing Support Agreement (the "Support Agreement") with the Economic Development Board of the Republic of Singapore (the "EDB"). Pursuant to the Support Agreement, the EDB agreed to make a term loan (the "Singapore Loan") of S\$62.1 million (approximately \$46.6 million) to the Company, subject to the satisfaction of customary deliveries, to support the manufacture of the LUNAR-COV19 vaccine candidate (ARCT-021). The Singapore Loan accrued interest at a rate of 4.5% per annum calculated on a daily basis. The Company elected to borrow the full amount available under the Support Agreement of S\$62.1 million (approximately \$46.6 million) on January 29, 2021.

During the first quarter of 2023, the parties terminated the Support Agreement and the EDB agreed to an extension of the reconciliation period to March 22, 2023, with unused funds not utilized for the manufacture of ARCT-021 as of such date returned to the EDB. As of December 31, 2022, the outstanding balance of the Singapore Loan, which includes accrued interest, was \$50.4 million of which the Company paid S\$22.8 million (approximately \$17.1 million) in March 2023. During the first quarter of 2023, the remaining principal portion of the Singapore Loan plus accrued interest, totaling \$34.0 million, was forgiven and recorded as a gain on debt extinguishment in the condensed consolidated statement of operations and comprehensive loss.

For the three months ended March 31, 2024, the Company recorded no interest expense, compared to interest expense of \$0.5 million for the same period in 2023.

### *Termination of Agreement with Western Alliance Bank*

On March 14, 2023, the Loan and Security Agreement, dated as of October 12, 2018 (as amended and supplemented, the "Western Alliance Agreement") with Western Alliance Bank, an Arizona corporation ("Western Alliance"), was terminated (the "Termination") upon the receipt by Western Alliance of a payoff amount of approximately \$7.4 million from the Company. The Western Alliance Agreement provided for a collateralized term loan in the aggregate principal amount of up to \$15.0 million, with



interest at a floating rate ranging from 1.25% to 2.75% above the prime rate and a maturity date of October 30, 2023. The payoff amount was made by the Company to Western Alliance from available cash on hand, pursuant to a payoff letter, and included payment of (i) approximately \$7.0 million in principal and interest, (ii) \$0.3 million fee payable upon prepayment as a result of prior FDA approval of an IND and (iii) de minimis amounts in prepayment charges and various operational fees. The Company was released from all liens under the Western Alliance Agreement.

For the three months ended March 31, 2024, the Company recorded no interest expense, compared to interest expense of \$0.3 million for the same period in 2023.

#### Note 6. Stockholders' Equity

##### Net (Loss) Earnings per Share

Potentially dilutive securities that were not included in the calculation of diluted net loss per share for the three months ended March 31, 2024 as they were anti-dilutive totaled 1.4 million. Potentially dilutive securities that were not included in the calculation of diluted earnings per share for the three months ended March 31, 2023 as they were anti-dilutive totaled 5.2 million.

##### Sales Agreement

On December 23, 2022, the Company entered into a Controlled Equity Offering<sup>SM</sup> Sales Agreement (the "Sales Agreement") with Cantor Fitzgerald & Co. ("Cantor") and Wells Fargo Securities, LLC ("Wells Fargo Securities"), relating to shares of the Company's common stock. In accordance with the terms of the Sales Agreement, the Company may offer and sell shares of its common stock having an aggregate offering price of up to \$200,000,000 from time to time through Cantor or Wells Fargo Securities, each acting as the Company's sales agent. During the period ended March 31, 2024, the Company did not offer or sell any shares of common stock pursuant to the Sales Agreement.

#### Note 7. Share-Based Compensation Expense

In June 2022 at the Company's 2022 Annual Meeting of Stockholders (the "2022 Annual Meeting"), the stockholders of the Company approved an amendment to the Company's 2019 Omnibus Equity Incentive Plan (as amended, the "2019 Plan") which, among other things, increased the aggregate number of shares authorized for use in making awards to eligible persons under the 2019 Plan by 3,750,000 shares, for a total of up to 8,750,000 shares available for issuance. As of March 31, 2024, a total of 379,084 shares remain available for future issuance under the 2019 Plan, subject to the terms of the 2019 Plan.

In October 2021, the Company adopted the 2021 Inducement Equity Incentive Plan which covers the award of up to 1,000,000 shares of common stock (the "2021 Plan") effective as of October 15, 2021. Approval of the Company's stockholders is not required as a condition to the effectiveness of the 2021 Plan for so long as the plan is in compliance with applicable Nasdaq inducement plan rules. In April 2022, the compensation committee of the Company's board of directors approved a proposal to reduce the total number of shares available for future issuance under the 2021 Plan to 130,000. As of March 31, 2024, a total of 124,697 shares remain available for future issuance under the 2021 Plan, subject to the terms of the 2021 Plan.

##### Stock Options

Share-based compensation expense included in the Company's condensed consolidated statements of operations and comprehensive loss for the three months ended March 31, 2024 and 2023 was as follows:

| (in thousands)             | For the Three Months<br>Ended March 31, |                 |
|----------------------------|---|-----------------|
|                            | 2024                                    | 2023            |
| Research and development   | \$ 4,803                                | \$ 3,508        |
| General and administrative | 5,285                                   | 4,674           |
| Total                      | <u>\$ 10,088</u>                        | <u>\$ 8,182</u> |

## Note 8. Income Taxes

The Company is subject to taxation in the United States and various states. The Company computes its quarterly income tax provision by using a forecasted annual effective tax rate and adjusts for any discrete items arising during the quarter. The primary difference between the effective tax rate and the federal statutory tax rate is due to federal and state income tax expense offset by valuation allowance on the Company's deferred tax assets.

For the three months ended March 31, 2024 and 2023, the Company recorded \$0.4 million and \$0.1 million of income tax expense, respectively. No tax benefit was provided for losses incurred in United States because those losses are offset by a full valuation allowance.

## Note 9. Commitments and Contingencies

### Cystic Fibrosis Foundation Agreement

On September 25, 2023, the Company amended its Development Program Letter Agreement, dated May 16, 2017 and as amended July 13, 2018 and August 1, 2019, with the Cystic Fibrosis Foundation ("CFF"). Pursuant to the amendment, CFF increased the amount it will award to advance LUNAR-CF to \$24.6 million from approximately \$15.6 million and the Company agreed to incur at least \$15.0 million toward activities under the research plan. For the three months ended March 31, 2024 and 2023, the Company recognized no contra expense related to CFF. As of March 31, 2024 and December 31, 2023, \$7.6 million was included in accrued liabilities.

### Leases

In October 2017, the Company entered into a non-cancellable operating lease agreement for office space adjacent to its previously occupied headquarters. The commencement of the lease began in March 2018 and the lease extends for approximately 84 months from the commencement date with a remaining lease term through March 2025. Monthly rental payments are due under the lease and there are escalating rent payments during the term of the lease. The Company is also responsible for its proportional share of operating expenses of the building and common areas. In conjunction with the new lease, the Company received free rent for four months and received a tenant improvement allowance of \$0.1 million. In March 2024, the Company negotiated with the lessor to extend the lease through March 2027.

The Company entered into an irrevocable standby letter of credit with the landlord for a security deposit of \$0.1 million upon executing the lease which is included (along with additional funds required to secure the letter of credit) in the balance of non-current restricted cash.

In February 2020, the Company entered into a second non-cancellable operating lease agreement for office space near its current headquarters. The lease extended for 13 months from the commencement date and included a right to extend the lease for one twelve-month period. In February 2021, the Company opted to extend the lease through March 2025 to coincide with the lease term of the Company's headquarters. In January 2024, the Company vacated the office space, and has no intention of operating out of this location in the future. Arcturus is currently engaged in a lease for this property through March 31, 2025. It is obligated to continue to make the remaining payments per the lease agreement through the end of the term. As such, the Company recorded an impairment loss in the amount of \$1.3 million during the three months ended March 31, 2024, as it will not receive any future economic benefits from the lease.

In September 2021, the Company entered into a third non-cancellable lease agreement for office, research and development, engineering and laboratory space near its current headquarters and lease term commenced during the second quarter of 2022. The initial term of the lease extends ten years and eight months from the date of possession, and the Company has the right to extend the term of the lease for an additional five-year period. When the lease term was determined for the operating lease right-of-use assets and lease liabilities, the extension option for the lease was not included. The lease has a monthly base rent ranging from \$0.3 million to \$0.4 million which escalates over the lease term. The Company received a free rent period of four months and also pays for various operating costs, including utilities and real property taxes. The Company entered into an irrevocable standby letter of credit with the landlord for a security deposit of \$2.0 million upon executing the lease which is included (along with additional funds required to secure the letter of credit) in the balance of non-current restricted cash.

Operating lease right-of-use asset and liability on the condensed consolidated balance sheets represent the present value of remaining lease payments over the remaining lease terms. The Company does not allocate lease payments to non-lease components; therefore, payments for common-area-maintenance and administrative services are not included in the operating lease right-of-use asset and liability. The Company uses its incremental borrowing rate to calculate the present value of the lease payments, as the implicit rate in the lease is not readily determinable.

As of March 31, 2024, the remaining payments of the operating lease liability were as follows:

| (in thousands)                        | Remaining Lease Payments |
|---------------------------------------|--------------------------|
| 2024                                  | \$ 4,257                 |
| 2025                                  | 5,019                    |
| 2026                                  | 5,274                    |
| Thereafter                            | 23,703                   |
| Total remaining lease payments        | 38,253                   |
| Less: imputed interest                | (6,331)                  |
| Total operating lease liabilities     | \$ 31,922                |
| Weighted-average remaining lease term | 7.7                      |
| Weighted-average discount rate        | 4.8%                     |

Operating lease costs consist of the fixed lease payments included in operating lease liability and are recorded on a straight-line basis over the lease terms. Operating lease costs were \$1.4 million for the three months ended March 31, 2024 and \$1.4 million for the three months ended March 31, 2023, respectively.

#### **Note 10. Related Party Transactions**

See “Note 1, Joint Ventures, Equity Method Investments and Variable Interest Entities” for specific details surrounding the Company’s agreement with Axcelead to form the joint venture entity, ARCALIS, Inc.

## Item 2. Management’s Discussion and Analysis of Financial Condition and Results of Operations.

*The following is a discussion of the financial condition and results of operations of Arcturus Therapeutics Holdings Inc. for the three month period ended March 31, 2024. Unless otherwise specified herein, references to the “Company,” “Arcturus,” “we,” “our” and “us” mean Arcturus Therapeutics Holdings Inc. and its consolidated subsidiaries. You should read the following discussion and analysis together with the interim condensed consolidated financial statements and related notes included elsewhere herein. For additional information relating to our management’s discussion and analysis of financial conditions and results of operations, please see our Annual Report on Form 10 K for the year ended December 31, 2023 (the “2023 Annual Report”), which was filed with the U.S. Securities and Exchange Commission (the “Commission”) on March 14, 2024. Unless otherwise defined herein, capitalized words and expressions used herein shall have the same meanings ascribed to them in the 2023 Annual Report.*

*This report includes forward-looking statements which, although based on assumptions that we consider reasonable, are subject to risks and uncertainties which could cause actual events or conditions to differ materially from those currently anticipated and expressed or implied by such forward-looking statements.*

*You should read this report and the documents that we reference in this report and have filed as exhibits to this report completely and with the understanding that our actual future results may be materially different from what we expect. You should also review the factors and risks we describe in the reports we will file or submit from time to time with the Commission after the date of this report.*

### Overview

We are a global messenger RNA medicines company focused on the development of infectious disease vaccines and opportunities within liver and respiratory rare diseases. In addition to our messenger RNA (“mRNA”) platform, our proprietary lipid nanoparticle (“LNP”) delivery system, LUNAR<sup>®</sup>, may enable multiple nucleic acid medicines. Our proprietary self-amplifying mRNA technology (Self-Transcribing and Replicating RNA, or STARR<sup>®</sup>, technology) provides a longer-lasting and broader response at lower dose levels than conventional mRNA. In 2023, our COVID-19 vaccine, ARCT-154, received marketing authorization approval in Japan and became the world’s first approved self-amplifying RNA (sa-mRNA) vaccine.

We are leveraging our proprietary LUNAR platform and our nucleic acid technologies to develop and advance a pipeline of mRNA-based vaccines and therapeutics for infectious diseases and rare genetic disorders with significant unmet medical needs. We continue to expand this platform by adding new innovative delivery solutions that allow us to expand our discovery efforts. Our proprietary LUNAR technology is intended to address the major hurdles in RNA drug development, namely the effective and safe delivery of RNA therapeutics to disease-relevant target tissues. We believe the versatility of our platform to target multiple tissues, its compatibility with various nucleic acid therapeutics, and our expertise in developing scalable manufacturing processes can allow us to deliver on the next generation of nucleic acid medicines.

### Business Updates

#### Vaccine Collaboration with CSL Seqirus

In November 2022, we entered into a Collaboration and License Agreement (as amended, the “CSL Collaboration Agreement”) with Seqirus, Inc. (“CSL Seqirus”), a part of CSL Limited, and one of the world’s leading influenza vaccine providers, for global exclusive rights to research, develop, manufacture and commercialize self-amplifying mRNA vaccines against COVID-19, influenza and three other respiratory infectious diseases and global non-exclusive rights to pandemic pathogens. The CSL Collaboration Agreement became effective on December 8, 2022. The collaboration combines CSL Seqirus’ established global vaccine commercial and manufacturing infrastructure with Arcturus’ manufacturing expertise and innovative STARR self-amplifying mRNA vaccine and LUNAR delivery platform technologies. Under the framework of our collaboration with CSL Seqirus, we continue the development of the COVID-19 vaccine to establish a differentiated platform and address routine recommendations for periodic vaccine composition updates in a timely manner. In November 2023, ARCT-154, our self-amplifying RNA (sa-mRNA) vaccine, received marketing authorization approval from the Japanese Ministry of Health, Labour and Welfare for use as a primary immunization and booster in Japan. The approval was based on positive clinical data from several ARCT-154 studies, including the pivotal 19,000 subject efficacy, safety and immunogenicity study performed in Vietnam as well as the pivotal Phase 3 booster study in Japan. The European Medicines Agency (EMA) is currently reviewing a marketing authorization application for ARCT-154. The review procedure started on August 17, 2023.

#### *Key Updates on Our COVID Collaboration Program*

#### ***Pivotal Phase 3 Non-Inferiority Study of ARCT-154 in Japan***

Meiji Holdings Co., Ltd. (“Meiji”) sponsored a randomized, multicenter, Phase 3, observer-blind, active-controlled comparative study to evaluate the safety and immunogenicity of a booster dose of ARCT-154 and to evaluate the non-inferiority of ARCT-154 over COMIRNATY (Monovalent, Original strain). The study targeted a total of 780 adult participants, with half in the ARCT-154

group and half in a comparator group, and completed enrollment with 828 participants in February 2023. As previously announced, the study met all primary and secondary immunogenicity endpoints, including a secondary pre-defined superiority assessment over Comirnaty (Omicron BA.4/5 strain). Overall, the safety and immunogenicity results of the study support the favorable benefit/risk profile of the ARCT-154 vaccine when administered as a booster dose in adult individuals who previously received other mRNA COVID-19 vaccines.

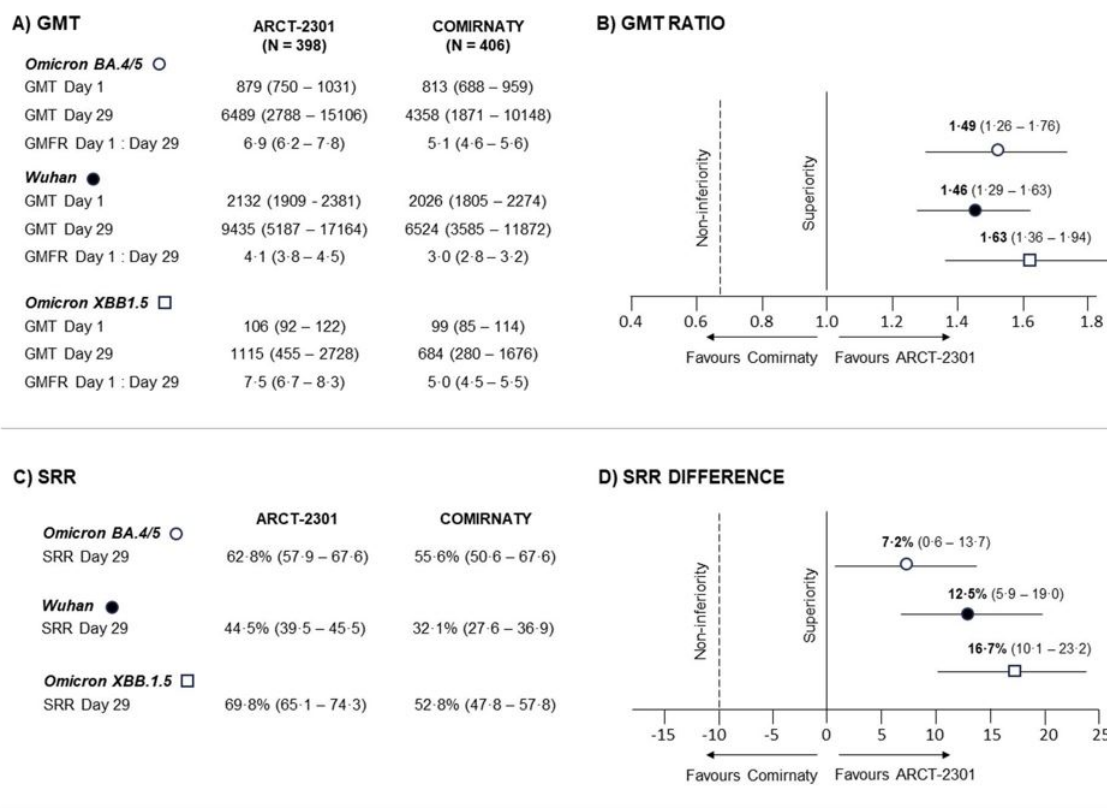
On February 1, 2024, the journal Lancet Infectious Diseases published the article ‘Persistence of immune responses of a self-amplifying RNA COVID-19 vaccine (ARCT154) versus BNT162b2’ ([https://www.thelancet.com/journals/laninf/article/PIIS1473-3099\(24\)00060-4/fulltext](https://www.thelancet.com/journals/laninf/article/PIIS1473-3099(24)00060-4/fulltext)), with a 6-month follow-up results from this study. These additional data demonstrate the extended persistence of neutralizing antibodies after ARCT-154 compared with conventional mRNA vaccine in the clinical setting, indicating longer-lasting immunity and implying a longer duration of protection by ARCT-154.

### ***Phase 3 Study of Bivalent Version of COVID-19 Vaccine Candidate in Japan***

On September 29, 2023, Meiji initiated an additional Phase 3 clinical study with a bivalent version of our COVID-19 vaccine candidate (ancestral strain, ARCT-154 and Omicron BA.4/5) to further support immunogenicity and safety data for our self-amplifying mRNA platform, which may facilitate the timely release of future seasonal updates of our COVID-19 vaccine against evolving variants of concern. On March 19, 2024, Meiji announced that the bivalent vaccine met the primary endpoint (non-inferiority) in the study. The study enrolled 930 healthy adults and individuals with comorbidities, who previously received three to five doses of mRNA COVID-19 vaccines, including the last booster at least three months prior to recruitment. The study compares the investigational vaccine (ARCT-2301) and COMIRNATY (ancestral strain and BA.4/5), to evaluate safety and immunogenicity between observer-blind groups. Both the geometric mean titer (GMT) ratio and seroresponse rate (SRR) difference of neutralizing antibodies against SARS-CoV-2 (Omicron strain BA.4/5) met non-inferiority criteria. In addition, the superiority of ARCT-2301 to

COMIRNATY (BA.4/5) was confirmed for both SARS-CoV-2 (Omicron strain BA.4/5 and Wuhan strain). There were no causally-associated severe or serious adverse events with ARCT-2301.

The results of this study of the bivalent version of our COVID-19 vaccine candidate were not required for approval of ARCT-154 in Japan but will facilitate the timely release of future seasonal updates of the COVID-19 vaccine.



Abbreviations: GMT – geometric mean titer; SRR – seroresponse rate; GMFR – geometric mean fold raise; LL – lower limit; CI – confidence interval

**Figure:** Geometric mean titers (GMT) of surrogate neutralizing antibodies at Days 1 (baseline) and 29, and geometric mean-fold rises (GMFR) in titers from Day 1 to Day 29; B) GMT Ratio; C) seroresponse rates (SRR) at Day 29; D) SRR Difference – Study ARCT-2301-J01. Note: GMT – Geometric Mean Titer; SRR – seroresponse rate. All values are from the Per Protocol Subset 1 (PPS-1) and are shown with 95% confidence intervals in parentheses. Solid circles (●) represent the Wuhan variant, open circles (○) represent the Omicron BA.4/5 variant, and open squares (□) represent the Omicron XBB.1.5 variant. Vertical lines represent the threshold for achieving the non-inferiority and superiority comparisons of ARCT-154 to Comirnaty.

Bivalent ARCT-2301, when administered intramuscularly as a booster dose in subjects who had received three to five doses of authorized mRNA COVID-19 vaccines at least three months before the recruitment, demonstrated immunological superiority over the comparator vaccine (Comirnaty® bivalent: Wuhan strain/Omicron strain BA.4/5), as measured by GMT ratios and seroresponse rates differences for both vaccine strains (prototype Wuhan strain and Omicron BA.4/65 variant). In addition, ARCT-2301 induced a higher immune response against the epidemiologically dominant Omicron XBB.1.5 variant.

### Phase 3 Study in Southern Hemisphere of Monovalent XBB1.5 COVID-19 Vaccine Candidate

In March 2024, Arcturus and CSL Seqirus initiated a Phase 3 pivotal study with the ARCT-2303 candidate vaccine containing the XBB1.5 Omicron variant. The purpose of this study is to generate additional immunogenicity and safety data for the recently recommended vaccine composition and support product licensure in the United States. In addition, the study will assess the

co-administration of the ARCT-2303 vaccine with the age-appropriate seasonal influenza vaccines. Overall, approximately 1,680 young and older adults are planned to be recruited in the study in Australia, Costa Rica, Honduras and the Philippines.

#### Flu Collaboration Program Updates

##### LUNAR-qsFLU (Quadrivalent Seasonal Influenza)

Our LUNAR-qsFLU (qs; quadrivalent seasonal) program, now exclusively licensed to CSL Seqirus, has the objective of producing a safe and effective seasonal influenza vaccine candidate with significant advantages over the traditional egg-based inactivated quadrivalent vaccine. Inaccurate predictions of circulating influenza strains as well as mutations due to adaptation in egg-grown vaccines can substantially reduce efficacy on a year-to-year basis. We believe the ability of mRNA platforms to nimbly adapt to new viral strains should help improve efficacy. In addition, we do not expect mRNA vaccines to face the challenge from mutations common to egg-grown vaccines.



LUNAR-qsFLU has been designed to take advantage of our expertise in both LUNAR lipid delivery systems and our STARR self-amplifying mRNA technology. This platform has been shown to deliver effective protection against COVID-19 and has been optimized to elicit robust immunogenicity with acceptable reactogenicity at a lower dose than conventional mRNA vaccines with the objective of creating a highly effective influenza vaccine for use in general and high-risk populations. Working with CSL Seqirus, we generated a comprehensive non-clinical data package to support the initiation of the Phase 1 clinical trial with a novel influenza mRNA vaccine candidate. A Phase 1 dose-finding safety and immunogenicity study was initiated in January 2024 in Australia. As of May 1, 2024, 84 healthy young adults were recruited in the study and received one of four dose levels of the study vaccine or a licensed influenza vaccine. The recruitment of older adults is ongoing. Additional preclinical mouse immunogenicity studies and nonclinical safety studies have been completed that will help enable the Phase 2 clinical trial.

##### Pandemic Influenza Program

Our LUNAR-pandFLU program continues to progress under the award from the Biomedical Advanced Research and Development Authority (“BARDA”) that we obtained in 2022. The program includes all non-clinical, manufacturing, and regulatory support to advance a vaccine to protect against disease caused by H5N1 highly-pathogenic avian influenza. A pre-IND meeting was granted and Written Response Only (WRO) was received for integration into future development plans. Nonclinical safety studies have been completed that will enable the Phase 1 clinical trial. Enrollment for a Phase 1 clinical trial designed to evaluate the safety and immunogenicity of ARCT-2304 (LUNAR-pandFLU candidate vaccine) is expected to begin before the end of 2024.

#### Key Updates on Arcturus-Owned mRNA Therapeutic Development Candidates

The following chart represents our current pipeline of Arcturus-owned mRNA therapeutic candidates:

| Franchise   | Candidate            | Funded By   | Indication                                  | Global Prevalence | Upcoming Milestone            |
|-------------|----------------------|---|---|-------------------|-------------------------------|
| Hepatic     | LUNAR-OTC (ARCT-810) |  | Ornithine Transcarbamylase Deficiency (OTC) | > 10,000          | Phase 2 Interim Data H1 2024  |
| Respiratory | LUNAR-CF (ARCT-032)  |  | Cystic Fibrosis                             | 85,000-100,000    | Phase 1b Interim Data H1 2024 |

- LUNAR-OTC/ARCT-810
  - o A Phase 1b study in stable OTC-deficient adults completed dosing in the United States in August 2023. The trial was designed to assess safety, tolerability and pharmacokinetics of a single dose of ARCT-810, as well as exploratory biomarkers of drug activity. The Phase 1b study was a single ascending dose, placebo-controlled study that enrolled 16 adults with mild OTCD. ARCT-810 was generally safe and well tolerated at doses ranging from 0.1-0.5mg/kg and no severe adverse events were observed. Sporadic infusion-related reactions (IRRs) could be managed with symptomatic treatment and appear to be less frequent with slower infusion rates. In plasma, ARCT-810 mRNA could be detected up to 4 weeks, while ionizable lipid was no longer measurable after 48 hours, indicating rapid degradation of the lipid nanoparticle that was utilized to deliver ARCT-810 mRNA.
  - o A Phase 2 multiple-dose study of ARCT-810 in OTC-deficient adolescents and adults initiated dosing in December 2022 and plans to enroll approximately 24 participants in two dose cohorts. The study is being conducted in the UK and several countries in the European Union. Efforts to address the continued challenging enrollment rate in Europe,

by adding study sites and patient services to eliminate barriers to participation, appear to be effective and the study continues to enroll patients.

- LUNAR-CF/ARCT-032 – Our program for cystic fibrosis is being supported in part by the Cystic Fibrosis Foundation. In 2023 we initiated and successfully achieved the recruitment target in a Phase 1 single ascending dose study of ARCT-032 (LUNAR-CF), our mRNA therapeutic candidate for cystic fibrosis (CF), in 32 healthy participants (eight subjects in each of four dose cohorts). In August 2023 we received regulatory approval of a protocol amendment to transition to a Phase 1b clinical study of ARCT-032 in up to eight adults with CF, with each participant receiving two administrations of ARCT-032.
  - o The first participant with CF in the Phase 1b study part enrolled and completed two administrations of ARCT-032 in November 2023, and we are continuing enrollment.
  - o In February 2024, the European Commission (EC), based on a positive opinion issued by the European Medicines Agency (EMA), granted Orphan Medicinal Product Designation for ARCT-032 to treat CF. ARCT-032 was granted Orphan Drug Designation by the FDA in November 2023.

### **Updates on Collaboration Agreements**

#### *CSL Collaboration Agreement.*

In March 2024, we entered into Amendment Number Two to Collaboration and License Agreement to reflect updates to the development program and other adjustments consistent with our prior disclosures regarding the Collaboration and License Agreement (“Amendment Number Two”). Amendment Number Two, among other things, adjusts (i) the development plans for certain product candidates, (ii) various development milestones related to such product candidates, (iii) provisions of the CSL Collaboration Agreement related to specific royalty payments, (iii) provisions of the CSL Collaboration Agreement related to distributors, and (iv) proprietary payment calculations related to the foregoing.

### **Updates on Research and Platform Activities**

We continue to conduct exploratory platform development activities, including the evaluation of genome editing, and new targeting approaches, where our LUNAR<sup>®</sup> and STARR<sup>®</sup> platforms could potentially be useful for identification and development of additional products for our portfolio.

#### *Discovery Programs – Vaccine Programs (Lyme Disease and Gonorrhea)*

Based on the clinical and regulatory validation of LUNAR and STARR technologies provided by the approval of ARCT-154, our next-generation vaccine for COVID-19, we have initiated new vaccine discovery programs for Lyme disease and gonorrhea. The new discovery programs rely on the evidence of superior immunogenicity, durability, and breadth of immune response compared to conventional mRNA vaccines, as observed in the COVID-19 program.

Lyme disease is a bacterial infection and is the most common vector-borne disease in the United States. Infection can spread to joints, the heart and the nervous system. Gonorrhea is a sexually transmitted disease (STD) that can infect the mucous membranes of the reproductive tract. It is the second most commonly reported bacterial sexually transmitted infection in the United States. We selected these diseases based on high unmet medical needs, good understanding of the path forward in vaccine target selection, and demonstration of proof of concept, as well as platform advantages that may be translated in a favorable vaccine product.

### **Updates on Supply and Manufacturing**

We have built a global manufacturing footprint with our partners, including Aldevron, Catalent, Recipharm, Polymun and ARCALIS. With such collaborations we have established an Integrated Global Supply Chain Network with our primary and secondary sourcing contract development & manufacturing organizations (CDMOs) based in the United States, EU and Asia for producing critical raw materials, drug substance, and packaged finished product. As the market for COVID vaccines shifts from multi-dose vial formats to lower and single-dose vial formats, we continue, with our collaborator CSL Seqirus, to evaluate and advance manufacturing process and capabilities and technology transfers, and prepare for stockpiling and commercialization of COVID vaccines.

### **Results of Operations**

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our condensed consolidated financial statements and related notes appearing elsewhere in this Report and our audited financial statements and related notes for the year ended December 31, 2023. Our historical results of operations and the year-to-year comparisons of our results of operations that follow are not necessarily indicative of future results.



## Revenue

We enter into arrangements with pharmaceutical and biotechnology partners and government agencies that may contain upfront payments, license fees for research and development arrangements, research and development funding, milestone payments, option exercise and exclusivity fees, royalties on future sales, consulting fees and payments for technology transfers. The following table summarizes our total revenues for the periods indicated:

| (in thousands) | Three Months Ended March 31, |           | 2023 to 2024 |          |
|----------------|------------------------------|-----------|--------------|----------|
|                | 2024                         | 2023      | \$ change    | % change |
| Revenue        | \$ 38,012                    | \$ 80,285 | \$ (42,273)  | -52.7%   |

Revenue decreased by \$42.3 million during the three months ended March 31, 2024 as compared to the three months ended March 31, 2023. The decrease was primarily attributable to the CSL agreement as \$78.2 million total revenue was recognized during the first quarter of 2023 upon the achievement of a conditional payment and multiple milestones, compared to \$32.4 million total revenue related to CSL during the first quarter of 2024, resulting in a decrease of \$45.8 million. An additional decrease of \$1.3 million resulted from the completion of two collaboration agreements by the third quarter of 2023. The total decrease was primarily offset by an increase in revenue of \$4.9 million related to the agreement with BARDA.

Our operating expenses consist of research and development and general and administrative expenses.

| (in thousands)                | Three Months Ended March 31, |           | 2023 to 2024 |          |
|-------------------------------|------------------------------|-----------|--------------|----------|
|                               | 2024                         | 2023      | \$ change    | % change |
| Operating expenses:           |                              |           |              |          |
| Research and development, net | \$ 53,573                    | \$ 51,768 | \$ 1,805     | 3.5%     |
| General and administrative    | 14,851                       | 13,762    | 1,089        | 7.9%     |
| Total                         | \$ 68,424                    | \$ 65,530 | \$ 2,894     | 4.4%     |

## Research and Development Expenses, net

The following table presents our total research and development expenses by category:

| (in thousands)                               | Three Months Ended March 31, |           | 2023 to 2024 |          |
|--|------------------------------|-----------|--------------|----------|
|  | 2024                         | 2023      | \$ change    | % change |
| External pipeline development expenses:      |                              |           |              |          |
| LUNAR-COVID, net                             | \$ 20,730                    | \$ 22,828 | \$ (2,098)   | -9.2%    |
| LUNAR-OTC, net                               | 1,383                        | 3,319     | (1,936)      | -58.3%   |
| BARDA  | 3,235                        | 156       | 3,079        | *        |
| Early-stage programs                         | 7,362                        | 4,714     | 2,648        | 56.2%    |
| Discovery technologies                       | 1,190                        | 4,751     | (3,561)      | -75.0%   |
| External platform development expenses:      |                              |           |              |          |
| Personnel related expenses                   | 15,518                       | 13,271    | 2,247        | 16.9%    |
| Facilities and equipment expenses            | 4,155                        | 2,729     | 1,426        | 52.3%    |
| Total research and development expenses, net | \$ 53,573                    | \$ 51,768 | \$ 1,805     | 3.5%     |

\* Greater than 100%

Our research and development expenses consist primarily of external manufacturing costs, in-vivo research studies and clinical trials performed by contract research organizations, clinical and regulatory consultants, personnel related expenses, facility related expenses and laboratory supplies related to conducting research and development activities. Research and development expenses were \$53.6 million for the three months ended March 31, 2024, compared with \$51.8 million in the comparable period last year, primarily reflecting increased BARDA related expenses of \$3.0 million, increased early-stage programs expenses of \$2.7 million, increased personnel expenses of \$2.2 million and increased facilities and equipment expenses of \$1.4 million. The increases were offset by a \$3.5 million decrease in discovery technologies expenses, a \$2.1 million decrease in COVID expenses primarily caused by fewer contract manufacturing costs and a \$1.9 million decrease in OTC expenses. We expect that our research and development efforts and associated costs will increase and continue to be substantial over the next several years as our pipeline progresses.

Early-stage programs represent programs that are in the pre-clinical or Phase 1 clinical stage and may be partnered or unpartnered, including the LUNAR-CF and LUNAR-FLU programs. Discovery technologies represent our efforts to expand our product pipeline and are primarily related to pre-partnered studies and new capabilities assessment. For some of our programs, the activities are part of our collaborative and other relationships, and the expenses may be partially offset with funds that have been awarded to the Company. The expenses for early-stage programs and discovery technologies primarily consist of external manufacturing costs, lab supplies, equipment, and consulting and professional fees. Both early-stage programs and discovery technologies expenses are expected to steadily increase over the coming years.

Personnel related expenses primarily consist of employee salaries and benefits, share-based compensation and consultants. Although such expenses increased during 2024 as compared to 2023, we expect that they will not increase over the next twelve months.

During the three months ended March 31, 2024, facilities and equipment expenses increased primarily due to higher rent and associated costs. Additionally, we recognized a \$0.8 million lease impairment loss during the same period due to the abandonment of one of our facilities. Facilities and equipment expenses are not expected to increase during the next twelve months.

### General and Administrative Expenses

General and administrative expenses primarily consist of salaries and related benefits for our executive, administrative, legal and accounting functions and professional service fees for legal and accounting services as well as other general and administrative expenses.

General and administrative expenses were \$14.9 million for the three months ended March 31, 2024 compared with \$13.8 million in the comparable period last year. The increase in expenses resulted primarily from increased personnel expenses due to increased salaries, increased travel and consulting expenses as well as escalated rent expense associated with our facilities. The Company does not expect that general and administrative expenses will increase on a yearly basis from the current quarter March 31, 2024 expense trend.

### Finance income (expense), net

| (in thousands)   | Three Months Ended March 31, |          | 2023 to 2024 |          |
|------------------|------------------------------|----------|--------------|----------|
|                  | 2024                         | 2023     | \$ change    | % change |
| Interest income  | \$ 4,016                     | \$ 3,220 | \$ 796       | 24.7%    |
| Interest expense | —                            | (743)    | 743          | *        |
| Total            | \$ 4,016                     | \$ 2,477 | \$ 1,539     | 62.1%    |

\* Greater than 100%

Interest income is generated on cash and cash equivalents. The increase in interest income for the three months ended March 31, 2024 as compared to the comparable period last year was primarily the result of increased interest rates and shifting money within accounts. Interest expense decreased as no interest expense was incurred during the first quarter of 2024. Interest expense during the first quarter ended March 31, 2023 was incurred in conjunction with the Western Alliance Agreement and the Singapore Loan, both of which have since been terminated.

### Other income and expense

| (in thousands)                    | Three Months Ended March 31, |           | 2023 to 2024 |          |
|-----------------------------------|------------------------------|-----------|--------------|----------|
|                                   | 2024                         | 2023      | \$ change    | % change |
| Gain (loss) from foreign currency | (53)                         | (328)     | 275          | -83.8%   |
| Gain on debt extinguishment       | —                            | 33,953    | (33,953)     | *        |
| Total                             | \$ (53)                      | \$ 33,625 | \$ (33,678)  | *        |

\* Greater than 100%

Other income and expense items primarily relate to gains and losses from foreign currency transactions. Additionally, we recorded a gain on debt extinguishment related to the Singapore Loan of \$34.0 million during the first quarter of 2023 as a result of the Singapore Loan being forgiven.

### Off-balance sheet arrangements

Through March 31, 2024, we have not entered into and did not have any relationships with unconsolidated entities or financial collaborations, such as entities often referred to as structured finance or special purpose entities, established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes.

### Liquidity and Capital Resources

From the Company's inception through the quarter ended March 31, 2024, the Company has funded its operations principally with the proceeds from the sale of capital stock, long-term debt and revenues earned through collaboration agreements and government contracts. Through the first quarter of 2024, we have achieved a total of approximately \$420.1 million in upfront payments and milestones from CSL Seqirus, including a milestone of \$19.2 million achieved in the current quarter with payment anticipated in the second quarter of 2024. At March 31, 2024, we had \$345.3 million in cash and cash equivalents and restricted cash.

### *CSL Seqirus, Inc. Collaboration and License Agreement*

We entered into the CSL Collaboration Agreement with CSL Seqirus, a part of CSL Limited, one of the world's leading influenza vaccine providers, for the global exclusive rights to research, develop, manufacture and commercialize mRNA vaccines.

CSL Seqirus received exclusive global rights to our technology for vaccines against SARS-CoV-2 (COVID-19), influenza and three other respiratory infectious diseases and non-exclusive rights to pandemic pathogens. We received an up-front payment of \$200.0 million during the fourth quarter of 2022. We will be eligible to receive development milestones totaling more than \$1.3 billion if all products are registered in the licensed fields. We will also be entitled to receive up to \$3.0 billion in commercial milestones based on "net sales" of vaccines in the various fields.

In addition, we are entitled to receive a 40% share of net profits from COVID-19 vaccine sales and up to low double-digit royalties of annual net sales for vaccines against influenza and the other three specified infectious disease pathogens, as well as royalties on revenues from vaccines that may be developed for pandemic preparedness.

The CSL Collaboration Agreement sets forth how CSL Seqirus and we shall collaborate to research and develop vaccine candidates. In the COVID-19 field, we will lead activities for certain regulatory filings for ARCT-154 in the US and Europe and for research and development activities of a next-generation COVID vaccine candidate. CSL Seqirus will lead and be responsible for all other research and development in COVID-19, influenza and the other fields.

### *Wells Fargo Credit Agreement*

On April 21, 2023, the Company's wholly-owned subsidiary, Arcturus Therapeutics, Inc. entered into a credit agreement with Wells Fargo Bank, National Association ("Wells Fargo") whereby Wells Fargo agreed to make a \$50.0 million revolving credit line available to the Company (the "Wells Fargo Loan") and each Wells Fargo Loan evidenced by a revolving line of credit note (the "Note").

Borrowings under the agreement will bear interest at a rate of 1.00% above either the Daily Simple SOFR or Term SOFR (as such terms are defined in the Wells Fargo Note), with "SOFR" being the rate per annum equal to the secured overnight financing rate as administered by the Federal Reserve Bank of New York. If an Event of Default (as defined in the credit agreement) occurs, then all Wells Fargo Loans shall bear interest at a rate equal to 2.00% above the interest rate applicable immediately prior to the occurrence of the Event of Default. As of March 31, 2024, no borrowings were made against the Wells Fargo Note.

The term of the agreement is two years, with an option for one-year renewals subject to Wells Fargo approval and the Company furnishing to Wells Fargo a non-refundable commitment fee equal to 0.25% of the Wells Fargo Loan amount for each such renewal. There is no penalty for terminating the agreement. There is no penalty for terminating the facility prior to the maturity date of the Wells Fargo Note. As collateral, the Company has agreed to pledge \$55.0 million in cash to be held at the Company's securities accounts with Wells Fargo Securities, LLC, an affiliate of Wells Fargo, pursuant to a security agreement.

### *Grant from the Biomedical Advanced Research and Development Authority*

On August 31, 2022, we entered into a cost reimbursement contract (the "BARDA Contract") with the Biomedical Advanced Research and Development Authority ("BARDA"), a division of the Office of the Assistant Secretary for Preparedness and Response (ASPR) within the U.S. Department of Health and Human Services (HHS) to support the development of a low-dose pandemic influenza candidate based on our proprietary self-amplifying messenger RNA-based vaccine platform. The BARDA Contract is to support our non-clinical and pre-clinical development, early-stage clinical development through Phase 1, and associated drug product manufacturing, regulatory and quality-assurance activities over a period of three years. It provides for reimbursement by BARDA of our permitted costs up to \$63.2 million.

### *Vinbiocare Agreement*

During 2021, we entered into a technology license and technical support agreement and the framework drug substance supply agreement with Vinbiocare, a member of Vingroup Joint Stock Company (collectively, the "Vinbiocare License & Supply Agreements"), whereby we would provide technical expertise and support services to Vinbiocare to assist in the build out of an mRNA drug product manufacturing facility in Vietnam. We received an upfront payment in aggregate of \$40.0 million as part of the Vinbiocare License and Supply Agreements. In October 2022, in association with the termination of the Vinbiocare License and Supply Agreements, we signed the Vinbiocare Support Agreement with Vinbiocare which continues Vinbiocare's clinical obligations and reserved a portion of the original \$40.0 million upfront payment received from the License and Supply Agreements to be paid over the future periods.

The Vinbiocare Support Agreement requires us to pay to Vinbiocare certain limited payments, including upon the occurrence of specified events through the first quarter of 2025. Vinbiocare is also eligible to receive a single digit percentage of amounts received by Arcturus on net sales, if any, of ARCT-154 (or next-generation COVID vaccine) up to a capped amount.

### *General Financial Resources*

A portion of our current cash balance is expected to be utilized during fiscal year 2024 to fund (i) the continued Phase 2 trial of ARCT-810, our LUNAR-OTC candidate, (ii) advances to our LUNAR-CF program in clinical trials, (iii) expenses incurred prior to customer payments under the CSL Collaboration Agreement and BARDA agreement and (iv) continued exploratory activities related to our platform and other general administrative activities.

Our future capital requirements are difficult to forecast and will depend on many factors that are out of our control. If we are unable to maintain sufficient financial resources, our business, financial condition and results of operations will be materially and adversely affected. There can be no assurance that we will be able to obtain additional needed financing on acceptable terms or at all. Additionally, equity or debt financings may have a dilutive effect on the holdings of our existing shareholders.

We expect to continue to incur additional losses in the long term, and we will need to execute on milestones within the CSL Collaboration Agreement, raise additional debt or equity financing or enter into additional partnerships to fund development. Our ability to transition to profitability is dependent on executing on milestones within the CSL Collaboration Agreement and identifying and developing successful mRNA drug and vaccine candidates. If we are not able to achieve planned milestones or incur costs in excess of our forecasts, we will need to reduce discretionary spending, discontinue the development of some or all of our programs, which will delay part of our development programs, all of which will have a material adverse effect on our ability to achieve our intended business objectives.

### ***Funding Requirements***

We anticipate that we will continue to generate losses for the foreseeable future, and we expect the losses to increase as we continue the development of, and seek regulatory approvals for, our product candidates, and begin commercialization of our products. As a result, we will require additional capital to fund our operations in order to support our long-term plans. We believe that our current cash position will be sufficient to meet our anticipated cash requirements through at least the next twelve months, assuming, among other things, no significant unforeseen expenses and continued funding from partners at anticipated levels. We intend to seek additional capital through equity and/or debt financings, collaborative or other funding arrangements with partners or through other sources of financing. Should we seek additional financing from outside sources, we may not be able to raise such financing on terms acceptable to us or at all. If we are unable to raise additional capital when required or on acceptable terms, we may be required to scale back or discontinue the advancement of product candidates, reduce headcount, liquidate our assets, file for bankruptcy, reorganize, merge with another entity, or cease operations.

Our future funding requirements are difficult to forecast and will depend on many factors, including the following:

- the development of our LUNAR-COV19 and LUNAR-FLU vaccine candidates;
- the achievement of milestones under our strategic alliance agreements;
- maintaining and/or expanding our manufacturing network and capabilities;
- the terms and timing of any other strategic alliance, licensing and other arrangements that we may establish, including those with CSL Seqirus and CSL Seqirus' arrangement with Meiji, and any related payments thereunder;
- the initiation, progress, timing and completion of preclinical studies and clinical trials for our product candidates;
- the number and characteristics of product candidates that we pursue;
- the outcome, timing and cost of regulatory approvals;
- delays that may be caused by changing regulatory requirements;
- the cost and timing of hiring new employees to support our continued growth;
- the costs involved in filing and prosecuting patent applications and enforcing and defending patent claims;
- the costs and timing of procuring clinical and commercial supplies of our product candidates;
- the costs and timing of establishing sales, marketing and distribution capabilities;
- the costs associated with legal proceedings;
- the costs associated with potential litigation related to collaboration agreements; and
- the extent to which we acquire or invest in businesses, products or technologies.

### **Critical Accounting Policies and Estimates**

We prepare our condensed consolidated financial statements in conformity with GAAP. As such, we make certain estimates, judgments and assumptions that we believe are reasonable, based upon information available to us. These judgments involve making estimates about the effect of matters that are inherently uncertain and may significantly impact our reported results of operations and financial condition. We describe our significant accounting policies more fully in Note 2 to our consolidated financial statements for the year ended December 31, 2023.

There have been no material changes to our critical accounting policies and estimates from the information provided in Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations, included in the 2023 Annual Report.

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

Our primary exposure to market risk is interest income sensitivity, which is affected by changes in the general level of interest rates in the United States. Due to the nature of our cash and cash equivalents, we believe that we are not subject to any material market risk exposure. We do not have any foreign currency or other derivative financial instruments.

### **Item 4. Controls and Procedures.**

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

As required by Rule 13a-15(b) and Rule 15d-15(b) of the Exchange Act, our management, including our principal executive officer, our principal financial officer and our principal accounting officer, conducted an evaluation as of the end of the period covered by this Quarterly Report on Form 10-Q of the effectiveness of the design and operation of our disclosure controls and procedures. Based on that evaluation, management has concluded that as of March 31, 2024, our disclosure controls and procedures were not effective due to the material weaknesses in internal control over financial reporting described below.

The Company's disclosure controls and procedures have been designed to ensure that: (i) information required to be disclosed by us in reports that we file or submit to the SEC under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in applicable rules and forms and (ii) material information required to be disclosed in our reports filed under the Exchange Act is accumulated and communicated to management, including the CEO and the CFO, as appropriate, to allow for accurate and timely decisions regarding required disclosure.

Management does not expect that our disclosure controls and procedures will prevent all error and all fraud. The effectiveness of our or any system of disclosure controls and procedures, however well designed and operated, can provide only reasonable assurance that the objectives of the system will be met and is subject to certain limitations, including the exercise of judgment in designing, implementing, and evaluating controls and procedures and the assumptions used in identifying the likelihood of future events.

#### ***Material Weaknesses in Internal Control over Financing Reporting Existing as of March 31, 2024***

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim consolidated financial statements will not be prevented or detected on a timely basis.

Management concluded that the material weaknesses disclosed in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2024 continued to exist as of March 31, 2024. Specifically, management concluded that the following material weaknesses exist as of March 31, 2024:

- A material weakness related to information technology general controls ("ITGCs") that support our financial reporting processes; Management determined that we did not maintain effective controls over (i) user access to ensure appropriate segregation of duties and adequately restrict user and privileged access to financial applications, programs and data to the appropriate personnel; (ii) program change management for financial applications to ensure that information technology ("IT") program and data changes affecting financial IT applications and underlying accounting records are identified, tested, authorized and implemented appropriately; and (iii) IT operations controls to ensure that critical interface jobs are monitored. As a result, our related IT dependent manual and application controls that rely upon the affected ITGCs, or information coming from IT systems with affected ITGCs, were also deemed ineffective.
- A material weakness related to revenue recognition. Management determined that certain control activities within the area of revenue did not operate effectively, specifically controls over the review of costs incurred in satisfaction of our performance obligations under collaboration arrangements.

Notwithstanding the identified material weaknesses, management does not believe that the deficiencies had an adverse effect on our reported operating results or financial condition, and management has determined that the financial statements and other information included in this report and other periodic filings present fairly in all material respects our financial condition and results of operations at and for the periods presented.

#### ***Plan for Remediation of Material Weaknesses***

Our remediation efforts are ongoing, and we will continue our initiatives to implement measures designed to ensure that control deficiencies contributing to the material weaknesses are remediated, such that these controls are designed, implemented, and operating effectively. We are committed to making the necessary changes and improvements to our system of controls to address the material weaknesses in internal control over financial reporting described above.

Our renewed emphasis of designing and implementing improved processes and controls involves but is not limited to the following:

- Expand available resources with experience designing and implementing control activities, including ITGCs and automated controls, both by hiring internally and the use of third-party consultations and specialists.
- Adjust access profiles in IT systems and relevant software, and adjust access review controls accordingly.
- Refine the control to identify access profiles in IT systems and software that result in risks of segregation of duties.
- Perform ongoing training with control performers to improve documentation that supports effective control activities, including evidence over the completeness and accuracy of information produced by the Company.
- Add additional technical accounting resource to review our revenue accounting along with financial disclosures for collaboration arrangements on a quarterly basis.

We are in the process of implementing the remediation activities as of the date of this report and believe that upon completion, we will have strengthened our ITGCs, and controls related to accounting for collaboration arrangements to address and successfully remediate the identified material weaknesses. However, control weaknesses are not considered remediated until new internal controls have been operational for a period of time, are tested, and management concludes that these controls are operating effectively. We expect to complete the remediation activities as early as practicable in the fiscal year 2024. We will continue to monitor the effectiveness of these remediation measures, and we will make any changes to the design of this plan and take such other actions that we deem appropriate given the circumstances.

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

As required by Rule 13a-15(d) and Rule 15d-15(d) of the Exchange Act, our management, including our principal executive officer and our principal financial and accounting officer, conducted an evaluation of the internal control over financial reporting to determine whether any other changes occurred during the period covered by this Quarterly Report on Form 10-Q that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. Based on that evaluation, our principal executive officer and our principal financial and accounting officer concluded that there were no changes in our internal controls over financial reporting during the periods covered by this Quarterly Report on Form 10-Q that materially affected, or were reasonably likely to materially affect, our internal control over financial reporting.

## PART II—OTHER INFORMATION

### Item 1. Legal Proceedings.

From time to time, we may be involved in various legal proceedings and subject to claims that arise in the ordinary course of business, including those related to governmental inquiries, intellectual property and commercial relationships. The subject matter of any such legal proceedings or claims are or will be highly complex and subject to substantial uncertainties. The outcome of any such proceedings or claims, regardless of the merits, are and will be inherently uncertain; therefore, assessing the likelihood of loss and any estimated damages is difficult and subject to considerable judgment.

### Item 1A. Risk Factors.

Our business is subject to various risks, including those described in Item 1A of our Annual Report on Form 10-K for the fiscal year ended December 31, 2023, which we strongly encourage you to review. There have been no material changes from the risk factors described in our Annual Report on Form 10-K for the year ended December 31, 2023 filed with the Commission on March 14, 2024.

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

None.

### Item 3. Defaults Upon Senior Securities.

None.

### Item 4. Mine Safety Disclosures.

Not applicable.

### Item 5. Other Information.

#### *Rule 10b5-1 Trading Arrangements*

During the three months ended March 31, 2024, none of our directors or officers adopted or terminated a "Rule 10b5-1 trading arrangement" (as defined in Item 408 of Regulation S-K of the Exchange Act) intended to satisfy the affirmative defense conditions of Rule 10b5-1(c) under the Exchange Act, other than as follows:

- Keith C. Kummerfeld's Rule 10b5-1 trading arrangement terminated on March 18, 2024 upon the effective date of his resignation.



**Item 6. Exhibits.****Exhibit Index**

| Exhibit Number | Description  |
|----------------|--|
| 1.1            | <a href="#"><u>Controlled Equity Offering<sup>SM</sup> Sales Agreement, dated as of December 23, 2022 by and between Cantor Fitzgerald &amp; Co, Wells Fargo Securities, LLC and Arcturus Therapeutics Holdings Inc. Incorporated by reference to Exhibit 1.2 to Registration Statement on Form S-3 filed on December 23, 2022 (File No. 333269003).</u></a> |
| 1.2            | <a href="#"><u>Amendment No. 1 to Controlled Equity Offering<sup>SM</sup> Sales Agreement by and between Cantor Fitzgerald &amp; Co, Wells Fargo Securities, LLC, William Blair &amp; Company, L.L.C., and Arcturus Therapeutics Holdings Inc. Incorporated by reference to Exhibit 1.1 to Form 8-K filed on August 7, 2023.</u></a>                         |
| 3.1            | <a href="#"><u>Certificate of Incorporation. Incorporated by reference to Annex B to the proxy statement/prospectus which forms part of the Registration Statement on Form S-4 filed on March 18, 2019 (File No. 333-230353).</u></a>  |
| 3.2            | <a href="#"><u>Certificate of Amendment, dated November 25, 2020. Incorporated by reference to Exhibit 3.1 to Form 8-K filed on November 25, 2020 (File No. 001-38942).</u></a>  |
| 3.3            | <a href="#"><u>Bylaws of Arcturus Therapeutics Holdings Inc. Incorporated by reference to Exhibit 3.2 to the Company's Registration Statement on Form S-3, filed with the SEC on May 8, 2020 (File No. 333-238139).</u></a>  |
| 4.1            | <a href="#"><u>Description of Registrant's Securities. Incorporated by reference to Exhibit 4.1 to the Company's Annual Report on Form 10-K for the year ended December 31, 2021 filed on February 28, 2022 (File No. 001-38942).</u></a>  |
| 10.1†          | <a href="#"><u>Form of Indemnification Agreement. Incorporated by reference to Exhibit 10.1 to the Company's Annual Report on Form 10-K for the year ended December 31, 2019 filed on March 16, 2020 (File No. 001-38942).</u></a>   |
| 10.2†          | <a href="#"><u>Amended and Restated 2019 Omnibus Equity Incentive Plan. Incorporated by reference Exhibit 4.3 to the Registration Statement on Form S-8 filed on August 5, 2020 (File No. 333-240397).</u></a>   |
| 10.3**         | <a href="#"><u>Amended and Restated Amendment to Development and Option Agreement, dated as of September 28, 2018, by and between CureVac AG and Arcturus Therapeutics Inc. Incorporated by reference to Exhibit 99.2 to the Company's Report of Foreign Private Issuer on Form 6-K filed on October 1, 2018 (File No. 001-35932).</u></a>                   |
| 10.4**         | <a href="#"><u>Research and Exclusive License Agreement, by and between Arcturus Therapeutics, Inc. and Synthetic Genomics, Inc., effective October 24, 2017. Incorporated by reference to Exhibit 4.8 to Form 20-F filed on May 14, 2018 (File No. 001-35932).</u></a>  |
| 10.5**         | <a href="#"><u>Research Collaboration and License Agreement, by and between Arcturus Therapeutics, Inc. and Ultragenyx Pharmaceutical Inc., entered into as of October 26, 2015, as amended October 17, 2017 and April 20, 2018. Incorporated by reference to Exhibit 4.10 to Form 20-F filed on May 14, 2018 (File No. 001-35932).</u></a>                  |
| 10.6**         | <a href="#"><u>Third Amendment to Research Collaboration and License Agreement, by and between Arcturus Therapeutics, Inc. and Ultragenyx Pharmaceutical Inc., effective June 18, 2019. Incorporated by reference to Exhibit 10.2 to Form 8-K filed on June 20, 2019 (File No. 001-38942).</u></a>   |
| 10.7**         | <a href="#"><u>Letter Agreement, by and between Arcturus Therapeutics, Inc. and the Cystic Fibrosis Foundation, dated May 16, 2017. Incorporated by reference to Exhibit 4.11 to Form 20-F filed on May 14, 2018 (File No. 001-35932).</u></a>   |
| 10.8**         | <a href="#"><u>Amendment No. 2 to Letter Agreement, by and between Arcturus Therapeutics, Inc. and the Cystic Fibrosis Foundation, dated August 1, 2019. Incorporated by reference to Exhibit 10.16 to Form 10-Q filed on August 14, 2019.</u></a>   |
| 10.9**         | <a href="#"><u>Development and Option Agreement, by and between Arcturus Therapeutics, Inc. and CureVac AG, dated January 1, 2018, as amended May 3, 2018. Incorporated by reference to Exhibit 4.12 to Form 20-F filed on May 14, 2018 (File No. 001-35932).</u></a>  |
| 10.10**        | <a href="#"><u>Third Amendment to Development and Option Agreement, by and between Arcturus Therapeutics, Inc. and CureVac AG, dated July 26, 2019. Incorporated by reference to Exhibit 10.20 to Form 10-Q filed on August 14, 2019 (File No. 001-38942).</u></a>   |
| 10.11**        | <a href="#"><u>License Agreement, by and between Arcturus Therapeutics, Inc., as successor-in-interest to Marina Biotech, Inc., and Protiva Biotherapeutics Inc., dated as of November 28, 2012. Incorporated by reference to Exhibit 4.14 to Form 20-F/A filed on July 10, 2018 (File No. 001-35932).</u></a>   |

- 10.12\*\* [Patent Assignment and License Agreement, by and between Arcturus Therapeutics, Inc. and Marina Biotech, Inc., dated as of August 9, 2013. Incorporated by reference to Exhibit 4.15 to Form 20-F filed on May 14, 2018 \(File No. 001-35932\).](#)
- 10.13 [Share Exchange Agreement, dated as of February 11, 2019, by and between Arcturus Therapeutics Ltd. and Arcturus Therapeutics Holdings Inc. Incorporated by reference to Exhibit 10.13 to the Company's Annual Report on Form 10-K for the year ended December 31, 2018 filed on March 18, 2019 \(File No. 001-35932\).](#)
- 10.14 [Lease Agreement, by and between Arcturus Therapeutics, Inc. and ARE-SD Region No. 44, LLC, dated October 4, 2017. Incorporated by reference to Exhibit 4.6 to Form 20-F filed on May 14, 2018 \(File No. 001-35932\).](#)
- 10.15 [First Amendment to Lease Agreement, by and between Arcturus Therapeutics Holdings Inc. and ARE-SD Region No. 44, LLC dated February 1, 2020. Incorporated by reference to Exhibit 10.23 to the Company's Annual Report on Form 10-K for the year ended December 31, 2019 filed on March 16, 2020 \(File No. 001-38942\).](#)
- 10.16\*\* [Acceptance Letter, dated March 4, 2020, by and between Arcturus Therapeutics Holdings Inc. and the Economic Development Board of Singapore. Incorporated by reference to Exhibit 10.24 to the Company's Annual Report on Form 10-K for the year ended December 31, 2019 filed on March 16, 2020 \(File No. 001-38942\).](#)
- 10.17† [2020 Employee Stock Purchase Plan. Incorporated by reference to Exhibit 4.3 to Form S-8 filed on August 5, 2020 \(File No. 333-240392\).](#)
- 10.18 [Second Amendment to Lease, by and between Arcturus Therapeutics, Inc. and ARE-SD Region No. 44, LLC, dated November 13, 2020. Incorporated by reference to Exhibit 10.29 to the Company's Annual Report on Form 10-K for the year ended December 31, 2020 filed on March 1, 2020 \(File No. 001-38942\).](#)
- 10.19 [Third Amendment to Lease, by and between Arcturus Therapeutics, Inc. and ARE-SD Region No. 44, LLC, dated February 25, 2021. Incorporated by reference to Exhibit 10.30 to the Company's Annual Report on Form 10-K for the year ended December 31, 2020 filed on March 1, 2020 \(File No. 001-38942\).](#)
- 10.20 [Arcturus Therapeutics Holdings Inc. Severance Policy for Executives. Incorporated by reference to Exhibit 10.1 to Current Report on Form 8-K filed on April 26, 2021 \(File No. 001-38942\).](#)
- 10.21 [Lease, by and between Arcturus Therapeutics, Inc. and TPSC IX, LLC, dated September 29, 2021. Incorporated by reference to Exhibit 10.35 to Form 10-Q filed on November 9, 2021 \(File No. 001-38942\).](#)
- 10.22† [Arcturus Therapeutics Holdings Inc. 2021 Inducement Equity Incentive Plan. Incorporated by reference to Exhibit 4.1 to the Registration Statement on Form S-8 filed on October 20, 2021 \(File No. 333-260391\).](#)
- 10.23† [Amended and Restated 2019 Omnibus Equity Incentive Plan, as amended. Incorporated by reference to Exhibit 4.3 to the Registration Statement on Form S-8 filed on June 30, 2022.](#)
- 10.24\*\* [Cost Reimbursement Contract dated August 31, 2022, by and between Arcturus Therapeutics Holdings Inc. and Biomedical Advanced Research and Development Authority of the U.S. Department of Health and Human Services. Incorporated by reference to Exhibit 10.36 to Quarterly Report on Form 10-Q filed on November 9, 2022 \(File No. 001-38942\).](#)
- 10.25\*\* [Study Support Agreement, dated October 31, 2022, by and between Arcturus Therapeutics, Inc. and Vinbiocare Research and Manufacture Joint Stock Company. Incorporated by reference to Exhibit 10.1 to Current Report on Form 8-K filed on November 4, 2022 \(File No. 001-38942\).](#)
- 10.26\*\* [Collaboration and License Agreement, dated November 1, 2022, by and between Arcturus Therapeutics Holdings Inc. and CSL Limited. Incorporated by reference to Exhibit 10.38 to Quarterly Report on Form 10-Q filed on November 9, 2022 \(File No. 001-38942\).](#)
- 10.27\*\* [Manufacturing Support Agreement Termination Letter, dated March 23, 2023, by and between Arcturus Therapeutics, Inc. and the Economic Development of Singapore. Incorporated by reference to Exhibit 10.41 to Annual Report on Form 10-K filed on March 29, 2023 \(File No. 001-38942\).](#)
- 10.28\*\* [Credit Agreement dated April 21, 2023, by and between Arcturus Therapeutics, Inc. and Wells Fargo Bank, National Association. Incorporated by reference to Exhibit 10.28 to Quarterly Report on Form 10-Q filed on May 9, 2023 \(File No. 001-38942\).](#)

- 10.29\*\* [Security Agreement dated April 21, 2023, by and between Arcturus Therapeutics, Inc. and Wells Fargo Bank, National Association. Incorporated by reference to Exhibit 10.29 to Quarterly Report on Form 10-Q filed on May 9, 2023 \(File No. 001-38942\).](#)
- 10.30\*\* [Revolving Line of Credit Note dated April 21, 2023, by and between Arcturus Therapeutics, Inc. and Wells Fargo Bank, National Association. Incorporated by reference to Exhibit 10.30 to Quarterly Report on Form 10-Q filed on May 9, 2023 \(File No. 001-38942\).](#)
- 10.31\*\* [Amendment Number One to Collaboration and License Agreement, dated August 3, 2023, by and between Arcturus Therapeutics, Inc. and Seqirus Inc. Incorporated by reference to Exhibit 10.31 to Quarterly Report on Form 10-Q filed on November 14, 2023 \(File No. 001-38942\).](#)
- 10.32\*\* [Amendment No. 4 to Letter Agreement, dated September 25, 2023, by and between Arcturus Therapeutics, Inc. and the Cystic Fibrosis Foundation. Incorporated by reference to Exhibit 10.32 to Quarterly Report on Form 10-Q filed on November 14, 2023 \(File No. 001-38942\).](#)
- 10.33\*\* \* [Amendment Number Two to Collaboration and License Agreement, dated March 29, 2024, by and between Arcturus Therapeutics, Inc. and Seqirus Inc.](#)
- 31.1\* [Certification of Principal Executive Officer Pursuant to Rule 13a-14\(a\) or 15d-14\(a\) under the Securities Exchange Act of 1934, as amended.](#)
- 31.2\* [Certification by Principal Financial Officer pursuant to Rule 13a-14\(a\) or 15d-14\(a\) under the Securities Exchange Act of 1934, as amended.](#)
- 32.1\* [Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.](#)
- 32.2\* [Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.](#)
- 101\* The following financial statements and footnotes from the Registrant’s Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2024 formatted in Inline Extensible Business Reporting Language (Inline XBRL):  
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  
101.SCH Inline XBRL Taxonomy Extension Schema  
101.CAL Inline XBRL Taxonomy Extension Calculation Linkbase  
101.DEF Inline XBRL Taxonomy Extension Definition Linkbase  
101.LAB Inline XBRL Taxonomy Extension Label Linkbase  
101.PRE Inline XBRL Taxonomy Extension Presentation Linkbase
- 104 Cover Page Interactive Data File (embedded within the Inline XBRL document)

\* Filed herewith.

\*\* Certain confidential portions of this exhibit have been redacted from the publicly filed document because such portions are (i) not material and (ii) would be competitively harmful if publicly disclosed.

† Management compensatory plan, contract or arrangement.

**SIGNATURE**

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

**ARCTURUS THERAPEUTICS HOLDINGS INC.**

Date: May 8, 2024

By: /s/ Andy Sassine

Andy Sassine

Chief Financial Officer

*Principal Financial and Accounting Officer*

**REDACTED**

Certain identified information, indicated by [\*\*\*], has been excluded from the exhibit because it is both (i) not material and (ii) would likely cause competitive harm if publicly disclosed.

**AMENDMENT NUMBER TWO  
TO COLLABORATION AND LICENSE AGREEMENT**

This Amendment Number Two to Collaboration and License Agreement (this “**Amendment Number Two**”) is made and entered into on March 29, 2024 (the “**Amendment Number Two Effective Date**”) by and between Arcturus Therapeutics, Inc., a Delaware corporation (“**Arcturus**”), and Seqirus Inc., a Delaware corporation (“**Seqirus**”), and further amends the Collaboration and License Agreement executed on November 1, 2022 with an effective date of December 8, 2022, as amended by Amendment No. 1 on August 10, 2023 (the “**Collaboration Agreement**”). Arcturus and Seqirus are sometimes referred to herein individually as a “**Party**” and together as the “**Parties**.” Capitalized terms used in this Amendment Number Two that are not defined herein shall have the meanings ascribed to such terms in the Collaboration Agreement.

**RECITALS**

**WHEREAS**, Arcturus and Seqirus are parties to the Collaboration Agreement;

**WHEREAS**, Arcturus and Seqirus have entered into that certain letter agreement dated as of December 22, 2023 (the “**Bridging Letter**”); and

**WHEREAS**, the Parties desire to, among other things, modify and update the [\*\*\*] Development Plan and to amend the Collaboration Agreement on the terms and conditions set forth herein;

**NOW, THEREFORE**, in consideration of the premises and the mutual promises and conditions hereinafter set forth, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties, intending to be legally bound, do hereby agree as follows:

**1. Amended [\*\*\*] Development Plan.** Attached hereto as Schedule 1 to this Amendment Number Two is the amended [\*\*\*] Development Plan. The amended [\*\*\*] Development Plan was approved by the JDC on March 21, 2024, subject to execution of this Amendment Number Two.

**2. Next Gen Product.**

**2.1 Replacing [\*\*\*] of [\*\*\*].** The [\*\*\*] in the Collaboration Agreement is hereby replaced throughout the Collaboration Agreement with [\*\*\*] and the [\*\*\*] in the Collaboration Agreement is hereby [\*\*\*] and [\*\*\*] in [\*\*\*] with [\*\*\*]:

[\*\*\*] means (i) [\*\*\*], (ii) [\*\*\*], (iii) [\*\*\*], or (iv) [\*\*\*]. If the Parties determine to replace or transition the Research and Development of any of such [\*\*\*] with [\*\*\*], then, upon mutual written agreement of the Parties, the [\*\*\*] shall be deemed to include [\*\*\*] or [\*\*\*].”

2.2 **Arcturus** [\*\*\*]. The [\*\*\*] is hereby [\*\*\*] and [\*\*\*] in [\*\*\*] with [\*\*\*]:

[\*\*\*] means [\*\*\*] and [\*\*\*] by [\*\*\*] in connection with [\*\*\*] described in [\*\*\*].

2.3 **Replacing Section 3.2.3.** Section 3.2.3 of the Collaboration Agreement is hereby replaced in its entirety with the following:

“3.2.3 [\*\*\*] **Field Development Obligations of Arcturus.** Arcturus shall, in consideration of the payment commitments given under this Agreement and on the terms and conditions of this Agreement, and as provided in [\*\*\*], undertake the [\*\*\*] work that may be deemed necessary to support the [\*\*\*] in order to obtain Regulatory Approvals for [\*\*\*] in [\*\*\*] in [\*\*\*], [\*\*\*] and [\*\*\*] as a [\*\*\*] and [\*\*\*] work to support [\*\*\*] in order to obtain Regulatory Approvals for [\*\*\*] in [\*\*\*], [\*\*\*] and [\*\*\*] as [\*\*\*] in [\*\*\*]. Such activities include undertaking the [\*\*\*], along with the Development of [\*\*\*], Development of [\*\*\*], Development of [\*\*\*], undertaking [\*\*\*] to [\*\*\*] and the obtaining of Regulatory Approvals for [\*\*\*] in [\*\*\*], [\*\*\*] and [\*\*\*], as a [\*\*\*], all as and to the extent set forth in the [\*\*\*] Development Plan as [\*\*\*] activity or responsibility. [\*\*\*] will support [\*\*\*] on filings in other countries as agreed in good faith by and between the Parties. In the event that the Parties determine to have [\*\*\*] undertake a [\*\*\*], or any other activities not reflected in the [\*\*\*] Development Plan, then the Parties will amend the [\*\*\*] Development Plan in accordance with Section 3.2.2 (Updates; Amendments). For avoidance of doubt, (i) if the Parties determine to have [\*\*\*] undertake a [\*\*\*], then the costs thereof shall be treated in a manner similar to that of the [\*\*\*] work in accordance with Section 3.6.2(i), and (ii) except to the extent otherwise expressly agreed in writing by the Parties, [\*\*\*] shall be responsible for undertaking any [\*\*\*] and [\*\*\*] activities following the receipt of the [\*\*\*] in [\*\*\*], [\*\*\*] and [\*\*\*], and [\*\*\*] shall have no obligation to undertake any [\*\*\*].”

2.4 **Replacing Section 3.6.2.** Section 3.6.2 of the Collaboration Agreement is hereby replaced in its entirety with:

“3.6.2 **Responsibility for Funding Costs Relating to Research and Development Activities in the [\*\*\*] Field.** This Section 3.6.2 only applies to the [\*\*\*] Field.

(i) [\*\*\*] **Development.** Subject to the terms of this Agreement (including payment of milestone payments under Section 6.3 (Development Milestones)), [\*\*\*] shall be responsible for [\*\*\*] of the [\*\*\*] in the [\*\*\*] Field as set forth in the [\*\*\*] Development Plan and Section 3.2.3 ([\*\*\*] Development Obligations of Arcturus); provided, however, that [\*\*\*] shall be responsible for funding [\*\*\*] of such activities that are [\*\*\*] in support of [\*\*\*] and [\*\*\*] other than [\*\*\*] and [\*\*\*], to the extent not theretofore covered by the Development Milestone Payments.

(ii) [\*\*\*] **Development.**

a) Subject to the terms of this Agreement (including payment of milestone payments under Section 6.3.1(ii) through 6.3.1(ix) and the determination of

[\*\*\*] in accordance with Section 6.5), [\*\*\*] shall be responsible for [\*\*\*] of the [\*\*\*] of the [\*\*\*] in the [\*\*\*] Field allocated to be conducted by [\*\*\*] in the [\*\*\*] Development Plan as of the Effective Date (along with any additional activities related to the [\*\*\*] for which the Parties agree in an amended [\*\*\*] Development shall be funded by [\*\*\*]).

b) For avoidance of doubt, [\*\*\*] shall be responsible for funding [\*\*\*] of the [\*\*\*] in the [\*\*\*] Field as set forth in the [\*\*\*] Development Plan.

c) [\*\*\*] of such [\*\*\*] Development Costs and [\*\*\*] Development Costs described in clauses (a) and (b) of this Section 3.6.2(ii) shall be applied by [\*\*\*] to the calculation of [\*\*\*].

(iii) **Additional Development.** Except as set forth in clauses (i) and (ii) above, [\*\*\*] shall be responsible for funding [\*\*\*] of any additional [\*\*\*] in the [\*\*\*] Field. For avoidance of doubt, [\*\*\*] of such [\*\*\*] Development Costs shall be applied by [\*\*\*] to the calculation of [\*\*\*]. Any such additional [\*\*\*] by [\*\*\*] will be paid by [\*\*\*] in the manner set forth in Section 3.6.1(ii) and 3.6.1(iii).”

2.5 [\*\*\*] **Fees.** The Parties acknowledge and agree that all costs and fees paid or payable by [\*\*\*] to [\*\*\*] pursuant to any agreement between [\*\*\*] and [\*\*\*] shall be the sole responsibility of [\*\*\*].

3. [\*\*\*] **Responsibilities Transition.** The Parties have agreed to a transition of commercial manufacturing responsibilities from [\*\*\*] to [\*\*\*] and shall [\*\*\*] to complete such transition of drug product manufacturing by [\*\*\*] and of [\*\*\*] by [\*\*\*] as further detailed in a manufacturing transition plan to be entered into by the Parties within [\*\*\*] after the Amendment Number Two Effective Date. For the avoidance of doubt, (i) costs will be borne by the Parties consistent with Section 4.10 (Manufacturing Technology Transfer Upon [\*\*\*]Request) unless otherwise expressly agreed in writing by the Parties, and (ii) the Parties agree that [\*\*\*] shall continue to [\*\*\*] to [\*\*\*], at [\*\*\*] by the Parties in writing, certain proprietary raw materials for use in commercial manufacturing undertaken by [\*\*\*], including [\*\*\*] until [\*\*\*], unless otherwise agreed between the Parties. Following the transition of [\*\*\*] and upon request of [\*\*\*], [\*\*\*] shall cooperate in good faith to provide technical support for management of technical investigations, with costs to be borne by the Parties consistent with Section 4.10.

3.1 **Commercial Supply in the [\*\*\*] Field.** Section 4.9 of the Collaboration Agreement is hereby amended and replaced in its entirety with the following:

“4.9 **Commercial Supply in the [\*\*\*] Field.**

4.9.1 Not later than [\*\*\*] days after [\*\*\*], [\*\*\*] and [\*\*\*] shall enter into a supply agreement pursuant to which, subject to Section 4.10 (Manufacturing Technology Transfer Upon [\*\*\*] Request), [\*\*\*] shall supply to [\*\*\*] the [\*\*\*] and [\*\*\*] in the [\*\*\*] Field (the “**Supply Agreement**”) in such quantities as [\*\*\*] may order in accordance with the terms and conditions of such agreement. The Supply Agreement shall contain the terms set forth in Schedule 4.9 (Commercial Supply in the [\*\*\*] Field) and such additional terms as are reasonable and customary for similar supply agreements that shall be negotiated and agreed by the Parties in good

faith. In the event that the Parties are not able to agree on such additional terms to be included in the Supply Agreement by the date that is [\*\*\*] after [\*\*\*], such additional terms shall be determined in accordance with Section 13.6 (Dispute Resolution). Arcturus will facilitate, at Seqirus' request, discussions with its contract manufacturers and suppliers for the provision of manufacturing and supply services to [\*\*\*] necessary for the [\*\*\*] of [\*\*\*] and [\*\*\*] and, to the extent practicable, the assignment or novation of any such contracts to [\*\*\*].

Pursuant to the preceding paragraph, the Parties entered into the Supply Agreement (titled the [\*\*\*] Commercial Supply Agreement) dated as of [\*\*\*], as amended by [\*\*\*] thereto effective [\*\*\*], providing for the manufacture and supply of [\*\*\*]. As of the Amendment Number Two Effective Date, there are [\*\*\*] to be [\*\*\*] under the Supply Agreement. The Parties have also entered into that certain [\*\*\*] dated as of [\*\*\*], as amended by [\*\*\*] (the "[\*\*\*]"), pursuant to which [\*\*\*] will supply to [\*\*\*] [\*\*\*]. Other than obligations under the [\*\*\*] and [\*\*\*], and notwithstanding anything else in this Agreement, [\*\*\*] shall have no obligations for the commercial supply of any [\*\*\*] or [\*\*\*], except as may be expressly agreed in writing by the Parties subsequent to the [\*\*\*]."

**3.2 Next Gen Product.** Clause (i) of Section 4.10 of the Collaboration Agreement is hereby amended and replaced in its entirety with the following:

"...(i) the then-current process for the Manufacture of the [\*\*\*] in the [\*\*\*] Field, including Research Scale Manufacturing, Small Lab Scale Manufacturing and Large Scale Manufacturing of [\*\*\*] and any [\*\*\*] in the [\*\*\*] Field,..."

**4. Development Milestones.** Section 6.3 and Section 6.3.1 (but not Sections 6.3.2, 6.3.3 or 6.3.4) of the Collaboration Agreement are hereby amended and replaced in its entirety with the following. The Parties acknowledge and agree that, as of the Amendment Number Two Effective Date, the milestones set forth in Sections 6.3.1 (i)a) ([\*\*\*]), 6.3.1(ii), 6.3.1(iii) and 6.3.1(iv) have been achieved and the corresponding Development Milestone Payments have been paid by Seqirus.

"**6.3 Development Milestones.** In partial consideration of the rights granted by Arcturus to Seqirus hereunder and subject to the terms and conditions set forth in this Agreement, during the Payment Term, Seqirus shall pay to Arcturus a milestone payment, calculated as set forth in this Section 6.3 (each, a "**Development Milestone Payment**").

**6.3.1 [\*\*\*] Field.** The Development Milestone Payments set forth in this Section 6.3.1 shall be:

(a)

(1) with respect to Section 6.3.1(i), in connection with the completion of the [\*\*\*] relating to the monovalent [\*\*\*] and [\*\*\*] in [\*\*\*], [\*\*\*] and [\*\*\*] of the [\*\*\*] as [\*\*\*] and [\*\*\*], and

(2) with respect to Sections 6.3.1(ii)-(ix), in connection with the completion of the [\*\*\*] relating to, and [\*\*\*] in [\*\*\*] and [\*\*\*] of, the [\*\*\*] to meet such milestone,



and in each case of (1) and (2) the delivery of [\*\*\*] to enable [\*\*\*] to seek [\*\*\*] in other countries or jurisdictions in the Territory; and

(b) payable only one time and upon the first achievement of the corresponding milestone event by a [\*\*\*], and no amounts shall be due for subsequent or repeated achievements of such milestone event for any [\*\*\*]. For clarity, each of the Development Milestone Payments set forth in subsections (ii)-(ix) below is not dependent on achieving Regulatory Approvals in [\*\*\*] or [\*\*\*].

6.3.1(i)

a) [\*\*\*] Milestone. Upon [\*\*\*].

b) [\*\*\*] Milestones.

1. Upon [\*\*\*]; and

2. Upon [\*\*\*].

6.3.1 (ii) upon [\*\*\*];

6.3.1 (iii) upon [\*\*\*];

6.3.1(iv) upon [\*\*\*];

6.3.1 (v) upon [\*\*\*];

6.3.1 (vi) upon [\*\*\*];

6.3.1 (vii) upon [\*\*\*];

6.3.1 (viii) upon [\*\*\*];

6.3.1 (ix) upon [\*\*\*]; and

6.3.1 (x)

A. upon [\*\*\*];

B. upon [\*\*\*]; and

C. upon [\*\*\*].

The Development Milestone Payments set forth in this Section 6.3.1 shall be payable only one time and upon the first achievement of the corresponding milestone event by a [\*\*\*] or [\*\*\*], and no amounts shall be due for subsequent or repeated achievements of such milestone event for any [\*\*\*] or [\*\*\*]. Except as otherwise expressly set forth in this Agreement (including Sections 2.1.2(g) and 3.2.2), such milestone payments are non-refundable.”

## 5. Additional Representations, Warranties or Covenants of Seqirus.

5.1 [\*\*\*] represents and warrants to [\*\*\*], that, for [\*\*\*], [\*\*\*] [\*\*\*] [\*\*\*] than [\*\*\*] of [\*\*\*] from [\*\*\*].

5.2 [\*\*\*] hereby agrees that, from and after the Amendment Number Two Effective Date and during the Term, [\*\*\*] will not establish any [\*\*\*] of [\*\*\*] with [\*\*\*] in [\*\*\*] in order to [\*\*\*] of [\*\*\*] in [\*\*\*] under [\*\*\*].

## 6. Reference to Section 6.3.1(viii).

6.1 The reference to “Section 6.3.1(i) through (viii)” in Sections 3.2.2, 6.9.2, and 6.9.4(i) of the Collaboration Agreement are hereby amended and replaced with “Section 6.3.1(i) through 6.3.1(ix)”.

6.2 The reference to “Sections 6.3.1(i)-6.3.1(viii)” in Section 6.8.1 of the Collaboration Agreement is hereby amended and replaced with “Sections 6.3.1(i)-6.3.1(ix)”.

6.3 The reference to “Sections 6.3.1(ii)-6.3.1(viii)” in Section 12.10.2 of the Collaboration Agreement is hereby amended and replaced with “Sections 6.3.1(ii)-6.3.1(ix)”.

7. [\*\*\*] **Net Sales** [\*\*\*]. The following Section 6.6.1(iv) is hereby added to the Collaboration Agreement:

“(iv) Notwithstanding anything else to the contrary in this Agreement, with respect to [\*\*\*] [\*\*\*] or [\*\*\*] from [\*\*\*] in [\*\*\*], the [\*\*\*] shall be [\*\*\*], [\*\*\*] or [\*\*\*], as the case may be. In the event that, in a Calendar Year, there are both [\*\*\*] [\*\*\*] or [\*\*\*] from a [\*\*\*] and [\*\*\*] by [\*\*\*] or a [\*\*\*] for a [\*\*\*] in a [\*\*\*] impacted by this Section 6.6.1(iv), and the total [\*\*\*] for [\*\*\*] in a [\*\*\*] in a [\*\*\*], then [\*\*\*] by [\*\*\*], [\*\*\*] and [\*\*\*] shall be [\*\*\*] by [\*\*\*] or [\*\*\*] or [\*\*\*] from [\*\*\*] and the [\*\*\*] shall be applied in proportion to [\*\*\*] from each (e.g., [\*\*\*].)”

## 8. Pharmacovigilance.

9.1 **Pharmacovigilance Agreement.** Notwithstanding Section 8.2 of the Collaboration Agreement, the Parties entered into a Pharmacovigilance Agreement dated May 30, 2023, whereby [\*\*\*] agreed to [\*\*\*] than had been contemplated in the Collaboration Agreement, subject to payment terms to be agreed in good faith by the Parties. Other than as expressly set forth in the Pharmacovigilance Agreement, [\*\*\*] is responsible for [\*\*\*]. The Parties agree that the Pharmacovigilance Agreement will be amended to reflect that [\*\*\*] activities and responsibilities undertaken by [\*\*\*] pursuant to the Pharmacovigilance Agreement shall be transitioned to [\*\*\*] by [\*\*\*], and [\*\*\*] will retain [\*\*\*] to support [\*\*\*] and [\*\*\*].

8.1 **Global Safety Database.** Section 8.3 of the Collaboration Agreement is hereby amended and replaced in its entirety with the following:

“8.3 **Global Safety Database.** The pharmacovigilance agreement under Section 8.2 (Pharmacovigilance) shall provide the terms and conditions under which the Parties will exchange safety related data in order to comply with their respective pharmacovigilance responsibilities.

Except as otherwise set forth in such pharmacovigilance agreement or otherwise agreed by the Parties, [\*\*\*] shall [\*\*\*] (at [\*\*\*] [\*\*\*] and [\*\*\*]) the [\*\*\*] for [\*\*\*] and [\*\*\*], and shall provide [\*\*\*] relevant information from [\*\*\*]. [\*\*\*] shall provide [\*\*\*] with all information necessary or desirable for [\*\*\*] to comply with its pharmacovigilance responsibilities in the Territory, including, as applicable, any safety-related or adverse drug experiences, from pre-clinical or clinical laboratory, animal toxicology and pharmacology studies, and Clinical Studies with a [\*\*\*] or [\*\*\*] or the [\*\*\*] platform, reported anywhere in the world, in each case in the form and manner reasonably requested by [\*\*\*] and further specified in the pharmacovigilance agreement. In addition, with respect to any Clinical Trial Applications/Investigational New Drug Applications or Drug Approval Applications that may be maintained by Arcturus or its partners, Seqirus shall provide Arcturus with all information necessary or desirable for Arcturus to comply with its pharmacovigilance responsibilities, including, as applicable, any adverse drug experiences, from pre-clinical or clinical laboratory, animal toxicology and pharmacology studies, Clinical Studies, and commercial experiences, in each case to the extent in [\*\*\*] possession and control and in the form reasonably requested by [\*\*\*] and further specified in the pharmacovigilance agreement. As information maintained on the global safety database and listed under this Section 8.3 may relate to the Arcturus Technology platform, [\*\*\*] shall provide [\*\*\*] relevant information from the global safety database with which to provide its partners as reasonably required in connection with [\*\*\*] collaboration and license agreements, subject to the confidentiality provisions thereof.”

## 9. Distributorships, [\*\*\*] and [\*\*\*]

9.1 **Distributorships.** Section 4.7 of the Collaboration Agreement is hereby amended and replaced in its entirety with the following:

### “4.7 Distributorships.

Seqirus shall have the right, in its sole discretion, to appoint its Affiliates, and Seqirus and its Affiliates and Sublicensees shall have the right, in their sole discretion, to appoint any other Person, in the Territory or in any specific country or other jurisdiction of the Territory, to undertake any or all of the following (but only any or all of the following): (a) register any [\*\*\*] or [\*\*\*] in the Fields in any given jurisdiction; (b) hold the Regulatory Approval or act as in-country sponsor for the Regulatory Approval in the Field in any given jurisdiction; (c) undertake bridging or other Clinical Studies or other Development activities in furtherance of seeking, obtaining, maintaining or updating (including with respect to the conduct of strain updates, post marketing studies and real world evidence studies) such Regulatory Approval for such [\*\*\*] or [\*\*\*] in the Fields in such jurisdiction; or (d) distribute, market, and sell such [\*\*\*] in the Fields ([\*\*\*]), in each case where (i) such Person purchases its requirements of [\*\*\*] or [\*\*\*] for a transfer price from or through Seqirus or its Affiliates or Sublicensees, (ii) [\*\*\*] does not book the sales of [\*\*\*] made by such Person; and (iii) such Person (1) has no right to research or develop [\*\*\*] or [\*\*\*] (except to the limited extent necessary to conduct the activities described in clauses (a) through (c) above); and (2) has no right to manufacture or have manufactured [\*\*\*] ([\*\*\*]). The term [\*\*\*] in this Section 4.7 (Distributorships) means [\*\*\*]. Where [\*\*\*] or [\*\*\*] appoints such a Person and such Person is not [\*\*\*] of [\*\*\*], such Person shall be a “**Distributor**” for purposes of this Agreement, regardless of whether [\*\*\*] or [\*\*\*] has granted any license or sublicense to such Person in connection with such arrangement.”

9.2 **Net Sales.** the definition of “Net Sales” in the Collaboration Agreement is hereby amended and replaced in its entirety with the following:

“1.120. “**Net Sales**” means the [\*\*\*] by Seqirus, its Affiliates or Sublicensees (which shall not include Distributors or wholesalers) as the case may be (each a “**Selling Person**”) to Third Parties, or received by Seqirus, its Affiliates or Sublicensees from Distributors, less the following deductions, in each case to the extent specifically related to [\*\*\*] and taken by the Selling Person or otherwise paid for or accrued by the Selling Person (“**Permitted Deductions**”):

- (a) [\*\*\*];
- (b) [\*\*\*];
- (c) [\*\*\*];
- (d) [\*\*\*];
- (e) [\*\*\*];
- (f) [\*\*\*]; and
- (g) [\*\*\*].

[\*\*\*] shall not [\*\*\*]. [\*\*\*] shall include [\*\*\*], whether such consideration is in cash, payment in kind, exchange or other form. [\*\*\*] shall not include sales between or among Seqirus, its Affiliates, or Sublicensees, unless such [\*\*\*] is consumed by such Affiliate or Sublicensee in the course of its commercial activities. Subject to the above, [\*\*\*] shall be calculated in accordance with [\*\*\*].

For purposes of calculating [\*\*\*], all [\*\*\*] shall be converted into Dollars in accordance with Section 6.10 (Mode of Payment).

If any [\*\*\*] is sold as part of a [\*\*\*], the portion of [\*\*\*] from [\*\*\*], for the [\*\*\*] or [\*\*\*], shall be [\*\*\*] of the [\*\*\*] during the applicable [\*\*\*], by [\*\*\*], where [\*\*\*], and [\*\*\*]. If such [\*\*\*] amount [\*\*\*] or [\*\*\*] for both the [\*\*\*] and all [\*\*\*] in the [\*\*\*], [\*\*\*] for the purposes of determining [\*\*\*] and [\*\*\*] the [\*\*\*] shall be [\*\*\*] by the Parties in good faith negotiations based on [\*\*\*].

Notwithstanding the foregoing, for purposes of the calculation of royalty payments, [\*\*\*], [\*\*\*], or [\*\*\*], the term "**Net Sales**" when used in this Agreement in the context of a Distributor, or a country or other jurisdiction in the Territory in which Seqirus or its Affiliate or Sublicensee has engaged a Distributor, means any payments by such Distributor to Seqirus or its Affiliates or Sublicensee under the agreement governing such distribution arrangement attributable to the engagement of such Person as a Distributor for, and the provision to such Distributor of, such [\*\*\*] in the country or other jurisdiction of the Territory of such distributorship.”

9.3 **Shared Net Profits.** The definition of “Shared Net Profits” in the Collaboration Agreement is hereby amended and replaced in its entirety with the following:

“1.177 “**Shared Net Profits**” [\*\*\*]

9.4 **Schedule 6.5.** Section 3 of Schedule 6.5 of the Collaboration Agreement is hereby amended and replaced in its entirety with the following:

“3. “**Shared Net Profits**” Calculation. “**Shared Net Profits**” is calculated as follows:

For each [\*\*\*] for all [\*\*\*] in the [\*\*\*] Field, an amount [\*\*\*]:

- a. [\*\*\*];
- b. [\*\*\*];
- c. [\*\*\*];
- d. [\*\*\*]; and
- e. [\*\*\*].

#### 10. **Additional Provisions.**

10.1 Section 3.4.2 ([\*\*\*] Field, [\*\*\*] Field and [\*\*\*] Field). The last sentence of Section 3.4.2 of the Collaboration Agreement is hereby amended and replaced with the following:

“For avoidance of doubt, the costs therefor shall be [\*\*\*] and treated in accordance with Section 3.6.1 (Responsibility for Costs Relating to Research and Development Activities in [\*\*\*] Field, [\*\*\*] Field and [\*\*\*]Field).”

#### 11. **Miscellaneous.**

11.1 **Effect.** Except as specifically amended by this Amendment Number Two, all of the terms and conditions of the Collaboration Agreement shall remain in full force and effect, and this Amendment Number Two shall be read together and construed as one with the Collaboration Agreement.

11.2 **Conflicts.** In the event of a conflict between a provision of the Collaboration Agreement and a provision of this Amendment Number Two, the provisions of this Amendment Number Two will control to the extent of such conflict.

11.3 **Counterparts.** This Amendment Number Two may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Counterparts may be signed or delivered by facsimile or electronically scanned signature page.

[SIGNATURE PAGE FOLLOWS.]

THIS AMENDMENT NUMBER TWO IS EXECUTED by the authorized representatives of the Parties as of the Amendment Number Two Effective Date.

**ARCTURUS THERAPEUTICS, INC.**

**SEQIRUS, INC.**

By:

By:

Name: Joseph E. Payne  
Title: President and CEO

Name: Jonathan Kegerise  
Title: President

**SEQIRUS, INC.**

By:

Name: Melissa Puryear  
Title: Secretary

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Schedule 1 to Amendment Number Two

[\*\*] Development Plan

[See attached.]

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