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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-Q

(Mark One)

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

For the quarterly period ended June 30, 2021

OR

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

For the transition period from to

Commission file number: 001-37526

Zynerba Pharmaceuticals, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**26-0389433**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)
80 W. Lancaster Avenue, Suite 300 Devon, PA	**19333**
(Address of principal executive offices)	(Zip Code)

(484) 581-7505
(Registrant's telephone number, including area code)

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

Title of each class:	**Trading Symbol**	**Name of each exchange on which registered:**
Common Stock, $0.001 par value per share	ZYNE	The Nasdaq Global Market

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

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

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

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

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

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

As of August 5, 2021, the registrant had 41,251,537 shares of common stock, $0.001 par value per share, outstanding.

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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

Statements made in this Quarterly Report on Form 10-Q, or this Quarterly Report, that are not statements of historical or current facts, such as those under the heading "Management's Discussion and Analysis of Financial Condition and Results of Operations," are "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements discuss our current expectations and projections relating to our financial condition, results of operations, plans, objectives, future performance and business. These statements may be preceded by, followed by or include the words "aim," "anticipate," "believe," "estimate," "expect," "forecast," "intend," "outlook," "plan," "potential," "project," "projection," "seek," "may," "could," "would," "will," "should," "can," "can have," "likely," the negatives thereof and other words and terms of similar meaning.

Forward-looking statements are inherently subject to risks, uncertainties and assumptions; they are not guarantees of performance. You should not place undue reliance on these statements. We have based these forward-looking statements on our current expectations and projections about future events. Although we believe that our assumptions made in connection with the forward-looking statements are reasonable, we cannot assure you that the assumptions and expectations will prove to be correct.

You should understand that the following important factors could affect our future results and could cause those results or other outcomes to differ materially from those expressed or implied in our forward-looking statements:

- our expectations, projections and estimates regarding expenses, future revenue, capital requirements, incentive and other tax credit eligibility, collectability and timing, and availability of and the need for additional financing;
- the results, cost and timing of our preclinical studies and clinical trials, including any delays to such clinical trials relating to enrollment or site initiation, as well as the number of required trials for regulatory approval and the criteria for success in such trials;
- our dependence on third parties in the conduct of our preclinical studies and clinical trials;
- legal and regulatory developments in the United States and foreign countries, including any actions or advice that may affect the design, initiation, timing, continuation, progress or outcome of clinical trials or result in the need for additional clinical trials;
- that the results of our preclinical studies and earlier clinical trials of our product candidates may not be predictive of future results and we may not have favorable results in our ongoing or planned clinical trials;
- the difficulties and expenses associated with obtaining and maintaining regulatory approval of our product candidates, and the indication and labeling under any such approval;
- our plans and ability to develop and commercialize our product candidates;
- the successful development of our commercialization capabilities, including sales and marketing capabilities, whether alone or with potential future collaborators;
- the size and growth of the potential markets for our product candidates, the rate and degree of market acceptance of our product candidates and our ability to serve those markets;
- the coverage and reimbursement status for our product candidates from third-party payors;
- the success of competing therapies and products that are or become available;
- our ability to limit our exposure under product liability lawsuits, shareholder class action lawsuits or other litigation;
- our ability to obtain and maintain intellectual property protection for our product candidates;
- legislative changes and recently proposed changes regarding the healthcare system, including changes and proposed changes to the Patient Protection and Affordable Care Act;
- our ability to obtain and maintain third-party manufacturing for our product candidates on commercially reasonable terms;
- delays, interruptions or failures in the manufacture and supply of our product candidates;
- the performance of third parties upon which we depend, including third-party contract research organizations, or CROs, contract manufacturing organizations, or CMOs, contractor laboratories and independent contractors;
- our ability to recruit or retain key scientific, commercial or management personnel or to retain our executive officers;
- the timing and outcome of current and future legal proceedings;
- our ability to maintain proper functionality and security of our internal computer and information systems and prevent or avoid cyberattacks, malicious intrusion, breakdown, destruction, loss of data privacy or other significant disruption;

- the timing and outcome of the Australian Taxation Office's, or ATO, review regarding our eligibility to receive certain tax credits;
- the extent to which health epidemics and other outbreaks of communicable diseases, including the ongoing COVID-19 pandemic, could disrupt our operations or materially and adversely affect our business and financial conditions; and
- the other risks, uncertainties and factors discussed in our Annual Report on Form 10-K for the fiscal year ended December 31, 2020, or our 2020 Annual Report, and our Quarterly Report on Form 10-Q for the quarter ended March 31, 2021, under the caption "Item 1A. Risk Factors".

In light of these risks and uncertainties, expected results or other anticipated events or circumstances discussed in this Quarterly Report (including the exhibits hereto) might not occur. We undertake no obligation, and specifically decline any obligation, to publicly update or revise any forward-looking statements, even if experience or future developments make it clear that projected results expressed or implied in such statements will not be realized, except as may be required by law.

PART I – FINANCIAL INFORMATION

Item 1. Consolidated Financial Statements (Unaudited)

ZYNERBA PHARMACEUTICALS, INC.
CONSOLIDATED BALANCE SHEETS
(UNAUDITED)

	June 30, 2021	December 31, 2020
Assets		
Current assets:		
Cash and cash equivalents	$ 85,780,711	$ 59,157,187
Incentive and tax receivables	8,906,379	9,042,586
Prepaid expenses and other current assets	1,767,989	5,166,401
Total current assets	96,455,079	73,366,174
Property and equipment, net	509,623	585,403
Incentive and tax receivables	552,922	—
Right-of-use assets	678,280	105,199
Total assets	$ 98,195,904	$ 74,056,776
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 1,819,761	$ 2,522,716
Accrued expenses	8,002,290	11,280,843
Lease liabilities	206,211	109,689
Total current liabilities	10,028,262	13,913,248
Lease liabilities, long-term	468,385	—
Total liabilities	10,496,647	13,913,248
Stockholders' equity:		
Preferred stock, $0.001 par value; 10,000,000 shares authorized; no shares issued or outstanding	—	—
Common stock, $0.001 par value; 200,000,000 shares authorized; 41,251,537 shares issued and outstanding at June 30, 2021 and 29,975,264 shares issued and outstanding at December 31, 2020	41,252	29,975
Additional paid-in capital	307,742,167	262,286,008
Accumulated deficit	(220,084,162)	(202,172,455)
Total stockholders' equity	87,699,257	60,143,528
Total liabilities and stockholders' equity	$ 98,195,904	$ 74,056,776

See accompanying notes to unaudited consolidated financial statements.

ZYNERBA PHARMACEUTICALS, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(UNAUDITED)

	Three months ended June 30,		Six months ended June 30,	
	2021	2020	2021	2020
Operating expenses:				
Research and development	$ 5,451,948	$ 17,349,841	$ 10,060,958	$ 24,232,634
General and administrative	4,386,546	4,492,034	7,662,343	8,408,603
Total operating expenses	9,838,494	21,841,875	17,723,301	32,641,237
Loss from operations	(9,838,494)	(21,841,875)	(17,723,301)	(32,641,237)
Other income (expense):				
Interest income	5,943	26,601	11,576	228,285
Foreign exchange (loss) gain	(117,528)	1,482,513	(199,982)	(257,638)
Total other expense	(111,585)	1,509,114	(188,406)	(29,353)
Net loss	$ (9,950,079)	$ (20,332,761)	$ (17,911,707)	$ (32,670,590)
Net loss per share basic and diluted	$ (0.25)	$ (0.78)	$ (0.47)	$ (1.32)
Basic and diluted weighted average shares outstanding	40,065,715	26,100,264	38,344,145	24,749,851

See accompanying notes to unaudited consolidated financial statements.

ZYNERBA PHARMACEUTICALS, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(UNAUDITED)

	Six months ended June 30, 2021				
	Common stock		Additional paid-in capital	Accumulated deficit	Total stockholders' equity
	Shares	Amount			
Balance at December 31, 2020	**29,975,264**	**$ 29,975**	**$ 262,286,008**	**$ (202,172,455)**	**$ 60,143,528**
Issuance of common stock, net of issuance costs	10,244,326	10,245	42,210,099	—	42,220,344
Issuance of restricted stock	1,018,822	1,019	(1,019)	—	—
Exercise of stock options	13,125	13	47,893	—	47,906
Stock-based compensation expense	—	—	1,264,837	—	1,264,837
Net loss	—	—	—	(7,961,628)	(7,961,628)
Balance at March 31, 2021	**41,251,537**	**41,252**	**305,807,818**	**(210,134,083)**	**95,714,987**
Stock-based compensation expense	—	—	1,934,349	—	1,934,349
Net loss	—	—	—	(9,950,079)	(9,950,079)
Balance at June 30, 2021	**41,251,537**	**$ 41,252**	**$ 307,742,167**	**$ (220,084,162)**	**$ 87,699,257**

	Six months ended June 30, 2020				
	Common stock		Additional paid-in capital	Accumulated deficit	Total stockholders' equity
	Shares	Amount			
Balance at December 31, 2019	**23,211,391**	**$ 23,211**	**$ 226,409,156**	**$ (150,835,624)**	**$ 75,596,743**
Issuance of common stock, net of issuance costs	356,000	356	1,581,694	—	1,582,050
Issuance of restricted stock	5,000	5	(5)	—	—
Stock-based compensation expense	—	—	1,323,352	—	1,323,352
Net loss	—	—	—	(12,337,829)	(12,337,829)
Balance at March 31, 2020	**23,572,391**	**23,572**	**229,314,197**	**(163,173,453)**	**66,164,316**
Issuance of common stock, net of issuance costs	5,682,784	5,683	27,240,793	—	27,246,476
Stock-based compensation expense	—	—	1,347,433	—	1,347,433
Net loss	—	—	—	(20,332,761)	(20,332,761)
Balance at June 30, 2020	**29,255,175**	**$ 29,255**	**$ 257,902,423**	**$ (183,506,214)**	**$ 74,425,464**

See accompanying notes to unaudited consolidated financial statements.

ZYNERBA PHARMACEUTICALS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(UNAUDITED)

	Six months ended June 30,	
	2021	2020
Cash flows from operating activities:		
Net loss	$ (17,911,707)	$ (32,670,590)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation	123,350	89,463
Stock-based compensation	3,199,186	2,670,785
Changes in operating assets and liabilities:		
Incentive and tax receivables	(416,715)	6,810,905
Prepaid expenses and other assets	3,536,027	381,064
Right-of-use assets and liabilities	(8,173)	2,360
Accounts payable	(794,987)	(789,142)
Accrued expenses	(3,303,778)	1,846,301
Net cash used in operating activities	(15,576,797)	(21,658,854)
Cash flows from investing activities:		
Purchases of property and equipment	(47,570)	(360,838)
Net cash used in investing activities	(47,570)	(360,838)
Cash flows from financing activities:		
Proceeds from the issuance of common stock	43,193,660	29,766,385
Payment of financing fees and expenses	(993,675)	(803,895)
Proceeds from the exercise of stock options	47,906	—
Net cash provided by financing activities	42,247,891	28,962,490
Net increase in cash and cash equivalents	26,623,524	6,942,798
Cash and cash equivalents at beginning of period	59,157,187	70,063,242
Cash and cash equivalents at end of period	$ 85,780,711	$ 77,006,040
Supplemental disclosures of cash flow information:		
Financing costs included in accounts payable and accrued expenses at end of period	$ 134,532	$ 4,029
Property and equipment acquired but unpaid at end of period	$ —	$ 22,764

See accompanying notes to unaudited consolidated financial statements

ZYNERBA PHARMACEUTICALS, NC.
NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS

(1) Nature of Business and Liquidity

Zynerba Pharmaceuticals, Inc., together with its subsidiary, Zynerba Pharmaceuticals Pty Ltd ("Zynerba," the "Company," or "we"), is a clinical stage specialty pharmaceutical company focused on the development of pharmaceutically-produced transdermal cannabinoid therapies for rare and near-rare neuropsychiatric disorders, including Fragile X syndrome, autism spectrum disorder, 22q11.2 deletion syndrome, and a heterogeneous group of rare and ultra-rare epilepsies known as developmental and epileptic encephalopathies.

The Company has incurred losses and negative cash flows from operations since inception and has an accumulated deficit of $220.1 million as of June 30, 2021. The Company anticipates incurring additional losses until such time, if ever, that it can generate significant revenue from its product candidates currently in development. The Company's primary source of liquidity has been the issuance of equity securities.

On May 11, 2021, the Company entered into a Controlled Equity Offering^{SM} Sales Agreement (the "2021 Sales Agreement") with Cantor Fitzgerald & Co., Canaccord Genuity, LLC, H.C. Wainwright & Co. LLC and Ladenburg Thalmann & Co. Inc., as sales agents (the "2021 Sales Agents"), pursuant to which the Company may sell, from time to time, up to $75.0 million of its common stock. As of August 5, 2021, there have been no sales of common stock under the 2021 Sales Agreement.

In August 2019, the Company entered into a Controlled Equity Offering^{SM} Sales Agreement (the "2019 Sales Agreement") with Cantor Fitzgerald & Co., Canaccord Genuity, LLC, H.C. Wainwright & Co. LLC and Ladenburg Thalmann & Co. Inc., as sales agents (the "2019 Sales Agents"), pursuant to which the Company sold $75.0 million of its common stock. In the first quarter of 2021, the Company sold and issued 10,244,326 shares of common stock under the 2019 Sales Agreement in the open market at a weighted average selling price of $4.22 per share, resulting in gross proceeds of $43.2 million. Net proceeds after deducting commissions and offering expenses were $42.2 million. In 2020, the Company sold and issued 6,596,873 shares of common stock in the open market at a weighted-average selling price of $4.81 per share, for gross proceeds of $31.7 million and net proceeds, after deducting commissions and offering expenses, of $30.7 million. The last sale under the 2019 Sales Agreement was made on February 9, 2021. From August 2019 through February 9, 2021, the Company received cumulative gross proceeds of $75.0 million from shares sold in the open market under the 2019 Sales Agreement, which was terminated pursuant to its terms.

Management believes that the Company's cash and cash equivalents as of June 30, 2021 are sufficient to fund operations and capital requirements well into the first half of 2024. Substantial additional financings will be needed by the Company to fund its operations, and to complete clinical development of and to commercially develop its product candidates. The Company's ability to raise sufficient additional financing depends on many factors beyond its control, including the current volatility in the capital markets as a result of the COVID-19 pandemic. There is no assurance that such financing will be available when needed or on acceptable terms.

The Company is subject to those risks associated with any clinical stage pharmaceutical company that has substantial expenditures for research and development. There can be no assurance that the Company's research and development projects will be successful, that products developed will obtain necessary regulatory approval, or that any approved product will be commercially viable. In addition, the Company operates in an environment of rapid technological change and is largely dependent on the services of its employees and consultants.

(2) Summary of Significant Accounting Policies

a. Basis of Presentation

The accompanying unaudited interim consolidated financial statements of the Company have been prepared in accordance with U.S. generally accepted accounting principles ("GAAP") for interim financial information and with the instructions to Form 10-Q and Article 10 of Regulation S-X. The interim unaudited consolidated financial statements have been prepared on the same basis as the consolidated financial statements as of and for the year ended December 31, 2020 included in the Company's Annual Report on Form 10-K for the year ended December 31, 2020 ("2020 Annual Report"), filed with the Securities and Exchange Commission (the "SEC"). In the opinion of management, the

accompanying consolidated financial statements of the Company include all normal and recurring adjustments (which consist primarily of accruals, estimates and assumptions that impact the consolidated financial statements) considered necessary to present fairly the Company's financial position as of June 30, 2021 its results of operations for the three and six months ended June 30, 2021 and 2020 and cash flows for the six months ended June 30, 2021 and 2020. Operating results for any interim period are not necessarily indicative of results for any future interim period or for the entire year. The accompanying unaudited interim consolidated financial statements should be read in conjunction with the consolidated financial statements and related notes included in the Company’s 2020 Annual Report.

b. Use of Estimates

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements and reported amounts of expenses during the reporting period. Actual results could differ from such estimates.

c. Incentive and Tax Receivables

The Company’s subsidiary, Zynerba Pharmaceuticals Pty Ltd (the “Subsidiary”), is incorporated in Australia. The Subsidiary is eligible to participate in an Australian research and development tax incentive program. As part of this program, the Subsidiary is eligible to receive a cash refund from the Australian Taxation Office (“ATO”) for a percentage of the research and development costs expended by the Subsidiary in Australia. The cash refund is available to eligible companies with an annual aggregate revenue of less than $20.0 million (Australian dollars) during the reimbursable period. The Company estimates the amount of cash refund it expects to receive related to the Australian research and development tax incentive program and records the incentives when it is probable (1) the Company will comply with relevant conditions of the program and (2) the incentive will be received.

Certain research and development expenses incurred with respect to the Company’s lead product candidate Zygel outside of Australia may also be eligible for the Australian research and development tax incentive program. To receive a cash refund with respect to such expenses incurred outside of Australia, the expenses must have been for eligible research and development activities, as determined by AusIndustry, and the expenditures must have a scientific link to the Australian activities, be unable to be conducted in Australia and be less than the expenditures for activities conducted in Australia, as determined by the ATO. In December 2018, the Company submitted an Advance Overseas Finding (“AOF”) application to AusIndustry for a determination that a portion of the Company’s activities outside of Australia are eligible research and development activities, which was approved by AusIndustry in July 2019.

As a result of this finding, the Company believes it is eligible to receive a cash refund from the ATO for qualifying expenditures related to its research and development activities outside of Australia in 2018, 2019 and 2020. During the year ended December 31, 2019, the Company recorded $8.3 million as an incentive and tax receivable and recorded a corresponding credit to research and development expense for amounts expected to be received through the AOF for the period January 1, 2018 through September 30, 2019. As of June 30, 2021, incentive and tax receivables included $8.9 million related to the AOF. The increase of $0.6 million was due to unrealized foreign currency gains related to the remeasurement of the Subsidiary’s assets and liabilities.

The Company evaluates its eligibility under tax incentive programs as of each balance sheet date based on the most current and relevant data available. If the Company is deemed to be ineligible or unable to receive the Australian research and development tax credit, or the Australian government significantly reduces or eliminates the tax credit, the actual cash refund the Company receives may materially differ from its estimates. In June 2020, the ATO informed the Company that it may not qualify for the AOF program based on their interpretation of certain eligibility requirements. Although the Company continues to believe that it complies with the relevant conditions of the AOF program that were in place when the Company received its original approval from AusIndustry, the Company determined it was no longer probable that the AOF claim would be received. As a result, during the three months ended June 30, 2020, the Company recorded a full reserve against the AOF receivable.

In addition, the Subsidiary incurs Goods and Services Tax (“GST”) on services provided by Australian vendors. As an Australian entity, the Subsidiary is entitled to a refund of the GST paid. The Company’s estimate of the amount of cash

refund it expects to receive related to GST incurred is included in "Incentive and tax receivables" in the accompanying consolidated balance sheets. As of June 30, 2021, incentive and tax receivables included $0.3 million for refundable GST on expenses incurred with Australian vendors during the three months ended June 30, 2021.

Current incentive and tax receivables consisted of the following as of June 30, 2021 and December 31, 2020:

	June 30, 2021	December 31, 2020
Research and development incentive (non-AOF) for the period 1/1/18 - 12/31/18	$ 3,366,787	$ 3,425,791
Research and development incentive (non-AOF) for the period 1/1/19 - 12/31/19	3,137,078	3,192,056
Research and development incentive (non-AOF) for the period 1/1/20 - 12/31/20	2,090,371	2,127,005
Research and development incentive (AOF) for the period 1/1/18 - 12/31/19	8,890,254	9,046,058
Goods and services tax	312,143	297,734
Total incentive and tax receivables before reserve for AOF	17,796,633	18,088,644
Reserve for research and development incentive (AOF) for the period 1/1/18 - 12/31/19	(8,890,254)	(9,046,058)
Total incentive and tax receivables - current assets	$ 8,906,379	$ 9,042,586

As of June 30, 2021, the Company's estimate of the amount of cash refund it expects to receive in 2021 for 2020, 2019 and 2018 eligible spending as part of this incentive program was $8.6 million and was recorded as a current asset. The Company's estimate of the amount of cash refund it expects to receive in 2022 for 2021 eligible spending through June 30, 2021 was $0.6 million and was recorded as a non-current asset.

d. Research and Development

Research and development costs are expensed as incurred and are primarily comprised of external research and development expenses incurred under arrangements with third parties, such as contract research organizations, contract manufacturing organizations, consultants and employee-related expenses including salaries and benefits. At the end of each reporting period, the Company compares the payments made to each service provider to the estimated progress towards completion of the related project. Factors that the Company considers in preparing these estimates include the number of patients enrolled in studies, milestones achieved and other criteria related to the efforts of its vendors. These estimates will be subject to change as additional information becomes available. Depending on the timing of payments to vendors and estimated services provided, the Company will record net prepaid or accrued expenses related to these costs. Research and development expenses are recorded net of expected refunds of eligible research and development costs paid pursuant to the Australian research and development tax incentive program and GST incurred on services provided by Australian vendors.

The following table summarizes research and development expenses for the three and six months ended June 30, 2021 and 2020:

	Three months ended June 30,		Six months ended June 30,	
	2021	2020	2021	2020
Research and development expenses - before R&D incentive	$ 5,672,810	$ 9,863,223	$ 10,622,323	$ 17,349,081
Research and development incentive (non-AOF)	(220,862)	(621,077)	(561,365)	(1,224,142)
Research and development expenses (before impact of AOF)	5,451,948	9,242,146	10,060,958	16,124,939
Amounts reserved against AOF refund	—	8,107,695	—	8,107,695
Total research and development expenses	$ 5,451,948	$ 17,349,841	$ 10,060,958	$ 24,232,634

e. Net Loss Per Share

Basic net loss per share is determined using the weighted average number of shares of common stock outstanding during each period. Diluted net income per share includes the effect, if any, from the potential exercise or conversion of securities, such as restricted stock and stock options, which would result in the issuance of incremental shares of

common stock. Basic and dilutive computations of net loss per share are the same in periods in which a net loss exists as the dilutive effects of restricted stock and stock options would be anti-dilutive.

The following potentially dilutive securities outstanding as of June 30, 2021 and 2020 have been excluded from the computation of diluted weighted average shares outstanding, as their effects on net loss per share for the periods presented would be anti-dilutive:

	June 30,	
	2021	2020
Stock options	5,255,538	4,710,201
Unvested restricted stock	1,185,822	11,800
	6,441,360	4,722,001

f. Recent Accounting Pronouncements

The Company does not expect the adoption of recently issued accounting pronouncements to have a significant impact on its results of operations, financial position or cash flow.

(3) Fair Value Measurements

The Company measures certain assets and liabilities at fair value in accordance with Accounting Standards Codification ("ASC") 820, *Fair Value Measurements and Disclosures*. ASC 820 defines fair value as the price that would be received to sell an asset or paid to transfer a liability (the exit price) in an orderly transaction between market participants at the measurement date. The guidance in ASC 820 outlines a valuation framework and creates a fair value hierarchy that serves to increase the consistency and comparability of fair value measurements and the related disclosures. In determining fair value, the Company maximizes the use of quoted prices and observable inputs. Observable inputs are inputs that market participants would use in pricing the asset or liability based on market data obtained from independent sources. The fair value hierarchy is broken down into three levels based on the source of inputs as follows:

Level 1 — Valuations based on unadjusted quoted prices in active markets for identical assets or liabilities.

Level 2 — Valuations based on observable inputs and quoted prices in active markets for similar assets and liabilities.

Level 3 — Valuations based on unobservable inputs and models that are supported by little or no market activity.

In accordance with the fair value hierarchy described above, the following table sets forth the Company's financial assets measured at fair value on a recurring basis as of June 30, 2021 and December 31, 2020:

	Carrying amount as of June 30, 2021	Fair Value Measurement as of June 30, 2021		
		Level 1	Level 2	Level 3
Cash equivalents (money market accounts)	$ 85,249,760	$ 85,249,760	$ —	$ —
	$ 85,249,760	$ 85,249,760	$ —	$ —

	Carrying amount as of December 31, 2020	Fair Value Measurement as of December 31, 2020		
		Level 1	Level 2	Level 3
Cash equivalents (money market accounts)	$ 59,010,328	$ 59,010,328	$ —	$ —
	$ 59,010,328	$ 59,010,328	$ —	$ —

ZYNERBA PHARMACEUTICALS, INC.
NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(4) Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets consisted of the following as of June 30, 2021 and December 31, 2020:

	June 30, 2021	December 31, 2020
Prepaid development expenses	$ 940,191	$ 866,498
Prepaid insurance	255,916	1,639,687
Insurance litigation settlement receivable	—	2,389,250
Other current assets	571,882	270,966
Total prepaid expenses and other current assets	$ 1,767,989	$ 5,166,401

(5) Property and Equipment

Property and equipment consisted of the following as of June 30, 2021 and December 31, 2020:

	Estimated useful life (in years)	June 30, 2021	December 31, 2020
Equipment	2-5	$ 740,543	$ 729,489
Computer equipment	3-5	30,319	30,319
Furniture and fixtures	3-5	311,356	311,355
Leasehold improvements	various	68,881	68,881
Construction in process		79,342	42,827
Total cost		1,230,441	1,182,871
Less accumulated depreciation		(720,818)	(597,468)
Property and equipment, net		$ 509,623	$ 585,403

Depreciation expense was $123,350 and $89,463 for the six months ended June 30, 2021 and 2020, respectively.

(6) Accrued Expenses

Accrued expenses consisted of the following as of June 30, 2021 and December 31, 2020:

	June 30, 2021	December 31, 2020
Accrued compensation	$ 1,639,032	$ 1,928,865
Accrued research and development	5,615,941	4,999,881
Accrued litigation settlement expenses	121,406	4,000,000
Other	625,911	352,097
Total accrued expenses	$ 8,002,290	$ 11,280,843

(7) Common Stock

On May 11, 2021, the Company entered into the 2021 Sales Agreement with the 2021 Sales Agents, pursuant to which the Company may sell, from time to time, up to $75.0 million of its common stock. As of August 5, 2021, there have been no sales of common stock under the 2021 Sales Agreement.

In August 2019, the Company entered into the 2019 Sales Agreement with the 2019 Sales Agents pursuant to which the Company sold $75.0 million of its common stock. In the first quarter of 2021, the Company sold and issued 10,244,326 shares of common stock under the 2019 Sales Agreement in the open market at a weighted average selling price of $4.22 per share, resulting in gross proceeds of $43.2 million. Net proceeds after deducting commissions and offering expenses were $42.2 million. In 2020, the Company sold and issued 6,596,873 shares of common stock in the open market at a weighted-average selling price of $4.81 per share, for gross proceeds of $31.7 million and net proceeds, after deducting commissions and offering expenses, of $30.7 million. The last sale under the 2019 Sales Agreement was made on

ZYNERBA PHARMACEUTICALS, INC.
NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS (Continued)

February 9, 2021. From August 2019 through February 9, 2021, the Company received cumulative gross proceeds of $75.0 million from shares sold in the open market under the 2019 Sales Agreement, which was terminated pursuant to its terms.

(8) Stock-Based Compensation

The Company maintains the Amended and Restated 2014 Omnibus Incentive Compensation Plan, as amended (the "2014 Plan"), which allows for the granting of incentive stock options, nonqualified stock options, stock appreciation rights, stock awards, stock units, performance units and other stock-based awards to employees, officers, non-employee directors, consultants, and advisors. In addition, the 2014 Plan provides selected executive employees with the opportunity to receive bonus awards that are considered qualified performance-based compensation. The 2014 Plan is subject to automatic annual increases in the number of shares authorized for issuance under the 2014 Plan on the first trading day of January each year equal to the lesser of 1.5 million shares or 10% of the number of shares of common stock outstanding on the last trading day of December of the preceding year. As of January 1, 2021, the number of shares of common stock that may be issued under the 2014 Plan was automatically increased by 1.5 million shares, increasing the total number of shares of common stock available for issuance under the 2014 Plan to 9,304,869 shares. As of June 30, 2021, 2,302,008 shares were available for future issuance under the 2014 Plan.

Options issued under the 2014 Plan have a contractual life of 10 years and may be exercisable in cash or as otherwise determined by the board of directors. The Company has granted options to employees and non-employee directors. Stock options granted to employees primarily vest 25% upon the first anniversary of the grant date and the balance of unvested options vests in quarterly installments over the remaining three years. Stock options granted annually to non-employee directors vest on the earlier of the one-year anniversary of the grant date, or the date of the Company's next annual stockholders' meeting that occurs after the grant date. The Company's non-employee director compensation policy enables directors to receive stock options in lieu of quarterly cash payments. Any option granted to the directors in lieu of cash compensation vests in full on the grant date. The Company records forfeitures as they occur.

During the six months ended June 30, 2021, the Company granted 506,911 time-based restricted stock awards to employees with two-year cliff vesting. In addition, during the six months ended June 30, 2021, the Company granted 506,911 performance-based restricted stock awards to employees. Vesting of the performance-based restricted stock awards is dependent on meeting certain performance conditions, which relate to the Company's research and development progress, which were established by the Company's board of directors. The Company's board of directors determines if the performance conditions have been met.

Stock-based compensation expense for these performance-based grants are recorded when management estimates that the vesting of these shares is probable based on the status of the Company's research and development programs and other relevant factors. During the three months ended June 30, 2021, the performance-based conditions were deemed probable of achievement and the Company recorded $0.8 million in stock-based compensation expense related to these performance-based grants. As of June 30, 2021, there was $1.1 million of unrecognized stock-based compensation expense related to these performance-based awards, which will be expensed over the estimated service period related to each performance condition.

During the third quarter of 2020, the Company granted 194,000 restricted stock awards that contain both performance-based and service-based conditions. These awards vest on the earlier of: (a) meeting the performance condition or (b) service provided for one-year from the grant date. Awards with both performance and service conditions are being expensed over the service period, with an acceleration of the remaining compensation expense if the performance-based criteria is met before the end of the service condition.

ZYNERBA PHARMACEUTICALS, INC.
NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS (Continued)

For the six months ended June 30, 2021 and 2020, the Company recorded stock-based compensation expense related to its stock option grants and restricted stock awards, as follows:

	Stock Option Grants		Restricted stock awards		Total	
	2021	2020	2021	2020	2021	2020
Research and development	$ 815,289	$ 1,029,415	$ 809,988	$ 15,961	$ 1,625,277	$ 1,045,376
General and administrative	931,352	1,625,409	642,557	—	1,573,909	1,625,409
	$ 1,746,641	$ 2,654,824	$ 1,452,545	$ 15,961	$ 3,199,186	$ 2,670,785

The following table summarizes the Company's stock option activity for the six months ended June 30, 2021:

	Number of Shares	Weighted-Average Exercise Price	Weighted-Average Contractual Life (in Years)	Aggregate Intrinsic Value
Outstanding as of December 31, 2020	4,546,484	$ 9.76		
Granted	786,117	3.65		
Exercised	(13,125)	3.65		
Forfeited	(63,938)	15.84		
Outstanding as of June 30, 2021	5,255,538	8.79	6.73	$ 3,175,029
Exercisable as of June 30, 2021	3,518,924	10.71	5.74	$ 1,313,759
Vested and expected to vest as of June 30, 2021	3,518,924	$ 10.71		

The weighted-average grant date fair values of options granted during the six months ended June 30, 2021 and 2020 were $2.81 and $3.58, respectively.

The fair values of stock options granted were calculated using the Black-Scholes option pricing model with the following weighted-average assumptions:

	Six months ended June 30,	
	2021	2020
Weighted-average risk-free interest rate	0.37%	1.27%
Expected term of options (in years)	6.25	6.18
Expected stock price volatility	95.60%	82.00%
Expected dividend yield	0%	0%

As of June 30, 2021, there was $5.5 million of unrecognized stock-based compensation expense related to stock options, which is expected to be recognized over a weighted-average period of 2.55 years. During the six months ended June 30, 2021, the Company received $47,906 in cash from the exercise of employee stock options.

The following table summarizes the Company's restricted stock award activity under the 2014 Plan for the six months ended June 30, 2021:

	Shares	Weighted Average Grant Date Fair Value	Aggregate Intrinsic Value
Unvested as of December 31, 2020	173,800	$ 3.64	
Granted	1,018,822	3.59	
Vested	(6,800)	5.16	
Unvested as of June 30, 2021	1,185,822	$ 3.58	$ 6,272,998
Vested and expected to vest as of June 30, 2021	1,180,822	$ 3.58	$ 6,246,548

As of June 30, 2021, there was $2.6 million of unrecognized stock-based compensation expense related to unvested restricted stock awards, which is expected to be recognized over a weighted-average period of 1.21 years. The Company expects that 1,180,822 of the unvested restricted stock awards will vest.

ZYNERBA PHARMACEUTICALS, INC.
NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(9) Operating Lease Obligations

The Company adopted ASC 842 prospectively using the modified-retrospective method and elected the package of transition practical expedients that does not require reassessment of: (1) whether any existing or expired contracts are or contain leases, (2) lease classification and (3) initial direct costs. In addition, the Company has elected other available practical expedients to not separate lease and nonlease components, which consist principally of common area maintenance charges, and to exclude leases with an initial term of 12 months or less.

The Company leases its headquarters where it occupies 10,877 square feet of office space. On March 1, 2021, the Company extended its lease for three additional years until May 31, 2024. The Company's lease contains variable lease costs that do not depend on a rate or index and consist primarily of common area maintenance, taxes, and insurance charges. As the implicit rate was not readily determinable for the Company's lease, the Company used an estimated incremental borrowing rate, or discount rate, to determine the initial present value of the lease payments. The discount rate for the lease was calculated using a synthetic credit rating model.

As of March 1, 2021, the effective date of the lease modification, the Company remeasured the lease liability for the remaining portion of the lease and adjusted the lease liability to $755,085 and right-of-use assets to $752,391, which was recorded net of a deferred rent liability of $2,694. As of June 30, 2021, the Company's right-of-use asset, net of amortization, was $678,280.

Other operating lease information as of June 30, 2021:

Weighted-average remaining lease term - operating leases	2.9 years
Weighted-average discount rate - operating leases	2.76 %

The following is a maturity analysis of the annual undiscounted cash flows of the operating lease liabilities as of June 30, 2021:

Year ending:	June 30, 2021
December 31, 2021	$ 120,210
December 31, 2022	240,420
December 31, 2023	240,421
December 31, 2024	100,175
Total minimum lease payments	701,226
Less: imputed lease interest	(26,630)
Total lease liabilities	$ 674,596

Lease expense for the six months ended June 30, 2021 was comprised of the following:

	Six months ended June 30,	
	2021	2020
Operating lease expense	$ 123,367	$ 128,419
Variable lease expense	31,515	29,348
Total lease expense	$ 154,882	$ 157,767

Cash payments related to operating leases were $131,540 and $126,058 for the six months ended June 30, 2021 and 2020, respectively.

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

You should read the following discussion and analysis of our financial condition and results of operations together with our unaudited interim consolidated financial statements and related notes appearing elsewhere in this Quarterly Report and the audited consolidated financial statements and notes thereto for the year ended December 31, 2020 and the related Management's Discussion and Analysis of Financial Condition and Results of Operations, both of which are contained in our 2020 Annual Report. The following discussion contains forward-looking statements that involve risks, uncertainties and assumptions. Our actual results and the timing of certain events could differ materially from those anticipated in these forward-looking statements as a result of many factors. We discuss factors that we believe could cause or contribute to these differences below and elsewhere in this Quarterly Report, including those set forth under "Cautionary Note Regarding Forward-looking Statements" and "Risk Factors" in this Quarterly Report and our 2020 Annual Report.

Overview

Company Overview

We are the leader in pharmaceutically-produced transdermal cannabinoid therapies for rare and near-rare neuropsychiatric disorders. We are committed to improving the lives of patients and their families living with severe, chronic health conditions including Fragile X syndrome, or FXS, autism spectrum disorder, or ASD, 22q11.2 deletion syndrome, or 22q, and a heterogeneous group of rare and ultra-rare epilepsies known as developmental and epileptic encephalopathies, or DEE.

Cannabinoids are a class of compounds derived from *Cannabis* plants. The two primary cannabinoids contained in *Cannabis* are cannabidiol and Tetrahydrocannabinol, or THC. Clinical and preclinical data suggest that cannabidiol has positive effects on treating behavioral symptoms of FXS, ASD, 22q and seizures in patients with epilepsy.

We are currently developing Zygel, the first and only pharmaceutically-produced cannabidiol formulated as a permeation-enhanced gel for transdermal delivery, which is patent protected through 2030. Five additional patents expiring in 2038 are directed to methods of use relating to Zygel, including methods of treating FXS and ASD.

In preclinical animal studies, Zygel's permeation enhancer increased delivery of cannabidiol through the layers of the skin and into the circulatory system. These preclinical studies suggest increased bioavailability, consistent plasma levels and the avoidance of first-pass liver metabolism of cannabidiol when delivered transdermally. In addition, an *in vitro* study published in *Cannabis and Cannabinoid Research* in April 2016 demonstrated that cannabidiol is degraded to THC (the major psychoactive cannabinoid in *Cannabis)* in an acidic environment such as the stomach. As a result, we believe such degradation may lead to increased psychoactive effects if cannabidiol is delivered orally. These effects may be avoided with the transdermal delivery of Zygel, which maintains cannabidiol in a neutral pH. Zygel is being developed as a clear gel with once- or twice-daily dosing and is targeting treatment of behavioral symptoms of FXS, ASD and 22q and the reduction of seizures in patients with DEE syndromes. We have been granted orphan drug designations from United States Food and Drug Administration, or FDA, for the use of cannabidiol for the treatment of FXS and for the treatment of 22q. In May 2019, we received Fast Track designation from the FDA for treatment of behavioral symptoms associated with FXS. The FDA's Fast Track program is designed to facilitate the development of drugs intended to treat serious conditions and fill unmet medical needs and can lead to expedited review by the FDA in order to get new important drugs to the patient earlier.

Our clinical program for Zygel includes clinical trials evaluating Zygel in the treatment of behavioral symptoms of FXS, ASD and 22q and the reduction of seizures and the treatment of associated symptoms in patients with DEE syndromes. As of August 2021, the Zygel safety database across all clinical studies conducted by us includes data from 909 volunteers and patients. Across these clinical studies, Zygel has been well-tolerated and consistent with previously reported data. Following the positive meeting with the FDA on our development program in ASD, we are evaluating and prioritizing our development options for ASD, 22q and DEE and we expect to provide guidance on the path forward in each of these indications by the end of 2021.

CONNECT-FX Trial (FXS)

In June 2020, we announced results of our pivotal CONNECT-FX clinical trial, a multi-national randomized, double-blind, placebo-controlled, 14-week study designed to assess the efficacy and safety of Zygel in children and adolescents ages three through 17 years who have full mutation of the *FMR1* gene. While Zygel did not achieve statistical significance versus placebo in the primary endpoint of improvement in the Social Avoidance subscale of the Aberrant Behavior Checklist – Community FXS (ABC-C_{FXS}), a pre-planned ad hoc analysis of the most severely impacted patients in the trial, as defined by patients having at least 90% methylation ("highly methylated") of the impacted *FMR1* gene, demonstrated that those patients receiving Zygel achieved statistical significance in the primary endpoint of improvement at 12 weeks of treatment in the Social Avoidance subscale of the ABC-C_{FXS} compared to placebo.

RECONNECT Trial (FXS)

In May 2021, following guidance received from the FDA regarding the regulatory path forward for Zygel, we announced that we will be conducting a pivotal, multi-national, confirmatory Phase 3 trial of Zygel in patients with FXS. The trial, which will be called RECONNECT (A **R**andomiz**e**d, Double-Blind, Pla**c**ebo-C**on**trolled, Multiple-Ce**nte**r, Effi**c**acy and Safe**t**y Study of ZYN002 Administered as a Transdermal Gel to Children and Adolescents with Fragile X Syndrome), is designed to evaluate the efficacy and safety of Zygel in children and adolescents with FXS. We believe that the results, if positive, from RECONNECT will be sufficient to support the submission of a New Drug Application for Zygel in patients with FXS.

The RECONNECT trial will be an 18-week trial which will enroll approximately 200 children and adolescents of which approximately 160 patients will have complete (100%) methylation of their *FMR1* gene and approximately 40 patients will have partial methylation of their *FMR1* gene. The primary endpoint for the trial will be the change in the Aberrant Behavior Checklist-Community FXS Specific (ABC-C_{FXS}) Social Avoidance subscale in patients who have complete methylation of their *FMR1* gene. All patients, including the cohort of partially methylated patients, will be included in a key secondary endpoint analysis.

We expect to initiate the RECONNECT trial in the third quarter of 2021. All patients will be eligible to enroll in our ongoing open-label extension after completing dosing in this clinical trial.

Phase 2 BRIGHT Trial (ASD)

In May 2020, we reported positive top-line results of the Phase 2 BRIGHT clinical trial, a 14-week, open-label clinical trial designed to assess the safety, tolerability and efficacy of Zygel for the treatment of pediatric and adolescent patients with ASD. Patients treated with Zygel demonstrated statistically significant improvement at week 14 compared to baseline for each ABC-C subscale (Irritability, Inappropriate Speech, Stereotypy, Social Withdrawal, and Hyperactivity). The results of the other efficacy assessments were consistent with the results demonstrated in the ABC-C. During the six months ended June 30, 2021, we discussed data supporting the potential efficacy of Zygel in ASD, including the results of our Phase 2 BRIGHT trial, with the FDA to determine the regulatory path forward. The guidance from the FDA included agreement on utilizing the irritability subscale of the ABC-C as the primary endpoint to support an indication for the treatment of irritability in ASD. This is the same primary endpoint utilized in the previously completed BRIGHT open label Phase 2 trial.

Phase 2 INSPIRE Trial (22q)

In May 2019, we initiated the open-label Phase 2 INSPIRE clinical trial, a 14-week, open-label clinical trial designed to assess the safety, tolerability and efficacy of Zygel for treatment of behavioral symptoms of 22q. We expect to enroll approximately 20 male and female patients (ages six through 17 years). Recruitment into the INSPIRE trial has been delayed due to the impact of COVID-19 and resulting significant travel restrictions in Australia. Once enrollment is complete, we will provide a timeframe for disclosing top line results of this trial. In September 2020, we were granted orphan drug designation from the FDA for the use of cannabidiol for the treatment of 22q.

Phase 2 BELIEVE Trial (DEE)

In September 2019, we reported top-line results from the Phase 2 BELIEVE clinical trial, a six-month, open-label, multi-dose clinical trial designed to evaluate the efficacy and safety of Zygel in children and adolescents (ages three through

17 years) with DEE. Following discussions with the FDA regarding the clinical pathway for Zygel in DEE, we plan to pursue individual syndromes. We are evaluating potential target indications and expect to finalize target syndrome selection for one or more DEE syndromes in 2021.

Operations

We continue to closely monitor the status of the COVID-19 pandemic, including its potential impact on our clinical development plans and timelines going forward. In response to the impact of COVID-19, for our current clinical development programs, we implemented multiple measures consistent with the FDA's guidance on the conduct of clinical trials of medical products during the COVID-19 pandemic, including remote site monitoring and patient visits using telemedicine where needed, direct to patient drug shipments, and local study-related clinical laboratory collection. Except with respect to our Phase 2 open-label INSPIRE trial, timelines for delivery of top-line results for our clinical trials were not adversely impacted by COVID-19, and we intend to implement similar measures, as necessary, for our planned clinical trials in 2021.

We have never been profitable and have incurred net losses since inception. Our net losses were $17.9 million and $32.7 million for the six months ended June 30, 2021 and 2020, respectively. As of June 30, 2021, our accumulated deficit was $220.1 million. We expect to incur losses for the foreseeable future, and we expect these losses to increase as we continue our development of, and seek regulatory approvals for, our product candidates. Because of the numerous risks and uncertainties associated with product development, we are unable to predict the timing or amount of increased expenses or when, or if, we will be able to achieve or maintain profitability.

Financial Operations Overview

The following discussion sets forth certain components of our consolidated statements of operations as well as factors that impact those items.

Research and Development Expenses

Our research and development expenses relating to our product candidates consisted of the following:

- expenses associated with preclinical development and clinical trials;
- personnel-related expenses, such as salaries, benefits, travel and other related expenses, including stock-based compensation;
- payments to third-party CROs or CMOs, contractor laboratories and independent contractors; and
- depreciation, maintenance and other facility-related expenses.

We expense all research and development costs as incurred. Clinical development expenses for our product candidates are a significant component of our current research and development expenses. Generally, expenses associated with clinical trials will increase as our clinical trials progress. Product candidates in later stage clinical development generally have higher research and development expenses than those in earlier stages of development, primarily due to increased size and duration of the clinical trials. We track and record information regarding external research and development expenses for each grant, study or trial that we conduct. We use third-party CROs, CMOs, contractor laboratories and independent contractors in preclinical studies and clinical trials. We recognize the expenses associated with third parties performing these services for us in our preclinical studies and clinical trials based on the percentage of each study completed at the end of each reporting period.

Our Australian subsidiary, Zynerba Pharmaceuticals Pty Ltd, or the Subsidiary, is incorporated in Australia and is eligible to participate in an Australian research and development tax incentive program. As part of this program, the Subsidiary is eligible to receive a cash refund from the Australian Taxation Office, or ATO, for a percentage of the research and development costs expended by the Subsidiary in Australia. The cash refund is available to eligible companies with an annual aggregate revenue of less than $20.0 million (Australian dollars) during the reimbursable period. We estimate the amount of cash refund we expect to receive related to the Australian research and development

tax incentive program and record the incentives when it is probable (1) we will comply with relevant conditions of the program and (2) the incentive will be received.

Certain research and development expenses incurred with respect to Zygel outside of Australia may also be eligible for the Australian research and development tax incentive program. To receive a cash refund with respect to such expenses incurred outside of Australia, the expenses must have been for eligible research and development activities, as determined by AusIndustry, and the expenditures must have a scientific link to the Australian activities, be unable to be conducted in Australia and be less than the expenditures for activities conducted in Australia, as determined by the ATO. In December 2018, the Subsidiary submitted an AOF application to AusIndustry for a determination that its activities are eligible research and development activities, which was approved by AusIndustry in July 2019.

As a result of this finding, we believe the Subsidiary is eligible to receive a cash refund from the ATO for qualifying expenditures related to its research and development activities outside of Australia in 2018, 2019 and 2020. During the year ended December 31, 2019, we recorded $8.3 million as an incentive and tax receivable and recorded a corresponding credit to research and development expense for amounts expected to be received through the AOF for the period January 1, 2018 through September 30, 2019. As of June 30, 2021, incentive and tax receivables included $8.9 million related to the AOF. The increase of $0.6 million was due to unrealized foreign currency gains related to the remeasurement of the Subsidiary's assets and liabilities.

We evaluate the Subsidiary's eligibility under tax incentive programs as of each balance sheet date based on the most current and relevant data available. If the Subsidiary is deemed to be ineligible or unable to receive the Australian research and development tax credit, or the Australian government significantly reduces or eliminates the tax credit, the actual cash refund we receive may materially differ from our estimates. In June 2020, the ATO informed us that we may not qualify for the AOF program based on their interpretation of certain eligibility requirements. Although we continue to believe that we comply with the relevant conditions of the AOF program that were in place when we received our original approval from AusIndustry, we have determined it is no longer probable that the AOF claim will be received. As a result, during the three months ended June 30, 2020, we recorded a full reserve against the AOF receivable.

The following table summarizes research and development expenses for the three and six months ended June 30, 2021 and 2020:

	Three months ended June 30,		Six months ended June 30,	
	2021	2020	2021	2020
Research and development expenses - before R&D incentive	$ 5,672,810	$ 9,863,223	$ 10,622,323	$ 17,349,081
Research and development incentive (non-AOF)	(220,862)	(621,077)	(561,365)	(1,224,142)
Research and development expenses (before impact of AOF)	5,451,948	9,242,146	10,060,958	16,124,939
Amounts reserved against AOF refund	—	8,107,695	—	8,107,695
Total research and development expenses	$ 5,451,948	$ 17,349,841	$ 10,060,958	$ 24,232,634

We expect research and development expenses to decrease in 2021 as compared to 2020 as we concluded our pivotal CONNECT-FX clinical trial and our BRIGHT clinical trial during 2020. We expect to initiate the RECONNECT pivotal trial in FXS during the third quarter of 2021. These expenditures are subject to numerous uncertainties regarding timing and cost to completion. Completion of our preclinical development and clinical trials may take several years or more and the length of time generally varies according to the type, complexity, novelty and intended use of a product candidate. The cost of clinical trials may vary significantly over the life of a project as a result of differences arising during clinical development, including, among others:

- the number of sites included in the clinical trials;
- the length of time required to enroll suitable patients;
- the size of patient populations participating in the clinical trials;
- the duration of patient follow-ups;

- the development stage of the product candidates; and
- the efficacy and safety profile of the product candidates.

Due to the early stages of our research and development, we are unable to determine the duration or completion costs of our development of our product candidates. As a result of the difficulties of forecasting research and development costs of our product candidates as well as the other uncertainties discussed above, we are unable to determine when and to what extent we will generate revenue from the commercialization and sale of an approved product candidate.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries, benefits and other related costs, including stock-based compensation, for personnel serving in our executive, finance, legal, human resource, investor relations and commercial functions. Our general and administrative expenses also include facility and related costs not included in research and development expenses, professional fees for legal services, including patent-related expenses, litigation settlement expenses, consulting, tax and accounting services, insurance, market research and general corporate expenses. We expect that our general and administrative expenses will increase for the next several years as we increase our headcount with the continued development and potential commercialization of our product candidates.

Interest Income

Interest income primarily consists of interest earned on balances maintained in our money market bank account.

Foreign Exchange (Loss) Gain

Foreign exchange (loss) gain relates to the effect of exchange rates on transactions incurred by the Subsidiary.

Critical Accounting Estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles, or GAAP. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reported period. In accordance with GAAP, we base our estimates on historical experience, known trends and events and various other factors that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying amounts of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

We define our critical accounting policies as those that require us to make subjective estimates and judgments about matters that are uncertain and are likely to have a material impact on our financial condition and results of operations as well as the specific manner in which we apply those principles. Critical accounting estimates and the accounting policies critical to the process of making significant judgments and estimates in the preparation of our consolidated financial statements are discussed in our 2020 Annual Report under Part II, Item 7, "Critical Accounting Policies and Use of Estimates." During the six months ended June 30, 2021, there have been no material changes to the critical accounting estimates or critical accounting policies discussed in our 2020 Annual Report.

Results of Operations

Comparison of the Three Months Ended June 30, 2021 and 2020

Research and Development Expenses

	Three months ended June 30,	
	2021	2020
Research and development expenses (before impact of AOF)	$ 5,451,948	$ 9,242,146
Amounts reserved against AOF refund	—	8,107,695
Total research and development expenses	$ 5,451,948	$ 17,349,841

Excluding the $8.1 million increase in research and development expenses for the amounts reserved against the AOF receivable during the three months ended June 30, 2020, research and development expenses decreased by $3.8 million, or 41%, to $5.5 million for the three months ended June 30, 2021 from $9.2 million for the three months ended June 30, 2020. The decrease was primarily related to decreased clinical trial and manufacturing costs associated with our Zygel program following the conclusion of our CONNECT-FX and BRIGHT clinical trials; partially offset by an increase in stock-based compensation expenses and a reduction in the non-AOF Australian research and development incentive.

General and Administrative Expenses

General and administrative expenses decreased by $0.1 million, or 2%, to $4.4 million for the three months ended June 30, 2021 from $4.5 million for the three months ended June 30, 2020. The decrease was primarily related to decreases in pre-commercialization expense for Zygel and a decrease in legal expenses partially offset by an increase in directors and officers liability insurance and an increase in proxy solicitation costs related to our annual meeting.

Other Income (Expense)

During the three months ended June 30, 2021 and 2020, we recognized $5,943 and $26,601, respectively, in interest income. The decrease in interest income was related to lower average interest rates earned on our investments. During the three months ended June 30, 2021 and 2020, we recognized a foreign currency loss of $0.1 million and a foreign currency gain of $1.5 million, respectively. Foreign currency gains and losses are due primarily to the remeasurement of the Subsidiary's assets and liabilities, which are denominated in the local currency to the Subsidiary's functional currency, which is the U.S. dollar.

Comparison of the Six Months Ended June 30, 2021 and 2020

Research and Development Expenses

	Six months ended June 30,	
	2021	2020
Research and development expenses (before impact of AOF)	$ 10,060,958	$ 16,124,939
Amounts reserved against AOF refund	—	8,107,695
Total research and development expenses	$ 10,060,958	$ 24,232,634

Excluding the $8.1 million increase in research and development expenses for the amounts reserved against the AOF receivable during the six months ended June 30, 2020, research and development expenses decreased by $6.1 million, or 38%, to $10.1 million for the six months ended June 30, 2021 from $16.1 million for the six months ended June 30, 2020. The decrease was primarily related to decreased clinical trial and manufacturing costs associated with our Zygel program following the conclusion of our CONNECT-FX and BRIGHT clinical trials; partially offset by an increase in stock-based compensation expenses and a reduction in the non-AOF Australian research and development incentive.

General and Administrative Expenses

General and administrative expenses decreased by $0.7 million, or 9%, to $7.7 million for the six months ended June 30, 2021 from $8.4 million for the six months ended June 30, 2020. The decrease was primarily related to decreases in pre-commercialization expense for Zygel, decreased employee-related costs and a decrease in legal expenses partially offset

by an increase in directors and officers liability insurance and an increase in proxy solicitation costs related to our annual meeting.

Other Income (Expense)

During the six months ended June 30, 2021 and 2020, we recognized $11,576 and $0.2 million, respectively, in interest income. The decrease in interest income was related to lower average interest rates earned on our investments. During the six months ended June 30, 2021 and 2020, we recognized foreign currency losses of $0.2 million and $0.3 million, respectively. Foreign currency gains and losses are due primarily to the remeasurement of the Subsidiary's assets and liabilities, which are denominated in the local currency to the Subsidiary's functional currency, which is the U.S. dollar.

Liquidity and Capital Resources

Since our inception in 2007, we have devoted most of our cash resources to research and development and general and administrative activities. We have financed our operations primarily with the proceeds from the issuance and sale of equity securities (most notably our initial public offering, our follow-on public offerings and sales under our "at-the-market" offering) and convertible promissory notes, state and federal grants and research services.

To date, we have not generated any revenue from the sale of products, and we do not anticipate generating any revenue from the sales of products for the foreseeable future. We have incurred losses and generated negative cash flows from operations since inception. As of June 30, 2021, our principal sources of liquidity were our cash and cash equivalents of $85.8 million. Our working capital was $86.4 million as of June 30, 2021.

Management believes that cash and cash equivalents as of June 30, 2021 are sufficient to fund operations and capital requirements well into the first half of 2024. The economic effects of the COVID-19 pandemic remain fluid and management will continue to closely monitor the situation to ensure our cash and cash equivalents will help us manage the impact of the COVID-19 pandemic on our business and related liquidity needs. Substantial additional financings will be needed to fund our operations and to complete clinical development of and to commercially develop our product candidates. There is no assurance that such financing will be available when needed or on acceptable terms. Our ability to access the capital markets or otherwise raise such capital may be adversely impacted by potential worsening global economic conditions and the recent disruptions to, and volatility in, financial markets in the United States and worldwide resulting from the ongoing COVID-19 pandemic.

Equity Financings

On May 11, 2021, we entered into a Controlled Equity Offering^{SM} Sales Agreement, or the 2021 Sales Agreement, with Cantor Fitzgerald & Co., Canaccord Genuity, LLC, H.C. Wainwright & Co. LLC and Ladenburg Thalmann & Co. Inc., as sales agents, pursuant to which we may sell, from time to time, up to $75.0 million of our common stock. As of August 5, 2021, there have been no sales of common stock under the 2021 Sales Agreement.

In August 2019, we entered into a Controlled Equity Offering^{SM} Sales Agreement, or the 2019 Sales Agreement, with Cantor Fitzgerald & Co., Canaccord Genuity, LLC, H.C. Wainwright & Co. LLC and Ladenburg Thalmann & Co. Inc., as sales agents, pursuant to which we sold $75.0 million of our common stock. In the first quarter of 2021, we have sold and issued 10,244,326 shares of our common stock under the 2019 Sales Agreement in the open market at a weighted average selling price of $4.22 per share, resulting in gross proceeds of $43.2 million. Net proceeds after deducting commissions and offering expenses were $42.2 million. In the first quarter of 2020, we sold and issued 356,000 shares of our common stock in the open market at a weighted-average selling price of $5.10 per share, for gross proceeds of $1.8 million and net proceeds, after deducting commissions and offering expenses, of $1.6 million. In 2020, we sold and issued 6,596,873 shares of our common stock in the open market at a weighted-average selling price of $4.81 per share, for gross proceeds of $31.7 million and net proceeds, after deducting commissions and offering expenses, of $30.7 million. The last sale under the 2019 Sales Agreement was made on February 9, 2021. From August 2019 through February 9, 2021, we received cumulative gross proceeds of $75.0 million from shares sold in the open market under the 2019 Sales Agreement, which was terminated pursuant to its terms.

Debt

We had no debt outstanding as of June 30, 2021 or December 31, 2020.

Future Capital Requirements

During the six months ended June 30, 2021, net cash used in operating activities was $15.6 million, and our accumulated deficit as of June 30, 2021 was $220.1 million. Our expectations regarding future cash requirements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments that we may make in the future. To the extent that we enter into any of those types of transactions, we may need to raise substantial additional capital.

We expect to continue to incur substantial additional operating losses for at least the next several years as we continue to develop our product candidates and seek marketing approval and, subject to obtaining such approval, the eventual commercialization of our product candidates. If we obtain marketing approval for any of our product candidates, we will incur significant sales, marketing and manufacturing expenses. In addition, we expect to incur additional expenses to add operational, financial and information systems and personnel, including personnel to support our planned product commercialization efforts. We also expect to continue to incur significant costs to comply with corporate governance, internal controls and similar requirements associated with operating as a public reporting company.

Our future use of operating cash and capital requirements will depend on many forward-looking factors, including the following:

- the initiation, progress, timing, costs and results of preclinical studies and clinical trials for our product candidates;
- the clinical development plans we establish for these product candidates;
- the number and characteristics of product candidates that we may develop or in-license;
- the terms of any collaboration agreements we may choose to execute;
- the outcome, timing and cost of meeting regulatory requirements established by the United States Drug Enforcement Agency, the FDA, the European Medicines Agency or other comparable foreign regulatory authorities;
- the cost of filing, prosecuting, defending and enforcing our patent claims and other intellectual property rights;
- the cost of defending intellectual property disputes, including patent infringement actions brought by third parties against us;
- costs and timing of the implementation of commercial scale manufacturing activities;
- the cost of establishing, or outsourcing, sales, marketing and distribution capabilities for any product candidates for which we may receive regulatory approval in regions where we choose to independently commercialize our products;
- the extent to which health epidemics and other outbreaks of communicable diseases, including the ongoing COVID-19 pandemic, could disrupt our operations or materially and adversely affect our business and financial conditions; and
- the timing and outcome of the ATO’s review regarding our eligibility to receive tax credits related to the AOF.

To the extent that our capital resources are insufficient to meet our future operating and capital requirements, we will need to finance our cash needs through public or private equity offerings, debt financings, collaboration and licensing arrangements or other financing alternatives. We have no committed external sources of funds. Additional equity or debt financing or collaboration and licensing arrangements may not be available on acceptable terms, if at all.

If we raise additional funds by issuing equity securities, including through our 2021 Sales Agreement, our stockholders will experience dilution.

Cash Flows

The following table summarizes our cash flows from operating, investing and financing activities for the six months ended June 30, 2021 and 2020.

	Six Months Ended June 30,	
	2021	2020
Statement of Cash Flows Data:		
Total net cash (used in) provided by:		
Operating activities	$ (15,576,797)	$ (21,658,854)
Investing activities	(47,570)	(360,838)
Financing activities	42,247,891	28,962,490
Net increase in cash and cash equivalents	$ 26,623,524	$ 6,942,798

Operating Activities

For the six months ended June 30, 2021, cash used in operating activities was $15.6 million compared to $21.7 million for the six months ended June 30, 2020. The decrease from the comparable 2020 period was primarily the result of decreased research and development expenses related to clinical trial costs of our Zygel program and decreased general and administrative expenses.

Excluding any cash that may be received from the July 2019 AOF application, we expect cash used in operating activities to decrease in 2021 as compared to 2020, as we concluded our pivotal CONNECT-FX clinical trial and our BRIGHT clinical trial during 2020. We expect to initiate the RECONNECT pivotal trial in FXS during the third quarter of 2021.

Investing Activities

For the six months ended June 30, 2021 and 2020, cash used in investing activities represented the cost of expenditures made for manufacturing equipment.

Financing Activities

Cash provided by financing activities for the six months ended June 30, 2021 consisted primarily of $42.2 million in net proceeds from sales of our shares of common stock under the 2019 Sales Agreement. Cash provided by financing activities for the six months ended June 30, 2020 consisted of $29.0 million in net proceeds from sales of our shares of common stock under the 2019 Sales Agreement.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements, except for operating leases, or relationships with unconsolidated entities or financial partnerships, such as entities often referred to as structured finance or special purpose entities.

Recent Accounting Pronouncements

For descriptions of recently issued accounting pronouncements, see “Note 2 –Recent Accounting Pronouncements” of our Notes to Unaudited Consolidated Financial Statements included above in Part I of this report.

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

We are exposed to various market risks, which may result in potential losses arising from adverse changes in market rates, such as interest rates and foreign exchange rates. We do not enter into derivatives or other financial instruments for trading or speculative purposes nor do we engage in any hedging activities. As of June 30, 2021, we had cash and cash equivalents of $85.8 million, consisting primarily of cash and money market account balances. Because of the short-term maturities of our cash and cash equivalents, we do not believe that an immediate 10% increase in interest rates would have any significant impact on the realized value of our investments. Accordingly, we do not believe we are exposed to material market risk with respect to our cash and cash equivalents.

We have engaged third parties to manufacture our product candidates in Australia, Canada and the United Kingdom and to conduct clinical trials for our product candidates in the United States, Australia and New Zealand. Manufacturing and research costs related to these operations are paid for in a combination of U.S. dollars and local currencies, limiting our foreign currency exchange rate risk, however, our financial statements are reported in U.S. dollars and changes in foreign currency exchange rates could significantly affect our financial condition, results of operations, or cash flows. If we conduct clinical trials and seek to manufacture a more significant portion of our product candidates outside of the United States in the future, we could incur significant foreign currency exchange rate risk.

Item 4. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of June 30, 2021. The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, or the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the rules and forms, promulgated by the Securities and Exchange Commission. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of the effectiveness of the design and operation of our disclosure controls and procedures as of June 30, 2021, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting during the three months ended June 30, 2021 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.

Shareholder Class Action

On October 23, 2019, a putative class action complaint was filed against the Company and certain of its current officers in the United States District Court for the Eastern District of Pennsylvania, with an amended complaint filed on March 9, 2020. This action was purportedly brought on behalf of a putative class of Zynerba investors who purchased the Company’s publicly traded securities between March 11, 2019 and September 17, 2019 (the “Shareholder Class Action”). The complaint alleges that defendants made certain material misstatements and omissions relating to product candidate Zygel (“ZYN002”) in alleged violation of Section 10(b) of the Exchange Act, Rule 10b-5 promulgated thereunder, and Section 20(a) of the Exchange Act. Specifically, plaintiff claims that defendants made false statements or failed to disclose that: (i) Zygel was proving unsafe and not well-tolerated in the BELIEVE 1 clinical trial; (ii) that the foregoing created a foreseeable, heightened risk that Zynerba would fail to secure the necessary regulatory approvals for commercializing Zygel for the treatment of developmental and epileptic encephalopathies in children and adolescents, and (iii) as a result the Company’s public statements and public filings were materially false and misleading to investors.

The Company's motion to dismiss the plaintiffs' complaint was denied on November 25, 2020. The Company and the individual defendants reached an agreement to settle this action, which was subject to the preliminary and final approval of the court. On May 12, 2021, the court issued an order providing for preliminary approval of the proposed settlement of claims asserted in the Shareholder Class Action (the "Preliminary Approval Order"), subject to final approval following a settlement hearing before the court, currently scheduled for August 31, 2021. Pursuant to the Preliminary Approval Order, during the three months ending June 30, 2021, the Company and its insurance carrier deposited their respective share of the agreed upon settlement amount into a settlement fund escrow account pending final approval of the settlement by the court.

The Company and the individual defendants have denied, and continue to deny, that they have committed any violations of law or breaches of duty as alleged in the Shareholder Class Action and make no admission of liability or any form of wrongdoing.

Derivative Action

On April 24, 2020, a stockholder derivative complaint, captioned Philip Quartararo v. Armando Anido, et al., was filed against the Company, its current and former directors (Armando Anido, John P. Butler, Warren D. Cooper, William J. Federici, Thomas L. Harrison, Daniel L. Kisner, Kenneth I. Moch, and Pamela Stephenson), and its Chief Financial Officer, James E. Fickenscher. (the "Quartararo Action") in the United States District Court for the District of Delaware.

On December 4, 2020 a stockholder derivative complaint, captioned Dmitry Itkis, derivatively on behalf of Zynerba Pharmaceuticals, Inc. v. Armando Anido, et al. was filed against the Company, its current and former directors (Armando Anido, John P. Butler, Warren D. Cooper, William J. Federici, Thomas L. Harrison, Daniel L. Kisner, Kenneth I. Moch, and Pamela Stephenson), and its Chief Financial Officer, James E. Fickenscher. (the 'Itkis Action") in the United States District Court for the District of Delaware. The Quartararo Action and the Itkis action were consolidated in the shareholder derivative action, captioned *In Re Zynerba Pharmaceuticals, Inc. Derivative Litigation* (the "Derivative Action") pending in the United States District Court for the District of Delaware. The consolidated complaint generally alleges breach of fiduciary duty, corporate waste and violations of Section 14 (a) of the Exchange Act in connection with the Company's disclosures around the BELIEVE I clinical trial. The Company and the individual defendants reached an agreement in principle to settle the Derivative Action (the "Stipulation of Settlement") which was subject to the preliminary and final approval of the court. On May 12, 2021, the court issued an order providing for preliminary approval of the Stipulation of Settlement. On July 15, 2021, following a settlement hearing, the Court issued a final order and judgment (the "Final Order"), pursuant to which the court fully and finally approved the settlement set forth in the Stipulation of Settlement and dismissed the Derivative Action with prejudice. In accordance with the terms of the Stipulation of Settlement, the Company has undertaken to institute specified governance enhancements. Under their terms, the Final Order and the Stipulation of Settlement may not be deemed to be evidence or an admission of liability, fault, breach of duty or wrongdoing on the part of the Company. Attorneys' fees and service awards, granted in the Final Order to plaintiffs' counsel and their clients, respectively, will be paid by the Company's insurance carrier under the terms of their insurance policy.

220 Action

On March 15, 2021, stockholder Roland Davies filed a complaint pursuant to 8 Del. C. § 220 ("§220") in the Court of Chancery of the State of Delaware seeking to inspect and make copies and extracts of certain books and records of the Company based on claims set forth in the Shareholder Class Action and the Derivative Action (the "220 Action").

The Company and the individual defendants recently reached an agreement to settle the 220 Action (the "220 Settlement Agreement"), pursuant to which the matter has been dismissed with prejudice by the court. The Company and the individual defendants have denied, and continue to deny, that they committed any violations of law or breaches of duty as alleged in the 220 Action and make no admission of liability or any form of wrongdoing. Under its terms, the 220 Settlement Agreement may not be deemed to be evidence or an admission of liability, fault, breach of duty or wrongdoing on the part of the Company.

Item 1A. Risk Factors.

You should carefully consider the risk factors described in our 2020 Annual Report under the caption "Item 1A. "Risk Factors." There have been no material changes in our risk factors included in our 2020 Annual Report. The risks

described in our 2020 Annual Report are not the only risks facing our company. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial also may materially adversely affect our business, financial condition or future results.

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

Recent Sales of Unregistered Securities

None.

Purchase of Equity Securities

We did not purchase any of our registered equity securities during the period covered by this Quarterly Report.

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

Not applicable.

Item 6. Exhibits.

The following exhibits are being filed herewith:

EXHIBIT INDEX

Exhibit No.	Exhibit
3.1	Amended and Restated By-laws of Zynerba Pharmaceuticals, Inc., as amended.
10.1	Controlled Equity Offering℠ Sales Agreement, dated May 11, 2021, by and among the registrant, Cantor Fitzgerald & Co., Canaccord Genuity LLC, H.C. Wainwright & Co., LLC, and Ladenburg Thalmann & Co. Inc. Incorporated herein by reference to Exhibit 10.1 to the registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2021 (File No. 001-37526) filed on May 12, 2021.
10.2	Form of Restricted Stock Grant Agreement under Amended and Restated 2014 Omnibus Incentive Compensation Plan.
31.1	Certification of Chief Executive Officer pursuant to Rules 13a-14(a) or 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (filed herewith).
31.2	Certification of Chief Financial Officer pursuant to Rules 13a-14(a) or 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (filed herewith).
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (furnished herewith).
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (furnished herewith).
101 INS	Inline XBRL Document (filed herewith).
101 SCH	Inline XBRL Taxonomy Extension Schema (filed herewith).
101 CAL	Inline XBRL Taxonomy Extension Schema Calculation Linkbase (filed herewith).
101 DEF	Inline XBRL Taxonomy Extension Schema Definition Linkbase (filed herewith).
101 LAB	Inline XBRL Taxonomy Extension Schema Label Linkbase (filed herewith).
101 PRE	Inline XBRL Taxonomy Extension Schema Presentation Linkbase (filed herewith).
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in exhibit 101)

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.

ZYNERBA PHARMACEUTICALS, INC.

Date: August 9, 2021

By: /s/ ARMANDO ANIDO
Armando Anido
Chief Executive Officer
(Principal Executive Officer)

Date: August 9, 2021

By: /s/ JAMES E. FICKENSCHER
James E. Fickenscher
Chief Financial Officer
(Principal Financial and Accounting Officer)

AMENDED AND RESTATED BYLAWS OF
ZYNERBA PHARMACEUTICALS, INC.

ADOPTED: JULY 29, 2021

1. STOCKHOLDERS

1.1. **Annual Meeting**.

An annual meeting of the stockholders of Zynerba Pharmaceuticals, Inc. (the "***Corporation***") shall be held in each calendar year, on such date and at such time as may be fixed by the board of directors of the Corporation (the "***Board***"), for the purpose of electing directors in accordance with the certificate of incorporation of the Corporation (the "***Certificate of Incorporation***") and for the transaction of such other business as may properly come before the meeting. If the day fixed for the annual meeting shall be a legal holiday in the state where the meeting is to be held, such meeting shall be held on the next succeeding business day.

1.2. **Special Meetings**.

Except as otherwise required by statute and subject to the rights, if any, of the holders of any series of Preferred Stock, special meetings of the stockholders of the Corporation may be called only by the Board or by such person or persons acting pursuant to a resolution approved by the affirmative vote of a majority of the directors then in office. The Board may postpone or reschedule any previously scheduled special meeting of stockholders. Only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of stockholders of the Corporation. Nominations of persons for election to the Board of the Corporation and stockholder proposals of other business shall not be brought before a special meeting of stockholders to be considered by the stockholders unless such special meeting is held in lieu of an annual meeting, and in which case such special meeting in lieu thereof shall be deemed an Annual Meeting for purposes of these Bylaws.

1.3. **Place of Meeting**.

All meetings of the stockholders shall be held at the registered office of the Corporation or at such other place, within or without the State of Delaware, as may be designated by the Board from time to time.

1.4. **Notice**.

Except as otherwise provided by law, notice of each meeting of stockholders, whether annual or special, shall be given not less than ten (10) nor more than sixty (60) days before the date of the meeting to each stockholder entitled to vote at such meeting. Without limiting the manner by which notice otherwise may be given to stockholders, any notice shall be effective if given by a form of electronic transmission consented to by the stockholder to whom the notice is given (in a manner consistent with the General Corporation Law of the State of Delaware, as may be amended from time to time (the "***DGCL***")). The notices of all meetings shall state the place, date and time of the meeting and the means of remote communications, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such meeting. The notice of a special meeting shall state, in addition, the purpose or purposes for which the meeting is called. If notice is given by mail, such notice shall be deemed given when deposited in the United States mail, postage prepaid, directed to the stockholder at such stockholder's address as it appears on the records of the Corporation, if notice is given by electronic transmission, such notice shall be deemed given at the time specified in Section 232 of the DGCL.

1.5. **Quorum**.

A stockholders' meeting duly called shall not be organized for the transaction of business unless a quorum is present. The holders of shares of stock representing 45% of the voting power of all shares of stock issued and outstanding and entitled to vote on a particular matter to be acted upon at a meeting, present in person or by proxy, shall constitute a quorum for the purposes of consideration and action on such matter. In the event the Corporation shall have more than one series or class of stock with varying voting rights, only those shares of stock authorized by the Certificate of Incorporation or the applicable provision of the DGCL shall be counted for purposes of determining if a quorum exists. A quorum, once established at a meeting, shall not be broken by the withdrawal of enough votes to leave less than a quorum.

1.6. **Adjournments**.

Adjournment or adjournments of any annual or special meeting of stockholders, other than one at which directors are to be elected, may be taken for such period or periods as the presiding officer of the meeting or the stockholders present in person or by proxy and entitled to vote, although less than a quorum, shall direct. When a meeting of stockholders is adjourned, it shall not be necessary to give any notice of the adjourned meeting or of the business to be transacted at the adjourned meeting other than by announcement at the meeting at which the adjournment is taken, unless the adjournment is for more than thirty (30) days, the Board fixes a new record date for the adjourned meeting or notice of the business to be transacted was required by the DGCL to be set forth in the original notice of the meeting and such notice had not been previously provided.

1.7. **Action by Stockholders**.

When a quorum is present at any meeting, any matter to be voted upon by the stockholders at such meeting, other than the election of directors, shall be decided by the vote of the holders of shares of stock representing a majority of the voting power of the votes cast by the holders of all of the shares of stock present or represented at the meeting and voting affirmatively or negatively on such matter (or if there are two or more classes or series of stock entitled to vote as separate classes, then in the case of each such class or series, the holders of a majority in voting power of the shares of stock of that class or series present or represented at the meeting and voting affirmatively or negatively on such matter), except when a different vote is required by law, the Certificate of Incorporation or these Bylaws. When a quorum is present at any meeting, any election by stockholders of directors shall be determined by a plurality of the shares present in person or by proxy entitled to vote on the election.

1.8. **Voting Rights of Stockholders and Proxies**.

Each stockholder shall have one vote for each share of stock entitled to vote held of record by such stockholder and a proportionate vote for each fractional share so held, unless otherwise provided by law or the Certificate of Incorporation. Each stockholder of record entitled to vote at a meeting of stockholders may vote in person (including by means of remote communications, if any, by which stockholders may be deemed to be present in person and vote at such meeting) or may authorize another person or persons to vote for such stockholder by a proxy executed or transmitted in a manner permitted by the DGCL by the stockholder or such stockholder's authorized agent and delivered (including by electronic transmission) to the secretary of the Corporation. All proxies must be filed with the secretary of the Corporation or the inspector of election for the meeting at the beginning of such meeting in order to be counted in any vote at the meeting. No such proxy shall be voted upon after three years from the date of its execution, unless the proxy expressly provides for a longer period.

1.9. **Voting List**.

The secretary shall prepare, at least ten (10) days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, for a period of at least ten (10) days prior to the meeting: (a) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting, or (b) during ordinary business hours, at the principal place of business of the Corporation. The list shall also be produced and kept at the time and place of the meeting during the whole time thereof, and may be inspected by any stockholder who is present. The list shall presumptively determine the identity of the stockholders entitled to vote at the meeting and the number of shares held by each of them.

1.10. **Determination of Stockholders of Record**.

1.10.1. The Board may fix a time prior to the date of any meeting of stockholders as a record date for the determination of the stockholders entitled to notice of, or to vote at, the meeting, which time, except in the case of an adjourned meeting, shall be not more than sixty (60) days nor less than ten (10) days prior to the date of the meeting of stockholders. Only stockholders of record on the date fixed shall be entitled to notice of, or to vote at, such meeting, notwithstanding any transfer of shares on the books of the Corporation after the record date so fixed. The Board may similarly fix a record date for the determination of stockholders of record for payment of dividends or for any other purpose. When a determination of stockholders of record has been made as provided in this bylaw for purposes of a meeting, the determination shall apply to any adjournment thereof unless the Board fixes a new record date for the adjourned meeting.

1.10.2. If a record date is not fixed:

(a) The record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be the close of business on the day immediately preceding the day on which notice is given or, if notice is waived, at the close of business on the day immediately preceding the day on which the meeting is held.

(b) The record date for determining stockholders for any other purpose shall be at the close of business on the day on which the Board adopts the resolution relating thereto.

1.11. **Presiding Officer**.

All meetings of the stockholders shall be called to order and presided over by the chairman of the Board, if any, or, if there is no chairman or in the chairman's absence, by the chief executive officer, or, in the absence of the chief executive officer, by a chairman of the meeting designated by the Board. The secretary shall act as secretary of the meeting, but in the secretary's absence the chairman of the meeting may appoint any person to act as secretary of the meeting.

1.12. **Inspectors of Election**.

In advance of any meeting of stockholders, the Board may appoint inspectors of election, who may also serve the Corporation in other capacities, including, without limitation, as officers, employees or representatives, but who need not be stockholders, to act at such meeting or any adjournment thereof. If inspectors of election are not so appointed, the presiding officer of any such meeting may make such appointment at the meeting. The number of inspectors shall be one or any greater odd number. No person

who is a nominee for director to be elected at the meeting shall act as an inspector. In case any person appointed as an inspector fails to appear or fails or refuses to act, the vacancy may be filled by appointment made by the Board in advance of the convening of the meeting or at the meeting by the presiding officer thereof. Each inspector, before entering upon the discharge of such inspector's duties, shall take and sign an oath to faithfully execute the duties of inspector with strict impartiality and according to the best of such inspector's ability. The inspector or inspectors of election shall determine the number of shares outstanding and the voting power of each such share, the shares represented at the meeting, the existence of a quorum, and the authenticity, validity and effect of proxies, shall receive votes or ballots, shall hear and determine all challenges and questions in any way arising in connection with the right to vote, shall count and tabulate all votes and determine the result and shall do such acts as may be proper to conduct the election or vote with fairness to all stockholders. The inspector or inspectors of election shall perform their duties impartially, in good faith, to the best of their ability, and as expeditiously as is practical. If there are three or more inspectors of election, the decision, act or certificate of a majority shall be effective in all respects as the decision, act or certificate of all. At the request of the presiding officer of the meeting, or of any stockholder, the inspector or inspectors shall make a report in writing of any challenge or question or matter determined by them and execute a certificate of any fact found by them. Any report or certificate made by them shall be prima facie evidence of the facts stated therein.

1.13. **Conduct of Meetings.**

The date and time of the opening and the closing of the polls for each matter upon which the stockholders will vote at a meeting shall be announced at such meeting by the person presiding over the meeting. The Board of the Corporation may adopt by resolution such rules or regulations for the conduct of meetings of stockholders as it shall deem appropriate. Except to the extent inconsistent with such rules and regulations as adopted by the Board, the chair of any meeting of stockholders shall have the right and authority to prescribe such rules, regulations and procedures and to do all such acts as, in the judgment of such chair, are appropriate for the proper conduct of the meeting. Such rules, regulations or procedures, whether adopted by the Board or prescribed by the chair of the meeting, may include, without limitation, the following: (a) the establishment of an agenda or order of business for the meeting; (b) rules and procedures for maintaining order at the meeting and the safety of those present; (c) limitations on attendance at or participation in the meeting, to stockholders of record of the Corporation, their duly authorized and constituted proxies or such other persons as the chair shall permit; (d) restrictions on entry to the meeting after the time fixed for the commencement thereof; and (e) limitations on the time allotted to questions or comments by participants. Unless and to the extent determined by the Board or the chair of the meeting, meetings of stockholders shall not be required to be held in accordance with rules of parliamentary procedure.

2. BOARD OF DIRECTORS

2.1. **General**.

The business and affairs of the Corporation shall be managed by or under the direction of the Board, who may exercise all of the powers of the Corporation except as otherwise provided by law or the Certificate of Incorporation.

2.2. **Number, Qualifications, Term of Office**.

Subject to the rights of holders of any series of Preferred Stock to elect directors, the number of directors of the Corporation shall be established by majority vote of the Board. Directors need not be stockholders of the Corporation. Terms of office of directors shall be as provided for in accordance with the terms of the Certificate of Incorporation.

2.3. **Vacancies**.

Vacancies or newly-created directorships on the Board shall be filled in accordance with the terms of the Certificate of Incorporation.

2.4. **Removal and Resignation**.

2.4.1. Removal. Directors may be removed from office only in the manner provided in the Certificate of Incorporation.

2.4.2. Resignation. Any director may resign at any time from his or her position as a director of the Corporation by delivering a resignation in writing or by electronic transmission to the Corporation at its principal office or to the chairman of the Board, the chief executive officer, the president or the secretary. The resignation shall be effective upon receipt thereof by the Corporation or at such subsequent time as may be specified in the notice of resignation.

2.5. **Regular Meetings**.

Regular meetings of the Board may be held without notice at such time and place as shall be determined from time to time by the Board, provided that any director who is absent when such a determination is made shall be given notice of the determination. The Board shall hold an annual meeting for the election of officers and the transaction of other proper business either as soon as practical after, and at the same place as, the annual meeting of stockholders or at such other day, hour and place as may be fixed by the Board. The Board may designate by resolution the day, hour and place, within or without the State of Delaware, of other regular meetings.

2.6. **Special Meetings**.

Special meetings of the Board may be called by the chairman of the Board, if any, the chief executive officer or any two (2) directors. The person or persons calling the special meeting may fix the day, hour and place, within or without the State of Delaware, of the meeting.

2.7. **Notice of Meetings**.

No notice of any annual or regular meeting of the Board need be given. Written notice of each special meeting of the Board, specifying the place, day and hour of the meeting, shall be given to each director (a) in person or by telephone or (b) by sending written notice by reputable overnight courier, telecopy, facsimile or electronic transmission, or delivering written notice by hand, to such director's last known business, home or electronic transmission address. Neither the business to be transacted at, nor the purpose of, any annual, regular or special meeting of the Board need be specified in the notice of the meeting.

2.8. **Meetings by Conference Communications Equipment**.

Directors may participate in meetings of the Board or any committee thereof by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and participation by such means shall constitute presence in person at such meeting.

2.9. **Quorum of and Action by Directors**.

A quorum of directors shall be determined in accordance with the terms of the Certificate of Incorporation, and the acts of a majority of directors present and voting at a meeting at which a quorum is present shall be the acts of the Board except where a different vote is required by law, the Certificate of Incorporation or these Bylaws. Every director shall be entitled to one vote.

2.10. **Action by Written Consent**.

Any action required or permitted to be taken at any meeting of the Board or of any committee thereof may be taken without a meeting, if all members of the Board or committee, as the case may be, consent to the action in writing or by electronic transmission, and the written consents or electronic transmissions are filed with the minutes of proceedings of the Board or committee.

2.11. **Presumption of Assent**.

A director of the Corporation who is present at a meeting of the Board, or of a committee of the Board, at which action on any corporate matter is taken on which the director is generally competent to act, shall be presumed to have assented to the action taken unless his or her dissent is entered in the minutes of the meeting or unless such director files his or her written dissent to the action with the secretary of the meeting before the adjournment thereof or transmits the dissent in writing to the secretary of the Corporation immediately after the adjournment of the meeting. Such right to dissent shall not apply to a director who voted in favor of the action. Nothing in this Section 2.11 shall bar a director from asserting that the minutes of a meeting incorrectly omitted said director's dissent if, promptly upon receipt of a copy of such minutes, said director notified the secretary, in writing, of the asserted omission or inaccuracy.

2.12. **Presiding Officer**.

All meetings of the Board shall be called to order and presided over by the chairman of the Board, if any, or, if there is no chairman or in the chairman's absence, by the chief executive officer or, in the absence of the chairman and chief executive officer, by a chairman of the meeting elected at such meeting by the Board.

2.13. **Compensation**.

Directors may be paid such compensation for their services and such reimbursement for expenses of attendance at meetings as the Board may from time to time determine. No such payment shall preclude any director from serving the Corporation or any of its parent or subsidiary entities in any other capacity and receiving compensation for such service.

3. **COMMITTEES OF THE BOARD**

3.1. **Committees of the Board**.

The Board may, by resolution adopted by a majority of the directors in office, establish one or more committees, each committee to consist of one or more of the directors of the Corporation. The Board may designate one or more directors as alternate members of any committee who may replace any absent or disqualified member at any meeting of the committee or for purposes of any written action of the committee. A committee, to the extent provided in the resolution of the Board creating it, shall have and may exercise all of the powers and authority of the Board except those which by law, the Certificate of Incorporation or these Bylaws may not be delegated. Each such committee shall keep minutes and make such reports as the Board may from time to time request. Each committee of the Board shall serve at the pleasure of the Board. Except as otherwise provided in the Certificate of Incorporation, these Bylaws, or

the resolution of the Board designating the committee, a committee may create one or more subcommittees, each subcommittee to consist of one or more members of the committee, and delegate to a subcommittee any or all of the powers and authority of the committee.

3.2. **Committee Rules**.

Unless the Board provides otherwise by resolution each committee shall conduct its business and take action in the same manner as the Board conducts its business pursuant to the Certificate of Incorporation of the Corporation and these Bylaws.

4. OFFICERS

4.1. Officers, Subordinate Officers, Qualifications and Authority.

4.1.1. The Corporation shall have a chief executive officer, a chief financial officer, a president, a secretary and a treasurer, each of whom shall be elected or appointed by the Board.

4.1.2. The Board may from time to time elect such other officers and appoint such committees, employees or other agents as the business of the Corporation may require, including a chairman and vice chairman of the Board, one or more vice presidents, one or more assistant secretaries and one or more assistant treasurers. Any number of offices may be held by the same person. Each such officer shall hold office for such period, have such authority and perform such duties as are provided in these Bylaws or as the Board or the chief executive officer may from time to time determine. The Board may delegate to any officer or committee the power to elect subordinate officers and to retain or appoint employees or other agents, or committees thereof and to prescribe the authority and duties of such subordinate officers, committees, employees or other agents.

4.1.3. All officers and subordinate officers shall be natural persons over the age of eighteen. Any two or more offices may be held by the same person. It shall not be necessary for officers to be directors of the Corporation.

4.1.4. Subject to these Bylaws and to limitations as the Board may from time to time prescribe, the officers of the Corporation, as between themselves and the Corporation, shall each have such authority and perform such duties in the management of the Corporation as generally pertain to their respective offices, as well as such powers and duties as from time to time may be conferred by the Board or the chief executive officer.

4.2. Election, Term, and Vacancies.

The officers and assistant officers of the Corporation shall be elected by the Board at the annual meeting of the Board or from time to time as the Board shall determine and each officer shall hold office until his or her successor has been duly selected and qualified or until said officer's earlier death, resignation or removal. A vacancy in any office occurring in any manner may be filled by the Board and, if the office is one for which these Bylaws prescribe a term, shall be filled for the unexpired portion of the term.

4.3. **Removal and Resignation**.

4.3.1. Removal. Any officer or agent of the Corporation may be removed by the affirmative vote of a majority of the directors then in office, with or without cause, but such removal shall be without prejudice to the contract rights, if any, of the person so removed.

4.3.2. Resignation. Any officer may resign at any time by delivering a resignation in writing or by electronic transmission to the Corporation at its principal office to the chief executive officer. The resignation shall be effective upon receipt thereof by the Corporation or at such subsequent time as may be specified in the notice of resignation.

4.4. **Temporary Absence or Disability**.

In the event of the temporary absence or disability of any officer, the Board may designate another officer to act temporarily in place of such absent or disabled officer.

4.5. **Chairman of the Board**.

4.5.1. The chairman shall have full power and authority to act in any manner on behalf of the Corporation which such powers shall include, but not be limited to, the following: (a) to preside at all meetings of the stockholders and of the Board; (b) to perform all other duties as may from time to time be requested by the Board; and (c) to perform all duties incident to the office of chairman of the Board. The chairman shall be the direct superior officer of the vice chairman and the chief executive officer.

4.5.2. In the event that the Corporation shall not have a chairman or there shall be a vacancy in said office, the powers and duties of the chairman shall inure to the vice chairman and if the Corporation shall not have a vice chairman or there shall be a vacancy in said office, to another director or officer as determined by resolution of the Board.

4.6. **Chief Executive Officer**.

The chief executive officer shall (a) have primary responsibility for strategic and long-range planning and direction of the business and finances of the Corporation, (b) see that all orders and resolutions of the Board and the committees thereof are carried into effect, (c) oversee the management of the business of the Corporation, (d) have authority to sign, execute, and acknowledge, in the name of the Corporation, tax returns, deeds, mortgages, bonds, contracts and/or any and all other instruments, (e) appoint and remove such subordinate officers and agents other than those actually appointed or elected by the Board as the business of the Corporation may require, (f) act as the duly authorized representative of the Board in all matters, except where the Board has formally designated some other person or group to act and (g) perform all the duties incident to the office of chief executive officer as may be assigned to such person by the Board.

4.7. **President**.

The president, if any, shall perform such duties as may be assigned to him or her by the Board or the chief executive officer. In the absence or disability of the chief executive officer, the president, if any, shall perform the duties of the chief executive officer on an interim basis until the Board selects or appoints a new chief executive officer.

4.8. **Vice Presidents**.

Each vice president, if any, shall perform such duties as may be assigned to him or her by the Board or the chief executive officer. In the absence or disability of the president, the most senior in rank of the vice presidents, if any, shall perform the duties of the president.

4.9. **Secretary**.

The secretary shall (a) keep or cause to be kept the minutes of all meetings of the stockholders, the Board, and any committees of the Board in one or more books kept for that purpose, (b) have custody of the corporate seal, corporate records, stock books and stock ledgers of the Corporation, (c) keep or cause to be kept a register of the address of each stockholder, which address has been furnished to the secretary by such stockholder, (d) see that all notices are duly given in accordance with law, the Certificate of Incorporation and these Bylaws, and (e) in general perform all the usual duties incident to the office of secretary and such other duties as may be assigned to him or her by the Board or the chief executive officer.

4.10. **Assistant Secretary**.

The assistant secretary, if any, or assistant secretaries if more than one, shall perform the duties of the secretary in his or her absence and shall perform such other duties as the Board, the chief executive officer or the secretary may from time to time designate.

4.11. **Chief Financial Officer**.

The chief financial officer shall perform such duties and shall have such powers as may be assigned by the Board or the chief executive officer. The chief financial officer shall have the custody of the corporate funds and securities and shall keep full and accurate accounts of receipts and disbursements in books belonging to the Corporation and shall deposit all moneys and other valuable effects in the name and to the credit of the Corporation in such depositories as may be designated by the Board. The chief financial officer shall disburse the funds of the Corporation as may be ordered by the Board, taking proper vouchers for such disbursements and shall render to the chief executive officer and the Board, when the chief executive officer or Board so requires, an account of all the transactions as chief financial officer and of the financial condition of the Corporation.

4.12. **Treasurer**.

The treasurer shall have such duties as may be specified by the chief financial officer to assist the chief financial officer in the performance of his or her duties, and to perform such other duties and have such other powers as may from time to time be prescribed by the Board or the chief executive officer. The assistant treasurer, or if there shall be more than one, the assistant treasurers in the order determined by the Board, the chief executive officer, the chief financial officer or the treasurer (or if there be no such determination, then in the order determined by their tenure in office), shall assist the treasurer in the performance of his or her duties and, in the absence of the treasurer or in the event of the treasurer's inability or refusal to act, perform the duties and exercise the powers of the treasurer and shall perform such other duties and have such other powers as the Board, the chief executive officer, the chief financial officer or the treasurer may from time to time prescribe.

4.13. **Salaries**.

Unless otherwise provided by the Board, the salaries of each of the officers elected by the Board shall be fixed from time to time by the Board and the salaries of all other officers of the Corporation shall be fixed from time to time by the chief executive officer or such other person as may be designated from time to time by the chief executive officer or the Board.

4.14. **Delegation of Authority**.

The Board may from time to time delegate the powers or duties of any officer to any other officer or agent, notwithstanding any provision hereof.

5. CAPITAL STOCK

5.1. **Issuance of Stock**.

Subject to the provisions of the Certificate of Incorporation, the whole or any part of any unissued balance of the authorized capital stock of the Corporation or the whole or any part of any shares of the authorized capital stock of the Corporation held in the Corporation's treasury may be issued, sold, transferred or otherwise disposed of by vote of the Board in such manner, for such lawful consideration and on such terms as the Board may determine.

5.2. **Stock Certificates; Uncertificated Shares**.

5.2.1. The shares of the Corporation shall be represented by certificates or shall be uncertificated. Each registered holder of shares of capital stock, upon request to the Corporation, shall be provided with a certificate of stock representing the number of shares owned by such holder. Each such certificate shall be signed in a manner that complies with Section 158 of the DGCL.

5.2.2. Each certificate for shares of stock which are subject to any restriction on transfer pursuant to the Certificate of Incorporation, these Bylaws, applicable securities laws or any agreement among any number of stockholders or among such holders and the Corporation shall have conspicuously noted on the face or back of the certificate either the full text of the restriction or a statement of the existence of such restriction.

5.2.3. If the Corporation shall be authorized to issue more than one class of stock or more than one series of any class, the powers, designations, preferences and relative participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights shall be set forth in full or summarized on the face or back of each certificate representing shares of such class or series of stock, provided that in lieu of the foregoing requirements there may be set forth on the face or back of each certificate representing shares of such class or series of stock a statement that the Corporation will furnish without charge to each stockholder who so requests a copy of the full text of the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights.

5.2.4. Within a reasonable time after the issuance or transfer of uncertificated shares, the Corporation shall send to the registered owner thereof a written notice containing the information required to be set forth or stated on certificates pursuant to Sections 151, 202(a) or 218(a) of the DGCL or, with respect to Section 151 of DGCL, a statement that the Corporation will furnish without charge to each stockholder who so requests the powers, designations, preferences and relative participating, optional or

other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights.

5.3. **Transfer of Shares**.

Shares of stock of the Corporation shall be transferable in the manner prescribed by law and in these Bylaws. Transfers of shares of stock of the Corporation shall be made only on the books of the Corporation or by transfer agents designated to transfer shares of stock of the Corporation. Subject to applicable law, shares of stock represented by certificates shall be transferred only on the books of the Corporation by the surrender to the Corporation or its transfer agent of the certificate representing such shares properly endorsed or accompanied by a written assignment or power of attorney properly executed, and with such proof of authority or the authenticity of signature as the Corporation or its transfer agent may reasonably require. Except as may be otherwise required by law, by the Certificate of Incorporation or by these Bylaws, the Corporation shall be entitled to treat the record holder of stock as shown on its books as the owner of such stock for all purposes, including the payment of dividends and the right to vote with respect to such stock, regardless of any transfer, pledge or other disposition of such stock until the shares have been transferred on the books of the Corporation in accordance with the requirements of these Bylaws.

5.4. **Lost, Destroyed or Stolen Certificates**.

If the registered owner of a share certificate claims that the security has been lost, destroyed or wrongfully taken, another may be issued in lieu thereof in such manner and upon such terms as the Board may authorize and shall be issued in place of the original security, in accordance with the DGCL, if the owner: (a) so requests before the Corporation has notice that the security has been acquired by a bona fide purchaser; (b) files with the Corporation a sufficient indemnity bond; and (c) satisfies any other reasonable requirements imposed by the Corporation; provided, that a new certificate may be issued without requiring any bond when, in the judgment of the Board, it is proper to do so.

6. **PERSONAL LIABILITY, INDEMNIFICATION AND INSURANCE**

6.1. **Indemnification of Officers and Directors**.

Each person who was or is made a party to, or is threatened to be made a party to, or is involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative (a "***Proceeding***"), by reason of the fact that such person is or was a director or officer of the Corporation, or, while serving as a director or officer of the Corporation, is or was serving at the request of the Corporation as a director, officer, employee or agent of another corporation, or of a partnership, joint venture, trust or other enterprise, including service with respect to employee benefit plans (for purposes of this Section 6, an "***Indemnitee***"), shall be indemnified and held harmless by the Corporation to the fullest extent permitted by applicable law, against all expenses, liability and loss (including attorneys' fees and all other costs, expenses and obligations) reasonably incurred or suffered by such Indemnitee in connection therewith, provided such Indemnitee acted in good faith and in a manner that the Indemnitee reasonably believed to be in or not opposed to the best interests of the Corporation, and, with respect to any criminal action or Proceeding, had no reasonable cause to believe the Indemnitee's conduct was unlawful. Such indemnification shall continue as to an Indemnitee who has ceased to be a director or officer of the Corporation and shall inure to the benefit of such Indemnitees' heirs, executors and administrators. Notwithstanding the foregoing, the Corporation shall not be obligated under this Section 6 to indemnify any Indemnitee seeking indemnification in connection with a Proceeding (or part thereof) initiated by such Indemnitee unless (i) such Proceeding (or part thereof) was authorized in the first instance by the Board, (ii) such Proceeding is brought to establish or enforce a right of indemnification under this Section 6 or any

agreement or insurance policy relating to Proceedings, or (iii) otherwise required under Section 145 of the DGCL.

6.2. **Advance of Expenses**.

The Corporation shall pay all expenses (including attorneys' fees) incurred by such an Indemnitee in defending any such Proceeding in advance of its final disposition; provided, however, that (a) the payment of such expenses incurred by such an Indemnitee in advance of the final disposition of such Proceeding shall be made only upon delivery to the Corporation of an undertaking, by or on behalf of such Indemnitee, to repay all amounts so advanced if it shall ultimately be determined that such Indemnitee is not entitled to be indemnified under this Section 6 or otherwise; (b) the Corporation's obligation to advance expenses shall terminate with respect to any Proceeding as to which Indemnitee is shall have entered a plea of guilty or nolo contendere, or an equivalent plea of guilt; and (c) the Corporation shall not be required to advance any expenses to a person against whom the Corporation directly brings a claim alleging that such person has breached such person's duty of loyalty to the Corporation, committed an act or omission not in good faith or that involves intentional misconduct or a knowing violation of law, or derived an improper personal benefit from a transaction.

6.3. **Non-Exclusivity of Rights**.

The rights conferred on any person in this Section 6 shall not be exclusive of any other right that such person may have or hereafter acquire under any statute, provision of the Certificate of Incorporation, any bylaw, agreement, vote or consent of stockholders or disinterested directors, or otherwise. Additionally, nothing in this Section 6 shall limit the ability of the Corporation, in its discretion but subject to applicable law, to provide rights to indemnification or advancement of expenses to any person other than an Indemnitee or to provide greater rights to indemnification and advancement of expenses than those provided in this Section 6 to any Indemnitee.

6.4. **Indemnification Agreements**.

The Board is authorized to cause the Corporation to enter into agreements with any director, officer, employee or agent of the Corporation, or any person serving at the request of the Corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, including employee benefit plans, providing indemnification or advancement rights to such person. Such rights may be greater than those provided in this Section 6.

6.5. **Insurance**.

The Corporation may purchase and maintain insurance on its own behalf and on behalf of any person who is or was a director, officer, employee or agent of the Corporation, or is or was serving at the request of the Corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any expense, liability or loss asserted against such person and incurred by such person in any such capacity, or arising out of such person's status as such, whether or not the Corporation would have the power to indemnify such person against such liability under the provisions of the DGCL or this Section 6.

6.6. **Severability**.

If any word, clause or provision of this Section 6 or any award made hereunder shall for any reason be determined to be invalid, the provisions hereof shall not otherwise be affected thereby but shall remain in full force and effect.

6.7. **Intent of Section**.

The intent of this Section 6 is to provide for indemnification to the fullest extent not prohibited by section 145 of the DGCL. To the extent that such Section or any successor section may be amended or supplemented from time to time, this Section 6 shall be amended automatically and construed so as to permit indemnification to the fullest extent from time to time not prohibited by law.

7. NOTICE FOR NOMINATIONS AND PROPOSALS

7.1. **Procedure for Notice of Stockholder Recommendations of Director Nominees, and Stockholder Proposals**.

Recommendations of nominees for election to the Board and the proposal of other business to be considered by the stockholders at an annual meeting of stockholders may be made (a) pursuant to the Corporation's notice of meeting, (b) by or at the direction of the Board (or, with respect to director nominations, by the Nominating and Corporate Governance Committee of the of the Board), or (c) by any stockholder of the Corporation present in person at the meeting who (i) was a stockholder of record at the time of giving of notice provided for in this Section 7 and at the time of an annual meeting, (ii) is entitled to vote at the meeting, and (iii) complies with the notice procedures set forth in this subsection as to such proposals or nominations. Clause (c) in the foregoing sentence provides the exclusive means for a stockholder to make recommendations for director nominations or submit proposals of other business (other than matters properly brought under Rule 14a-8 under the Securities Exchange Act of 1934, as amended (the "***Exchange Act***"), and included in the Corporation's notice of meeting) before an annual meeting of stockholders. In addition, any business proposed by a stockholder to be considered by the stockholders at an annual meeting of stockholders must be a proper matter for stockholder action under the DGCL and the Certificate of Incorporation. For purposes of this Section 7, "present in person" shall mean that the stockholder proposing that the business be brought before the meeting of the Corporation, or a qualified representative of such proposing stockholder, appear at such meeting. A "qualified representative" of such proposing stockholder shall be, if such proposing stockholder is (i) a general or limited partnership, any general partner or person who functions as a general partner of the general or limited partnership or who controls the general or limited partnership, (ii) a corporation or a limited liability company, any officer or person who functions as an officer of the corporation or limited liability company or any officer, director, general partner or person who functions as an officer, director or general partner of any entity ultimately in control of the corporation or limited liability company, or (iii) a trust, any trustee of such trust.

7.2. **Timing Requirements**.

Nominations, other than those made by or at the direction of the Nominating and Corporate Governance Committee of the Board, shall be made pursuant to timely notice in writing to the secretary of the Corporation as set forth in this Section 7.2. To be timely, a stockholder's notice shall be delivered to, or mailed and received at, the principal executive offices of the Corporation not less than ninety (90) days nor more than one hundred twenty (120) days prior to the anniversary date of the Corporation's immediately preceding annual meeting of stockholders of the Corporation; provided, however, that in the event that the date of the annual meeting is more than twenty-five (25) days before or after such anniversary date or a special meeting called for the purpose of electing directors, notice by the stockholder must be so received not later than the tenth (10th) day following the day on which public announcement of the date of the meeting is first made by the Corporation. In no event shall the public announcement of an adjournment or postponement of an annual meeting commence a new time period for the giving of a stockholder's notice as described above.

7.3. **Contents of Notice**.

Each stockholder notice shall set forth:

7.3.1. As to each person whom the stockholder recommends for nomination for election or reelection as a director, (a) all information relating to such person that is required to be disclosed in a proxy statement or other filings required to be made in connection with solicitations of proxies for election of directors in an election contest, or is otherwise required, in each case pursuant to Section 14 of the Exchange Act, and the rules and regulations promulgated thereunder (including such person's written consent to being named in the proxy statement as a nominee and to serving as a director if elected), (b) a description of all direct and indirect compensation, economic interests and other material monetary agreements, arrangements and understandings during the past three years, and any other material relationships, between or among such stockholder and beneficial owner, if any, and their respective affiliates and associates, or others acting in concert therewith, on the one hand, and each recommended nominee, and his or her respective affiliates and associates, or others acting in concert therewith, on the other hand, including, without limitation, all information that would be required to be disclosed pursuant to Rule 404 promulgated under Regulation S-K if the stockholder making the nomination and any beneficial owner on whose behalf the nomination is made, if any, or any affiliate or associate thereof or person acting in concert therewith, were the "registrant" for purposes of such rule and the recommended nominee were a director or executive officer of such registrant, (c) a description of all relationships between the proposed nominee and the recommending stockholder and the beneficial owner, if any, and of any agreements, arrangements and understandings between the recommending stockholder and the beneficial owner, if any, and the recommended nominee regarding the nomination, and (d) a description of all relationships between the recommended nominee and any of the Corporation's competitors, customers, suppliers, labor unions (if any) and any other persons with special interests regarding the Corporation;

7.3.2. As to any business other than a recommendation for nomination of a director or directors that the stockholder proposes to bring before a meeting, set forth (a) a brief description of the business desired to be brought before the meeting, the reasons for conducting such business at the meeting and any material interest of such stockholder and beneficial owner, if any, in such business, (b) a description of all contracts, arrangements, understandings and relationships between such stockholder and beneficial owner, if any, on the one hand, and any other person or persons (including their names), on the other hand, in connection with the proposal of such business by such stockholder and (c) the text of the proposal or business (including the text of any resolutions proposed for consideration); and

7.3.3. As to the stockholder giving the notice and the beneficial owner, if any, on whose behalf the recommendation for nomination or proposal is made, (a) the name and address of such stockholder, as they appear on the Corporation's books, the telephone number of such stockholder, and the name, address and telephone number of such beneficial owner, if any, (b)(i) the class or series and number of shares of capital stock of the Corporation which are, directly or indirectly, owned of record by such stockholder and beneficially by such beneficial owner and the time period such shares have been held, (ii) any option, warrant, convertible security, stock appreciation right, or similar right with an exercise or conversion privilege or a settlement payment or mechanism at a price related to any class or series of stock of the Corporation or with a value derived in whole or in part from the value of any class or series of stock of the Corporation, whether or not such instrument or right shall be subject to settlement in the underlying class or series of capital stock of the Corporation or otherwise (a "***Derivative Instrument***") directly or indirectly owned beneficially by such stockholder or beneficial owner, if any, and any other direct or indirect opportunity to profit or share in any profit derived from any increase or decrease in the value of stock of the Corporation, (iii) any proxy, agreement, arrangement, understanding or relationship pursuant to which such stockholder or beneficial owner, if any, has a right to vote any

shares of capital stock of any security of the Corporation or has granted any such right to any person or persons, (iv) any short interest in any security of the Corporation (for purposes of these Bylaws a person shall be deemed to have a short interest in a security if such person directly or indirectly, through any agreement, arrangement, understanding, relationship or otherwise, has the opportunity to profit or share in any profit derived from any decrease in value of the subject security), (v) any rights to dividends on the capital stock of the Corporation owned beneficially by such stockholder that are separated or separable from the underlying capital stock of the Corporation, (vi) any proportionate interest in shares of capital stock of the Corporation or Derivative Instruments held, directly or indirectly, by a general or limited partnership in which such stockholder is a general partner or, directly or indirectly, beneficially owns an interest in a general partner, (vii) any performance-related fees (other than an asset-based fee) that such stockholder is entitled to based on any increase or decrease in the value of shares of capital stock of the Corporation or Derivative Instruments, if any, as of the date of such notice, including without limitation any such interests held by members of such stockholder's immediate family sharing the same household (which information shall be updated or supplemented by such stockholder and beneficial owner, if any, not later than ten (10) days after the record date for the meeting to disclose such ownership as of the record date), (viii) any other information relating to such stockholder and beneficial owner, if any, that would be required to be disclosed in a proxy statement or other filings required to be made in connection with solicitations of proxies for, as applicable, the proposal and/or the election of directors in a contested election pursuant to Section 14 of the Exchange Act and the rules and regulations promulgated thereunder, (ix) any material pending or threatened legal proceeding in which such stockholder or beneficial owner is a party or material participant involving the Corporation or any of its officers or directors, or any affiliate of the Corporation, and (x) any direct or indirect material interest in any material contract or agreement of such stockholder or beneficial owner with the Corporation, any affiliate of the Corporation or any principal competitor of the Corporation (including, in any such case, any employment agreement, collective bargaining agreement or consulting agreement); (c) a representation that such stockholder and beneficial owner, if any, intend to be present in person at the meeting, (d) a representation that such stockholder and such beneficial owner, if any, intend to continue to hold the reported shares, Derivative Instruments or other interests through the date of the Corporation's next annual meeting of stockholders, (e) a completed and signed questionnaire and consent required in clauses (a) and (b) of Section 7.4, prepared with respect to and signed by such stockholder and beneficial owner, and (f) such additional information, documents, instruments, agreements and consents as may be deemed useful to the Board. For purposes of satisfying the requirements of clause (b) of this paragraph with respect to a beneficial owner, the beneficial owner shall supply to the Corporation either (i) a statement from the record holder of the shares, Derivative Instruments or other interests verifying the holdings of the beneficial owner and indicating the length of time the shares, Derivative Instruments or other interests have been held by such beneficial owner, or (ii) a current Schedule 13D, Schedule 13G, Form 3, Form 4 or Form 5 filed with the Securities and Exchange Commission reflecting the holdings of the beneficial owner, together with a statement of the length of time that the shares, Derivative Instruments or other interests have been held. If a recommendation is submitted by a group of two or more stockholders, the information regarding the recommending stockholders and beneficial owners, if any, must be submitted with respect to each stockholder in the group and any beneficial owners.

7.3.4. A stockholder providing notice pursuant to this Section 7 shall further update and supplement such notice, if necessary, so that the information provided or required to be provided in such notice pursuant to this Section 7 shall be true and correct as of the record date for determining the stockholders entitled to receive notice of the annual meeting or special meeting and such update and supplement shall be delivered to or be mailed and received by the secretary at the principal executive offices of the Corporation not later than five (5) business days after the record date for determining the stockholders entitled to receive notice of the annual meeting or special meeting.

7.4. **Requirements of Recommended Nominee**.

To be eligible for consideration to be nominated for election or reelection as a director of the Corporation, the notice required pursuant to Section 7.3 must be accompanied by (a) a written questionnaire with respect to the background and qualification of such recommended nominee and the background of any other person or entity on whose behalf the nomination is being made (which questionnaire shall be provided by the secretary upon written request) and (b) the written consent of each recommended nominee to: (i) provide, within such time period specified by the Corporation, such information concerning the recommended nominee as may reasonably be required by the Nominating and Corporate Governance Committee of the Board and/or Board to determine the eligibility of such recommended nominee to serve as an independent director of the Corporation, that could be material to a reasonable stockholder's understanding of the independence, or lack thereof, of such proposed nominee, and (ii) a background check to confirm the qualifications and character of the recommended nominee and to make such other determinations as the Nominating and Corporate Governance Committee of the Board or the Board may deem appropriate or necessary, and (c) the written representation and agreement (in the form provided by the secretary upon written request) of the recommended nominee that he or she (i) is not and will not become a party to (A) any agreement, arrangement or understanding with, and has not given any commitment or assurance to, any person or entity as to how such person, if elected as a director of the Corporation, will act or vote on any issue or question (a "***Voting Commitment***") that has not been disclosed to the Corporation or (B) any Voting Commitment that could limit or interfere with such person's ability to comply, if elected as a director of the Corporation, with such person's fiduciary duties under applicable law, (ii) is not a party to any agreement, arrangement or understanding that the nominee has with any person or entity other than the Corporation with respect to any direct or indirect compensation, reimbursement or indemnification in connection with service or action as a director that has not been disclosed therein and that he or she will promptly disclose to the secretary any such agreement, arrangement, or understanding that arises at any time during the nominee's service on the Board, and (iii) in such person's individual capacity and on behalf of any person or entity on whose behalf the nomination is being made, would be in compliance, if elected as a director of the Corporation, and will comply with all applicable publicly disclosed corporate governance, conflict of interest, confidentiality and stock ownership and trading policies and guidelines of the Corporation.

7.5. **Rule 14a-8 under the Exchange Act; Preferred Stock**.

Nothing in this Section 7 shall be deemed to affect any rights of (i) stockholders to request inclusion of proposals in the Corporation's proxy statement pursuant to Rule 14a-8 under the Exchange Act, or (ii) the holders of any series of Preferred Stock if and to the extent provided for under law, the Certificate of Incorporation or these Bylaws.

7.6. **Waiver by Board of Directors**.

The Board may, in its sole discretion, waive any condition or requirement of any provision of this Section 7 in one or more instances.

8. GENERAL PROVISIONS

8.1. **Registered Office**.

The registered office of the Corporation, required by law to be maintained in the State of Delaware, shall be 1313 N. Market Street, Suite 5100, Wilmington, DE 19801, New Castle County. The principal place of business of the Corporation may be, but need not be, the same as the registered office.

The address of the registered office may be changed from time to time as determined by resolution of the Board.

8.2. **Other Offices**.

The Corporation may have additional offices and places of business in such places, within or without the State of Delaware, as the Board may designate or as the business of the Corporation may require.

8.3. **Corporate Seal**.

The Corporation may have a corporate seal which shall have inscribed thereon the name of the Corporation, the year of organization, and the words "Corporate Seal – Delaware" or such inscription as the Board may determine. The seal may be used by causing it or a facsimile thereof to be impressed or affixed, or in any manner reproduced.

8.4. **Fiscal Year**.

The fiscal year of the Corporation shall end on the 31st day of December in each year.

8.5. **Waiver of Notice**.

Whenever notice is required to be given by law, the Certificate of Incorporation or these Bylaws, a written waiver signed by the person entitled to notice, or a waiver by electronic transmission by the person entitled to notice, whether before, at or after the time of the event for which notice is to be given, shall be deemed equivalent to notice required to be given to such person. Neither the business nor the purpose of any meeting need be specified in any such waiver. Attendance of a person at a meeting shall constitute a waiver of notice of such meeting, except when the person attends a meeting for the express purpose of objecting at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened.

8.6. **Voting of Securities**.

Except as the Board may otherwise designate, the chairman of the Board, chief executive officer, or the president may waive notice of, vote, or appoint any person or persons to vote, on behalf of the Corporation at, and act as, or appoint any person or persons to act as, proxy or attorney-in-fact for this Corporation (with or without power of substitution) at, any meeting of stockholders or security holders of any other entity, the securities of which may be held by this Corporation.

8.7. **Exclusive Jurisdiction**.

Unless the Corporation consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall, to the fullest extent permitted by law, be the sole and exclusive forum for: (a) any derivative action or proceeding brought on behalf of the Corporation; (b) any action asserting a claim of breach of a fiduciary duty owed by any director, officer or other employee of the Corporation to the Corporation or the Corporation's stockholders; (c) any action asserting a claim against the Corporation or any director, officer or other employee of the Corporation arising pursuant to the DGCL, the Certificate of Incorporation or these Bylaws; (d) any action to interpret, apply, enforce or determine the validity of this Certificate of Incorporation or these Bylaws; or (e) any action asserting a claim governed by the internal affairs doctrine, except as to each of (a) through (e) above, for any claim (A) as to which the Court of Chancery determines that there is an indispensable party not subject to the jurisdiction of the Court

of Chancery (and the indispensable party does not consent to the personal jurisdiction of the Court of Chancery within ten days following such determination), (B) which is vested in the exclusive jurisdiction of a court or forum other than the Court of Chancery, or (C) for which the Court of Chancery does not have subject matter jurisdiction; provided, that, if and only if the Court of Chancery of the State of Delaware dismisses any such action for lack of jurisdiction, such action may be brought in another state court sitting in the State of Delaware or, if no state court located within the State of Delaware has jurisdiction, the federal district court for the District of Delaware. If any provision or provisions of this Section 8.7 shall be held to be invalid, illegal or unenforceable as applied to any person or entity or circumstance for any reason whatsoever, then, to the fullest extent permitted by law, the validity, legality and enforceability of such provisions in any other circumstance and of the remaining provisions of this Section 8.7 (including, without limitation, each portion of any sentence of this Section 8.7 containing any such provision held to be invalid, illegal or unenforceable that is not itself held to be invalid, illegal or unenforceable) and the application of such provision to other persons or entities and circumstances shall not in any way be affected or impaired thereby. Any person or entity purchasing or otherwise acquiring any interest in shares of stock of the Corporation shall be deemed to have notice of and consented to the provisions of this Section 8.7.

8.8. **Amendment of Bylaws**.

8.8.1. Amendment by Directors. Except as otherwise provided by law, and subject to the terms of any series of preferred stock of the corporation, these Bylaws may be amended or repealed by the Board by the affirmative vote of a majority of the directors present at any regular or special meeting of the Board at which a quorum is present.

8.8.2. Amendment by Stockholders. These Bylaws may be amended or repealed at any annual meeting of stockholders, or special meeting of stockholders called for such purpose, by the affirmative vote of at least 66⅔% of the outstanding shares of capital stock entitled to vote on such amendment or repeal, voting together as a single class; provided, however, that if the Board recommends that stockholders approve such amendment or repeal at such meeting of stockholders, such amendment or repeal shall only require the affirmative vote of the majority of the outstanding shares of capital stock entitled to vote on such amendment or repeal, voting together as a single class.

8.9. **Corporate Records**.

The original or attested copies of the Certificate of Incorporation, Bylaws and records of all meetings of the incorporators, stockholders and the Board and the stock transfer books, which shall contain the names of all stockholders, their record addresses and the amount of stock held by each, may be kept outside the State of Delaware and shall be kept at the principal office of the Corporation, at an office of its counsel, at an office of its transfer agent or at such other place or places as may be designated from time to time by the Board.

ZYNERBA PHARMACEUTICALS, INC.
2014 OMNIBUS INCENTIVE COMPENSATION PLAN

RESTRICTED STOCK GRANT

This RESTRICTED STOCK GRANT AGREEMENT (this "Agreement"), dated as of _____ (the "Date of Grant"), is delivered by Zynerba Pharmaceuticals, Inc. (the "Company"), to _____ (the "Grantee").

RECITALS

A. The Zynerba Pharmaceuticals, Inc. 2014 Omnibus Incentive Compensation Plan, as amended on July 22, 2015, (the "Plan") provides for the grant of restricted stock in accordance with the terms and conditions of the Plan. The Board of Directors of the Company (the "Board") has decided to make a restricted stock grant as an inducement for the Grantee to promote the best interests of the Company and its stockholders.

B. The Board is authorized to appoint a committee to administer the Plan. If a committee is appointed, all references in this Agreement to the "Board" shall be deemed to refer to the committee.

NOW, THEREFORE, the parties to this Agreement, intending to be legally bound hereby, agree as follows:

1. Restricted Stock Grant. Subject to the terms and conditions set forth in this Agreement and the Plan, the Company hereby grants the Grantee _____ shares of common stock of the Company, subject to the restrictions set forth below and in the Plan (the "Restricted Stock"). Shares of Restricted Stock may not be transferred by the Grantee or subjected to any security interest until the shares have become vested pursuant to this Agreement and the Plan.

2. Vesting and Non-assignability of Restricted Stock.

(a) The shares of Restricted Stock shall become vested, and the restrictions described in Sections 2(b) and 2(c) shall lapse, according to the following vesting schedule, if the Grantee continues to be employed by, or provide service to, the Employer (as defined in the Plan) from the Date of Grant until the applicable vesting date:

Vesting Date	Shares Vested on Vesting Date
_____	_____
_____	_____
_____	_____
_____	_____

The vesting of the Restricted Stock shall be cumulative, but shall not exceed 100% of the shares. If the foregoing schedule would produce fractional shares, the number of shares of Restricted Stock that vest shall be rounded down to the nearest whole share.

(b) If the Grantee ceases to be employed by, or provide service to, the Employer for any reason before the Restricted Stock fully vests, the shares of Restricted Stock that are not then vested shall be forfeited and must be immediately returned to the Company.

(c) During the period before the shares of Restricted Stock vest (the "Restriction Period"), the non-vested Restricted Stock may not be assigned, transferred, pledged or otherwise disposed of by the Grantee. Any attempt to assign, transfer, pledge or otherwise dispose of the shares contrary to the provisions hereof, and the levy of any execution, attachment or similar process upon the shares, shall be null, void and without effect.

3. Issuance of Certificates.

(a) Stock certificates representing the Restricted Stock may be issued by the Company and held in escrow by the Company until the Restricted Stock vests, or the Company may hold non-certificated shares until the Restricted Stock vests. During the Restriction Period, the Grantee shall receive any cash dividends with respect to the shares of Restricted Stock, may vote the shares of Restricted Stock and may participate in any distribution pursuant to a plan of dissolution or complete liquidation of the Company. In the event of a dividend or distribution payable in stock or other property or a reclassification, split up or similar event during the Restriction Period, the shares or other property issued or declared with respect to the non-vested shares of Restricted Stock shall be subject to the same terms and conditions relating to vesting as the shares to which they relate.

(b) When the Grantee obtains a vested right to shares of Restricted Stock, a certificate representing the vested shares shall be issued to the Grantee, free of the restrictions under Section 2 of this Agreement.

(c) The obligation of the Company to deliver shares upon the vesting of the Restricted Stock shall be subject to all applicable laws, rules, and regulations and such approvals by governmental agencies as may be deemed appropriately to comply with relevant securities laws and regulations.

4. Change of Control. The provisions of the Plan applicable to a Change of Control (as defined in the Plan) shall apply to the Restricted Stock, and, in the event of a Change of Control, the Board may take such actions as it deems appropriate pursuant to the Plan.

5. Grant Subject to Plan Provisions. This grant is made pursuant to the Plan, the terms of which are incorporated herein by reference, and in all respects shall be interpreted in accordance with the Plan. The grant is subject to interpretations, regulations and determinations concerning the Plan established from time to time by the Board in accordance with the provisions of the Plan, including, but not limited to, provisions pertaining to (a) rights and obligations with respect to withholding taxes, (b) the registration, qualification or listing of the shares, (c) changes in capitalization of the Company, and (d) other requirements of applicable law. The Board shall

have the authority to interpret and construe the grant pursuant to the terms of the Plan, and its decisions shall be conclusive as to any questions arising hereunder.

6. Withholding. The Grantee shall be required to provide for the payment of, any federal, state, local or other taxes that the Employer is required to withhold with respect to the grant or vesting of the Restricted Stock ("Withholding Taxes"). Unless otherwise determined by the Board, on each vesting date, the Company shall arrange a mandatory sale (on the Grantee's behalf pursuant to the Grantee's authorization under this Section 6 and without further consent) of shares of Restricted Stock that become vested in an amount necessary to satisfy the Withholding Taxes and shall satisfy the Withholding Taxes by withholding from the proceeds of such sale (the "Mandatory Sell to Cover"). The Grantee hereby acknowledges and agrees that the Company shall have the authority to administer the Mandatory Sell to Cover arrangement in its sole discretion with a registered broker-dealer that the Company selects as the agent (the "Agent") who will sell on the open market at the then-prevailing market price(s), as soon as practicable on or after each date on which the Restricted Stock vests, the number (rounded up to the next whole number) of shares of Restricted Stock that vest sufficient to generate proceeds to cover (a) the Withholding Taxes that the Grantee is required to pay pursuant to the Plan and this Agreement as a result of the vesting of the Restricted Stock and (b) all applicable fees and commissions due to, or required to be collected by, the Agent with respect thereto.

If, for any reason, such Mandatory Sell to Cover does not result in sufficient proceeds to satisfy the Withholding Taxes, the Company or an affiliate of the Company may, in its sole discretion, satisfy all or any portion of the Withholding Taxes relating to your Restricted Stock by any of the following means or by a combination of such means: (a) withholding from any compensation otherwise payable to the Grantee by the Company; (b) causing the Grantee to tender a cash payment (which may be in the form of a check, electronic wire transfer or other method permitted by the Company); or (c) withholding shares of common stock from the shares of Restricted Stock that become vested with a fair market value up to an amount that does not exceed the amount necessary to satisfy the Company's required tax obligations for Withholding Taxes. The Grantee acknowledges that the Mandatory Sell to Cover is imposed by the Company on the Grantee pursuant to the terms of this Agreement.

7. Section 83(b) Election. The Grantee hereby acknowledges that the Grantee has been informed that, with respect to the Restricted Stock, the Grantee may file an election with the Internal Revenue Service, within 30 days of the execution of this Agreement, electing pursuant to Section 83(b) of the Internal Revenue Code of 1986, as amended, (the "Code") to be taxed currently on any difference between the purchase price of the Restricted Stock and their fair market value on the date of purchase. Absent such an election, taxable income will be measured and recognized by the Grantee at the time or times at which the forfeiture restrictions on the Restricted Stock lapse. The Grantee is strongly encouraged to seek the advice of his or own tax consultants in connection with the issuance of the Restricted Stock and the advisability of filing of the election under Section 83(b) of the Code. A form of Election under Section 83(b) is attached hereto as Exhibit A for reference.

THE GRANTEE ACKNOWLEDGES THAT IT IS NOT THE COMPANY'S, BUT RATHER THE GRANTEE'S SOLE RESPONSIBILITY TO FILE THE ELECTION UNDER SECTION 83(b) TIMELY.

8. No Employment or Other Rights. This grant shall not confer upon the Grantee any right to be retained by or in the employ or service of the Employer and shall not interfere in any way with the right of the Employer to terminate the Grantee's employment or service at any time. The right of the Employer to terminate at will the Grantee's employment or service at any time for any reason is specifically reserved.

9. Assignment by Company. The rights and protections of the Company hereunder shall extend to any successors or assigns of the Company and to the Company's parents, subsidiaries, and affiliates. This Agreement may be assigned by the Company without the Grantee's consent.

10. Applicable Law. The validity, construction, interpretation and effect of this instrument shall be governed by and construed in accordance with the laws of the State of Delaware, without giving effect to the conflicts of laws provisions thereof.

11. Notice. Any notice to the Company provided for in this instrument shall be addressed to the Company in care of the General Counsel at 80 W. Lancaster Avenue, Suite 300, Devon, PA 19333 and any notice to the Grantee shall be addressed to such Grantee at the current address shown on the payroll of the Employer, or to such other address as the Grantee may designate to the Employer in writing. Any notice shall be delivered by hand, sent by telecopy or enclosed in a properly sealed envelope addressed as stated above, registered and deposited, postage prepaid, in a post office regularly maintained by the United States Postal Service.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the Company has caused its duly authorized officers to execute and attest this instrument, and the Grantee has placed his or her signature hereon, effective as of the Date of Grant.

ZYNERBA PHARMACEUTICALS, INC.

By: _____
Name: _____
Title: _____

I hereby accept the grant of Restricted Stock described in this Agreement, and I agree to be bound by the terms of the Plan and this Agreement. I hereby further agree that all of the decisions and determinations of the Board shall be final and binding.

Grantee:_____

ELECTION UNDER SECTION 83(b)
OF THE INTERNAL REVENUE CODE OF 1986, AS AMENDED

The undersigned taxpayer hereby makes an election pursuant to Section 83(b) of the Internal Revenue Code of 1986, as amended, and the Treasury Regulations thereunder (the "Regulations"), and in connection with this election supplies the following information:

(1) Name of taxpayer making election: _____
Address: _____
Social Security Number: _____

Tax Year for which election is being made: _____

(2) The property with respect to which the election is being made consists of _____ shares of common stock of Zynerba Pharmaceuticals, Inc. (the "Company").

(3) Date the property was transferred:_____(the "Date of Grant").

(4) The stock is subject to forfeiture to the Company if the taxpayer ceases to be employed by, or provide service to, the Company during the restriction period. The restriction period lapses according to the following schedule, if the taxpayer is employed by, or providing service to, the Company from the Date of Grant until the applicable vesting date:

Vesting Date	Shares Vested on Vesting Date
_____	_____
_____	_____
_____	_____
_____	_____

(5) The fair market value at the time of the transfer of the stock (determined without regard to any restriction other than a restriction which by its terms will never lapse) is $_____ per share.

(6) The amount paid for the stock is $___ per share ($_____ aggregate consideration).

(7) A copy of this statement has been furnished to the Company (and to the transferee of the Stock, if different from the taxpayer) as required by §1.83-2(d) of the Regulations.

(8) This statement is executed as of _____.

_____
Taxpayer

INSTRUCTIONS FOR FILING SECTION 83(B) ELECTION

Attached is a form of election under section 83(b) of the Internal Revenue Code. If you wish to make such an election, you should complete, sign and date the election and then proceed as follows:

1. Execute three counterparts of your completed election (plus one extra counterpart for each person other than you, if any who receives property that is the subject of your election), retaining at least one photocopy for your records.

2. Send one counterpart to the Internal Revenue Service Center with which you will file your Federal income tax return for the current year (e.g., Kansas City, Missouri for Pennsylvania residents) via certified mail, return receipt requested. THE ELECTION SHOULD BE SENT IMMEDIATELY, AS YOU ONLY HAVE 30 DAYS FROM THE ISSUANCE/PURCHASE/GRANT DATE WITHIN WHICH TO MAKE THE ELECTION – NO WAIVERS, LATE FILINGS OR EXTENSIONS ARE PERMITTED.

3. Deliver one counterpart of the completed election to the Company for its files.

4. If anyone other than you (e.g., one of your family members) will receive property that is the subject of your election, deliver one counterpart of the completed election to each such person.

5. Attach one counterpart of the completed election to your Federal income tax return for this year when you file that return next year.

Exhibit 31.1

CERTIFICATION

I, Armando Anido, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Zynerba Pharmaceuticals, Inc.;

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

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

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

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

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

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

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

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

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

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

By: /s/ Armando Anido
Name: Armando Anido
Title: Chairman and Chief Executive Officer

Dated: August 9, 2021

Exhibit 31.2

CERTIFICATION

I, James E. Fickenscher, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Zynerba Pharmaceuticals, Inc.;

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

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

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

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

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

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

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

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

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

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

By: /s/ James E. Fickenscher
Name: James E. Fickenscher
Title: Chief Financial Officer

Dated: August 9, 2021

Exhibit 32.1

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

In connection with the quarterly report of Zynerba Pharmaceuticals, Inc. (the "Company") on Form 10-Q for the fiscal quarter ended June 30, 2021 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Armando Anido, Chairman and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

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

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

/s/ Armando Anido
Armando Anido
Chairman and Chief Executive Officer

Dated: August 9, 2021

Exhibit 32.2

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

In connection with the quarterly report of Zynerba Pharmaceuticals, Inc. (the "Company") on Form 10-Q for the fiscal quarter ended June 30, 2021 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, James E. Fickenscher, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

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

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

/s/ James E. Fickenscher
James E. Fickenscher
Chief Financial Officer

Dated: August 9, 2021