LIGAND PHARMACEUTICALS INC
Form 10-Q
November 08, 2018
LIGAND PHARMACEUTICALS INC10-Q09/30/2018FALSE2018Q3Large Accelerated
FilerFALSEFALSE21,253,7260000886163--12-310.0010.00160,000,00033,333,33321,095,17421,148,66521,095,17421,148,6

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

FORM 10-Q

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x **Quarterly Report Pursuant to Section 13 or 15 (d) of the Securities Exchange Act of 1934**

For the quarterly period ended September 30, 2018

or

o **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: 001-33093

LIGAND PHARMACEUTICALS INCORPORATED
(Exact name of registrant as specified in its charter)

Delaware	**77-0160744**
(State or other jurisdiction of	**(I.R.S. Employer**

incorporation or organization)	**Identification No.)**
3911 Sorrento Valley Boulevard, Suite 110 San Diego, CA	**92121 (Zip Code)**
(Address of principal executive offices)	

(858) 550-7500
(Registrant's Telephone Number, Including Area Code)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes x No o
Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes x No o
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See definitions of “large accelerated filer,” “accelerated filer,” “smaller reporting company,” and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one)

Large Accelerated Filer	x	Accelerated Filer	o
Non-Accelerated Filer	o	Smaller Reporting Company	o
Emerging Growth Company	o		

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes o No x
As of November 6, 2018, the registrant had 21,253,726 shares of common stock outstanding.

LIGAND PHARMACEUTICALS INCORPORATED
QUARTERLY REPORT

FORM 10-Q

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GLOSSARY OF TERMS AND ABBREVIATIONS

Abbreviation	Definition
2017 Annual Report	Annual Report on Form 10-K for the year ended December 31, 2017, filed with the SEC on March 1, 2018
2019 Notes	$245.0 million aggregate principal amount of convertible senior unsecured notes due 2019
2023 Notes	$750.0 million aggregate principal amount of convertible senior unsecured notes due 2023
Aldeyra Therapeutics	Aldeyra Therapeutics, Inc.
AMD	Age-related macular degeneration
Amgen	Amgen, Inc.
ANDA	Abbreviated New Drug Application
Apricus Biosciences	Apricus Biosciences, Inc.
Arcus Biosciences	Arcus Biosciences, Inc.
ASC	Accounting Standards Codification
ASH	American Society of Hematology
ASU	Accounting Standards Update
Aziyo	Aziyo Med, LLC
CEO	Chief Executive Officer
Company	Ligand Pharmaceuticals Incorporated, including subsidiaries
CorMatrix	CorMatrix Cardiovascular, Inc.
Corvus Pharmaceuticals	Corvus Pharmaceuticals, Inc.
CVR	Contingent value right
Crystal	Crystal Bioscience, Inc.
CyDex	CyDex Pharmaceuticals, Inc.
DME	Diabetic macular edema

ESPP	Employee Stock Purchase Plan, as amended and restated
FASB	Financial Accounting Standards Board
FSGS	Focal segmental glomerulosclerosis
FDA	Food and Drug Administration
Fred Hutch	The Fred Hutchinson Cancer Research Center
GAAP	Generally accepted accounting principles in the United States
GRA	Glucagon receptor antagonist
Hovione	Hovione Farmaciencia
IPR&D	In-Process Research and Development
KSQ Therapeutics	KSQ Therapeutics, Inc.
Ligand	Ligand Pharmaceuticals Incorporated, including subsidiaries
Melinta Therapeutics	Melinta Therapeutics, Inc.
Metabasis	Metabasis Therapeutics, Inc.
NOLs	Net Operating Losses
Novartis	Novartis AG
OMT	Open Monoclonal Technology, Inc.
Ono Pharmaceutical	Ono Pharmaceutical Co., Ltd.
Orange Book	Publication identifying drug products approved by the FDA based on safety and effectiveness
Q2 2018	The Company's fiscal quarter ended June 30, 2018
Q3 2018	The Company's fiscal quarter ended September 30, 2018
Q2 2017	The Company's fiscal quarter ended June 30, 2017
Q3 2017	The Company's fiscal quarter ended September 30, 2017
Retrophin	Retrophin Inc.

Roivant	Roivant Sciences GMBH
Sage Therapeutics	Sage Therapeutics, Inc.
SEC	Securities and Exchange Commission
Seelos Therapeutics	Seelos Therapeutics, Inc.
Selexis	Selexis, SA
Sermonix Pharmaceuticals	Sermonix Pharmaceuticals, LLC
sNDA	Supplemental New Drug Application
Sunshine Lake Pharma	Sunshine Lake Pharma Co., Ltd.
Teva	Teva Pharmaceuticals USA, Inc., Teva Pharmaceutical Industries Ltd. and Actavis, LLC, collectively
Vernalis	Vernalis plc
Verona Pharma	Verona Pharma plc
Viking	Viking Therapeutics
WuXi	Wuxi Biologics
YTD	Year-to-date

PART I - FINANCIAL INFORMATION
Item 1. Condensed Consolidated Financial Statements

LIGAND PHARMACEUTICALS INCORPORATED
CONDENSED CONSOLIDATED BALANCE SHEETS
(Unaudited, in thousands, except par value and share data)

	September 30, 2018	December 31, 2017
ASSETS		
Current assets:		
Cash and cash equivalents	$ 115,560	$ 20,620
Restricted cash	43,646	—
Short-term investments	891,128	181,041
Investment in Viking	105,183	—
Accounts receivable, net	46,976	25,596
Inventory	8,136	4,373
Derivative asset	509,257	—
Other current assets	25,339	5,391
Total current assets	1,745,225	237,021
Deferred income taxes, net	32,440	84,422
Investment in Viking	—	6,438
Intangible assets, net	216,276	228,584
Goodwill	85,961	85,959
Commercial license rights, net	20,934	19,526
Property and equipment, net	4,407	4,212
Other assets	499	4,859
Total assets	$ 2,105,742	$ 671,021
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 1,647	$ 2,259
Accrued liabilities	9,267	7,377
Current contingent liabilities	3,678	4,703
Deferred revenue	2,450	—
2019 convertible senior notes, net	213,144	224,529
Derivative liability	563,158	—
Total current liabilities	793,344	238,868
2023 convertible senior notes, net	602,839	—
Long-term contingent liabilities	9,053	9,258
Other long-term liabilities	986	4,248
Total liabilities	1,406,222	252,374
Commitments and contingencies		
Equity component of currently redeemable	—	18,859

convertible notes (Note 3)				
Stockholders' equity:				
Common stock, $0.001 par value; 60,000,000 and 33,333,333 shares authorized; 21,095,174 and 21,148,665 shares issued and outstanding at September 30, 2018 and December 31, 2017, respectively	21		21	
Additional paid-in capital	883,477		798,205	
Accumulated other comprehensive income (loss)	(64)		2,486	
Accumulated deficit	(183,914)		(400,924)	
Total stockholders' equity	699,520		399,788	
Total liabilities and stockholders' equity	$	2,105,742	$	671,021

See accompanying notes to unaudited condensed consolidated financial statements.

LIGAND PHARMACEUTICALS INCORPORATED
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited)
(in thousands, except per share amounts)

	Three months ended September 30,		Nine months ended September 30,	
	2018	**2017**	**2018**	**2017**
Revenues:				
Royalties	$ 36,127	$ 21,931	$ 88,343	$ 60,372
Material sales	7,027	7,664	19,030	14,336
License fees, milestones and other revenues	2,509	3,780	84,490	15,930
Total revenues	45,663	33,375	191,863	90,638
Operating costs and expenses:				
Cost of sales [1]	1,460	2,385	3,382	3,628
Amortization of intangibles	5,725	2,706	12,309	8,126
Research and development	5,483	4,759	19,023	18,254
General and administrative	9,633	7,032	26,571	20,904
Total operating costs and expenses	22,301	16,882	61,285	50,912
Income from operations	23,362	16,493	130,578	39,726
Other (expense) income:				
Gain (loss) from Viking	62,398	(1,019)	124,206	(3,350)
Interest income	5,474	564	9,111	1,403
Interest expense	(11,200)	(3,386)	(28,133)	(10,028)
Other expense, net	(808)	(581)	(5,643)	(1,185)
Total other income (expense), net	55,864	(4,422)	99,541	(13,160)
Income before income taxes	79,226	12,071	230,119	26,566
Income tax expense	(11,864)	(3,645)	(44,316)	(7,000)
Net income	$ 67,362	$ 8,426	$ 185,803	$ 19,566
Basic net income per share	$ 3.19	$ 0.40	$ 8.77	$ 0.93
Shares used in basic per share calculations	21,148	21,071	21,189	21,007
Diluted net income per share	$ 2.80	$ 0.36	$ 7.61	$ 0.84
Shares used in diluted per share calculations	24,052	23,551	24,430	23,262

(1) Excludes amortization of intangibles.

See accompanying notes to unaudited condensed consolidated financial statements.

LIGAND PHARMACEUTICALS INCORPORATED
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(Unaudited)
(in thousands)

	Three months ended September 30,		Nine months ended September 30,	
	2018	**2017**	**2018**	**2017**
Net income:	$ 67,362	$ 8,426	$ 185,803	$ 19,566
Unrealized net gain on available-for-sale securities, net of tax	87	605	73	628
Less: Reclassification of net realized loss included in net income, net of tax	—	(329)	—	(36)
Comprehensive income	$ 67,449	$ 8,702	$ 185,876	$ 20,158

See accompanying notes to unaudited condensed consolidated financial statements.

LIGAND PHARMACEUTICAL INCORPORATED
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited, in thousands)

	Nine months ended September 30,	
	2018	**2017 (Revised)***
Cash flows from operating activities:		
Net income	$ 185,803	$ 19,566
Adjustments to reconcile net income to net cash provided by operating activities:		
Non-cash change in estimated fair value of contingent liabilities	3,637	2,302
Depreciation and amortization	11,421	7,581
Amortization of debt discount and issuance fees	25,155	8,647
Share-based compensation	14,837	15,917
Deferred income taxes	44,149	6,855
Change in fair value of Viking warrants	(20,438)	(426)
(Gain) / loss from investment in Viking	(101,645)	3,350
Royalties recorded in retained earnings upon adoption of ASC 606	32,707	—
Changes in operating assets and liabilities:		
Accounts receivable, net	(21,380)	1,909
Inventory	(3,763)	(1,985)
Accounts payable, accrued liabilities and Other	(5,129)	(1,458)
Contingent liabilities	(3,867)	(4,998)
Net cash provided by operating	161,487	57,260

activities		
Cash flows from investing activities:		
Payments to CVR holders and other contingency payments	(1,000)	—
Purchase of short-term investments	(1,158,290)	(205,121)
Proceeds from sale of short-term investments	75,993	83,390
Proceeds from maturity of short-term investments	381,690	75,887
Other	3,036	2,839
Net cash used in investing activities	(698,571)	(43,005)
Cash flows from financing activities:		
Repayment of debt	(21,785)	—
Gross proceeds from issuance of 2023 Convertible Senior Notes	750,000	—
Payment of debt issuance costs	(16,900)	—
Proceeds from issuance of warrants	90,000	—
Purchase of convertible bond hedge	(140,250)	—
Proceeds from convertible bond hedge settlement	52,129	—
Net proceeds from stock option exercises and ESPP	18,860	3,864
Taxes paid related to net share settlement of equity awards	(3,657)	(4,132)
Share repurchase	(52,727)	—
Net cash provided by (used in) financing activities	675,670	(268)

Net increase in cash and cash equivalents	138,586	13,987
Cash and cash equivalents and restricted cash at beginning of period	20,620	18,752
Cash and cash equivalents and restricted cash at end of period	$ 159,206	$ 32,739
Supplemental disclosure of cash flow information:		
Interest paid	$ 1,513	$ 1,838
Taxes paid	$ 341	$ 145
Supplemental schedule of non-cash activity:		
Accrued fixed asset purchases	$ 4	$ 1,700
Accrued inventory purchases	$ —	$ 499
Unrealized gain on AFS investments	$ —	$ 628
Excess of conversion value over the principal amount of 2019 Notes paid in shares	$ (31,571)	$ —
Value of shares reacquired under convertible bond hedge transaction entered into with 2019 Notes	$ 31,571	$ —

**See Note (1) for detail on the revision.*

See accompanying notes to unaudited condensed consolidated financial statements.

LIGAND PHARMACEUTICALS INCORPORATED
Notes to Condensed Consolidated Financial Statements
(Unaudited)

Unless the context requires otherwise, references in this report to "Ligand," "we," "us," the "Company," and "our" refer to Ligand Pharmaceuticals Incorporated and its consolidated subsidiaries.

1. Basis of Presentation and Summary of Significant Accounting Policies

Basis of Presentation

Our condensed consolidated financial statements include the financial statements of Ligand and its wholly-owned subsidiaries. All significant intercompany accounts and transactions have been eliminated in consolidation. We have included all adjustments, consisting only of normal recurring adjustments, which we considered necessary for a fair presentation of our financial results. These unaudited condensed consolidated financial statements and accompanying notes should be read together with the audited consolidated financial statements included in our 2017 Annual Report. Interim financial results are not necessarily indicative of the results that may be expected for the full year.

Reclassifications

Certain amounts in the prior period combined financial statements have been reclassified to conform with the current period presentation. See detail in *Accounting Standards Recently Adopted* subsection below for further information.

Significant Accounting Policies

We have described our significant accounting policies in Note 1 to the financial statements in Item 8 of our 2017 Annual Report.

Use of Estimates

The preparation of condensed consolidated financial statements in conformity with GAAP requires the use of estimates and assumptions that affect the amounts reported in the condensed consolidated financial statements and the accompanying notes. Actual results may differ from those estimates.

Accounting Standards Recently Adopted

Revenue Recognition - In May 2014, the FASB issued new guidance related to revenue recognition, ASU 2014-09, Revenue from Contracts with Customers (Topic 606), which outlines a comprehensive revenue recognition model and supersedes most current revenue recognition guidance. The new guidance requires a company to recognize revenue upon transfer of goods or services to a customer at an amount that reflects the expected consideration to be received in exchange for those goods or services. ASC 606 defines a five-step approach for recognizing revenue, which may require a company to use more judgment and make more estimates than under the current guidance. We adopted this new standard as of January 1, 2018, by using the modified-retrospective method. See *Revenue*, *Royalties, Licenses Fees and Milestones*, *Material Sales*, and *Disaggregation of Revenue* subsections below for further information.

Financial Instruments - In January 2016, the FASB issued ASU 2016-01, Financial Instruments - Overall (Subtopic 825-10), which requires equity investments (other than those accounted for under the equity method or those that result in consolidation) to be measured at fair value, with changes in fair value recognized in net income. We have strategic investments, including Viking, that fall under this guidance update. We have adopted ASU 2016-01 effective January 1, 2018 as a cumulative-effect adjustment and reclassified $2.6 million unrealized gains on equity

investments, net of tax, from accumulated other comprehensive income to accumulated deficit on our consolidated balance sheet. Effective January 1, 2018, our results of operations include the changes in fair value of these financial instruments. See *Viking* subsection below for further information on the Viking investment.

Statement of Cash Flows - In August 2016 the FASB issued ASU 2016-15, Statement of Cash Flows (Topic 230), Classification of Certain Cash Receipts and Cash Payments. The new standard clarifies certain aspects of the statement of cash flows, and aims to reduce diversity in practice regarding how certain transactions are classified in the statement of cash flows. This standard was effective January 1, 2018. We adopted ASU 2016-15 effective January 1, 2018. We have updated our presentation

of payments to CVR holders and other contingency payments from investing activities to operating activities to conform to the standard and have revised our prior year cash flows accordingly. In addition, in November 2016, the FASB issued ASU 2016-18, Statement of Cash Flows (Topic 230), Restricted Cash. The standard requires that a statement of cash flows explains the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. Therefore, restricted cash should be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. The new guidance is effective for interim and annual periods beginning after December 15, 2017. We adopted this standard retrospectively, effective January 1, 2018 and included restricted cash amount as of September 30, 2018 in the accompanying condensed consolidated statement of cash flows. We did not have any restricted cash as of December 31, 2017.

Accounting Standards Not Yet Adopted

Leases - In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842). This standard requires organizations that lease assets to recognize the assets and liabilities created by those leases. The standard also will require disclosures to help investors and other financial statement users better understand the amount, timing, and uncertainty of cash flows arising from leases. The ASU becomes effective for public companies for fiscal years and interim periods within those fiscal years, beginning after December 15, 2018. The FASB recently issued guidance that provides an optional transition method for adoption of this standard, which allows organizations to initially apply the new requirements at the effective date, recognize a cumulative effect adjustment to the opening balance of retained earnings, and continue to apply the legacy guidance in ASC 840, Leases, including its disclosure requirements, in the comparative periods presented. We will adopt this standard in the first quarter of 2019 and plan to apply the optional transition method and may elect to apply optional practical expedients. While we are currently evaluating the impact of this standard, the adoption will result in an increase to our consolidated balance sheet for lease liabilities and right-of-use assets, which we do not expect to have a material impact on our consolidated financial statements.

Financial Instruments - In June 2016, the FASB issued ASU 2016-13, Financial Instruments - Credit Losses: Measurement of Credit Losses on Financial Instruments (Topic 326), which amends the impairment model by requiring entities to use a forward-looking approach based on expected losses to estimate credit losses on certain types of financial instruments, including trade receivables and available for sale debt securities. ASU 2016-13 is effective for us beginning in the first quarter of 2020, with early adoption permitted. We are currently evaluating the impact of this ASU on our consolidated financial statements.

Fair Value Measurement - In August 2018, the FASB issued ASU 2018-13,
Fair Value Measurement: Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement (Topi
820), which modifies the disclosure requirements on fair value measurements. ASU 2018-13 is effective for us beginning in the first quarter of 2020, with earlier adoption permitted. We are currently evaluating the impact of this ASU on our consolidated financial statements.

We do not believe that any other recently issued, but not yet effective accounting pronouncements, if adopted, would have a material impact on our consolidated financial statements or disclosures.

Revenue

Our revenue is generated primarily from royalties on sales of products commercialized by our partners, Captisol material sales, license fees and development, regulatory and sales based milestone payments.

On January 1, 2018, we adopted ASC 606 which amends the guidance for recognition of revenue from contracts with customers by using the modified-retrospective method applied to those contracts that were not completed as of January 1, 2018. The results for reporting periods beginning January 1, 2018, are presented in accordance with the

new standard, although comparative information has not been restated and continues to be reported under the accounting standards and policies in effect for those periods. See Note 1, Summary of significant accounting policies, to the consolidated financial statements in our 2017 Annual Report for the accounting associated with revenue prior to the adoption of ASC 606.

Upon adoption, we recorded a net decrease of $25.4 million to accumulated deficit due to the cumulative impact of adopting the new standard, with the impact related primarily to the acceleration of royalty revenue, net of related deferred tax impact. See additional information in *Disaggregation of Revenue* subsection below. Our accounting policies under the new standard were applied prospectively and are noted below.

Royalties, License Fees and Milestones

We receive royalty revenue on sales by our partners of products covered by patents that we own. We do not have future performance obligations under these license arrangements. We generally satisfy our obligation to grant intellectual property rights on the effective date of the contract. However, we apply the royalty recognition constraint required under the guidance for sales-based royalties which requires a sales-based royalty to be recorded no sooner than the underlying sale. Therefore, royalties on sales of products commercialized by our partners are recognized in the quarter the product is sold. Our partners generally report sales information to us on a one quarter lag. Thus, we estimate the expected royalty proceeds based on an analysis of historical experience and interim data provided by our partners including their publicly announced sales. Differences between actual and estimated royalty revenues are adjusted for in the period in which they become known, typically the following quarter.

Our contracts with customers often will include future contingent milestone based payments. We include contingent milestone based payments in the estimated transaction price when there is a basis to reasonably estimate the amount of the payment. These estimates are based on historical experience, anticipated results and our best judgment at the time. If the contingent milestone based payment is sales-based, we apply the royalty recognition constraint and record revenue when the underlying sale has taken place. Significant judgments must be made in determining the transaction price for our sales of intellectual property. Because of the risk that products in development with our partners will not reach development based milestones or receive regulatory approval, we generally recognize any contingent payments that would be due to us upon or after the development milestone or regulatory approval.

Material Sales

We recognize revenue when control of Captisol material or intellectual property license rights is transferred to our customers in an amount that reflects the consideration we expect to receive from our customers in exchange for those products. This process involves identifying the contract with a customer, determining the performance obligations in the contract, determining the contract price, allocating the contract price to the distinct performance obligations in the contract, and recognizing revenue when the performance obligations have been satisfied. A performance obligation is considered distinct from other obligations in a contract when it provides a benefit to the customer either on its own or together with other resources that are readily available to the customer and is separately identified in the contract. We consider a performance obligation satisfied once we have transferred control of the product, meaning the customer has the ability to use and obtain the benefit of the Captisol material or intellectual property license right. We recognize revenue for satisfied performance obligations only when we determine there are no uncertainties regarding payment terms or transfer of control. Sales tax and other taxes we collect concurrent with revenue-producing activities are excluded from revenue. We expense incremental costs of obtaining a contract when incurred if the expected amortization period of the asset that we would have recognized is one year or less or the amount is immaterial. We did not incur any incremental costs of obtaining a contract during the periods reported.

Depending on the terms of the arrangement, we may also defer a portion of the consideration received because we have to satisfy a future obligation. We use an observable price to determine the stand-alone selling price for separate performance obligations or a cost plus margin approach when one is not available. We have elected to recognize the cost for freight and shipping when control over Captisol material has transferred to the customer as an expense in cost of sales.

The timing of revenue recognition, billings and cash collections results in billed accounts receivable, unbilled receivables (contract assets), and customer advances and deposits (contract liabilities) on the Consolidated Balance Sheet. Except for royalty revenue, we generally receive payment at the point we satisfy our obligation or soon after. Therefore, we do not generally carry a contract asset or contract liability balance.

We have revenue sharing arrangements whereby certain revenue proceeds are shared with a third party. The revenue standard requires an entity to determine whether it is a principal or an agent in these transactions by evaluating the nature of its promise to the customer. We received a $4.6 million milestone payment from a license partner in the first

nine months of 2018 of which $3.0 million was paid to a third-party in-licensor. We recorded net revenue of $1.6 million as we believe we are an agent in the transaction. We record amounts due to third-party in-licensors as general and administrative expenses when we are the principal in the transaction.

Disaggregation of Revenue

Under ASC 605, the legacy revenue standard, we would have reported total royalty revenue of $31.6 million in the third quarter of 2018, disaggregated as follows: Promacta $24.8 million, Kyprolis $5.2 million, Evomela $1.1 million, and Other $0.5 million. In 2017 royalty revenue continues to be reported in accordance with ASC 605 and was $21.9 million for the third quarter of 2017 or disaggregated as follows: Promacta $15.6 million, Kyprolis $4.0 million, Evomela $1.9 million and Other $0.4 and $60.4 million for the first nine months of 2017 or disaggregated as follows: Promacta $41.9 million, Kyprolis $11.6

million, Evomela $5.1 million, and Other $1.8 million. Under ASC 606, royalty revenue was $36.1 million in the third quarter of 2018 or disaggregated as follows: Promacta $27.8 million, Kyprolis $6.3 million, Evomela $1.3 million and Other $0.7 million and $88.3 million the first nine months of 2018 or disaggregated as follows: Promacta $68.2 million, Kyprolis $14.4 million, Evomela $4.1 million and Other $1.6 million.

The following table represents disaggregation of Material Sales and License fees, milestone and other (in thousands):

	Three months ended September 30,		Nine months ended September 30,	
	2018	2017	2018	2017
Material Sales				
Captisol	$ 7,027	$ 7,664	$ 19,030	$ 14,336
License fees, milestones and other				
License Fees	$ 265	$ 738	$ 75,201	$ 4,276
Milestone	1,308	2,059	6,052	7,564
Other	936	983	3,237	4,090
	$ 2,509	$ 3,780	$ 84,490	$ 15,930

Short-term Investments

Our investments consist of the following at September 30, 2018 and December 31, 2017 (in thousands):

	September 30, 2018				December 31, 2017			
	Amortized cost	Gross unrealized gains	Gross unrealized losses	Estimated fair value	Amortized cost	Gross unrealized gains	Gross unrealized losses	Estimated fair value
Short-term investments								
Bank deposits	$ 411,166	$ 98	$ (17)	$ 411,247	$ 80,095	$ 6	$ (42)	$ 80,059
Corporate bonds	76,961	4	(52)	76,913	55,335	—	(96)	55,239
Commercial paper	288,549	3	(72)	288,480	27,933	—	(20)	27,913
U.S. Government bonds	110,834	—	(25)	110,809	8,939	—	(10)	8,929
Agency bonds	—	—	—	—	4,991	—	(1)	4,990
Municipal bonds	2,008	—	(13)	1,995	2,028	—	(13)	2,015
Corporate equity securities	135	1,549	—	1,684	207	1,689	—	1,896
	$ 889,653	$ 1,654	$ (179)	$ 891,128	$ 179,528	$ 1,695	$ (182)	$ 181,041

Inventory

Inventory, which consists of finished goods, is stated at the lower of cost or market value. We determine cost using the first-in, first-out method.

Goodwill and Other Identifiable Intangible Assets

Goodwill and other identifiable intangible assets consist of the following (in thousands):

	September 30, 2018		**December 31, 2017**	
Indefinite lived intangible assets				
IPR&D	$	—	$	7,923
Goodwill	85,961		85,959	
Definite lived intangible assets				
Complete technology	228,413		222,900	
Less: accumulated amortization	(31,990)		(23,301)	
Trade name	2,642		2,642	
Less: accumulated amortization	(1,015)		(916)	
Customer relationships	29,600		29,600	
Less: accumulated amortization	(11,374)		(10,264)	
Total goodwill and other identifiable intangible assets, net	$	302,237	$	314,543

Commercial License Rights

Commercial license rights consist of the following (in thousands):

	September 30, 2018		**December 31, 2017**	
Aziyo and CorMatrix	$	17,696	$	17,696
Selexis	8,602		8,602	
	$	26,298	$	26,298
Less: accumulated amortization	(5,364)		(6,772)	
Total commercial rights, net	$	20,934	$	19,526

Commercial license rights represent a portfolio of future milestone and royalty payment rights acquired from Selexis in April 2013 and April 2015 and CorMatrix in May 2016. Individual commercial license rights acquired are carried at allocated cost and approximate fair value. In May 2017, we entered into a Royalty Agreement with Aziyo pursuant to which we will receive royalties from certain marketed products that Aziyo acquired from CorMatrix. We account for the Aziyo commercial license right as a financial asset in accordance with ASC 310, Receivables, and amortize the

commercial license right using the effective interest method whereby we forecast expected cash flows over the term of the arrangement to arrive at an annualized effective interest. The annual effective interest associated with the forecasted cash flows from the Royalty Agreement with Aziyo as of September 30, 2018 is 26%. Revenue is calculated by multiplying the carrying value of the commercial license right by the effective interest.

Viking

Our equity ownership interest in Viking decreased in the first quarter of 2018 to approximately 12.4% due to Viking's financing events in February 2018. As a result, in February 2018, we concluded that we did not exert significant influence over Viking and discontinued accounting for our investment in Viking under the equity method. We also have outstanding warrants to purchase 1.5 million shares of Viking's common stock at an exercise price of $1.50 per share. We recorded the warrants in other current assets in our condensed consolidated balance sheets at fair value of $24.3 million and $3.8 million at September 30, 2018 and December 31, 2017, respectively.

Accrued Liabilities

Accrued liabilities consist of the following (in thousands):

	September 30, 2018	December 31, 2017
Compensation	$ 4,249	$ 4,085
Professional fees	594	430
Amounts owed to former licensees	481	396
Royalties owed to third parties	74	954
Other	3,869	1,512
Total accrued liabilities	$ 9,267	$ 7,377

Share-Based Compensation

Share-based compensation expense for awards to employees and non-employee directors is recognized on a straight-line basis over the vesting period until the last tranche vests. The following table summarizes share-based compensation expense recorded as components of research and development expenses and general and administrative expenses for the periods indicated (in thousands):

	Three months ended September 30,		Nine months ended September 30,	
	2018	2017	2018	2017
Share-based compensation expense as a component of:				
Research and development expenses	$ 2,257	$ 2,394	$ 6,120	$ 8,260
General and administrative expenses	3,213	2,854	8,717	7,657
	$ 5,470	$ 5,248	$ 14,837	$ 15,917

No options were granted during the third quarter of 2018. The fair-value for options that were awarded to employees and directors was estimated at the date of grant using the Black-Scholes option valuation model with the following weighted-average assumptions:

	Three months ended September 30,		Nine months ended September 30,	
	2018	2017	2018	2017
Risk-free interest rate	N/A	2%	2.8%	2.1%
Dividend yield	N/A	N/A	N/A	N/A
Expected volatility	N/A	47%	34%	47%
Expected term	N/A	6.5	5.7	6.8

Derivatives

In May 2018, we issued $750 million aggregate principal amount of 0.75% convertible senior notes (the "2023 Notes") as further described in "Footnote 3. Convertible Senior Notes." Concurrently with the issuance of the notes, we entered into a series of convertible note hedge and warrant transactions which in combination are designed to reduce the potential dilution to our stockholders and/or offset the cash payments we are required to make in excess of the principal amount upon conversion of the notes. The conversion option associated with the 2023 Notes temporarily met the criteria for an embedded derivative liability which required bifurcation and separate accounting. In addition, the note hedge and warrants were also temporarily classified as a derivative asset and liability, respectively, on our condensed consolidated balance sheet. As a result of shareholder approval to increase the number of authorized shares of our common stock on June 19, 2018, as discussed in "Footnote 3. Convertible Senior Notes," the derivative asset and liabilities were reclassified to additional paid-in capital. Changes in the fair value of these derivatives prior to being classified in equity were reflected in other expense, net, in our condensed consolidated statements of operations.

The following table summarizes the inputs and assumptions used in the Black-Scholes model to calculate the fair value of the assets and the inputs and assumptions used in the Binomial model to calculate the fair value of the derivative liabilities associated with the 2023 Notes:

	As of May 22, 2018	As of June 19, 2018
Common stock price	$187.09	$195.91
Exercise price, conversion premium and bond hedge	$248.48	$248.48
Exercise price, warrant	$315.38	$315.38
Risk-free interest rate	2.9%	2.8%
Volatility	30%-35%	30%-35%
Dividend yield	—	—
Annual coupon rate	0.75%	0.75%
Remaining contractual term (in years)	5.00	4.98

In addition, on May 22, 2018, we amended our 2019 Notes making an irrevocable election to settle the entire note in cash. As a result, we reclassified from equity to derivative liability the fair value of the conversion premium as of May 22, 2018. Amounts paid in excess of the principal amount will be offset by an equal receipt of cash under the corresponding convertible bond hedge. As a result, we reclassified from equity to derivative asset the fair value of the bond hedge as of May 22, 2018. Changes in the fair value of these derivatives are reflected in other expense, net, in our condensed consolidated statements of operations.

The following table summarizes the inputs and assumptions used in the Black-Scholes model to calculate the fair value of the derivative assets and the inputs and assumptions used in the Binomial model to calculate the fair value of the derivative liability associated with the 2019 Notes:

	As of May 22, 2018	As of September 30, 2018
Common stock price	$187.09	$274.49
Exercise price, conversion premium and bond hedge	$75.05	$75.05
Risk-free interest rate	2.47%	2.59%
Volatility	30%-35%	30%-35%
Dividend yield	—	—
Annual coupon rate	0.75%	0.75%
	1.25	0.89

Remaining contractual term (in years)

Income Per Share

Basic income per share is calculated by dividing net income by the weighted-average number of common shares outstanding during the period. Diluted income per share is computed based on the sum of the weighted average number of common shares and potentially dilutive common shares outstanding during the period.

Potentially dilutive common shares consist of shares issuable under the 2023 Notes, warrants associated with the 2019 Notes and 2023 Notes, stock options and restricted stock. The 2023 Notes have a dilutive impact when the average market price our common stock exceeds the applicable conversion price of the notes. The 2019 Notes were amended to require cash settlement of the conversion premium for conversion notices received after May 22, 2018 and therefore do not have a dilutive impact subsequent to May 22, 2018. The warrants have a dilutive effect to the extent the market price per share of common stock exceeds the applicable exercise price of the warrants. Potentially dilutive common shares from stock options and restricted stock are determined using the average share price for each period under the treasury stock method. In addition, proceeds from exercise of stock options and the average amount of unrecognized compensation expense for restricted stock are assumed to be used to repurchase shares.

The following table presents the calculation of weighted average shares used to calculate basic and diluted earnings per share:

	Three months ended September 30,		Nine months ended September 30,	
	2018	2017	2018	2017
Weighted average shares outstanding:	21,148,080	21,070,678	21,188,938	21,006,718
Dilutive potential common shares:				
Restricted stock	83,427	79,222	68,997	140,340
Stock options	1,247,940	1,019,342	1,166,777	980,461
2019 Convertible Senior Notes	—	1,334,357	923,650	1,118,456
Warrants	1,572,969	47,646	1,081,209	15,882
Shares used to compute diluted income per share	24,052,416	23,551,245	24,429,571	23,261,857
Potentially dilutive shares excluded from calculation due to anti-dilutive effect	3,125,815	255,101	1,788,709	2,531,219

2. Fair Value Measurements

Assets and Liabilities Measured on a Recurring Basis

The following table presents the hierarchy for our assets and liabilities measured at fair value (in thousands):

	September 30, 2018				December 31, 2017			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets:								
Short-term investments(1)	$ 106,866	$ 889,445	$ —	$ 996,311	$ 1,896	$ 179,145	$ —	$ 181,041
Note receivable Viking	—	—	—	—	—	—	3,877	3,877
Investment in warrants(2)	24,284	—	—	24,284	3,846	—	—	3,846
Total assets	$ 131,150	$ 889,445	$ —	$ 1,020,595	$ 5,742	$ 179,145	$ 3,877	$ 188,764
Liabilities:								
Crystal contingent liabilities(3)	$ —	$ —	$ 7,401	$ 7,401	$ —	$ —	$ 8,401	8,401
CyDex contingent liabilities(4)	—	—	514	514	—	—	1,589	1,589

Metabasis contingent liabilities(5)	—	4,816	—	4,816	—	3,971	—	3,971		
Total liabilities	$ —	$ 4,816	$ 7,915	$ 12,731	$ —	$ 3,971	$ 9,990	$ 13,961		

1. Investments in equity securities, which we received from Viking and another licensee as upfront and event-based payments, are classified as level 1 as the fair value is determined using quoted market prices in active markets for the same securities. Short-term investments in marketable debt securities with maturities greater than 90 days are classified as available-for-sale securities based on management's intentions and are at level 2 of the fair value hierarchy, as these investment securities are valued based upon quoted prices for identical or similar instruments in markets that are not active, and model-based valuation techniques for which all significant assumptions are observable in the market.
2. Investment in warrants, which we received as a result of Viking's partial repayment of the Viking note receivable and our purchase of Viking common stock and warrants in April 2016, are classified as level 1 as the fair value is determined using quoted market prices in active markets for the same securities. The change of the fair value is recorded in Gain (loss) from Viking in our condensed consolidated statement of operations.
3. The fair value of Crystal contingent liabilities was determined using a probability weighted income approach. Most of the contingent payments are based on development or regulatory milestones as defined in the merger agreement with Crystal. The fair value is subjective and is affected by changes in inputs to the valuation model including management's estimates regarding the timing and probability of achievement of certain developmental and regulatory milestones. At September 30, 2018, most of the development and regulatory milestones were estimated to be highly probable of being achieved between 2018 and 2019. Changes in these estimates may materially affect the fair value.
4. The fair value of the liabilities for CyDex contingent liabilities were determined based on the income approach. To the extent the estimated future income may vary significantly given the long-term nature of the estimate, we utilize a Monte Carlo model. The fair value is subjective and is affected by changes in inputs to the valuation model including management's estimates of timing and probability of achievement of certain revenue thresholds and developmental and regulatory milestones which may be achieved and affect amounts owed to former license holders.
5. In connection with our acquisition of Metabasis in January 2010, we issued Metabasis stockholders four tradable CVRs, one CVR from each of four respective series of CVR, for each Metabasis share. The CVRs entitle Metabasis stockholders to cash payments as frequently as every six months as cash is received by the Company from proceeds from the sale or partnering of any of the Metabasis drug development programs, among other triggering events. The liability for the CVRs is determined using quoted prices in a market that is not active for the underlying CVR. The carrying amount of the liability may fluctuate significantly based upon quoted market prices and actual amounts paid under the agreements may be materially different than the carrying amount of the liability. Several of the Metabasis drug development programs have been outlicensed to Viking, including VK2809. VK2809 is a novel selective TR- agonist with potential in multiple indications, including hypercholesterolemia, dyslipidemia, NASH, and X-ALD. Under the terms of the agreement with Viking, Ligand may be entitled to up to $375 million of development, regulatory and commercial milestones and tiered royalties on potential future sales including a $10 million payment upon initiation of a Phase 3 clinical trial. Another Metabasis drug development program, RVT-1502, has been outlicensed to Metavant. RVT-1502 is a novel, orally-bioavailable, small molecule, glucagon receptor antagonist or "GRA." Ligand may be entitled to up to $529 million in milestone payments and royalties.

For the three months ended September 30, 2018, we reduced the contingent liabilities associated with CyDex by $1.1 million based on management's estimates of timing and probability of achievement of certain revenue thresholds, and there was no change to the fair value of the contingent liabilities associated with Crystal. We made $3.8 million payment to the former shareholders of Metabasis and $1.0 million payment to the former shareholders of Crystal during the third quarter and first quarter of 2018, respectively.

Assets Measured on a Non-Recurring Basis

We apply fair value techniques on a non-recurring basis associated with valuing potential impairment losses related to our goodwill, indefinite-lived intangible assets and long-lived assets.

We evaluate goodwill and indefinite-lived intangible assets annually for impairment and whenever circumstances occur indicating that goodwill might be impaired. We determine the fair value of our reporting unit based on a combination of inputs, including the market capitalization of Ligand, as well as Level 3 inputs such as discounted cash flows, which are not observable from the market, directly or indirectly. We determine the fair value of our indefinite-lived intangible assets using the income approach based on Level 3 inputs.

Other than certain indefinite-lived intangible asset, there were no triggering events identified and no indication of impairment of our goodwill, indefinite-lived intangible assets, or long-lived assets during the nine months ended September 30, 2018 and September 30, 2017.

3. Convertible Senior Notes

0.75% Convertible Senior Notes due 2019

In August 2014, we issued $245.0 million aggregate principal amount of 2019 Notes. The implied estimated effective rate of the liability component of the 2019 Notes was 5.83% and are convertible into common stock at an initial conversion rate of 13.3251 shares per $1,000 principal amount of 2019 Notes, subject to adjustment upon certain events, which is equivalent to an initial conversion price of approximately $75.05 per share of common stock. The notes bear cash interest at a rate of 0.75% per year, payable semi-annually.

Holders of the 2019 Notes may convert the notes at any time prior to the close of business on the business day immediately preceding May 15, 2019, under any of the following circumstances:

(1) during any fiscal quarter (and only during such fiscal quarter) commencing after December 31, 2014, if, for at least 20 trading days (whether or not consecutive) during the 30 consecutive trading day period ending on the last trading day of the immediately preceding fiscal quarter, the last reported sale price of our common stock on such trading day is greater than 130% of the conversion price on such trading day;

(2) during the five business day period immediately following any 10 consecutive trading day period, in which the trading price per $1,000 principal amount of notes was less than 98% of the product of the last reported sale price of our common stock on such trading day and the conversion rate on each such trading day; or

(3) upon the occurrence of certain specified corporate events as specified in the indenture governing the notes.

As of September 30, 2018, our last reported sale price has exceeded the 130% threshold described above and accordingly the 2019 Notes have been classified as a current liability as of September 30, 2018. Upon conversion, we must deliver cash to settle the principal and may deliver cash or shares of common stock, at our option, to settle any premium due upon conversion for any conversion notices received prior to May 22, 2018. And, as per a supplemental indenture entered into on May 22, 2018, we made an irrevocable election to settle the entire note in cash. As such, we

must deliver cash to settle the principal and any premium due upon conversion for any conversion notices received on or after May 22, 2018.

As a result of the requirement to deliver cash to settle any premium due upon conversion, on May 22, 2018, we reclassified from equity to liability the conversion option fair value of $341.6 million. In accordance with ASC 815, Derivatives and Hedging, the derivative was adjusted to its fair value as of September 30, 2018 to $563.2 million with the resulting $161.9 million and $221.6 million increase reflected in other expense, net, in our condensed consolidated statements of operations for the three and nine months ended September 30, 2018, respectively.

In March and April 2018, we received notices for conversion of $21.8 million of principal amount of the 2019 Notes which were settled in May and June 2018. We paid the noteholders the conversion value of the notes in cash, up to the principal amount of the 2019 Notes. The excess of the conversion value over the principal amount, totaling $31.6 million, was paid in shares of common stock. This equity dilution upon conversion of the 2019 Notes was offset by the reacquisition of the shares under the convertible bond hedge transactions entered into in connection with the offering of the 2019 Notes as further discussed below. As a result of the conversions, we recorded a $0.6 million loss on extinguishment of debt calculated as the difference between the estimated fair value of the debt and the carrying value of the 2019 Notes as of the settlement dates. To measure the fair value of the converted 2019 Notes as of the settlement dates, the applicable interest rates were estimated using Level 2 observable inputs and applied to the converted notes using the same methodology as in the issuance date valuation.

During the third quarter of 2018, we received notices for conversion of $195.9 million in principal of 2019 Convertible Senior Notes which settled in the fourth quarter of 2018.

Convertible Bond Hedge and Warrant Transactions

In August 2014, we entered into convertible bond hedges and sold warrants covering 3,264,643 shares of our common stock to minimize the impact of potential dilution to our stockholders and/or offset the cash payments we are required to make in excess of the principal amount upon conversion of the 2019 Notes.

The convertible bond hedges have an exercise price of $75.05 per share and are exercisable when and if the 2019 Notes are converted. If upon conversion of the 2019 Notes, the price of our common stock is above the exercise price of the convertible bond hedges, the counterparties will deliver shares of common stock and/or cash with an aggregate value equal to the difference between the price of common stock at the conversion date and the exercise price, multiplied by the number of shares of common stock related to the convertible bond hedge transaction being exercised. The convertible bond hedges and warrants described below are separate transactions entered into by us and are not part of the terms of the 2019 Convertible Senior Notes. Holders of the 2019 Convertible Senior Notes and warrants will not have any rights with respect to the convertible bond hedges. We paid $48.1 million for these convertible bond hedges and recorded the amount as a reduction to additional paid-in capital.

Conversion notices received after May 22, 2018 relating to the 2019 Notes must be fully settled in cash and amounts paid in excess of the principal amount will be offset by an equal receipt of cash under the convertible bond hedge. As a result of the irrevocable cash election, on May 22, 2018, we reclassified from equity to derivative asset the remaining bond hedge fair value of $340.0 million and marked it to market as of September 30, 2018 to $561.4 million with the resulting $162.0 million and $221.4 million increase reflected in other expense, net, in our condensed consolidated statements of operations for the three and nine months ended September 30, 2018, respectively.

Concurrently with the convertible bond hedge transactions, we entered into warrant transactions whereby it sold warrants to acquire approximately 3,264,643 shares of common stock with an exercise price of approximately $125.08 per share, subject to certain adjustments. The warrants have various expiration dates ranging from November 13, 2019 to April 22, 2020. The warrants will have a dilutive effect to the extent the market price per share of common stock exceeds the applicable exercise price of the warrants, as measured under the terms of the warrant transactions. We received $11.6 million for these warrants and recorded this amount to additional paid-in capital. The common stock issuable upon exercise of the warrants will be in unregistered shares, and we do not have the obligation and do not intend to file any registration statement with the SEC registering the issuance of the shares under the warrants. We continue to have the ability to avoid settling the warrants associated with the 2019 Notes in cash after May 22, 2018. Accordingly, the warrants continue to be classified in additional paid in capital. In the third quarter of 2018, we received $52.1 million in bond hedge settlement proceeds associated with a portion of the conversion notices received during the third quarter of 2018, which was recorded as a reduction against derivative assets. This amount, plus

additional conversion premium due upon settlement of the redeemed 2019 Convertible Senior Notes, will be paid in the fourth quarter of 2018.

0.75% Convertible Senior Notes due 2023

In May 2018, we issued $750 million aggregate principal amount of 0.75% convertible senior notes. The net proceeds from the offering, after deducting the initial purchasers' discount and offering expenses, were approximately $733.1 million. The 2023 Notes will be convertible into cash, shares of common stock, or a combination of cash and shares of common stock, at our election, based on an initial conversion rate, subject to adjustment, of 4.0244 shares per $1,000 principal amount of the 2023 Notes which represents an initial conversion price of approximately $248.48 per share.

Holders of the 2023 Notes may convert the notes at any time prior to the close of business on the business day immediately preceding November 15, 2022, under any of the following circumstances:

(1) during any fiscal quarter (and only during such fiscal quarter) commencing after September 30, 2018, if, for at least 20 trading days (whether or not consecutive) during the 30 consecutive trading day period ending on the last trading day of the immediately preceding fiscal quarter, the last reported sale price of our common stock on such trading day is greater than 130% of the conversion price on such trading day;

(2) during the five business day period immediately following any 10 consecutive trading day period, in which the trading price per $1,000 principal amount of notes was less than 98% of the product of the last reported sale price of our common stock on such trading day and the conversion rate on each such trading day; or

(3) upon the occurrence of certain specified corporate events as specified in the indenture governing the notes.

At the May 22, 2018 issuance date of the 2023 Notes, we did not have the necessary number of authorized but unissued shares of its common stock available to settle the conversion option of the 2023 Notes in shares. Therefore, in accordance with guidance found in ASC 815-15 – Embedded Derivatives, the conversion option of the Notes was deemed an embedded derivative requiring bifurcation from the 2023 Notes (host contract) and separate accounting as a derivative liability. The fair value of the conversion option derivative liability at May 22, 2018 was $144.0 million, which was recorded as a reduction to the carrying value of the debt. This debt discount is amortized to interest expense over the term of the debt using the effective interest method. Up to the date in which we received shareholder approval on June 19, 2018 to increase the authorized number of shares of our common stock, the conversion option was accounted for as a liability with the resulting change in fair value of $13.5 million during that period reflected in other expense, net, in our condensed consolidated statements of operations for the nine months ended September 30, 2018. As of September 30, 2018, the debt discount remains and continues to be amortized to interest expense.

The notes will have a dilutive effect to the extent the average market price per share of common stock for a given reporting period exceeds the conversion price of $248.48. As of September 30, 2018, the “if-converted value” did not exceed the principal amount of the 2023 Notes.

In connection with the issuance of the 2023 Notes, we incurred $16.9 million of issuance costs, which primarily consisted of underwriting, legal and other professional fees. The portion of these costs allocated to the conversion option totaling $3.2 million was recorded as interest expense for the nine months ended September 30, 2018. The portion of these costs allocated to the liability component totaling $13.7 million is amortized to interest expense using the effective interest method over the five year expected life of the 2023 Notes.

It is our intent and policy to settle conversions through combination settlement, which essentially involves payment in cash equal to the principal portion and delivery of shares of common stock for the excess of the conversion value over the principal portion.

Convertible Bond Hedge and Warrant Transactions

In conjunction with the 2023 Notes, in May 2018, we entered into convertible bond hedges and sold warrants covering 3,018,327 shares of its common stock to minimize the impact of potential dilution to our common stock and/or offset the cash payments we are required to make in excess of the principal amount upon conversion of the 2023 Notes. The convertible bond hedges have an exercise price of $248.48 per share and are exercisable when and if the 2023 Notes are converted. We paid $140.3 million for these convertible bond hedges. If upon conversion of the 2023 Notes, the price of our common stock is above the exercise price of the convertible bond hedges, the counterparties will deliver shares of common stock and/or cash with an aggregate value approximately equal to the difference between the price of common stock at the conversion date and the exercise price, multiplied by the number of shares of common stock related to the convertible bond hedge transaction being exercised. The convertible bond hedges and warrants described below are separate transactions entered into by us and are not part of the terms of the 2023 Notes. Holders of the 2023 Notes and warrants will not have any rights with respect to the convertible bond hedges.

Concurrently with the convertible bond hedge transactions, we entered into warrant transactions whereby it sold warrants covering approximately 3,018,327 shares of common stock with an exercise price of approximately $315.38 per share, subject to certain adjustments. We received $90.0 million for these warrants. The warrants have various expiration dates ranging from August 15, 2023 to February 6, 2024. The warrants will have a dilutive effect to the extent the market price per share of common stock exceeds the applicable exercise price of the warrants, as measured under the terms of the warrant transactions. The common stock issuable upon exercise of the warrants will be in unregistered shares, and we do not have the obligation and do not intend to file any registration statement with the SEC registering the issuance of the shares under the warrants.

For the period from May 22, 2018, the issuance date of the bond hedge and warrant transactions, to June 19, 2018, the date shareholders approved an increase in our authorized shares of common stock, the bond hedges and warrants required cash settlement and were accounted for as a derivative asset and liability, respectively, with the resulting increase in fair value of $19.2 million and $7.5 million during that period reflected in other expense, net, in our condensed consolidated statements of operations for the three and nine months ended September 30, 2018, respectively.

The following table summarizes information about the equity and liability components of the 2019 Notes and 2023 Notes (in thousands).

	September 30, 2018		**December 31, 2017**	
Principal amount of 2019 Notes outstanding	$	223,215	$	245,000
Unamortized discount (including unamortized debt issuance cost)	(10,071)		(20,471)	
Total current portion of notes payable	$	213,144	$	224,529
Principal amount of 2023 Notes outstanding	$	750,000	$	—
Unamortized discount (including unamortized	(147,161)		—	

debt issuance cost)				
Total long-term portion of notes payable	$	602,839	$	—
Carrying value of equity component of 2023 Notes	$	143,986	$	—
Fair value of convertible senior notes outstanding (Level 2)	$	1,729,179	$	446,360

4. Income Tax

Our effective tax rate may vary from the U.S. federal statutory tax rate due to the change in the mix of earnings in various state jurisdictions with different statutory rates, benefits related to tax credits, and the tax impact of non-deductible expenses, stock award activities and other permanent differences between income before income taxes and taxable income. The effective tax rate for the three and nine months ended September 30, 2018 was 15% and 19%, respectively. The variance from the U.S. federal statutory tax rate of 21% for the three and nine months ended September 30, 2018 was primarily attributable to tax deductions related to stock award activities which were recorded as discrete items as well as the release of a valuation allowance relating to our investment in Viking. The effective tax rate for the three and nine months ended September 30, 2017 was 30% and 26%, respectively. The variance from the U.S. federal statutory tax rate of 35% was primarily attributable to tax deductions related to stock award activities which were recorded as discrete items in the quarter.

We continue to evaluate the impact of the U.S. Tax Cuts and Jobs Act (Tax Act) and have not adjusted our provisional tax estimates related to the Tax Act that it recorded in the fourth quarter of 2017. Our accounting remains incomplete as of

September 30, 2018, and will be refined and, if necessary, adjusted by the end of 2018 as required by SEC Staff Accounting Bulletin No. 118 ("SAB 118").

5. Stockholders' Equity

We grant options and awards to employees and non-employee directors pursuant to a stockholder approved stock incentive plan, which is described in further detail in Note 8, Stockholders' Equity, of Notes to Consolidated Financial Statements in our 2017 Annual Report.

The following is a summary of our stock option and restricted stock activity and related information:

	Stock Options		Restricted Stock Awards	
	Shares	Weighted-Average Exercise Price	Shares	Weighted-Average Grant Date Fair Value
Balance as of December 31, 2017	1,876,332	$ 53.17	133,294	$ 91.60
Granted	224,316	121.83	62,033	169.91
Options exercised/RSUs vested	(318,536)	58.64	(60,135)	83.95
Forfeited	(12,228)	104.54	(1,165)	125.16
Balance as of September 30, 2018	1,769,763	$ 65.60	134,027	$ 130.99

As of September 30, 2018, outstanding options to purchase 1.3 million shares were exercisable with a weighted average exercise price per share of $43.98.

Employee Stock Purchase Plan

The price at which common stock is purchased under the Amended ESPP is equal to 0.85% of the fair market value of the common stock on the first or last day of the offering period, whichever is lower. As of September 30, 2018, 65,007 shares were available for future purchases under the Amended ESPP.

6. Commitment and Contingencies: Legal Proceedings

We record an estimate of a loss when the loss is considered probable and estimable. Where a liability is probable and there is a range of estimated loss and no amount in the range is more likely than any other number in the range, we record the minimum estimated liability related to the claim in accordance with ASC 450, Contingencies. As additional information becomes available, we assess the potential liability related to our pending litigation and revises our estimates. Revisions in the our estimates of potential liability could materially impact its results of operations.

On July 27, 2018, AG Oncon, LLC, AG Ofcon, Ltd., Calamos Market Neutral Income Fund, Capital Ventures International, Citadel Equity Fund Ltd., Opti Opportunity Master Fund, Polygon Convertible Opportunity Master Fund, Wolverine Flagship Fund Trading Limited, as plaintiffs, filed a complaint in the Court of Chancery of the State of Delaware (AG Oncon, LLC v. Ligand Pharmaceuticals Inc.) alleging claims for violation of the Trust Indenture Act, breach of contract, damages and a declaratory judgment that the Supplemental Indenture, dated as of February 20, 2018, entered into by us and Wilmington Trust, National Association, as trustee, is invalid. On October 1, 2018, we filed a motion to dismiss the plaintiffs' complaint. The hearing on our motion is currently scheduled for December 6, 2018. We believe the allegations are completely without merit, reject all claims raised by the plaintiffs and intend to vigorously defend this matter.

In November 2017, CyDex, our wholly owned subsidiary, received a paragraph IV certification from Teva alleging that certain of our patents related to Captisol were invalid, unenforceable and/or will not be infringed by Teva's ANDA related to Spectrum Pharmaceuticals' NDA for Evomela. On December 20, 2017, CyDex filed a complaint against Teva in the U.S. District Court for the District of Delaware, asserting that Teva's ANDA would infringe our patents. On March 22, 2018, Teva filed an answer and counterclaims seeking declarations of non-infringement and invalidity as to each of the asserted patents and on April 12, 2018, CyDex filed an answer to Teva's counterclaims. On July 24, 2018, the U.S. District Court entered a Scheduling Order, setting a hearing on Claim Construction for April 1, 2019, and a five to six day bench trial to begin on January 27, 2020. Fact discovery is proceeding.

7. Subsequent Event

Acquisition of Vernalis

In October 2018, we acquired Vernalis, a structure-based drug discovery biotechnology company for $43.0 million. The acquisition of Vernalis increases our overall portfolio of shots on goal. The acquisition was funded using cash on hand, which was previously deposited in an escrow account designated for the acquisition. Therefore, such amount was recorded as restricted cash on the accompanying condensed consolidated balance sheet as of September 30, 2018. We are currently evaluating the accounting impact of this transaction as it relates to our adoption of ASU 2017-01, Business Combinations (Topic 805): Clarifying the Definition of a Business.

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

Caution: This discussion and analysis may contain predictions, estimates and other forward-looking statements that involve a number of risks and uncertainties, including those discussed in Part II, Item 1A:"Risk Factors." This outlook represents our current judgment on the future direction of our business. These statements include those related to our Captisol-related revenues, our Promacta, Kyprolis, and other product royalty revenues, product returns, and product development. Actual events or results may differ materially from our expectations. For example, there can be no assurance that our revenues or expenses will meet any expectations or follow any trend(s), that we will be able to retain our key employees or that we will be able to enter into any strategic partnerships or other transactions. We cannot assure you that we will receive expected Promacta, Kyprolis, Captisol and other product revenues to support our ongoing business or that our internal or partnered pipeline products will progress in their development, gain marketing approval or achieve success in the market. In addition, ongoing or future arbitration, or litigation or disputes with third parties may have a material adverse effect on us. Such risks and uncertainties, and others, could cause actual results to differ materially from any future performance suggested. We undertake no obligation to make any revisions to these forward-looking statements to reflect events or circumstances arising after the date of this quarterly report. This caution is made under the safe harbor provisions of Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act.

Our trademarks, trade names and service marks referenced herein include Ligand. Each other trademark, trade name or service mark appearing in this quarterly report belongs to its owner.

References to "Ligand Pharmaceuticals Incorporated," "Ligand," the "Company," "we" or "our" include Ligand Pharmaceuticals Incorporated and our wholly owned subsidiaries.

Overview

We are a biopharmaceutical company focused on developing and acquiring technologies that help pharmaceutical companies discover and develop medicines. Over our more than 30 year history, we have employed research technologies such as nuclear receptor assays, high throughput computer screening, formulation science, liver targeted pro-drug technologies and antibody discovery technologies to assist companies in their work toward securing prescription drug approvals. We currently have partnerships and license agreements with over 100 pharmaceutical and biotechnology companies, and over 178 different programs under license with us are currently in various stages of commercialization and development. We have contributed novel research and technologies for approved medicines that treat cancer, osteoporosis, fungal infections and low blood platelets, among others. Our partners have programs currently in clinical development targeting seizure, coma, cancer, diabetes, cardiovascular disease, muscle wasting, liver disease, and kidney disease, among others.

We have over 800 issued patents worldwide. We have assembled our large portfolio of fully-funded programs either by licensing our own proprietary drug development programs, licensing our platform technologies such as Captisol or OmniAb to partners for use with their proprietary programs, or acquiring existing partnered programs from other companies. Fully-funded programs are those for which our partners pay all of the development and commercialization costs. For our internal programs, we generally plan to advance drug candidates through early-stage drug development or clinical proof-of-concept.

Our business model creates value for stockholders by providing a diversified portfolio of biotech and pharmaceutical product revenue streams that are supported by an efficient and low corporate cost structure. Our goal is to offer investors an opportunity to participate in the promise of the biotech industry in a profitable and diversified business with lower-risk than a typical biotech company. Our business model is based on doing what we do best: drug discovery, early-stage drug development, product reformulation and partnering. We partner with other pharmaceutical companies to leverage what they do best (late-stage development, regulatory management and commercialization) to

ultimately generate our revenue. We believe that focusing on discovery and early-stage drug development while benefiting from our partners' development and commercialization expertise will reduce our internal expenses and allow us to have a larger number of drug candidates progress to later stages of drug development.

Our revenue consists of three primary elements: royalties from commercialized products, license and milestone payments and sale of Captisol material. In addition to discovering and developing our own proprietary drugs, we selectively pursue acquisitions to bring in new assets, pipelines, and technologies to aid in generating additional potential new revenue streams.

Portfolio Program Updates

Promacta®/Revolade®

• Novartis reported third quarter 2018 net sales of Promacta/Revolade (eltrombopag) of $295 million, a $68 million or 30% increase over the same period in 2017.
• Novatis presented data from a Phase 4 open-label study of Promacta in the treatment of Chronic Immune Thrombocytopenia at the European Congress on Thrombosis and Haemostasis 2018.
• Novartis announced that Promacta would be highlighted at the 60th ASH annual meeting in December 2018.

Kyprolis® (carfilzomib), an Amgen Product Utilizing Captisol

• On October 30, 2018, Amgen reported third quarter net sales of Kyprolis of $232 million, a $25 million or 12% increase over the same period in 2017. On October 31, 2018, Ono Pharmaceutical reported Kyprolis sales in Japan of approximately $11 million for the most recent quarter.
• On October 1, 2018, Amgen announced that the FDA approved the sNDA to expand the prescribing information for Kyprolis to include a once-weekly dosing option in combination with dexamethasone for patients with relapsed or refractory multiple myeloma.
• On November 1, 2018, Amgen announced that new clinical data will be presented at the 60th ASH meeting in December 2018 for Kyprolis and AMG-330.

Recent Acquisition

• Ligand announced the acquisition of Vernalis, a structure-based drug discovery biotechnology company with a broad pipeline of partnered programs and ongoing collaborations for $43 million in cash, which was mostly offset by approximately $32 million of cash on hand at Vernalis after deal fees. The acquisition of Vernalis provides Ligand with more than eight fully-funded shots on goal, a 70-person R&D team based in Cambridge, England with a portfolio of ongoing collaboration agreements that have the potential to create additional shots on goal, a compound library of unpartnered programs for potential business development out-licensing and England-based operations that provide a platform to help efficiently pursue investment and acquisition activities in Europe and the United Kingdom.

Additional Pipeline and Partner Developments

• Viking announced positive topline results from a 12-week Phase 2 study of VK2809 in patients with non-alcoholic fatty liver disease which demonstrated statistically significant reductions in low-density lipoprotein cholesterol and statistically significant reductions in liver fat content, and that the study results would be presented in an oral late-breaker presentation at The Liver Meeting 2018.
• Viking announced that results from its Phase 2 study of VK5211 in patients recovering from hip fracture were presented at the American Society for Bone and Mineral Research 2018 annual meeting.
• Sage Therapeutics announced that the FDA Psychopharmacologic Drugs Advisory Committee and Drug Safety and Risk Management Advisory Committee jointly voted that data support the favorable benefit-risk profile of Zulresso injection for the treatment of postpartum depression (PPD).
• Sage Therapeutics announced The Lancet published an integrated analysis across three double-blind, randomized, placebo-controlled studies of Zulresso injection in women with PPD, demonstrating significant and clinically meaningful reductions in HAM-D total score.
• Melinta Therapeutics announced positive topline results from its Phase 3 trial of Baxdela™ for the treatment of adult patients with community-acquired bacterial pneumonia.
• Retrophin announced presentation of new data examining the long-term effects of sparsentan in FSGS at the American Society of Nephrology Kidney Week 2018, and that the Journal of the American Society of Nephrology published online the positive results from the Phase 2 DUET study of sparsentan for the treatment of FSGS.
• Retrophin announced two presentations related to sparsentan in the treatment of IgA Nephropathy during the 15th

International Symposium on IgA Nephropathy.

• Verona Pharma announced that it had enrolled the last patient in its Phase 2 clinical trial evaluating the effect of nebulized RPL554 as an add-on to dual therapy using long-acting anti-muscarinic / long-acting beta2-agonists and triple therapy in the maintenance treatment of patients with moderate to severe chronic obstructive pulmonary disease.

• Aldeyra Therapeutics announced positive results from its Phase 2b clinical trial of topical ocular reproxalap in patients with dry eye disease demonstrating statistically significant reductions in the Four-Symptom Ocular Dryness Score and the Overall Ocular Discomfort Symptom Score.

• Sermonix Pharmaceuticals announced the launch of a 100-patient Phase 2 trial of oral lasofoxifene for the treatment of metastatic breast cancer.
• Opthea Limited announced that its Phase 1b trial of OPT-302 in DME met its primary objective and that the company had dosed the first patient in a Phase 2a randomized, controlled clinical trial evaluating OPT-302 in patients with persistent center-involved DME.
• Opthea Limited presented Phase 1/2a data of OPT-302 in wet AMD at the Retina Society 2018 annual meeting.
• Corvus Pharmaceuticals announced the publication of results of preclinical studies of CPI-444 demonstrating that it induces dose-dependent antitumor responses as a monotherapy and in combination with anti-PD-1, anti-PD-L1 and anti-CTLA-4 therapies.
• Corvus Pharmaceuticals announced new data on a biomarker associated with patient response to therapy with CPI-444, an adenosine receptor antagonist at the European Society for Medical Oncology 2018 Congress.
• OmniAb partner Arcus Biosciences announced that abstracts relating to its portfolio have been accepted for poster presentation at the Society for Immunotherapy of Cancer Annual Meeting.
• Seelos Therapeutics announced a merger agreement with Apricus Biosciences, to form a combined publicly-traded company focused on developing a portfolio that includes Ligand-partnered CNS programs.
• Roivant announced that OmniAb-derived RVT-1401 (previously HL161) will form the foundation of a new company called Immunovant.

Business Development

• Ligand announced an OmniAb platform license agreement with the Fred Hutch to use the OmniAb rodent platform technologies to discover fully human antibodies. Ligand is eligible to receive a defined share of revenue received by Fred Hutch from companies that commercialize products incorporating any such OmniAb-derived antibody.
• Ligand entered into a Captisol use agreement with Sunshine Lake Pharma.

Results of Operations

Revenue

(Dollars in thousands)	Q3 2018	Q3 2017	Change	% Change	YTD 2018	YTD 2017	Change	% Change
Royalties	**$ 36,127**	$ 21,931	$ 14,196	65%	**$ 88,343**	$ 60,372	$ 27,971	46%
Material sales	**7,027**	7,664	(637)	(8)%	**19,030**	14,336	4,694	33%
License fees, milestones and other revenue	**2,509**	3,780	(1,271)	(34)%	**84,490**	15,930	68,560	430%
Total revenue	**$ 45,663**	$ 33,375	$ 12,288	37%	**$ 191,863**	$ 90,638	$ 101,225	112%

We adopted ASC 606, the new revenue standard, in the first quarter of 2018 and now recognize royalties on sales of products commercialized by our partners in the quarter the product is sold as opposed to on a one-quarter lag as previously recognized under ASC 605, the legacy revenue standard. The results for the reporting periods beginning after January 1, 2018 are presented in accordance with the new standard, although comparative information has not been restated and continues to be reported under the accounting standards and policies in effect for those periods.

Royalty revenue is a function of our partners' product sales and the applicable royalty rate. Promacta and Kyprolis royalty rates are under a tiered royalty rate structure with the highest tier being 9.4% and 3.0%, respectively. Evomela

has a fixed royalty rate of 20%.

The following table represents royalty revenue by program under the new (ASC 606) and prior (ASC 605) revenue standard:

(in millions)	Q3 2018 Estimated Partner Product Sales	Effective Royalty Rate	Q3 2018 Royalty Revenue under ASC 606	Q2 2018 Partner Product Sales	Effective Royalty Rate	Q3 2018 Royalty Revenue under ASC 605	Q2 2017 Partner Products Sales	Effective Royalty Rate	Q3 2017 Royalty Revenue under ASC 605
Promacta	**$ 295.0**	**9.4%**	**$ 27.8**	$ 290.7	8.5%	$ 24.8	$ 209.4	7.4%	$ 15.6
Kyprolis	**243.0**	**2.6%**	**6.3**	264.4	2.0%	5.2	220.6	1.8%	4.0
Evomela	**6.8**	**20.0%**	**1.3**	5.8	20.0%	1.1	9.6	20.0%	1.9
Other	**45.7**	**1.5%**	**0.7**	48.7	1.0%	0.5	44.4	0.9%	0.4
Total	**$ 590.5**		**$ 36.1**	$ 609.6		$ 31.6	$ 484.0		$ 21.9

Q3 2018 vs. Q3 2017

Total revenue increased $12.3 million, or 37%, to $45.7 million in Q3 2018 compared to $33.4 million in Q3 2017 driven by higher royalty revenue due to an increase in sales of Promacta and Kyprolis. Material sales decreased compared to the prior year quarter due primarily to timing of customer purchases of Captisol for use in clinical trials and in commercialized products.

YTD 2018 vs. YTD 2017

Total revenue increased $101.2 million, or 112%, to $191.9 million in the first nine months of 2018 compared to $90.6 million in the first nine months of 2017 primarily driven by a $47.0 million OmniAB platform license fee received from WuXi and $20.0 million received from Roivant upon entering into the GRA license agreement to develop and commercialize LGD-6972. An increase in sales of Promacta and Kyprolis were key drivers in the increase in royalty revenue. Material sales also contributed to the increase and was due primarily to timing of customer purchases of Captisol for use in clinical trials and in commercialized products.

Operating Costs and Expenses

(Dollars in thousands)	Q3 2018	% of Revenue	Q3 2017	% of Revenue	YTD 2018	% of Revenue	YTD 2017	% of Revenue
Costs of sales	**$ 1,460**		$ 2,385		**$ 3,382**		$ 3,628	
Amortization of intangibles	**5,725**		2,706		**12,309**		8,126	
Research and development	**5,483**		4,759		**19,023**		18,254	
General and administrative	**9,633**		7,032		**26,571**		20,904	
Total operating costs and expenses	**$ 22,301**	49%	$ 16,882	51%	**$ 61,285**	32%	$ 50,912	56%

Q3 2018 vs. Q3 2017

Total operating costs and expenses as a percentage of total revenue decreased in Q3 2018 compared to Q3 2017. Total revenue for Q3 2018 increased $12.3 million or 37% while total operating costs and expenses for that quarter increased by $5.4 million. Amortization of intangibles increased primarily as a result of the Crystal acquisition in the fourth quarter of 2017 and amortization of previous indefinite lived IPR&D assets that were out-licensed or impaired. Research and development expenses increased due to timing of internal development costs. General and administrative expenses increased primarily due to an increase in headcount related expenses including share-based compensation.

YTD 2018 vs. YTD 2017

Total operating costs and expenses as a percentage of total revenue decreased in the first nine months of 2018 compared to the first nine months of 2017. Total revenue for the first nine months of 2018 increased $101.2 million or 112% while total operating costs and expenses for that period increased $10.4 million. Amortization of intangibles increased primarily as a result of the Crystal acquisition in the fourth quarter of 2017 and amortization of previous indefinite lived IPR&D assets that were out-licensed or impaired during the nine months ended September 30, 2018. Research and development expenses increased due to timing of internal development costs. General and administrative expenses increased primarily due to a $1.2 million payment to a third-party in-licensor and an increase in headcount related expenses including share-based compensation.

Other Income (Expense)

(Dollars in thousands)	Q3 2018	Q3 2017	Change	YTD 2018	YTD 2017	Change
Gain (loss) from Viking	**$ 62,398**	$ (1,019)	$ 63,417	**$ 124,206**	$ (3,350)	$ 127,556
Interest income	**5,474**	564	4,910	**9,111**	1,403	7,708
Interest expense	**(11,200)**	(3,386)	(7,814)	**(28,133)**	(10,028)	(18,105)
Other expense, net	**(808)**	(581)	(227)	**(5,643)**	(1,185)	(4,458)
Total other expense, net	**$ 55,864**	$ (4,422)	$ 60,286	**$ 99,541**	$ (13,160)	$ 112,701

In the first quarter of 2018, we discontinued accounting for our ownership interest in Viking common stock under the equity method and now account for Viking as an equity security with changes in the fair value of Viking common stock recorded as "Gain (loss) from Viking." The increase in gain (loss) from Viking is a result of a $47.9 million and $101.4 million unrealized gain recorded in the third quarter and first nine months of 2018, respectively. In addition, gain (loss) from Viking includes a realized gain of $2.5 million in the third quarter and first nine months of 2018 resulting from the sale of Viking shares as well as an unrealized gain relating to an increase in the market value of Viking warrants held by us of $12.0 million and $20.4 million in the third quarter and first nine months of 2018, respectively.

Interest income consists primarily of short-term investment transactions and the change in their fair market value. The increase over the prior periods presented is due to the increase in our short-term investment balance as a result of the 2023 Notes financing on May 22, 2018.

Interest expense includes the 0.75% coupon cash interest expense in addition to the $9.7 million and $25.2 million non-cash accretion of discount on our 2019 Notes and 2023 Notes for the three and nine months ended September 30, 2018, respectively. The increase from prior period is primarily due to the issuance of the 2023 Notes in May 2018 and settlement of a portion of our 2019 Notes in the second quarter of 2018. *See Note 3 - Convertible Senior Notes.*

The increases in Other expense, net, for the three and nine months ended September 30, 2018 as compared to the prior periods are due primarily to the increase in the fair value of contingent liabilities associated with our Metabasis acquisition and a net increase in our derivative instrument expense associated with our convertible notes and hedge transactions. *See Note 3 - Convertible Senior Notes.* The increases were partially offset by a reduction of the contingent liabilities associated with CyDex by $1.1 million based on management's estimates of timing and probability of achievement of certain revenue thresholds.

Income Tax Expense

(Dollars in thousands)	Q3 2018	Q3 2017	Change	YTD 2018	YTD 2017	Change
Income before income taxes	**$ 79,226**	$ 12,071	$ 67,155	**$ 230,119**	$ 26,566	$ 203,553
Income tax expense	**(11,864)**	(3,645)	(8,219)	**(44,316)**	(7,000)	(37,316)
Income from operations	**$ 67,362**	$ 8,426	$ 58,936	**$ 185,803**	$ 19,566	$ 166,237
Effective tax rate	15 %	30 %		19 %	26 %	

We compute our income tax provision by applying the estimated annual effective tax rate to income from operations and adding the effects of any discrete income tax items specific to the period. Our effective tax rate for the third

quarter and first nine months of 2018 was approximately 15% and 19%, respectively. The variance from the U.S. federal statutory tax rate of 21% for the three and nine months ended September 30, 2018 was primarily attributable to tax deductions related to stock award activities which were recorded as discrete items as well as the release of a valuation allowance relating to our investment in Viking during the second quarter of 2018. Our effective tax rate for the comparable prior year periods was approximately 30% and 26%. respectively. Excluding discrete tax items primarily related to share-based compensation tax benefits, our effective tax rate for the third quarter and first nine months of 2017 was 39% and 38%, respectively. The variance from the U.S. federal statutory tax rate of 35% was primarily attributable to tax deductions related to stock award activities which were recorded as discrete items during the related periods.

Liquidity and Capital Resources

We have financed our operations through offerings of our equity securities, issuance of convertible notes, product sales and the subsequent sales of our commercial assets, royalties, collaborative research and development and other revenue, and operating lease transactions.

We had net income of $67.4 million for the quarter ended September 30, 2018. As of September 30, 2018, our cash, cash equivalents, restricted cash and marketable securities (including our investment in Viking) totaled $1.2 billion, and we had working capital of $951.9 million. We believe that our currently available funds, cash generated from operations as well as existing sources of and access to financing will be sufficient to fund our anticipated operating, capital requirements and debt service requirement.

While we believe in the viability of our strategy to generate sufficient operating cash flow and in our ability to raise additional funds, there can be no assurances to that effect.

Investments

We invest our excess cash principally in U.S. government debt securities, municipal debt securities, investment-grade corporate debt securities and certificates of deposit. We have established guidelines relative to diversification and maturities that maintain safety and liquidity. These guidelines are periodically reviewed and modified to take advantage of trends in yields and interest rates. Additionally, we own certain equity securities as a result of milestones and license fees received from licensees as well as warrants to purchase Viking common stock.

Borrowings and Other Liabilities

2019 Convertible Senior Notes

We have convertible debt outstanding as of September 30, 2018 related to our 2019 Convertible Senior Notes. In August 2014, we issued $245.0 million aggregate principal amount of convertible senior unsecured notes. The 2019 Convertible Senior Notes are convertible into common stock upon satisfaction of certain conditions. Interest of 0.75% per year is payable semi-annually on August 15th and February 15th through the maturity of the notes in August 2019.

In May and June 2018, we settled notices for conversion of $21.8 million in principal of 2019 Notes. In July and August 2018, we received notices for conversion of $195.9 million in principal of 2019 Notes which had been settled during the fourth quarter of 2018.

2023 Convertible Senior Notes

We have convertible debt outstanding as of September 30, 2018 related to our 2023 Notes. In May 2018, we issued $750.0 million aggregate principal amount of convertible senior unsecured notes. The 2023 Notes are convertible into common stock upon satisfaction of certain conditions. Interest of 0.75% per year is payable semi-annually on May 15th and November 15th through maturity of the notes in May 2023.

We may, from time to time, subject to market conditions, repurchase the 2019 Notes and/or 2023 Notes or exchange such notes in voluntary transactions with the holders of such notes.

Repurchases of Common Stock

In May 2018, in conjunction with our 2023 Convertible Senior Notes debt offering we repurchased 260,000 shares of common stock at a cost of $191.14 per share. In September 2018, our Board of Directors authorized us to repurchase up to $200 million of our common stock from time to time over a period of up to three years. As of September 30, 2018, $200 million remains available for repurchase under the authorized program.

Leases and Off-Balance Sheet Arrangements

We lease our office facilities under operating lease arrangements with varying terms through April 2023. The agreements provide for increases in annual rents based on changes in the Consumer Price Index or fixed percentage increases of 3.0%. We had no off-balance sheet arrangements at September 30, 2018 and December 31, 2017.

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Cash Flows

(Dollars in thousands)	YTD 2018	YTD 2017 Revised [1]
Net cash provided by (used in):		
Operating activities	$ 161,487	$ 57,260
Investing activities	(698,571)	(43,005)
Financing activities	675,670	(268)
Net increase in cash and cash equivalents	$ 138,586	$ 13,987

(1) We adopted ASU 2016-15 effective January 1, 2018, and have updated our presentation of payments to CVR holders and other contingency payments to conform to the standard and have revised our prior year cash flows accordingly. See *Note 1, Basis of Presentation and Summary of Significant Accounting Policies*.

During the first nine months of 2018, we generated cash from operations, from the 2023 Notes offering, from issuance of common stock under employee stock plans, and from net proceeds from the sale and maturity of short term investments. During the same period we used cash for investing activities, including payments to CVR holders and net purchases of short term investments. We used $52.7 million to repurchase our common stock in the first nine months of 2018.

During the first nine months of 2017, we generated cash from operations, from issuance of common stock under employee stock plans, and from net proceeds from the sale and maturity of short-term investments. During the same period we used cash for investing activities, including payments to CVR holders. We also used cash to pay taxes related to net share settlement of equity awards.

Critical Accounting Policies

Certain of our policies require the application of management judgment in making estimates and assumptions that affect the amounts reported in our consolidated financial statements and the disclosures made in the accompanying notes. Those estimates and assumptions are based on historical experience and various other factors deemed applicable and reasonable under the circumstances. The use of judgment in determining such estimates and assumptions is by nature, subject to a degree of uncertainty. Accordingly, actual results could differ materially from the estimates made. There have been no material changes in our critical accounting policies and estimates other than the adoption of the Accounting Standards Updates described in Item 1. Condensed Consolidated Financial Statements - Note 1, "Basis of Presentation and Summary of Significant Accounting Policies," as compared to the critical accounting policies and estimates described in our 2017 Annual Report.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

We are exposed to market risk from interest rates, equity prices and foreign currency risk, which could affect our results of operations, financial condition and cash flows. We manage our exposure to these market risks through our regular operating and financing activities.

Investment Portfolio Risk
At September 30, 2018, our investment portfolio included investments in available-for-sale securities of $891.1 million. These securities are subject to market risk and may decline in value based on market conditions. Due to the short-term duration of our investment portfolio and low risk profile of our investments, a 10% increase in interest rates would not have material effect on the fair value of our portfolio.

Equity Price Risk

Our 2019 Notes and 2023 Notes include conversion and settlement provisions that are based on the price of our common stock at conversion or maturity of the notes, as applicable. The minimum amount of cash we may be required to pay is $223.2 million for settlement of the 2019 Notes and $750.0 million for the settlement of the 2023 Notes, but will ultimately be determined by the price of our common stock. The fair values of our 2019 Notes and 2023 Notes are dependent on the price and volatility of our common stock and will generally increase or decrease as the market price of our common stock changes. In order to minimize the impact of potential dilution to our common stock upon the conversion of the 2019 Notes or 2023 Notes, we entered into convertible bond hedge transactions covering the shares of our common stock issuable upon conversion or maturity relating of the 2019 Notes or 2023 Notes. Concurrently with entering into the convertible bond hedge transactions, we entered into warrant transactions whereby we sold warrants with an exercise price of approximately $125.08 per share associated with the 2019 Notes and $315.38 per share associated with the 2023 Notes, subject to adjustment. Throughout the term of 2023 Notes, the notes may have a dilutive effect on our earnings per share to the extent the stock price exceeds the conversion price of the notes. On May 22, 2018 we entered into a supplemental indenture related to the 2019 Notes, whereby we relinquished our right to settle the conversion premium in shares, as a result, the 2019 Notes would not have a dilutive effect on our earnings per share as it relates to conversion notices received subsequent to May 22, 2018. Additionally, the warrants may have a dilutive effect on our earnings per share to the extent the stock price exceeds the strike price of the warrants.

Foreign currency risk

Through our licensing and business operations, we are exposed to foreign currency risk. Foreign currency exposures arise from transactions denominated in a currency other than the functional currency and from foreign denominated revenues and profit translated into U.S. dollars. Our collaborative partners sell our products worldwide in currencies other than the U.S. dollar. Because of this, our revenues from royalty payments are subject to risk from changes in exchange rates.

We purchase Captisol from Hovione, located in Lisbon, Portugal. Payments to Hovione are denominated and paid in U.S. dollars, however the unit price of Captisol contains an adjustment factor which is based on the sharing of foreign currency risk between the two parties. The effect of an immediate 10% change in foreign exchange rates would not have a material impact on our financial condition, results of operations or cash flows. We do not currently hedge our exposures to foreign currency fluctuations.

Interest rate risk
We are exposed to market risk involving rising interest rates. To the extent interest rates rise, our interest costs could increase. An increase in interest costs of 10% would not have a material impact on our financial condition, results of operations or cash flows.

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Item 4. Controls and Procedures

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures, as such term is defined in Rules 13a15(e) and 15d-15(e) under the Exchange Act. Based upon and as of the date of that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective to provide reasonable assurance that information required to be disclosed by us in reports we file or submit pursuant to the Exchange Act is (1) recorded, processed, summarized and reported within the time periods specified in SEC rules and forms, and (2) accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

Our disclosure controls were designed to provide reasonable assurance that the controls and procedures would meet their objectives. Our management, including the Chief Executive Officer and Chief Financial Officer, does not expect that our disclosure controls will prevent all error and all fraud. A control system, no matter how well designed and operated, can provide only reasonable assurance of achieving the designed control objectives and management is required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the Company have been detected. These inherent limitations include the realities that judgments in decision making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusions of two or more people, or by management override of the control. Because of the inherent limitations in a cost-effective, maturing control system, misstatements due to error or fraud may occur and not be detected.

There have not been any changes in our internal control over financial reporting (as defined in Rule 13a-15(f) and 15d-15(f) under the Exchange Act) during the quarter of the fiscal year to which this report relates that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

From time to time we are subject to various lawsuits and claims with respect to matters arising out of the normal course of our business. Due to the uncertainty of the ultimate outcome of these matters, the impact on future financial results is not subject to reasonable estimates.

On July 27, 2018, AG Oncon, LLC, AG Ofcon, Ltd., Calamos Market Neutral Income Fund, Capital Ventures International, Citadel Equity Fund Ltd., Opti Opportunity Master Fund, Polygon Convertible Opportunity Master Fund, Wolverine Flagship Fund Trading Limited, as plaintiffs, filed a complaint in the Court of Chancery of the State of Delaware (AG Oncon, LLC v. Ligand Pharmaceuticals Inc.) alleging claims for violation of the Trust Indenture Act, breach of contract, damages and a declaratory judgment that the Supplemental Indenture, dated as of February 20, 2018, entered into by us and Wilmington Trust, National Association, as trustee, is invalid. On October 1, 2018, we filed a motion to dismiss the plaintiffs' complaint. The hearing on our motion is currently scheduled for December 6, 2018. We believe the allegations are completely without merit, reject all claims raised by the plaintiffs and intend to vigorously defend this matter.

In November 2017, CyDex, our wholly owned subsidiary, received a paragraph IV certification from Teva alleging that certain of our patents related to Captisol were invalid, unenforceable and/or will not be infringed by Teva's ANDA related to Spectrum Pharmaceuticals' NDA for Evomela. On December 20, 2017, CyDex filed a complaint against Teva in the U.S. District Court for the District of Delaware, asserting that Teva's ANDA would infringe our patents. On March 22, 2018, Teva filed an answer and counterclaims seeking declarations of non-infringement and invalidity as to each of the asserted patents and on April 12, 2018, CyDex filed an answer to Teva's counterclaims. On July 24, 2018, the U.S. District Court entered a Scheduling Order, setting a hearing on Claim Construction for April 1, 2019, and a five to six day bench trial to begin on January 27, 2020. Fact discovery is proceeding.

Item 1A. Risk Factors

The following is a summary description of some of the many risks we face in our business. You should carefully review these risks in evaluating our business, including the businesses of our subsidiaries. You should also consider the other information described in this report. The risk factors set forth below with an asterisk (*) next to the title are new risk factors or risk factors containing material changes from the risk factors previously disclosed in Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2017, as filed with the SEC on March 1, 2018:

Future revenue based on Promacta, Kyprolis and Evomela, as well as sales of our other products, may be lower than expected.

Novartis is obligated to pay us royalties on its sales of Promacta, and we receive revenue from Amgen based on both sales of Kyprolis and purchases of Captisol material for clinical and commercial uses. These payments are expected to be a substantial portion of our ongoing revenues for some time. In addition, we receive revenues based on sales of Evomela and other products. Any setback that may occur with respect to any of our partners' products, and in particular Promacta or Kyprolis, could significantly impair our operating results and/or reduce our revenue and the market price of our stock. Setbacks for the products could include problems with shipping, distribution, manufacturing, product safety, marketing, government regulation or reimbursement, licenses and approvals, intellectual property rights, competition with existing or new products and physician or patient acceptance of the products, as well as higher than expected total rebates, returns, discounts, or unfavorable exchange rates. These products also are or may become subject to generic competition.

Future revenue from sales of Captisol material to our license partners may be lower than expected.

Revenues from sales of Captisol material to our collaborative partners represent a significant portion of our current revenues. Any setback that may occur with respect to Captisol could significantly impair our operating results and/or reduce the market price of our stock. Setbacks for Captisol could include problems with shipping, distribution, manufacturing, product safety, marketing, government regulation or reimbursement, licenses and approvals, intellectual property rights, competition with existing or new products and physician or patient acceptance of the products using Captisol.

If products or product candidates incorporating Captisol material were to cause any unexpected adverse events, the perception of Captisol safety could be seriously harmed. If this were to occur, we may not be able to sell Captisol unless and until we are able to demonstrate that the adverse event was unrelated to Captisol, which we may not be able to do. Further, the FDA could require us to submit additional information for regulatory review or approval, including data from extensive safety testing or clinical testing of products using Captisol. This would be expensive and it may delay the marketing of Captisol-enabled products and receipt of revenue related to those products, which could significantly impair our operating results and/or reduce the market price of our stock.

We obtain Captisol from a sole source supplier, and if this supplier were to cease to be able, for any reason, to supply Captisol to us in the amounts we require, or decline to supply Captisol to us, we would be required to seek an alternative source, which could potentially take a considerable length of time and impact our revenue and customer relationships. We maintain inventory of Captisol, which has a five year shelf life, at three geographically dispersed storage locations in the United States and Europe. If we were to encounter problems maintaining our inventory, such as natural disasters, at one or more of these locations, it could lead to supply interruptions. While we believe we maintain adequate inventory of Captisol to meet our current and expected future partner needs, our estimates and projections for Captisol demand may be wrong and any supply interruptions could materially adversely impact our operating results.

We currently depend on our arrangements with our partners and licensees to sell products using our Captisol technology. These agreements generally provide that our partners may terminate the agreements at will. If our partners discontinue sales of products using Captisol, fail to obtain regulatory approval for products using Captisol, fail to satisfy their obligations under their agreements with us, or choose to utilize a generic form of Captisol should it become available, or if we are unable to establish new licensing and marketing relationships, our financial results and growth prospects would be materially affected. Furthermore, we maintain significant accounts receivable balances with certain customers purchasing Captisol materials, which may result in the concentration of credit risk. We generally do not require any collateral from our customers to secure payment of these accounts receivable. If any of our major customers were to default in the payment of their obligations to us, our business, operating results and cash flows could be adversely affected.

Further, under most of our Captisol outlicenses, the amount of royalties we receive will be reduced or will cease when the relevant patent expires. Our low-chloride patents and foreign equivalents are not expected to expire until 2033, our high purity patents and foreign equivalents, are not expected to expire until 2029 and our morphology patents and foreign equivalents, are not expected to expire until 2025, but the initially filed patents relating to Captisol expired starting in 2010 in the United States and in 2016 in most countries outside the United States. If our other intellectual property rights are not sufficient to prevent a generic form of Captisol from coming to market and if in such case our partners choose to terminate their agreements with us, our Captisol revenue may decrease significantly.

Third party intellectual property may prevent us or our partners from developing our potential products; our and our partners' intellectual property may not prevent competition; and any intellectual property issues may be expensive and time consuming to resolve.*

The manufacture, use or sale of our potential products or our licensees' products or potential products may infringe the patent rights of others. If others obtain patents with conflicting claims, we may be required to obtain licenses to those patents or to develop or obtain alternative technology. We may not be able to obtain any such licenses on acceptable terms, or at all. Any failure to obtain such licenses could delay or prevent us from pursuing the development or commercialization of our potential products.

Generally, our success will depend on our ability and the ability of our partners to obtain and maintain patents and other intellectual property rights for our and their potential products. Our patent position is uncertain and involves complex legal and technical questions for which legal principles are unresolved. Even if we or our partners do obtain patents, such patents may not adequately protect the technology we own or have licensed.

We permit our partners to list our patents that cover their branded products in the Orange Book. If a third party files an NDA or ANDA for a generic drug product that relies in whole or in part on studies contained in our partner's NDA for their branded product, the third party will have the option to certify to the FDA that, in the opinion of that third party, the patents listed in the Orange Book for our partner's branded product are invalid, unenforceable, or will not be infringed by the manufacture, use or sale of the third party's generic drug product. A third party certification that a new product will not infringe Orange Book-listed patents, or that such patents are invalid, is called a paragraph IV patent certification. If the third party submits a paragraph IV patent certification to the FDA, a notice of the paragraph IV patent certification must be sent to the NDA owner and the owner of the patents that are subject to the paragraph IV patent certification notice once the third-party's NDA or ANDA is accepted for filing by the FDA. A lawsuit may then be initiated to defend the patents identified in the notice. The filing of a patent infringement lawsuit within 45 days of the receipt of notice of a paragraph IV patent certification automatically prevents the FDA from approving the generic NDA or ANDA until the earlier of the expiration of a 30-month period, the expiration of the patents, the entry of a settlement order stating that the patents are invalid or not infringed, a decision in the infringement case that is favorable to the NDA or ANDA applicant, or such shorter or longer period as the court may order. If a patent infringement lawsuit is not initiated within the required 45-day period, the third-party's NDA or ANDA will not be subject to the 30-month stay.

Several third-parties have challenged, and additional third parties may challenge, the patents covering our partner's branded products, including Promacta, Kyprolis and Evomela, which could result in the invalidation or unenforceability of some or all of the relevant patent claims. We may from time to time become party to litigation or other proceedings as a result of Paragraph IV certifications. For example, in November 2017, CyDex, our wholly owned subsidiary, received a paragraph IV certification from Teva alleging that certain of our patents related to Captisol were invalid, unenforceable and/or will not be infringed by Teva's ANDA related to Spectrum Pharmaceuticals' NDA for Evomela. On December 20, 2017, CyDex filed a complaint against Teva in the U.S. District Court for the District of Delaware, asserting that Teva's ANDA would infringe our patents. On March 22, Teva filed an answer and counterclaims seeking declarations of non-infringement and invalidity as to each of the asserted patents and on April 12, 2018, CyDex filed an answer to Teva's counterclaims. On July 24, 2018, the U.S. District Court

entered a Scheduling Order, setting a hearing on Claim Construction for April 1, 2019, and a five to six day bench trial to begin on January 27, 2020. Fact discovery is proceeding.

In addition, we cannot assure you that all of the potentially relevant prior art-information that was or is deemed available to a person of skill in the relevant art prior to the priority date of the claimed invention-relating to our and our partners' patents and patent applications has been found. If such prior art exists, it can invalidate a patent or prevent a patent from issuing from a pending patent application, and we or our partners may be subject to a third party pre-issuance submission of prior art to the United States Patent and Trademark Office. Even if patents do successfully issue and even if such patents cover our or our partner's products or potential products, third parties may an initiate litigation or opposition, interference, re-examination, post-grant review, inter partes review, nullification or derivation action in court or before patent offices, or similar proceedings

challenging the validity, enforceability or scope of such patents, which may result in the patent claims being narrowed or invalidated, may allow third parties to commercialize our or our partners' products and compete directly with us and our partners, without payment to us or our partners, or limit the duration of the patent protection of our and our partners' technology and products. For example, we are aware that a third party has requested a reexamination of U.S. Patent No. 8,703,485 related to OmniAb on the basis of certain prior art documents. If the United States Patent and Trademark Office grants the request, we will have an opportunity to respond, but we cannot assure you that this patent will be held to be valid.

Litigation or other proceedings to enforce or defend intellectual property rights are often very complex in nature, may be very expensive and time-consuming, may divert our management's attention from our core business, and may result in unfavorable results that could adversely impact our ability to prevent third parties from competing with our partner's products. Any adverse outcome of such litigation or other proceeding could result in one or more or our patents being held invalid or unenforceable, which could adversely affect our ability to successfully execute our business strategy and negatively impact our financial condition and results of operations. However, given the unpredictability inherent in litigation, we cannot predict or guarantee the outcome of these matters or any other litigation. Regardless of how these matters are ultimately resolved, these matters may be costly, time-consuming and distracting to our management, which could have a material adverse effect on our business.

In addition, periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and or applications will be due to the U.S. and various foreign patent offices at various points over the lifetime of our and our licensees' patents and/or applications. We have systems in place to remind us to pay these fees, and we rely on our outside patent annuity service to pay these fees when due. Additionally, the U.S. and various foreign patent offices require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. We employ reputable law firms and other professionals to help us comply, and in many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with rules applicable to the particular jurisdiction. However, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. If such an event were to occur, it could have a material adverse effect on our business.

Any conflicts with the patent rights of others could significantly reduce the coverage of our patents or limit our ability to obtain meaningful patent protection. For example, our European patent related to Agglomerated forms of Captisol was limited during an opposition proceeding, and the rejection of our European patent application related to High Purity Captisol was upheld on appeal. In addition, any determination that our patent rights are invalid may result in early termination of our agreements with our license partners and could adversely affect our ability to enter into new license agreements. We also rely on unpatented trade secrets and know-how to protect and maintain our competitive position. We require our employees, consultants, licensees and others to sign confidentiality agreements when they begin their relationship with us. These agreements may be breached, and we may not have adequate remedies for any breach. In addition, our competitors may independently discover our trade secrets.

We may also need to initiate litigation, which could be time-consuming and expensive, to enforce our proprietary rights or to determine the scope and validity of others' rights. If this occurs, a court may find our patents or those of our licensors invalid or may find that we have infringed on a competitor's rights. In addition, if any of our competitors have filed patent applications in the United States which claim technology we also have invented, the United States Patent and Trademark Office may require us to participate in expensive interference proceedings to determine who has the right to a patent for the technology.

The occurrence of any of the foregoing problems could be time-consuming and expensive and could adversely affect our financial position, liquidity and results of operations.

We rely heavily on licensee relationships, and any disputes or litigation with our partners or termination or breach of any of the related agreements could reduce the financial resources available to us, including milestone payments and future royalty revenues.

Our existing collaborations may not continue or be successful, and we may be unable to enter into future collaborative arrangements to develop and commercialize our unpartnered assets. Generally, our current collaborative partners also have the right to terminate their collaborations at will or under specified circumstances. If any of our collaborative partners breach or terminate their agreements with us or otherwise fail to conduct their collaborative activities successfully (for example, by not making required payments when due, or at all), our product development under these agreements will be delayed or terminated. Disputes or litigation may also arise with our collaborators (with us and/or with one or more third parties), including those over ownership rights to intellectual property, know-how or technologies developed with our collaborators. For example, we are

asserting our rights to receive payment against one of our collaborative partners which could harm our relationship with such partner. Such disputes or litigation could adversely affect our rights to one or more of our product candidates and could delay, interrupt or terminate the collaborative research, development and commercialization of certain potential products, create uncertainty as to ownership rights of intellectual property, or could result in litigation or arbitration. In addition, a significant downturn or deterioration in the business or financial condition of our collaborators or partners could result in a loss of expected revenue and our expected returns on investment. The occurrence of any of these problems could be time-consuming and expensive and could adversely affect our business.

Our product candidates, and the product candidates of our partners, face significant development and regulatory hurdles prior to partnering and/or marketing which could delay or prevent licensing, sales-based royalties and/or milestone revenue.

Before we or our partners obtain the approvals necessary to sell any of our unpartnered assets or partnered programs, we must show through preclinical studies and human testing that each potential product is safe and effective. We and/or our partners have a number of partnered programs and unpartnered assets moving toward or currently awaiting regulatory action. Failure to show any product's safety and effectiveness could delay or prevent regulatory approval of a product and could adversely affect our business. The drug development and clinical trials process is complex and uncertain. For example, the results of preclinical studies and initial clinical trials may not necessarily predict the results from later large-scale clinical trials. In addition, clinical trials may not demonstrate a product's safety and effectiveness to the satisfaction of the regulatory authorities. A number of companies have suffered significant setbacks in advanced clinical trials or in seeking regulatory approvals, despite promising results in earlier trials. The FDA may also require additional clinical trials after regulatory approvals are received. Such additional trials may be expensive and time-consuming, and failure to successfully conduct those trials could jeopardize continued commercialization of a product.

The speed at which we and our partners complete our scientific studies and clinical trials depends on many factors, including, but not limited to, the ability to obtain adequate supplies of the products to be tested and patient enrollment. Patient enrollment is a function of many factors, including the size of the patient population, the proximity of patients to clinical sites, the eligibility criteria for the trial and other potential drug candidates being studied. Delays in patient enrollment for our or our partners' trials may result in increased costs and longer development times. In addition, our partners have rights to control product development and clinical programs for products developed under our collaborations. As a result, these partners may conduct these programs more slowly or in a different manner than expected. Moreover, even if clinical trials are completed, we or our partners still may not apply for FDA or foreign regulatory approval in a timely manner or the FDA or foreign regulatory authority still may not grant approval.

Our drug discovery, early-stage drug development, and product reformulation programs may require substantial additional capital to complete successfully. Our partner's drug development programs may require substantial additional capital to complete successfully, arising from costs to: conduct research, preclinical testing and human studies; establish pilot scale and commercial scale manufacturing processes and facilities; and establish and develop quality control, regulatory, marketing, sales and administrative capabilities to support these programs. While we expect to fund our research and development activities from cash generated from operations to the extent possible, if we are unable to do so, we may need to complete additional equity or debt financings or seek other external means of financing. These financings could depress our stock price. If additional funds are required to support our operations and we are unable to obtain them on terms favorable to us, we may be required to cease or reduce further development or commercialization of our products, to sell some or all of our technology or assets or to merge with another entity.

Our OmniAb antibody platform faces specific risks, including the fact that no drug using antibodies from the platform has yet advanced to late stage clinical trials.

None of our collaboration partners using our OmniAb antibody platform have tested drugs based on the platform in late stage clinical trials and, therefore, none of our OmniAb collaboration partners' drugs have received FDA approval. If one of our OmniAb collaboration partners' drug candidates fails during preclinical studies or clinical trials, our other OmniAb collaboration partners may decide to abandon drugs using antibodies generated from the OmniAb platform, whether or not attributable to the platform. All of our OmniAb collaboration partners may terminate their programs at any time without penalty. In addition, our OmniRat and OmniFlic platforms, which we consider the most promising, are covered by two patents within the U.S. and two patents in the European Union and are subject to the same risks as our patent portfolio discussed above, including the risk that our patents may infringe on third party patent rights or that our patents may be invalidated. Further, we face significant competition from other companies selling human antibody-generating rodents, especially mice which compete with our OmniMouse platform, including the VelocImmune mouse, the AlivaMab mouse, the Trianni mouse and the Kymouse.

Many of our competitors have greater financial, technical and human resources than we do and may be better equipped to develop, manufacture and market competing antibody platforms.

If plaintiffs bring product liability lawsuits against us or our partners, we or our partners may incur substantial liabilities and may be required to limit commercialization of our approved products and product candidates.

As is common in our industry, our partners and we face an inherent risk of product liability as a result of the clinical testing of our product candidates in clinical trials and face an even greater risk for commercialized products. Although we are not currently a party to product liability litigation, if we are sued, we may be held liable if any product or product candidate we develop causes injury or is found otherwise unsuitable during product testing, manufacturing, marketing or sale. Regardless of merit or eventual outcome, liability claims may result in decreased demand for any product candidates, partnered products or products that we may develop, injury to our reputation, discontinuation of clinical trials, costs to defend litigation, substantial monetary awards to clinical trial participants or patients, loss of revenue and product recall or withdrawal from the market and the inability to commercialize any products that we develop. We have product liability insurance that covers our clinical trials up to a $10.0 million annual limit. Our insurance coverage may not be sufficient to cover all of our product liability related expenses or losses and may not cover us for any expenses or losses we may suffer. If we are sued for any injury caused by our product candidates, partnered products or any future products, our liability could exceed our total assets.

Market acceptance and sales of any approved product will depend significantly on the availability and adequacy of coverage and reimbursement from third-party payors and may be affected by existing and future healthcare reform measures.

Sales of the products we license to our collaboration partners and the royalties we receive will depend in large part on the extent to which coverage and reimbursement is available from government and health administration authorities, private health maintenance organizations and health insurers, and other healthcare payors. Significant uncertainty exists as to the reimbursement status of healthcare products. Healthcare payors, including Medicare, are challenging the prices charged for medical products and services. Government and other healthcare payors are increasingly attempting to contain healthcare costs by limiting both coverage and the level of reimbursement for medical products. Even if a product is approved by the FDA, insurance coverage may not be available, and reimbursement levels may be inadequate, to cover the costs associated with the research, development, marketing and sale of the product. If government and other healthcare payors do not provide adequate coverage and reimbursement levels for any product, market acceptance and any sales could be reduced.

From time to time, legislation is implemented to reign in rising healthcare expenditures. By way of example, in March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, or collectively, the ACA, was enacted, which included a number of provisions affecting the pharmaceutical industry, including, among other things, annual, non-deductible fees on any entity that manufactures or imports some types of branded prescription drugs and increases in Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program. Since its enactment, there have been judicial and Congressional challenges to certain aspects of the ACA, and we expect there will be additional challenges and amendments to the ACA in the future.

Other legislative changes have been proposed and adopted since the ACA was enacted, including aggregate reductions of Medicare payments to providers of 2% per fiscal year and reduced payments to several types of Medicare providers. Moreover, there has recently been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products, which has resulted in several Congressional inquiries and proposed bills designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drug products. Individual states in the United States have also become increasingly active in implementing regulations designed to control pharmaceutical product pricing, including price or patient reimbursement constraints,

discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. We cannot predict whether other legislative changes will be adopted, if any, or how such changes would affect our operations or financial condition.

We and our collaboration partners may be subject to federal and state healthcare laws, including fraud and abuse, false claims, physician payment transparency and health information privacy and security laws. Our operations and those of our collaboration partners are subject to various federal and state fraud and abuse laws, including, without limitation, anti-kickback, false claims and physician payment transparency statutes. These laws may impact, among other things, financial arrangements with physicians, sales, marketing and education programs and the manner in any of those activities are implemented. In addition, we may be subject to federal and state patient privacy regulations. If our operations or those of our collaboration partners are found to be in violation of any of those laws or any other applicable governmental regulations, we or our

collaboration partners may be subject to penalties, including civil and criminal penalties, damages, fines, imprisonment, exclusion from government healthcare programs or the curtailment or restructuring of operations, any of which could adversely affect our ability to operate our business and our financial condition.

Any difficulties from strategic acquisitions could adversely affect our stock price, operating results and results of operations.

We may acquire companies, businesses and products that complement or augment our existing business. We may not be able to integrate any acquired business successfully or operate any acquired business profitably. Integrating any newly acquired business could be expensive and time-consuming. Integration efforts often take a significant amount of time, place a significant strain on managerial, operational and financial resources and could prove to be more difficult or expensive than we predict. The diversion of our management's attention and any delay or difficulties encountered in connection with any future acquisitions we may consummate could result in the disruption of our on-going business or inconsistencies in standards and controls that could negatively affect our ability to maintain third-party relationships. Moreover, we may need to raise additional funds through public or private debt or equity financing, or issue additional shares, to acquire any businesses or products, which may result in dilution for stockholders or the incurrence of indebtedness.

As part of our efforts to acquire companies, business or product candidates or to enter into other significant transactions, we conduct business, legal and financial due diligence with the goal of identifying and evaluating material risks involved in the transaction. Despite our efforts, we ultimately may be unsuccessful in ascertaining or evaluating all such risks and, as a result, might not realize the intended advantages of the transaction. If we fail to realize the expected benefits from acquisitions we may consummate in the future or have consummated in the past, whether as a result of unidentified risks, integration difficulties, regulatory setbacks, litigation with current or former employees and other events, our business, results of operations and financial condition could be adversely affected. If we acquire product candidates, we will also need to make certain assumptions about, among other things, development costs, the likelihood of receiving regulatory approval and the market for such product candidates. Our assumptions may prove to be incorrect, which could cause us to fail to realize the anticipated benefits of these transactions.

In addition, we will likely experience significant charges to earnings in connection with our efforts, if any, to consummate acquisitions. For transactions that are ultimately not consummated, these charges may include fees and expenses for investment bankers, attorneys, accountants and other advisors in connection with our efforts. Even if our efforts are successful, we may incur, as part of a transaction, substantial charges for closure costs associated with elimination of duplicate operations and facilities and acquired IPR&D charges. In either case, the incurrence of these charges could adversely affect our results of operations for particular quarterly or annual periods.

Changes or modifications in financial accounting standards, including those related to revenue recognition, may harm our results of operations.

From time to time, the FASB either alone or jointly with other organizations, promulgates new accounting principles that could have an adverse impact on our results of operations. For example, in May 2014, FASB issued a new accounting standard for revenue recognition-Accounting Standards Codification Topic 606, Revenue from Contracts with Customers, or ASC 606-that supersedes most current revenue recognition guidance. The new guidance requires a company to recognize revenue upon transfer of goods or services to a customer at an amount that reflects the expected consideration to be received in exchange for those goods or services. The new guidance became effective in the first quarter of 2018.

This standard has a material impact on our consolidated financial statements by accelerating the timing of revenue recognition for revenues related to royalties, and potentially certain contingent milestone based payments. Our

practice has been to book royalties one quarter after our partners report sales of the underlying product. Now, under ASC 606, Ligand estimates and books royalties in the same quarter that our partners report the sale of the underlying product. As a result, we now book royalties one quarter earlier compared to our past practice. We rely on our partners' earning releases and other information from our partners to determine the sales of our partners' products and to estimate the related royalty revenues. If our partners report incorrect sales, or if our partners delay reporting of their earnings release, our royalty estimates may need to be revised and/or our financial reporting may be delayed.

Any difficulties in implementing this guidance could cause us to fail to meet our financial reporting obligations, which could result in regulatory discipline and harm investors' confidence in us. Finally, if we were to change our critical accounting estimates, including those related to the recognition of license revenue and other revenue sources, our operating results could be significantly affected.

Uncertainties in the interpretation and application of the 2017 Tax Cuts and Jobs Act could materially affect our tax obligations and effective tax rate.

The 2017 Tax Cuts and Jobs Act (the Tax Act) was enacted on December 22, 2017, and significantly affected U.S. tax law by changing how the U.S. imposes income tax on corporations, including by reducing the U.S. corporate income tax rate. The U.S. Department of Treasury has broad authority to issue regulations and interpretative guidance that may significantly impact how we will apply the law and impact our results of operations in the period issued.

The Tax Act requires certain complex computations not previously provided in U.S. tax law. As such, the application of accounting guidance for such items is currently uncertain. Further, compliance with the Tax Act and the accounting for such provisions require accumulation of certain information not previously required or regularly produced. As a result, we have provided a provisional estimate on the effect of the Tax Act in our financial statements. As additional regulatory guidance is issued by the applicable taxing authorities, as accounting treatment is clarified, as we perform additional analysis on the application of the law, and as we refine estimates in calculating the effect, our final analysis, which will be recorded in the period completed, may be different from our current provisional amounts, which could materially affect our tax obligations and effective tax rate.

Our ability to use our net operating loss carryforwards and certain other tax attributes to offset future taxable income may be subject to certain limitations.

As of December 31, 2017 we had U.S. federal and state net operating loss carryforwards (NOLs) of approximately $388 million and $127 million, respectively, which expire through 2036, if not utilized. As of December 31, 2017, we had federal and California research and development tax credit carryforwards of approximately $24 million and $21 million, respectively. The federal research and development tax credit carryforwards expire in various years through 2036, if not utilized. The California research and development credit will carry forward indefinitely. Under Sections 382 and 383 of Internal Revenue Code of 1986, as amended (Code) if a corporation undergoes an “ownership change,” the corporation’s ability to use its pre-change NOLs and other pre-change tax attributes, such as research tax credits, to offset its future post-change income and taxes may be limited. In general, an “ownership change” occurs if there is a cumulative change in our ownership by “5% shareholders” that exceeds 50 percentage points over a rolling three-year period. Similar rules may apply under state tax laws. We believe we have experienced certain ownership changes in the past and have reduced our deferred tax assets related to NOLs and research and development tax credit carryforwards accordingly. In the event that it is determined that we have in the past experienced additional ownership changes, or if we experience one or more ownership changes as a result future transactions in our stock, then we may be further limited in our ability to use our NOLs and other tax assets to reduce taxes owed on the net taxable income that we earn in the event that we attain profitability. Furthermore, under recently enacted U.S. tax legislation, although the treatment of tax losses generated before December 31, 2017 has generally not changed, tax losses generated in calendar year 2018 and beyond may only offset 80% of our taxable income. This change may require us to pay federal income taxes in future years despite generating a loss for federal income tax purposes in prior years. Any such limitations on the ability to use our NOLs and other tax assets could adversely impact our business, financial condition and operating results.

We rely on information technology and any failure, inadequacy, interruption or security lapse of that technology, including any cyber security incidents, could harm our ability to operate our business effectively.

Our business is increasingly dependent on critical, complex and interdependent information technology systems, including internet-based systems, to support business processes as well as internal and external communications. Despite the implementation of security measures, our internal computer systems and those of our partners are vulnerable to damage from cyber-attacks, computer viruses, security breaches, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. System failures, accidents or security breaches could cause interruptions in our operations, could lead to the loss of trade secrets or other intellectual property, could lead to

the public exposure of personal information of our employees and others, and could result in a material disruption of our clinical and commercialization activities and business operations, in addition to possibly requiring substantial expenditures to remedy. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability and our business and financial condition could be harmed.

The occurrence of a catastrophic disaster could damage our facilities beyond insurance limits or we could lose key data which could cause us to curtail or cease operations.

We are vulnerable to damage and/or loss of vital data from natural disasters, such as earthquakes, tornadoes, power loss, fire, floods and similar events, as well as from accidental loss or destruction. If any disaster were to occur, our ability to operate our business could be seriously impaired. We have property, liability, and business interruption insurance which may not be adequate to cover our losses resulting from disasters or other similar significant business interruptions, and we do not plan to purchase additional insurance to cover such losses due to the cost of obtaining such coverage. Any significant losses that are not recoverable under our insurance policies could seriously impair our business, financial condition and prospects.

Conversion of our outstanding convertible notes may result in losses, result in the dilution of existing stockholders, create downward pressure on the price of our common stock, and restrict our ability to take advantage of future opportunities.*

In August 2014, we issued $245.0 million principal amount of the 2019 Notes and in May 2018, we issued $750.0 million principal amount of the 2023 Notes. The sale of the 2019 Notes and 2023 Notes may affect our earnings per share figures, as accounting procedures require that we include in our calculation of earnings per share the number of shares of our common stock into which the 2019 Notes and 2023 Notes are convertible. The convertible notes may be converted into cash and shares of our common stock, if any (subject to our right or obligation to pay cash in lieu of all or a portion of such shares). If shares of our common stock are issued to the holders of the convertible notes upon conversion, there will be dilution to our shareholders' equity and the market price of our shares may decrease due to the additional selling pressure in the market. Any downward pressure on the price of our common stock caused by the sale or potential sale of shares issuable upon conversion of the convertible notes could also encourage short sales by third parties, creating additional selling pressure on our stock. Upon the occurrence of certain circumstances, holders of the convertible notes may require us to purchase all or a portion of their notes for cash, which may require the use of a substantial amount of cash. In addition, we must use cash to settle the principal and any premium due upon conversion of the 2019 Notes for any conversion notices received on or after May 22, 2018. If such cash is not available, we may be required to sell other assets or enter into alternate financing arrangements at terms that may or may not be desirable. The existence of the convertible notes and the obligations that we incurred by issuing them may restrict our ability to take advantage of certain future opportunities, such as engaging in future debt or equity financing activities.

As of September 30, 2018, we had $223.2 million aggregate principal amount of convertible notes due 2019, and $750 million aggregate principal amount of convertible notes due 2023 outstanding. The notes are convertible into cash, and if applicable, shares of our common stock under certain circumstances, including trading price conditions related to our common stock. Upon conversion, we are required to record a gain or loss for the difference between the fair value of the notes to be extinguished and their corresponding net carrying value. The fair value of the notes to be extinguished depends on our current incremental borrowing rate. The net carrying value of our notes has an implicit interest rate of 5.83% with respect to the 2019 Notes, and 5.55% with respect to the 2023 Notes. If our incremental borrowing rate at the time of conversion is lower than the implied interest rate of the notes, we will record a loss in our consolidated statement of income during the period in which the notes are converted.

In March and April 2018, we received notices for conversion of $21.8 million of principal amount of the 2019 Notes which were settled in May and June 2018. In July and August 2018, we received notices for conversion of $195.9 million of principal amount of the 2019 Notes which settled in the fourth quarter of 2018.

Impairment charges pertaining to goodwill, identifiable intangible assets or other long-lived assets from our mergers and acquisitions could have an adverse impact on our results of operations and the market value of our common stock.

The total purchase price pertaining to our acquisitions in recent years of CyDex, Metabasis, Neurogen, OMT and Crystal have been allocated to net tangible assets, identifiable intangible assets, in-process research and development and goodwill. To the extent the value of goodwill or identifiable intangible assets or other long-lived assets become impaired, we will be required to incur material charges relating to the impairment. Any impairment charges could have a material adverse impact on our results of operations and the market value of our common stock.

Our charter documents and concentration of ownership may hinder or prevent change of control transactions.

Provisions contained in our certificate of incorporation and bylaws may discourage transactions involving an actual or potential change in our ownership. In addition, our Board of Directors may issue shares of common or preferred stock without any further action by the stockholders. Our directors and certain of our institutional investors collectively beneficially own a significant portion of our outstanding common stock. Such provisions and issuances may have the effect of delaying or

preventing a change in our ownership. If changes in our ownership are discouraged, delayed or prevented, it would be more difficult for our current Board of Directors to be removed and replaced, even if you or our other stockholders believe that such actions are in the best interests of us and our stockholders.

Our stock price has been volatile and could experience a sudden decline in value.

The market prices for securities of biotechnology and pharmaceutical companies have historically been highly volatile, and the market has recently experienced significant price and volume fluctuations that are unrelated to the operating performance of particular companies. Continued volatility in the overall capital markets could reduce the market price of our common stock in spite of our operating performance. Further, high stock price volatility could result in higher share-based compensation expense.

Our common stock has experienced significant price and volume fluctuations and may continue to experience volatility in the future. Many factors may have a significant impact on the market price of our common stock, including, but not limited to, the following factors: results of or delays in our preclinical studies and clinical trials; the success of our collaboration agreements; publicity regarding actual or potential medical results relating to products under development by us or others; announcements of technological innovations or new commercial products by us or others; developments in patent or other proprietary rights by us or others; comments or opinions by securities analysts or major stockholders or changed securities analysts' reports or recommendations; future sales or shorting of our common stock by existing stockholders; regulatory developments or changes in regulatory guidance; litigation or threats of litigation; economic and other external factors or other disaster or crises; the departure of any of our officers, directors or key employees; period-to-period fluctuations in financial results; and price and volume fluctuations in the overall stock market.

Our results of operations and liquidity needs could be materially negatively affected by market fluctuations and economic downturn.

Our results of operations could be materially negatively affected by economic conditions generally, both in the United States and elsewhere around the world. Concerns over inflation, energy costs, geopolitical issues, the availability and cost of credit, and the U.S. financial markets have in the past contributed to, and may continue in the future contributed to, increased volatility and diminished expectations for the economy and the markets. Domestic and international equity markets periodically experience heightened volatility and turmoil. These events may have an adverse effect on us. In the event of a market downturn, our results of operations could be adversely affected by those factors in many ways, including making it more difficult for us to raise funds if necessary, and our stock price may further decline. We cannot provide assurance that our investments are not subject to adverse changes in market value. If our investments experience adverse changes in market value, we may have less capital to fund our operations.

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

None.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

None.

Item 6. Exhibits

Exhibit Number	Description
2.1	Rule 2.7 Announcement issued by Ligand Holdings UK Ltd., dated August 9, 2018 (incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed with the Securities and Exchange Commission on August 9, 2018).
10.1	Cooperation Agreement, dated August 9, 2018, by and between Vernalis plc and Ligand Holdings UK Ltd. (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the Securities and Exchange Commission on August 9, 2018).
10.2	Break Fee Agreement, dated August 9, 2018, by and between Vernalis plc and Ligand Holdings UK Ltd. (incorporated by reference to

	Exhibit 10.2 to the Company's Current Report on Form 8-K filed with the Securities and Exchange Commission on August 9, 2018).
31.1	Certification by Principal Executive Officer, Pursuant to Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.*
31.2	Certification by Principal Financial Officer, Pursuant to Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.*
32.1	Certifications by Principal Executive Officer and 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.LAB	XBRL Taxonomy Extension Label Linkbase Document.*
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.*

Filed herewith.

SIGNATURES

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

Date:	November 8, 2018	By:	/s/ Matthew Korenberg
			Matthew Korenberg
			Executive Vice President, Finance and Chief Financial Officer
			Duly Authorized

Officer and
Principal
Financial
Officer