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, 2019

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: 001-35932

ARCTURUS THERAPEUTICS LTD.

(Exact Name of Registrant as Specified in its Charter)

State of Israel (State or other jurisdiction of incorporation or organization)	46-1981974 (I.R.S. Employer Identification No.)
10628 Science Center Drive, Suite 250 **San Diego, California** (Address of principal executive offices)	92121 (Zip Code)

Registrant's telephone number, including area code: (858) 900-2660

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

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

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

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒	Smaller reporting company	☒
Emerging growth company	☐		

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

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

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Ordinary Shares, par value NIS 0.07 per share	ARCT	The NASDAQ Stock Market LLC

As of May 7, 2019, the registrant had 10,761,523 Ordinary Shares outstanding.

ARCTURUS THERAPEUTICS LTD. AND ITS SUBSIDIARIES

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PART I—FINANCIAL INFORMATION

Item 1. Financial Statements.

Provide the information required by Rule 10-01 of Regulation S-X (17 CFR Part 210). A smaller reporting company defined in Rule 12b-2 (§ 240.12b-2 of this chapter) may provide the information required by Article 8-03 of Regulation S-X (§ 210.8-03 of this chapter).

ARCTURUS THERAPEUTICS LTD. AND ITS SUBSIDIARIES
CONDENSED CONSOLIDATED BALANCE SHEETS
(In U.S. dollars in thousands, except par value information)

	March 31, 2019 (unaudited)	December 31, 2018
Assets		
Current assets:		
Cash and cash equivalents	$ 31,220	$ 36,709
Accounts receivable	4,457	4,481
Prepaid expenses and other current assets	929	638
Total current assets	36,606	41,828
Property and equipment, net	2,016	1,975
Operating lease right-of-use asset	5,690	—
Equity-method investment	—	288
Non-current restricted cash	107	107
Total assets	$ 44,419	$ 44,198
Liabilities and shareholders' equity		
Current liabilities:		
Accounts payable	$ 4,118	$ 2,398
Accrued liabilities	2,766	3,907
Deferred revenue	7,728	6,272
Total current liabilities	14,612	12,577
Deferred revenue, net of current portion	8,025	7,534
Long-term debt	9,945	9,911
Operating lease liability, net of current portion	5,483	—
Deferred rent	—	534
Total liabilities	$ 38,065	$ 30,556
Shareholders' equity		
Ordinary shares: NIS 0.07 par value; 30,000 shares authorized, 10,762 issued, 10,719 outstanding and 43 held in treasury at March 31, 2019; NIS 0.07 par value; 30,000 shares authorized, 10,762 issued, 10,719 outstanding and 43 held in treasury at December 31, 2018	214	214
Additional paid-in capital	58,701	58,302
Accumulated deficit	(52,561)	(44,874)
Total shareholders' equity	6,354	13,642
Total liabilities and shareholders' equity	$ 44,419	$ 44,198

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

ARCTURUS THERAPEUTICS LTD. AND ITS SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS
(unaudited)
U.S. dollars in thousands (except per share data)

	Three Months Ended March 31,	
	2019	**2018**
Collaboration revenue	$ 4,350	$ 2,367
Operating expenses:		
Research and development, net	7,324	3,941
General and administrative	3,534	5,098
Total operating expenses	10,858	9,039
Net loss from operations	(6,508)	(6,672)
Loss from equity-method investment	(288)	—
Finance (expense) income, net	(88)	101
Net loss	$ (6,884)	$ (6,571)
Net loss per share, basic and diluted	$ (0.68)	$ (0.66)
Weighted-average shares outstanding, basic and diluted	10,095	10,028
Comprehensive loss:		
Net loss	$ (6,884)	$ (6,571)
Unrealized loss on short-term investments	—	(2)
Comprehensive loss	$ (6,884)	$ (6,573)

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

ARCTURUS THERAPEUTICS LTD. AND ITS SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(unaudited)
U.S. dollars in thousands

Three Months Ended March 31, 2019

	Ordinary Shares Shares	Ordinary Shares Amount	Additional Paid-In Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total Shareholders' Equity
BALANCE - December 31, 2018	**10,762**	**$ 214**	**$ 58,302**	**$ —**	**$ (44,874)**	**$ 13,642**
Net loss	—	—	—	—	(6,884)	(6,884)
Share-based compensation	—	—	399	—	—	399
Effect of adoption of ASC 606	—	—	—	—	(803)	(803)
BALANCE – March 31, 2019	**10,762**	**$ 214**	**$ 58,701**	**$ —**	**$ (52,561)**	**$ 6,354**

Three Months Ended March 31, 2018

	Ordinary Shares Shares	Ordinary Shares Amount	Additional Paid-In Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total Shareholders' Equity
BALANCE - December 31, 2017	**10,699**	**$ 212**	**$ 56,674**	**$ (3)**	**$ (23,089)**	**$ 33,794**
Net loss	—	—	—	—	(6,571)	(6,571)
Unrealized loss on short-term investments	—	—	—	(2)	—	(2)
Share-based compensation	—	—	26	—	—	26
Issuance of common shares upon exercise of share options	39	1	303	—	—	304
BALANCE – March 31, 2018	**10,738**	**$ 213**	**$ 57,003**	**$ (5)**	**$ (29,660)**	**$ 27,551**

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

ARCTURUS THERAPEUTICS LTD. AND ITS SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(unaudited)
U.S. dollars in thousands

	Three Months Ended March 31,	
	2019	**2018**
OPERATING ACTIVITIES:		
Net loss	$ (6,884)	$ (6,571)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	172	111
Share-based compensation expense	399	26
Non-cash interest expense	34	—
Loss from equity-method investment	288	—
Changes in operating assets and liabilities		
Accounts receivable	24	(697)
Prepaid expense and other assets	(291)	371
Accounts payable	1,586	852
Accrued liabilities	(1,891)	(46)
Right of use asset and liability, net	8	—
Deferred revenue	1,144	5,593
Net cash used in operating activities	(5,411)	(361)
INVESTING ACTIVITIES:		
Proceeds from maturities of short-term investments	—	19,294
Purchases of short-term investments	—	(7,707)
Acquisition of property and equipment	(78)	(362)
Net cash (used in) provided by investing activities	(78)	11,225
FINANCING ACTIVITIES:		
Proceeds from exercise of share options	—	294
Net cash provided by financing activities	—	294
NET (DECREASE) INCREASE IN CASH, CASH EQUIVALENTS AND RESTRICTED CASH	(5,489)	11,158
Cash, cash equivalents and restricted cash at beginning of the period	36,816	25,238
Cash, cash equivalents and restricted cash at end of the period	$ 31,327	$ 36,396

	Three Months Ended March 31,	
	2019	**2018**
Supplemental disclosure of cash flow information		
Cash paid for interest	$ 167	$ —
Non-cash investing activities		
Purchase of property and equipment in accounts payable	$ 134	$ 320

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

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

Description of Business

Arcturus Therapeutics Ltd. and its subsidiaries (referred to as the "Company") is a RNA medicines company focused on significant opportunities in rare, liver, and respiratory diseases. The Company's key proprietary technology has the potential to address the major hurdles in RNA development, namely the effective and safe delivery of RNA therapeutics to disease-relevant target tissues.

Basis of Presentation

The accompanying condensed consolidated financial statements include the accounts of Arcturus Therapeutics Ltd. 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 financial statements and footnotes included in the Company's Annual Report on Form 10-K for the year ended December 31, 2018.

These condensed consolidated financial statements are prepared in accordance with GAAP with United States Dollars ("USD") as the functional currency, which requires management to make estimates and assumptions regarding the valuation of certain debt and equity instruments, the equity method investment, share-based compensation, accruals for liabilities, income taxes, deferred revenue, expense accruals, 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.

Unless the context otherwise requires, references to the "Company" and "Arcturus" refer to Arcturus Therapeutics Ltd. and its subsidiaries.

Going Concern

The Company's activities since inception have consisted principally of performing research and development activities, general and administration 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.

The Company is a pre-clinical bioscience company that is dependent on obtaining external equity and debt financings to fund its operations. Historically, the Company's primary sources of financing have been through the sale of its securities, through issuance of debt and through collaboration agreements. The Company raised $10.0 million in gross proceeds from a long-term debt agreement entered into on October 12, 2018 with Western Alliance Bank (Note 5). In addition, on October 15, 2018, the Company entered into a Sales Agreement (the "Sales Agreement") with Leerink Partners LLC ("Leerink"), pursuant to which it may sell from time to time, at its option, up to an aggregate of $30.0 million of the Company's Ordinary Shares through Leerink, as sales agent. Research and development activities have required significant capital investment since the Company's inception.

The Company expects its operations to continue to require cash investment to pursue the Company's research and development activities, including preclinical studies, formulation development, clinical trials and related drug manufacturing. The Company has experienced net losses since its inception and as of March 31, 2019 has an accumulated deficit of $52.6 million. The Company expects to continue to incur additional losses for the foreseeable future, and the Company will need to raise additional debt or equity financing or enter into additional collaborations to fund its development. The ability of the Company to transition to profitability is dependent on identifying and developing successful mRNA drug candidates. In the near future, if the Company is not able to achieve planned milestones, incurs costs in excess of its forecasts, or does not meet the covenant requirements associated with its debt (Note 5), it will need to reduce discretionary spending, discontinue the development of some or all of its products, which will delay part of its development programs, all of which will have a material adverse effect on the Company's ability to achieve its intended business objectives. There can be no assurances that additional financing will be secured or, if secured, will be on favorable terms to the Company. Management has prepared cash flow forecasts which indicate that based on the Company's expected operating losses and

negative cash flows, there is substantial doubt about the Company's ability to continue as a going concern within twelve months after the date that the condensed consolidated financial statements for the quarter ended March 31, 2019 are issued. The accompanying condensed consolidated financial statements have been prepared assuming that the Company will continue as a going concern, which contemplates the realization of assets and the settlement of liabilities and commitments in the normal course of business. The condensed consolidated financial statements do not reflect any adjustments related to the recoverability and classification of assets or the amounts and classification of liabilities that might be necessary if the Company is unable to continue as a going concern.

Recent Developments

The Company has initiated a process to redomicile from an Israeli limited company to a Delaware corporation (the "Redomiciliation"). The Redomiciliation is subject to the approval of the Company's shareholders via proxy vote, the Tel-Aviv District Court (the "Israeli Court") approval and approval of the listing of the shares in the Delaware corporation by the NASDAQ Stock Market LLC ("Nasdaq"), among other conditions precedent. On February 11, 2019, the Company filed an application with the Israeli Court to approve the convening of a general shareholders meeting of the Company for the approval of the Redomiciliation pursuant to Sections 350 and 351 of the Israeli Companies Law (the "Companies Law"). Following the Israeli Court approval dated March 13, 2019, the Company filed with the SEC a registration statement on Form S-4 (the "Form S-4"), which included a joint proxy statement/prospectus for the convening of the general shareholder meeting, scheduled to be held on May 17, 2019, as described in the Form S-4. If the general shareholders meeting results in the approval of the Redomiciliation, the Company will then approach the Israeli Court and request its approval of the Redomiciliation.

In connection with the Redomiciliation, the Company entered into a share exchange agreement (the "Exchange Agreement") with a special-purpose company, Arcturus Therapeutics Holdings Inc. ("NewCo").

In furtherance of the Redomiciliation, and pursuant to the terms of the Exchange Agreement, the holders of Ordinary Shares of the Company as of a future record date and the holders of options to purchase Ordinary Shares of the Company as of the same record date will transfer their Ordinary Shares of the Company and options to purchase Ordinary Shares of the Company, respectively, to NewCo and, in exchange thereof, will receive one share of common stock of NewCo for each ordinary share of the Company and an option to purchase one share of common stock of NewCo in exchange for each ordinary share of the Company underlying the existing option to be so exchanged, respectively.

The Company intends the common stock of NewCo to be listed on NASDAQ. Upon consummation of the transactions contemplated by the Share Exchange Agreement, it is expected that the Company's Ordinary Shares will be delisted from trading on NASDAQ, and the Company is expected to become a private company (as defined in the Companies Law) wholly-owned by NewCo.

Pursuant to the Exchange Agreement, and as disclosed in the Form S-4, the Company also has the right, exercisable in its sole discretion and subject to the conditions precedent set forth therein, to transfer all of the shares of Arcturus Therapeutics Inc. ("Arcturus Sub"), a wholly-owned subsidiary of the Company, to NewCo through a reduction of the Company's equity and the distribution of a dividend-in-kind, such that Arcturus Sub and the Company shall each become a wholly-owned and direct subsidiary of NewCo. The Company will determine if it will proceed with this second step prior to December 31, 2019.

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

Effective January 1, 2019, the Company adopted *ASU 2014-09, Revenue from Contracts with Customers (Topic 606)*, or Topic 606, using the modified retrospective transition method. Topic 606 provides a unified model to determine how revenue is recognized and the Company applied the standard to collaborative research and technology agreements that were in progress as of the effective date, January 1, 2019. The Company determines revenue recognition for arrangements within the scope of Topic 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 collaborative research and development agreements include license fees, upfront payments, milestone payments when and if certain research or technology transfer milestones are achieved, development milestones and reimbursement for research and development activities, option exercise fees, other contingent payments for the achievement of

defined collaboration objectives and certain preclinical, clinical, regulatory and sales-based events, as well as royalties on sales of commercialized products. Arrangements that include up-front payments are recorded as deferred revenue upon receipt or when due and may require deferral of revenue recognition to a future period until the Company perform obligations under these arrangements. The Company records research funding as accounts receivable when the right to consideration is unconditional. 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 Topic 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. Under Topic 606, the Company elected to use the practical expedients permitted related to adoption, which does not require the Company to disclose certain information regarding certain remaining performance obligations as of the end of the reporting period. Topic 606 is applicable for revenue recognized in accordance with the practical expedient for measuring progress toward satisfaction of a performance obligation, and variable consideration classified as a sales-based or usage-based royalty promised in exchange for a license.

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

Leases

In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842), which requires lessees to recognize most leases on the balance sheet as lease liabilities with corresponding right-of-use assets and to disclose key information about leasing arrangements. The Company adopted Topic 842 on its effective date in the first quarter of 2019 using a modified retrospective approach. The Company elected the available package of practical expedients upon adoption, which allowed it to carry forward historical assessment of whether existing agreements contained a lease and the classification of existing operating leases. The Company continues to report its financial position as of December 31, 2018 under the former lease accounting standard (Topic 840) in the condensed consolidated balance sheet.

The adoption impact was due to the recognition of an operating lease liability with a corresponding right-of-use asset based on the present value of remaining minimum lease payments. A reduction of the right-of-use asset was recorded to reflect the balance of the deferred rent obligation and there was no impact to retained earnings.

Research and Development, Net

Research and development costs are expensed as incurred. These expenses result from the Company's independent research and development efforts as well as efforts associated with collaboration arrangements. Research and development costs include salaries and personnel-related costs, consulting fees, fees paid for contract research and manufacturing services, the costs of laboratory supplies, equipment and facilities and other external costs are shown net of any royalty bearing grants.

Statement of Cash Flows

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, 2019	March 31, 2018
Cash and cash equivalents	$ 31,220	$ 36,289
Non-current restricted cash	107	107
Total cash, cash equivalents and restricted cash shown in the statement of cash flows	$ 31,327	$ 36,396

Net Loss per Share

Basic net loss per share is calculated by dividing the net loss by the weighted-average number of ordinary shares outstanding for the period, without consideration for ordinary share equivalents. Diluted net loss per share is calculated by dividing the net loss by the weighted-average number of ordinary shares and dilutive ordinary share equivalents outstanding for the period determined using the treasury-stock method. Dilutive ordinary shares are comprised of share options.

No dividends were declared or paid during the reported periods.

Recently Adopted Accounting Pronouncements

Revenue from Contracts with Customers

In May 2014, the Financial Accounting Standards Board (FASB) issued Topic 606, which supersedes nearly all existing revenue recognition guidance under GAAP. The FASB subsequently issued amendments to Topic 606 that have the same effective date and transition date.

The Company adopted this new guidance, effective January 1, 2019, using the modified retrospective transition method, in which the standard is applied as of the date of initial adoption. The Company recorded the cumulative effect of initially applying the standard as an adjustment to the opening balance of accumulated deficit. The adoption of the new revenue recognition guidance resulted in an increase of $0.8 million to deferred revenue and an increase of $0.8 million to accumulated deficit as of January 1, 2019. The change in revenue was due to a change in how the Company accounts for changes in the measure of progress and changes to the transaction price and for the recognition of revenue. Under Topic 605, the Company accounted for changes to the measure of progress and changes to the transaction price prospectively. Topic 606 requires companies to account for a change to the measure of progress or a change to the transaction price as a cumulative catch-up in the period of change. There were no other impacts upon the adoption of Topic 606. The Company will apply the standard to all new contracts initiated on or after the effective date.

Under prior guidance, collaboration revenue recognized would have been $4.1 million for the three months ended March 31, 2019, which is $0.3 million lower than the amount recognized under current guidance.

Leases

In February 2016, the FASB issued Accounting Standards Update ("ASU") 2016-02, *Leases (Topic 842)* in order to increase transparency and comparability among organizations by recognizing lease assets and lease liabilities on the balance sheet for those leases classified as operating leases under previous GAAP. ASU 2016-02 requires a lessee to recognize a liability for lease payments (the lease liability) and a right-of-use asset (representing its right to use the underlying asset for the lease term) on the balance sheet. ASU 2016-02 is effective for fiscal years beginning after December 15, 2018 (including interim periods within those periods) using a modified retrospective approach.

In July 2018, the FASB issued ASU 2018-11, *Leases (Topic 842): Targeted Improvements*, which provides entities an optional transition method to apply the new guidance as of the adoption date, rather than as of the earliest period presented. In transition, entities may also elect a package of practical expedients that must be applied in its entirety to all leases commencing before the effective date, unless the lease was modified, to not reassess (a) the existence of a lease, (b) lease classification or (c) determination of initial direct costs, which effectively allows entities to carryforward accounting conclusions under previous U.S. GAAP.

The Company adopted ASU 2016-02, using the optional transition method and electing the package of practical expedients described above on January 1, 2019. Due to the adoption, the Company recognized a new lease liability on the Company's consolidated balance sheet for its operating lease of office and lab space of $6.2 million on January 1, 2019, with a corresponding right-of-use asset of $5.7 million based on the present value of the remaining minimum rental payments. See Note 11 for further discussion.

Note 2. Collaboration Revenue

The Company has entered into license agreements and collaborative research and development arrangements with pharmaceutical and biotechnology companies. Under these arrangements, the Company is entitled to receive license fees, upfront payments, milestone payments when and if certain research or technology transfer milestones are achieved, development milestones, reimbursement for research and development activities, option exercise fees, other contingent payments for the achievement of defined collaboration objectives and certain preclinical, clinical, regulatory and sales-based events, as well as royalties on sales of commercialized products. The Company's costs of performing these services are included within research and development expense. 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 model(s), lead candidate identification, and completion of IND-enabling studies. Clinical milestones may include successful enrollment of the first or second patient in or completion of Phase I, II, and III clinical trials, and commercial revenue is 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.

The following table presents changes during the three months ended March 31, 2019 in the balances of contract assets, including receivables from collaborative partners, and contract liabilities, including deferred revenue, as compared to what was disclosed in the Company's Annual Report.

(in thousands)	Contract Assets
Balance at December 31, 2018	$ 4,480
Additions	3,611
Deductions	(3,634)
Balance at March 31, 2019	$ 4,457

(in thousands)	Contract Liabilities
Balance at December 31, 2018	$ 13,806
Additions for advanced billings	5,868
Additions for performance obligations to be satisfied in current and future periods in connection with Topic 606 adoption	803
Deductions for performance obligations satisfied in current period	(4,724)
Balance at March 31, 2019	$ 15,753

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

Collaboration Partner – Janssen

In October 2017 the Company entered into a research collaboration and license agreement with Janssen (the "2017 Agreement"). The 2017 Agreement allocated discovery, development, funding obligations, and ownership of related intellectual property among the Company and Janssen. The Company received an upfront payment of $7.7 million and may receive preclinical, development and sales milestone payments of $56.5 million, as well as royalty payments on any future licensed product sales. Janssen began reimbursing the Company for research costs during the first quarter of 2019 upon the completion of the first of three research periods. Janssen may also pay option exercise fees within the $1.0 million to $5.0 million range per target. Janssen will pay royalties on annual net sales of licensed products in the low to mid-single digits range, subject to reduction on a country-by-country and licensed-product-by-licensed-product basis and subject to certain events, such as expiration of program patents. In addition, the 2017 Agreement includes an exclusivity period.

Accounting Analysis under ASC 606

In evaluating the 2017 Agreement in accordance with ASC Topic 606, the Company concluded that the contract counterparty, Janssen, is a customer. The Company identified the following performance obligations as of the inception of the Agreement: (i) research services, (ii) license to use Arcturus technology and (iii) participation in the Joint Research Committee. The Company concluded that the performance obligations are highly interrelated and consequently do not have any value on a standalone basis. Accordingly, they are determined to represent a single performance obligation. The Company concluded that Janssen's options to select additional collaboration targets and to license rights to selected targets are not priced at a discount and therefore do not represent performance obligations for which the transaction price would be allocated.

At inception of the contract, the transaction price included the $7.7 million upfront consideration received and budgeted reimbursable out-of-pocket costs of $18.2 million. None of the development and commercialization milestones were included in the transaction price, as all milestone amounts were fully constrained. As part of its evaluation of the constraint, the Company considered numerous factors, including that receipt of the milestones is outside the control of the Company and contingent upon success in future clinical trials and the collaborator's efforts. Any consideration related to sales-based royalties will be recognized when the related sales occur, provided that the reported sales are reliably measurable, and the Company has no remaining performance obligations, as such sales were determined to relate predominantly to the license granted to Janssen and therefore have also been excluded from the transaction price. As of March 31, 2019, the remaining transaction price of $24.2 million is expected to be recognized over the remaining research period of 12 months. The Company will re-evaluate the transaction price in each reporting period as uncertain events are resolved and other changes in circumstances occur. For the three months ended March 31, 2019, no adjustments were made to the transaction price.

As the Company determined that only a single performance obligation exists, no allocation of the transaction price is necessary. The transaction price is recorded as deferred revenue in the Company's balance sheet and is recognized as revenue under the proportional performance method of revenue recognition in accordance with the Company's established budget of costs to be incurred. Total deferred revenue as of March 31, 2019 and December 31, 2018 for Janssen was $6.3 million and $6.5 million, respectively. The Company recognized revenue of $0.5 million and $0.1 million for the three months ended March 31, 2019 and 2018, respectively. No transition adjustment was necessary upon adoption of Topic 606.

Collaboration Partner – Ultragenyx

In October 2015 the Company entered into a research collaboration and license agreement with Ultragenyx (the "Ultragenyx Agreement"), whereby Arcturus grants to Ultragenyx a co-exclusive license under Arcturus technology and shall be in effect only during the reserve target exclusivity term as discuss in the following paragraphs. During the initial phase of the collaboration, the Company will design and optimize therapeutics for certain rare disease targets. Ultragenyx has the option under the Ultragenyx Agreement to add additional rare disease targets during the collaborative development period. Additionally, during the collaborative development period, the Company will participate with Ultragenyx in a joint steering committee. The Ultragenyx Agreement also includes an initial exclusivity period with an option to extend this period.

For each program, Ultragenyx will reimburse the Company for all internal and external development costs incurred, pursuant to the Ultragenyx Agreement, and if Ultragenyx achieves certain, clinical, regulatory and sales milestones, then the Company is eligible to receive royalty payments.

As part of the Ultragenyx Agreement, Ultragenyx paid an upfront fee of $10.0 million and agreed to certain research and development funding obligations. The Company is also entitled to certain additional payments upon exercise of the Ultragenyx expansion option or exclusivity extension (if any), and for costs incurred by the Company in conducting the activities assigned under each collaboration development plan. In addition, on a development target-by-development target basis during the two-year period from the effective date of contract, Ultragenyx will pay the Company a one-time milestone payment after the first optimized lead designation for the first product with respect of such development target. For each development target for which Ultragenyx exercises its option, Ultragenyx will pay the Company a one-time option exercise fee that increases based upon the number of development targets selected by Ultragenyx.

The agreement includes potential milestone payments for selected targets from Ultragenyx to the Company. The current potential milestone payment for the remaining targets as of March 31, 2019 is $139.0 million. Ultragenyx will pay royalties as a single-digit percentage of net sales on a product-by-product and country-by-country basis during the applicable royalty term. As of March 31, 2019, the Company has not yet reached the clinical phase of the contract. In 2018, the Company signed an amendment with Ultragenyx, that may reduce option exercise fees, milestone payments and/or royalty rates dependent on whether a development target or product is not covered by a patent directed to a chemistry methodology to increase mRNA half-life.

During 2017, the Company entered into an amendment with Ultragenyx to add one year to the exclusivity period for the reserved targets, in consideration for a one-time payment of $2.0 million. The extension of the exclusivity period did not change the length of the research and development period. Further, the amendment allows Ultragenyx the opportunity to review and comment on its filings and prosecution efforts of pending Company patents that relate to Ultragenyx chemistry. During the fourth quarter of 2018, Ultragenyx extended the exclusivity on a specified number of reserved targets for an additional year with an annual reserve target list maintenance fee of $1.5 million.

Accounting Analysis under ASC 606

In evaluating the Ultragenyx agreement in accordance with ASC Topic 606, the Company concluded that the contract counterparty, Ultragenyx, is a customer. The Company identified the following performance obligations as of the inception of the Agreement: (i) research services, (ii) license to use Arcturus technology, (iii) exclusivity and (iv) participation in the Joint Steering Committee. The Company concluded that the performance obligations are highly interrelated and consequently do not have any value on a standalone basis. Accordingly, they are determined to represent a single performance obligation. The Company concluded that

Ultragenyx's options to extend exclusivity and options to select additional collaboration targets and to license rights to selected targets are not priced at a discount and therefore do not represent performance obligations for which the transaction price would be allocated.

At inception of the contract, the transaction price included only the upfront consideration received. The Company concluded that the reimbursement of labor and expenses qualifies for the practical expedient under Topic 606, which allows the Company to recognize revenue in the amount for which it has a right to invoice if the Company's right to consideration is an amount that corresponds directly to the value to the customer of the performance completed to date. Therefore under the practical expedient the Company is not required to determine the transaction price, allocate the transaction price and determine the timing of revenue recognition for the reimbursement of labor and expenses. None of the development and commercialization milestones were included in the transaction price, as all milestone amounts were fully constrained. As part of its evaluation of the constraint, the Company considered numerous factors, including that the consideration is outside the control of the Company and contingent upon success in future clinical trials, approval from the Food and Drug Administration ("FDA") and the collaborator's efforts. Any consideration related to sales-based royalties will be recognized when the related sales occur, provided that the reported sales are reliably measurable and the Company has no remaining performance obligations, as such sales were determined to relate predominantly to the license granted to Ultragenyx and therefore have also been excluded from the transaction price. The Company will re-evaluate the transaction price in each reporting period as uncertain events are resolved and other changes in circumstances occur. For the three months ended March 31, 2019, no adjustments were made to the transaction price.

As the Company determined that only a single performance obligation exists, no allocation of the transaction price is necessary. The upfront payment was recorded as deferred revenue in the Company's balance sheet upon receipt and is currently being recognized as revenue on a straight-line basis over the estimated 47-month research period, which approximates the timing in which performance obligations are satisfied. As of March 31, 2019, the research period is expected to end by September 30, 2019. Upon execution of the 2017 amendment, the $2.0 million payment was added to the transaction price and through the transition to Topic 606 a cumulative catch-up entry was made. The exclusivity extension fee received by the Company during the fourth quarter of 2018 was recorded as deferred revenue and is being recognized as revenue on a straight-line basis over the one-year period that the exclusivity is provided. Total deferred revenue as of March 31, 2019 and December 31, 2018 for Ultragenyx was $2.4 million and $2.7 million, respectively. The Company recognized revenue of $1.4 million and $1.5 million for the three months ended March 31, 2019 and 2018, respectively. Upon adoption of Topic 606, the Company reversed $0.8 million of previously recorded revenue related to Ultragenyx through an increase to deferred revenue and a decrease to beginning retained earnings. The adjustment was due to a change in the way the Company accounts for updates to the research period over which revenue is recognized as well as accounting for adjustments to the transaction price for exclusivity extensions, such as the $2.0 million amendment. Under Topic 605, the Company accounted for these changes prospectively and under Topic 606 the Company accounts for the changes as a change in estimate recorded as a cumulative catch-up in the period in which the change occurred.

Collaboration Partner – CureVac

In January 2018, the Company entered into a Development and Option Agreement with CureVac, (the "Development and Option Agreement"). Under the terms of the Development and Option Agreement, the parties have agreed to conduct joint preclinical development programs once CureVac makes a payment to pull down a target on the basis of which CureVac is granted options for taking a license on pre-agreed license terms to develop and commercialize certain products incorporating the Company's patents and know-how related to delivery technology (the LUNAR® platform) (the "Arcturus Delivery Technology"), and CureVac patents and know-how related to mRNA technology. Subject to certain restrictions, the parties will have an undivided one-half interest in the patents and know-how developed jointly by the parties during the course of the Development and Option Agreement. Pursuant to the terms of the Development and Option Agreement, CureVac will have a number of target options to co-develop from a reserved target list to enter into licenses under the Arcturus Delivery Technology with respect to the development, manufacture and commercialization of licensed products (which can include products identified for development by the Company unless the Company is permitted by the terms of the Development and Option Agreement to place such products on a restricted list). A separate notice and fee will be required for each license agreement. If the target to which the license agreement relates is chosen by the parties for co-development under the Co-Development Agreement (which is defined below and discussed in the following paragraph) the license agreement will terminate as such programs will be covered under the Co-Development Agreement discussed below, and therefore CureVac will be given a credit for any exercise fees, milestone payments already paid and all other payments made in relation to the license agreement towards future such payments incurred with respect to future licenses under the Arcturus Delivery Technology.

Prior to expiration of the initial term of 8 years, the Agreement also includes an option to extend the term on an annual basis for up to 3 years and subject to payment by CureVac to Arcturus of a non-refundable annual extension fee. The agreement included potential milestone payments for selected targets from CureVac to the Company. The current potential milestone payment for the remaining target as of March 31, 2019 is $14.0 million for rare disease targets and $23.0 million for non-rare disease targets. CureVac will pay royalties as a percentage of net sales on a product-by-product and country-by-country basis during the applicable royalty term in the low single-digit range. As of March 31, 2019, the Company has not yet reached the clinical phase of the contract. Pursuant to a May 2018 amendment to the Development and Option Agreement (as amended and restated on September 28, 2018), the Company

increased the number of targets available to CureVac under the Development and Option Agreement and agreed upon the license forms to be executed upon selection of the targets by CureVac.

Concurrently with the Development and Option Agreement, the Company entered into a Co-Development and Co-Commercialization Agreement (the "Co-Development Agreement"). However, on February 11, 2019, the Company announced the termination of the obligations of CureVac for the preclinical development of ARCT-810, effective 180 days from February 5, 2019 and the re-assumption by the Company of the worldwide rights thereto. CureVac believes it is not obligated to continue funding any preclinical expenses for the OTC (which is defined in the following paragraph) program after February 5, 2019 and through the August 5, 2019 termination date as stated in the Co-Development Agreement. The Company does not believe that CureVac's position is consistent with the terms of the Co-Development Agreement and is engaged with CureVac to determine a resolution. The Company is seeking a resolution in the manner set forth in the Co-Development Agreement.

Arcturus will reassume 100% global rights for its flagship asset, clinical development candidate ARCT-810, a messenger RNA (mRNA) drug to treat ornithine transcarbamylase ("OTC") deficiency. ARCT-810 was previously subject to equal cost sharing between Arcturus and CureVac under the Co-Development Agreement. CureVac elected not to continue its obligations for the preclinical development of ARCT-810 under and pursuant to the terms of the agreement. Under the terms of the Co-Development Agreement, the parties collaborated to develop and commercialize mRNA-based products for treating OTC deficiency, incorporating CureVac's mRNA technology, the Arcturus' mRNA technology and the Arcturus Delivery Technology. The overall collaboration with CureVac was managed by a joint steering committee. Pursuant to the Co-Development Agreement, the Company and CureVac shared equally the internal costs and third-party costs incurred to conduct preclinical development, subject to exceptions specified in the Co-Development Agreement for specified manufacturing costs and costs in the parties' respective development plans, among others. The parties also continue to have the option to co-develop two mRNA programs for CureVac and one mRNA program for the Company.

The Company concluded that the contracts should be accounted for on a combined basis due to their being negotiated and signed concurrently as well as the interoperability between the two agreements.

Accounting Analysis under ASC 606

In evaluating the CureVac Development and Option Agreement and Co-Development Agreement in accordance with ASC Topic 606, the Company concluded that the contract counterparty, CureVac, is a customer. The Company identified the following performance obligations as of the inception of the Agreement: (i) research services, (ii) license to use Arcturus technology, (iii) exclusivity and (iv) participation in the Joint Steering Committee. The Company concluded that the performance obligations are highly interrelated and consequently do not have any value on a standalone basis. Accordingly, they are determined to represent a single performance obligation. The Company concluded that CureVac's options to extend the research term and options to select additional collaboration targets and to license rights to selected targets are not priced at a discount and therefore do not represent performance obligations for which the transaction price would be allocated.

At inception of the contract, the transaction price included only the $5.0 million upfront consideration received. The Company concluded that the reimbursement of labor and expenses within the Development and Option Agreement qualifies for the practical expedient under Topic 606 which allows the Company to recognize revenue in the amount for which it has a right to invoice if the Company's right to consideration is an amount that corresponds directly to the value to the customer of the performance completed to date. Therefore under the practical expedient the Company is not required to determine the transaction price, allocate the transaction price and determine the timing of revenue recognition for the reimbursement of labor and expenses. None of the development and commercialization milestones were included in the transaction price, as all milestone amounts were fully constrained. As part of its evaluation of the constraint, the Company considered numerous factors, including that receipt of the milestones is outside the control of the Company and contingent upon success in future clinical trials and the collaborator's efforts. Any consideration related to sales-based royalties will be recognized when the related sales occur, provided that the reported sales are reliably measurable and the Company has no remaining performance obligations, as such sales were determined to relate predominantly to the license granted to CureVac and therefore have also been excluded from the transaction price. As it relates to the Co-Development Agreement, the incremental costs incurred by Arcturus can only be determined based on reported costs provided by CureVac which is outside the control of the Company, and therefore, fully constrained and recognized as incurred. The Company will re-evaluate the transaction price in each reporting period as uncertain events are resolved and other changes in circumstances occur. For the three months ended March 31, 2019, no adjustments were made to the transaction price.

As the Company determined that only a single performance obligation exists, no allocation of the transaction price is necessary. The upfront payment of $5 million was recorded as deferred revenue in the Company's balance sheet upon receipt and is currently being recognized as revenue on a straight-line basis over the eight-year contractual term. Total deferred revenue as of March 31, 2019 and December 31, 2018 for CureVac was $4.2 million and $4.4 million, respectively. The Company recognized revenue of $1.9 million and $0.2 million for the three months ended March 31, 2019 and 2018, respectively. No adjustment was necessary upon adoption of Topic 606.

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 establishes 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, and accrued liabilities approximate their respective fair values due to their relative short maturities. The carrying amounts of long-term debt for the amount drawn on the Company's debt facility approximates fair value as the interest rate is variable and reflects current market rates.

As of March 31, 2019 and December 31, 2018, all assets measured at fair value on a recurring basis consisted of cash equivalents 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

Prepaid expenses and other current assets consisted of the following as of March 31, 2019 and December 31, 2018:

(in thousands)	March 31, 2019	December 31, 2018
Prepaid expenses	$ 807	$ 546
Other current assets	122	92
Total	$ 929	$ 638

Property and equipment, net consisted of the following:

(in thousands)	March 31, 2019	December 31, 2018
Research equipment	$ 2,854	$ 2,711
Computers and software	235	200
Office equipment and furniture	561	527
Leasehold improvements	35	34
Total	3,685	3,472
Less accumulated depreciation and amortization	(1,669)	(1,497)
Property and equipment, net	$ 2,016	$ 1,975

Depreciation and amortization expense was $172,000 and $111,000 for the three months ended March 31, 2019 and 2018, respectively.

Accrued liabilities consisted of the following as of March 31, 2019 and December 31, 2018:

(in thousands)	March 31, 2019	December 31, 2018
Accrued compensation	$ 1,015	$ 974
Refundable fees received	—	2,259
Current portion of operating lease liability	750	—
Other accrued liabilities	1,001	674
Total	$ 2,766	$ 3,907

Note 5. Debt

Long-term debt with Western Alliance Bank

On October 12, 2018, the Company entered into a Loan and Security Agreement with Western Alliance Bank whereby the Company received gross proceeds of $10.0 million under a long-term debt agreement (the "Loan"). The Loan has a maturity date of October 1, 2022 and carries interest at the U.S. prime rate plus 1.25%. The loan has an interest-only period of 19 months, which could be extended by an additional 6 months if certain conditions are met, followed by an amortization period of 30 months, or 24 months if the interest-only period is extended.

The Company paid a loan origination fee of $128,000 which was recorded as a debt discount and is being accreted over the term of the Loan. In addition, the Company is required to pay a fee of $350,000 upon certain change of control events.

Upon maturity or prepayment, the Company will be required to pay a 3% fee, or a 2% fee if the U.S. Food and Drug Administration accepts certain Investigational New Drug ("IND") applications prior to maturity. Because acceptance of an IND is outside of the Company's control, management estimated that the Company will be liable for a fee of 3% of the principal balance, or $300,000 upon repayment or maturity, and such fee is accreted to the debt balance using the effective interest method over the term of the Loan.

The Loan is collateralized by all of the assets of the Company, excluding intellectual property, which is subject to a negative pledge. The Loan contains customary conditions of borrowing, events of default and covenants, including covenants that restrict the Company's ability to dispose of assets, merge with or acquire other entities, incur indebtedness and make distributions to holders of the Company's capital stock. In addition, the Company is required to maintain at least 50% of its deposit and investment accounts, or $20 million, whichever is lower, with the Western Alliance Bank.

The Loan also includes covenants which include the Company's (1) nomination of a clinical candidate by December 31, 2018, which the Company is in compliance with, and (2) submission of a clinical candidate for Investigational New Drug application ("IND"), made to the U.S. Food and Drug Administration by December 31, 2019 and have it approved by January 31, 2020, provided that, if the Company has received net cash proceeds from sale, on or after October 12, 2018, of the Company's equity securities in an amount of not less than $15,000,000, then the IND submission date shall be extended to May 31, 2020 and the approval date shall be extended to June 30, 2020.

Should an event of default occur, including the occurrence of a material adverse effect, the Company could be liable for immediate repayment of all obligations under the Loan. As of March 31, 2019, the Company is in compliance with all covenants and conditions of the Loan.

Note 6. Shareholders' Equity

Restricted Ordinary Shares

In March 2013, the founders of the Company purchased 2,783,686 Ordinary Shares of stock for $0.0068 per share. Of the shares purchased, 1,538,353 were subject to a repurchase option whereby the Company has an option for two months after date of termination of service to repurchase any or all of the unvested shares at the original purchase price per share. The repurchase option shall be deemed to be automatically exercised by the Company as of the end of the two-month period unless the Company notifies the purchaser that it does not intend to exercise its option. The shares will be vested (1) 25% after obtaining suitable siRNA license; (2) 25% after *in vivo* proof-of-concept achieved; (3) 25% after a regulatory agency new drug application (such as an Investigational New Drug application) is filed and accepted by the applicable regulatory agency; and (4) 25% after human biological proof-of-concept is achieved. The Company met the first two milestones during 2013 and 2014 leaving an unvested balance of 769,176 Ordinary Shares. In 2017, the Ordinary Shares purchase agreements were amended to clarify vesting conditions and also to accelerate the vesting of 146,510 Ordinary Shares resulting in a modification expense of $1,495,000. As of March 31, 2019 and 2018, there were 622,667 Ordinary Shares unvested and subject to the repurchase option.

Net Loss per Share

Dilutive securities that were not included in the calculation of diluted net loss per share for the quarters ended March 31, 2019 and 2018 as they were anti-dilutive totaled 67,051 and 110,883, respectively.

For the quarters ended March 31, 2019 and 2018, the calculation of the weighted-average number of shares outstanding excludes both unvested restricted Ordinary Shares of 622,667 and shares held in treasury of 43,000.

Note 7. Share-Based Compensation

Arcturus Therapeutics Inc. had one stock compensation plan prior to the merger, the 2013 Equity Incentive Plan (the "2013 Plan") which provides for the granting of options, warrants, restricted stock awards, restricted stock units, and other equity-based compensation to the Company's directors, employees and consultants. In connection with the merger and as required in the 2013 Plan, all outstanding options in the 2013 Plan converted into options to purchase Alcobra Ltd.'s Ordinary Shares, as renamed Arcturus Therapeutics Ltd., and the applicable share amounts and exercise prices were adjusted to reflect the exchange ratio. The 2013 Plan has been extinguished and no additional grants shall be made from the 2013 Plan. Options granted under the 2013 Plan generally expire ten years from the date of grant. There are 38,751 shares available for future issuance under the 2013 Plan at March 31, 2019. As discussed in the next paragraph, the 2013 Plan was assumed by the 2010 Plan and no additional shares will be issued under the 2013 Plan.

Prior to the merger, Alcobra Ltd. granted options to officers, directors, advisors, management and other key employees through the 2010 Incentive Option Plan (the "2010 Plan"). Substantially all options that were outstanding under the 2010 Plan became fully vested upon the closing of the merger. The value of these options was included as a component of the purchase price recorded in conjunction with the merger. The number of shares subject to and the exercise prices applicable to these outstanding options were adjusted in connection with the 1- for- 7 reverse share split in conjunction with the merger. Options granted under the 2010 Plan generally expire ten years from the date of grant. Upon merger, the 2013 Plan was assumed by the 2010 Plan. The Company generally issues new shares upon option exercise. There were 111,251 shares available for future issuance under the 2010 Plan as of March 31, 2019; however, the Company does not intend to issue additional shares under the 2010 Plan.

In August 2018, the Company adopted the 2018 Omnibus Equity Incentive Plan ("2018 Plan"). Under the 2018 Plan, the Company is authorized to issue up to a maximum of 1,100,000 ordinary shares pursuant to the exercise of incentive share options or other awards provided for therein. As of February 2019, the Company issued a certain number of options to purchase Ordinary shares to a group of employees as well as options to purchase a total of 403,750 Ordinary Shares to its executives which includes 160,000 Ordinary Shares to the Chief Executive Officer and Chief Financial Officer and are subject to shareholder approval. The Company also issued options to purchase a total of 130,000 Ordinary Shares to the non-executive members of the Company's board of directors. As of March 31, 2019, there were 255,250 shares available for future issuance under the 2018 Plan.

Share Options

The following table presents the weighted-average assumptions used in the Black-Scholes valuation model by the Company in calculating the fair value of share options granted:

	For the Three Months Ended March 31,	
	2019	2018
Expected life (in years)	6.1	7.3
Expected volatility	74.1 %	76.4 %
Expected dividend yield	— %	— %
Risk-free interest rate	2.51 %	1.87 %
Grant date weighted average fair value	$ 3.19	$ 7.94

The following table summarizes the Company's share option activity for the three months ended March 31, 2019:

	Number of Shares	Weighted Average Exercise Price	Weighted-Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value (in thousands)
Outstanding - December 31, 2018	1,189,433	$ 7.41		
Granted	76,000 *	$ 4.80		
Exercised	—	$ —		$ —
Forfeited/cancelled	(38,500)	$ 8.08		
Outstanding - March 31, 2019	1,226,933	$ 6.95	9.02	$ 1,254
Exercisable - March 31, 2019	330,661	$ 6.14	7.60	$ 558
Exercisable and expected to vest - March 31, 2019	1,226,933	$ 6.95	9.02	$ 1,254

* Total options granted during the first quarter of 2019 exclude 160,000 options granted to the Chief Executive Officer and Chief Financial Officer which remain subject to shareholder approval.

At March 31, 2019, the total unrecognized compensation cost of $4.6 million will be recognized over the weighted-average remaining service period of approximately 3.1 years. The fair value of the options vested during the three months ended March 31, 2019 was $0.3 million.

Share-based compensation expenses included in the Company's condensed statements of operations and comprehensive loss for the three months ended March 31, 2019 and 2018 were:

(in thousands)	For the Three Months Ended March 31, 2019	2018
Research and development	$ 152	$ 8
General and administrative	247	18
Total	$ 399	$ 26

Share-based compensation expense for the three months ended March 31, 2019 excludes expense related to options granted to the Chief Executive Officer and Chief Financial Officer as option grants are subject to shareholder approval.

Note 8. 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 of six years. 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 will receive free rent for four months and received a tenant improvement allowance of $74,000. The lease may be extended for one five-year period at then current market rate with annual escalations; however, the Company deemed the extension option not reasonably certain to be exercised and therefore excluded the option from the lease terms. The Company entered into an irrevocable standby letter of credit with the landlord for security of $96,000 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, 2019, the payments of the operating lease liability were as follows:

(in thousands)	Remaining Lease Payments
2019	$ 932
2020	1,272
2021	1,310
2022	1,349
2023	1,390
Thereafter	1,745
Total remaining lease payments	7,998
Less: imputed interest	(1,765)
Total operating lease liability	$ 6,233
Less: current portion of operating lease liability	(750)
Operating lease liability, net of current portion	5,483
Weighted-average remaining lease term	6 years
Weighted-average discount rate	8.4%

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 $0.3 million for the three months ended March 31, 2019.

Note 9. Related Party Transactions

Providence

In March 2016, the Company entered into a Research Collaboration and License Agreement with a related party, Providence, whose CEO and President is also a shareholder of the Company, to identify and optimize microRNA modulators or mimetics for the treatment of neoplastic diseases. In April 2017, the Providence Agreement was amended to include mRNA for the treatment of neoplastic disease. In July 2018, the Providence Agreement was amended and restated to cover brain neoplasms, breast neoplasms and ovarian neoplasms. Each party is responsible for their own research costs under the agreement, and Providence is responsible for all development costs through the completion of Phase 2 clinical trials. The Company is entitled to share in future product revenue of each product provided the Company shares in the product's post Phase 2 costs. Separately, Providence has agreed to pay for FTEs at a specified rate. For the quarters ended March 31, 2019 and 2018, the Company has recognized revenue of $0.3 million and a negligible amount, respectively.

Equity-Method Investment

In June 2018, the Company completed the sale of its intangible asset related to the ADAIR technology. Pursuant to the asset purchase agreement for ADAIR, the Company received a 30% ownership interest in the common stock of a privately held company in consideration for the sale of the ADAIR technology. As this ownership interest is greater than 20% and one executive of the Company holds a seat on the investee's board of directors, the Company has the ability to exercise significant influence over the operating and financial policies of this investee; therefore, the Company accounts for this investment as an equity-method investment. The Company has no requirement to invest further in this private company and the ownership percentage may be diluted in the future. The Company has recorded $0.6 million of its share of losses of the investee leaving no equity investment balance as of March 31, 2019.

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 Ltd. for the three-month period ended March 31, 2019. Unless otherwise specified herein, references to the "Company," "we," "us" or "our" shall include Arcturus Therapeutics Ltd. and its 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, 2018 (the "2018 Annual Report"), which was filed with the U.S. Securities and Exchange Commission (the "Commission") on March 18, 2019 and amended on April 10, 2019. Unless otherwise defined herein, capitalized words and expressions used herein shall have the same meanings ascribed to them in the 2018 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. We qualify all of our forward-looking statements by these cautionary statements.

Overview

Arcturus is an emerging RNA medicines company focused on the development and commercialization of therapeutics directed towards rare, infectious, fibrotic, and respiratory diseases with significant unmet medical need. The genetic medicines industry is constantly struggling to identify non-viral delivery solutions for large RNA molecules to different cell types. Arcturus' LUNAR® Delivery technology is lipid mediated – and non-viral. LUNAR is versatile, compatible with various types of RNA -- and has been shown to deliver large RNA to different cell types including Liver hepatocytes, Liver stellate cells, Muscle cells (myocytes), and Lung cells (including bronchial epithelial cells).

Our activities since inception have consisted principally of performing research and development activities, general and administrative activities and raising capital to fund those efforts. Our activities are subject to significant risks and uncertainties, including failing to secure additional funding before we achieve sustainable revenues and profit from operations. As of March 31, 2019, we had an accumulated deficit of $52.6 million.

Liquidity and Capital Resources

Going Concern and Management's Plans

Our products that are being developed have not generated significant revenue. As a result, we have suffered recurring losses and requires significant cash resources to execute our business plans. These losses are expected to continue for an extended period of time. Based on our planned operations, we do not expect that our current cash and cash equivalents balances will be sufficient to fund our operations for at least 12 months after the date the condensed consolidated financial statements are filed without raising additional capital through equity or debt financing. These conditions raise substantial doubt about our ability to continue as a going concern for a period of one year from the date of the issuance of our first quarter 2019 condensed consolidated financial statements. The accompanying financial statements have been prepared on a going concern basis, which contemplates the realization of assets and the satisfaction of liabilities in the normal course of business. The financial statements do not include any adjustments relating to the recoverability and classification of asset amounts or the classification of liabilities that might be necessary should we be unable to continue as a going concern within one year after the date the financial statements are issued.

Historically, our major sources of cash have comprised proceeds from collaboration partners, various public and private offerings of our Ordinary Shares, option and warrant exercises, and interest income. From inception through March 2019, we raised approximately $136.6 million in gross proceeds from various public and private offerings of our Ordinary Shares, debt issuances, collaboration agreements, and the merger with Alcobra.

As of March 31, 2019, we had approximately $31.3 million in cash, restricted cash and cash equivalents. Our plans to mitigate an expected shortfall of capital, to support future operations, include raising additional funds. The actual amount of cash that it will need to operate is subject to many factors.

We also recognize that we will need to raise additional capital in order to continue to execute our business plan in the future. There is no assurance that additional financing will be available when needed, that we will be able to obtain financing on terms acceptable to us, or that we will become profitable and generate positive operating cash flow. If we are unable to raise sufficient additional funds, we will have to scale back operations.

Overview

Since our inception, we have funded our operations principally with proceeds from the sale of capital stock, convertible notes and revenues earned through collaborative agreements. At March 31, 2019, we had $31.2 million in unrestricted cash and cash equivalents.

To support our long-term plans, we intend to seek additional capital through equity 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.

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

- the achievement of milestones under our strategic alliance agreements;
- the terms and timing of any other strategic alliance, licensing and other arrangements that we may establish;
- 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.

The following table shows a summary of our cash flows for the three months ended March 31, 2019 and 2018 (in thousands):

	Three Months Ended March 31,	
(Dollars in thousands)	**2019**	**2018**
Cash provided by (used in):		
Operating activities	$ (5,411)	$ (361)
Investing activities	(78)	11,225
Financing activities	—	294
Net increase in cash and restricted cash	$ (5,489)	$ 11,158

Operating Activities

Our primary use of cash is to fund operating expenses, which consist mainly of research and development expenditures and general and administrative expenditures. We have incurred significant losses which have been partially offset by cash collected through our collaboration agreements and acquired through our recent merger. Cash collections under the collaboration agreements can vary from year to year depending on the terms of agreement and work performed. These changes on cash flows primarily relate to the timing of cash receipts for upfront payments, reimbursable expenses and achievement of milestones under these collaborative agreements.

Net cash used in operating activities was $5.4 million on a net loss of $6.9 million for the three months ended March 31, 2019, compared to net cash used of $0.4 million on a net loss of $6.6 million for the three months ended March 31, 2018. Adjustments for non-cash charges, including share-based compensation and depreciation and amortization were $0.9 million and $0.1 million for the three months ended March 31, 2019 and 2018, respectively. Changes in working capital resulted in adjustments to operating net cash inflows of $0.6 million and $6.1 million for the three months ended March 31, 2019 and 2018, respectively, and were primarily driven by increases to accounts payable and deferred revenue.

Investing Activities

Net cash used in investing activities of $0.1 million for the three months ended March 31, 2019 reflected cash used to purchase property and equipment. Net cash provided by investing activities of $11.2 million for the three months ended March 31, 2018 reflected proceeds of the maturities of our short-term investments of $19.3 million, offset by purchases of short-term investments of $7.7 million, and cash used to purchase property and equipment of $0.4 million.

Financing Activities

No cash was provided by or used in financing activities for the three months ended March 31, 2019. Net cash provided by financing activities for the three months ended March 31, 2018 consisted of net proceeds from the exercise of share options of $0.3 million.

Funding Requirements

We anticipate that we will continue to generate annual net 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. The Company intends 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 achievement of milestones under our strategic alliance agreements;
- the terms and timing of any other strategic alliance, licensing and other arrangements that we may establish;
- 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.

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, 2018. 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.

Revenues

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

	Three Months Ended March 31,		2018 to 2019	
(Dollars in thousands)	2019	2018	$ change	% change
Collaboration revenue	$ 4,350	$ 2,367	$ 1,983	83.8%

Collaboration revenue increased by $2.0 million during the three months ended March 31, 2019 as compared to the three months ended March 31, 2018. The increase in collaboration revenue primarily relates to increased revenue of $2.4 million for programs which commenced in late 2017 and early 2018 and have shown an increase in labor and out-of-pocket costs. This increase was partly offset by $0.4 million related to the termination of one program during the fourth quarter of 2018 and less revenue recognition for research and development funding.

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

	Three Months Ended March 31,		2018 to 2019	
(Dollars in thousands)	2019	2018	$ change	% change
Operating expenses:				
Research and development, net	$ 7,324	$ 3,941	$ 3,383	85.8%
General and administrative	3,534	5,098	(1,564)	-30.7%
Total	$ 10,858	$ 9,039	$ 1,819	20.1%

Research and Development Expenses, net

Our research and development expenses consist primarily of payments for salaries and related personnel expenses, third-party clinical consultants, and laboratory supplies related to conducting research and development activities in conjunction with collaborative agreements and our internal research and development activities.

The increase of $3.4 million in research and development expenses for the three months ended March 31, 2019 as compared to the three months ended March 31, 2018 resulted primarily from an increase of $0.8 million in personnel related expenses, $2.4 million in preclinical production costs related to drug development and $0.2 million in general facility costs.

General and Administrative Expenses

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

The decrease in general and administrative expenses of $1.6 million for the three months ended March 31, 2019 as compared to the three months ended March 31, 2018 was primarily due to a decrease of $2.4 million from the proxy event during fiscal year 2018, offset by the addition of accounting and legal fees of $0.5 million related to redomiciliation and an increase in $0.3 million of personnel and facility related expenses.

Finance (expense) income, net

	Three Months Ended March 31,		2018 to 2019	
(Dollars in thousands)	2019	2018	$ change	% change
Finance (expense) income, net:				
Interest income	$ 115	$ 101	$ 14	13.9%
Interest expense	(203)	—	(203)	*
Total	$ (88)	$ 101	$ (189)	*

* *Greater than 100%*

Interest income is generated on cash and cash equivalents. Interest expense was incurred in conjunction with our long-term debt agreement which was executed during the fourth quarter of 2018.

Critical Accounting Policies and Estimates

We prepare our condensed consolidated financial statements in conformity with accounting principles generally accepted in the United States, or U.S. GAAP. As such, we make certain estimates, judgements and assumptions that we believe are reasonable, based upon information available to us. These judgements involve making estimates about the effect of matters that are inherently uncertain and may significantly impact our 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, 2018. In the following paragraphs, we describe the specific risks associated with these critical accounting policies and we caution that future events exactly as one may expect, and that best estimates may require adjustment.

The following are our significant accounting policies which we believe are the most critical to aid in fully understanding and evaluating our reported financial results.

Revenue Recognition

Effective January 1, 2019, the Company adopted *ASU 2014-09, Revenue from Contracts with Customers (Topic 606)*, or Topic 606, using the modified retrospective transition method. Topic 606 provides a unified model to determine how revenue is recognized. We determine revenue recognition for arrangements within the scope of Topic 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, we satisfy a performance obligation.

The terms of our collaborative research and development agreements include license fees, upfront payments, milestone payments when and if certain research or technology transfer milestones are achieved, development milestones and reimbursement for research and development activities, option exercise fees, other contingent payments for the achievement of defined collaboration objectives and certain preclinical, clinical, regulatory and sales-based events, as well as royalties on sales of commercialized products. Arrangements that include up-front payments are recorded as deferred revenue upon receipt or when due and may require deferral of revenue recognition to a future period until we perform obligations under these arrangements. We record research funding as accounts receivable when the right to consideration is unconditional. The event-based milestone payments represent variable consideration, and we use the most likely amount method to estimate this variable consideration because we will either receive the milestone payment or we will not, which makes the potential milestone payment a binary event. The most likely amount method requires us to determine the likelihood of earning the milestone payment. Given the high degree of uncertainty around achievement of these milestones, we determine the milestone amounts to be fully constrained and do not recognize revenue until the uncertainty associated with these payments is resolved. We will recognize revenue from sales-based royalty payments when or as the sales occur. We 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 Topic 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. Under Topic 606, we elected to use the practical expedients permitted related to adoption, which does not require us to disclose certain information regarding certain remaining performance obligations as of the end of the reporting period. Topic 606 is applicable for revenue recognized in accordance with the practical expedient for measuring progress toward satisfaction of a performance obligation, and variable consideration classified as a sales-based or usage-based royalty promised in exchange for a license.

Leases

In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842), which requires lessees to recognize most leases on the balance sheet as lease liabilities with corresponding right-of-use assets and to disclose key information about leasing arrangements. We adopted Topic 842 on its effective date in the first quarter of 2019 using a modified retrospective approach. We elected the available package of practical expedients upon adoption, which allowed us to carry forward our historical assessment of whether existing agreements contained a lease and the classification of our existing operating leases. We continue to report our financial position as of December 31, 2018 under the former lease accounting standard (Topic 840) in our condensed consolidated balance sheet.

The adoption impact was due to the recognition of operating lease liabilities with corresponding right-of-use assets based on the present value of remaining minimum lease payments. The difference between these amounts was recorded as a reduction of the right-of-use asset by the existing balance of deferred rent obligation with no impact to retained earnings.

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 United States interest rates. 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, 2019, the Company's disclosure controls and procedures were effective at the reasonable assurance level and we believe the condensed consolidated financial statements included in this Form 10-Q for the three months ended March 31, 2019 present, in all material respects, our financial position, results of operations, comprehensive loss and cash flows for the periods presented in conformity with U.S. generally accepted accounting principles.

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, our principal financial officer and our principal 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, principal financial officer and principal accounting officer concluded that there were no other changes in our internal controls over financial reporting during the period 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.

None.

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, 2018, which we strongly encourage you to review. As of the filing of this report, there have been no material changes from the risk factors disclosed in Item 1A of our Form 10-K.

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.

None.

Item 6. Exhibits.

Exhibit No.	Description
2.1	Share Exchange Agreement, dated as of February 11, 2019, by and between the Company 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 with the SEC on March 18, 2019.
3.1	Articles of Association of the Company. Incorporated by reference to Exhibit No. 4.1 to the Company's Registration Statement on Form S-8 filed with the SEC on November 30, 2017 (File No. 333-221830).
4.1†	Arcturus Therapeutics Ltd. 2018 Omnibus Equity Incentive Plan. Incorporated by reference to Exhibit 99.3 to the Company's Report of Foreign Private Issuer on Form 6-K filed with the SEC on July 27, 2018 (File No. 001-35932).
4.2†	Arcturus Therapeutics Ltd. Amended and Restated Compensation Policy for Company Office Holders. Incorporated by reference to Exhibit 99.2 to the Company's Report of Foreign Private Issuer on Form 6-K filed with the SEC on July 27, 2018 (File No. 001-35932).
4.3	Agreement and Plan of Merger and Reorganization among Alcobra Ltd., Aleph MergerSub, Inc. and Arcturus Therapeutics, Inc., dated as of September 27, 2017. Incorporated by reference to Exhibit 99.2 to the Company's Report of Foreign Private Issuer on Form 6-K filed with the SEC on September 28, 2017 (File No. 001-35932).
4.4	Form of Indemnification Agreement. Incorporated by reference to Exhibit 10.4 to the Company's Form F-1/A filed with the SEC on February 19, 2013 (File No. 333-186003).
4.5†	Alcobra Ltd. Amended and Restated 2010 Incentive Option Plan. Incorporated by reference to Exhibit 4.3 to the Company's Form 20-F filed with the SEC on April 28, 2017 (File No. 001-35932).
4.6†	2013 Equity Incentive Plan of Arcturus Therapeutics, Inc. Incorporated by reference to Exhibit 99.1 to the Company's Form S-8 filed with the SEC on November 30, 2017 (File No. 333-221830).
10.1	Loan and Security Agreement, dated October 12, 2018, by and between Western Alliance Bank and Arcturus Therapeutics, Inc. Incorporated by reference to Exhibit 10.1 to the Company's Report of Foreign Private Issuer on Form 6-K filed with the SEC on October 15, 2018 (File No. 001-35932).
10.2	Sales Agreement, dated October 15, 2018, by and between Arcturus Therapeutics Ltd. and Leerink Partners LLC. Incorporated by reference to Exhibit 10.2 to the Company's Report of Foreign Private Issuer on Form 6-K filed with the SEC on October 15, 2018 (File No. 001-35932).
10.3	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 with the SEC on October 1, 2018 (File No. 001-35932).
10.4	Research Collaboration and License Agreement, by and between Arcturus Therapeutics, Inc. and Janssen Pharmaceuticals, Inc., dated October 18, 2017. Incorporated by reference to Exhibit 4.7 to Form 20-F filed with the SEC on May 14, 2018 (File No. 001-35932).
10.5	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 with the SEC on May 14, 2018 (File No. 001-35932).
10.6	Research Agreement, by and between Arcturus Therapeutics, Inc. and Millennium Pharmaceuticals, Inc., a wholly-owned subsidiary of Takeda Pharmaceutical Company Limited, effective December 6, 2016, as amended December 21, 2017. Incorporated by reference to Exhibit 4.9 to Form 20-F filed with the SEC on May 14, 2018 (File No. 001-35932).
10.7	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 with the SEC on May 14, 2018 (File No. 001-35932).
10.8	Letter Agreement, by and between Arcturus Therapeutics, Inc. and Cystic Fibrosis Foundation Therapeutics, Inc., dated May 16, 2017. Incorporated by reference to Exhibit 4.11 to Form 20-F filed with the SEC on May 14, 2018 (File No. 001-35932).
10.9	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 with the SEC on May 14, 2018 (File No. 001-35932).

10.10	Co-Development and Co-Commercialization Agreement, by and between Arcturus Therapeutics, Inc. and CureVac AG, dated January 1, 2018. Incorporated by reference to Exhibit 4.13 to Form 20-F filed with the SEC on May 14, 2018 (File No. 001-35932).
10.11	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 with the SEC on July 10, 2018 (File No. 001-35932).
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 with the SEC 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 with the SEC on March 18, 2019.
10.14	Amended and Restated Joint Venture, Research Collaboration and License Agreement, dated as of July 14, 2018 by and between Arcturus Therapeutics, Inc. and Providence Therapeutics, Inc. Incorporated by reference to Exhibit 10.14 to the Company's Amendment No. 1 to Annual Report on Form 10-K for the year ended December 31, 2018 filed with the SEC on April 10, 2019.
10.15	Research Collaboration Agreement, dated as of March 8, 2019 by and between Arcturus Therapeutics, Inc. and Millennium Pharmaceuticals, Inc., a wholly-owned subsidiary of Takeda Pharmaceutical Company Limited. Incorporated by reference to Exhibit 10.15 to the Company's Annual Report on Form 10-K for the year ended December 31, 2018 filed with the SEC on March 18, 2019.
31.1*	Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2*	Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1*	Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2*	Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.IAB	XBRL Taxonomy Extension Labels Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

* Filed herewith.

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 LTD.

Date: May 10, 2019

By: /s/ Andrew Sassine
Andrew Sassine
Chief Financial Officer

Exhibit 31.1

CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Joseph E. Payne, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Arcturus Therapeutics Ltd.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the small business issuer as of, and for, the periods presented in this report;

4. The small business issuer's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the small business issuer and have:

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

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

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

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

5. The small business issuer's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the small business issuer's auditors and the audit committee of the small business issuer's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the small business issuer's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the small business issuer's internal control over financial reporting.

Date: May 10, 2019

By: /s/ Joseph E. Payne

Joseph E. Payne
President and Chief Executive Officer
(principal executive officer)

Exhibit 31.2

CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Andrew Sassine, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Arcturus Therapeutics Ltd.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the small business issuer as of, and for, the periods presented in this report;

4. The small business issuer's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the small business issuer and have:

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

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

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

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

5. The small business issuer's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the small business issuer's auditors and the audit committee of the small business issuer's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the small business issuer's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the small business issuer's internal control over financial reporting.

Date: May 10, 2019

By: /s/ Andrew Sassine

Andrew Sassine
Chief Financial Officer
(principal financial officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Arcturus Therapeutics Ltd. (the "Company") on Form 10-Q for the period ending March 31, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

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

Date: May 10, 2019

By: /s/ Joseph E. Payne

Joseph E. Payne
President and Chief Executive Officer

Exhibit 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Arcturus Therapeutics Ltd. (the "Company") on Form 10-Q for the period ending March 31, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

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

Date: May 10, 2019

By: /s/ Andrew Sassine

Andrew Sassine
Chief Financial Officer