

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

FORM 10-Q

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

For the quarterly period ended June 30, 2022

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

Commission file number: 1-16467

RESPIRERX PHARMACEUTICALS INC.  
(Exact name of registrant as specified in its charter)

Delaware  
(State or other jurisdiction of  
incorporation or organization)

33-0303583  
(I.R.S. Employer  
Identification Number)

126 Valley Road, Suite C  
Glen Rock, New Jersey 07452  
(Address of principal executive offices)

(201) 444-4947  
(Registrant's telephone number, including area code)

Not applicable  
(Former name, former address and former fiscal year, if changed since last report)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
N/A	N/A	N/A

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Yes ☒ No ☐

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

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

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

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

As of August 19, 2022, the Company had 119,594,276, shares of common stock, \$0.001 par value, issued and outstanding.

**RESPIRERX PHARMACEUTICALS INC.  
AND SUBSIDIARY**

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In this Quarterly Report on Form 10-Q, the terms “RespireRx,” the “Company,” “we,” “us” and “our” refer to RespireRx Pharmaceuticals Inc. a Delaware corporation, and, unless the context indicates otherwise, its consolidated subsidiaries.

## INTRODUCTORY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q of RespireRx Pharmaceuticals Inc., referred to herein as our “Q2 2022 Quarterly Report” (“RespireRx” and together with RespireRx’s wholly owned subsidiary, Pier Pharmaceuticals, Inc. (“Pier”), the “Company,” “we,” or “our,” unless the context indicates otherwise) contains certain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”) and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and the Company intends that such forward-looking statements be subject to the safe harbor created thereby. These might include statements regarding the Company’s future plans, targets, estimates, assumptions, financial position, business strategy and other plans and objectives for future operations, and assumptions and predictions about research and development efforts, including, but not limited to, preclinical and clinical research design, execution, timing, costs and results, future product demand, supply, manufacturing, costs, marketing and pricing factors.

In some cases, forward-looking statements may be identified by words including “assumes,” “could,” “ongoing,” “potential,” “predicts,” “projects,” “should,” “will,” “would,” “anticipates,” “believes,” “intends,” “estimates,” “expects,” “plans,” “contemplates,” “targets,” “continues,” “budgets,” “may,” or the negative of these terms or other comparable terminology, although not all forward-looking statements contain these words, and such statements may include, but are not limited to, statements regarding (i) future research plans, expenditures and results, (ii) potential collaborative arrangements, (iii) the potential utility of the Company’s products candidates, (iv) reorganization plans, and (v) the need for, and availability of, additional financing. Forward-looking statements are based on information available at the time the statements are made and involve known and unknown risks, uncertainties and other factors that may cause our results, levels of activity, performance or achievements to be materially different from the information expressed or implied by the forward-looking statements in this Q2 2022 Quarterly Report.

These factors include but are not limited to, regulatory policies or changes thereto, available cash, research and development results, issuance of patents, competition from other similar businesses, interest of third parties in collaborations with us, and market and general economic factors, and other risk factors disclosed in our Annual Report on Form 10-K for the fiscal year ended December 31, 2021 as filed with the SEC on April 15, 2022 (the “2021 Form 10-K”) and as may be included in our Q1 2022 and in this Q2 2022 Quarterly Report.

You should read these risk factors and the other cautionary statements made in the Company’s filings as being applicable to all related forward-looking statements wherever they appear in this Q2 2022 Quarterly Report. We cannot assure you that the forward-looking statements in our Q1 2022 and in this Q2 2022 Quarterly Report or in our 2021 Annual Report will prove to be accurate and therefore prospective investors are encouraged not to place undue reliance on forward-looking statements. You should read this Q2 2022 Quarterly Report completely. Other than as required by law, we undertake no obligation to update or revise these forward-looking statements, even though our situation may change in the future.

We caution investors not to place undue reliance on any forward-looking statement that speaks only as of the date made and to recognize that forward-looking statements are predictions of future results, which may not occur as anticipated. Actual results could differ materially from those anticipated in the forward-looking statements and from historical results, due to the risks and uncertainties described in our Q1 2022 and in this Q2 2022 Quarterly Report and our 2021 Annual Report, as well as others that we may consider immaterial or do not anticipate at this time. These forward-looking statements are based on assumptions regarding the Company’s business and technology, which involve judgments with respect to, among other things, future scientific, economic, regulatory and competitive conditions, collaborations with third parties, and future business decisions, all of which are difficult or impossible to predict accurately and many of which are beyond the Company’s control. Although we believe that the expectations reflected in our forward-looking statements are reasonable, we do not know whether our expectations will prove correct. Our expectations reflected in our forward-looking statements can be affected by inaccurate assumptions that we might make or by known or unknown risks and uncertainties, including those described in our Q1 2022 and in this Q2 2022 Quarterly Report and our 2021 Annual Report. These risks and uncertainties are not exclusive and further information concerning us and our business, including factors that potentially could materially affect our financial results or condition, may emerge from time to time.

Forward-looking statements speak only as of the date they are made. The Company does not undertake and specifically declines any obligation to update any forward-looking statements or to publicly announce the results of any revisions to any statements to reflect new information or future events or developments.

**PART I - FINANCIAL INFORMATION**

**ITEM 1. CONDENSED CONSOLIDATED FINANCIAL STATEMENTS**

**RESPIRERX PHARMACEUTICALS INC.  
AND SUBSIDIARY**

**CONDENSED CONSOLIDATED BALANCE SHEETS**

	<b>June 30, 2022</b>	<b>December 31, 2021</b>
	(unaudited)	
Current assets:		
Cash and cash equivalents	\$ 21	\$ 1,398
Deferred financing costs	-	177,883
Prepaid expenses	77,687	29,456
Total current assets	77,708	208,737
Total assets	\$ 77,708	\$ 208,737
<b>LIABILITIES AND STOCKHOLDERS' DEFICIENCY</b>		
Current liabilities:		
Accounts payable and accrued expenses, including amounts owed to related parties (Note 5)	\$ 5,586,490	\$ 5,235,767
Accrued compensation and related expenses	2,968,808	2,608,708
Convertible notes payable, currently due and payable on demand, including accrued interest of \$192,467 and \$151,391 at June 30, 2022 and December 31, 2021 (Note 4)	992,716	790,153
Note payable to SY Corporation, including accrued interest of \$483,146 and \$459,358 at June 30, 2022 and December 31, 2021, payment obligation currently in default (Note 4)	792,748	837,104
Notes and advances payable to officers, including accrued interest (Note 4)	345,724	230,356
Notes payable to former officer, including accrued interest (Note 4)	215,398	205,222
Other short-term notes payable	73,283	15,185
Total current liabilities	10,975,167	9,922,495
Long-term liabilities		
Long-term accounts payable associated with payment settlement agreements, including long-term accounts payable due to affiliates of \$234,000 and \$294,000 at June 30, 2022 and December 31, 2021 (Note 5)	234,000	294,000
Total long-term liabilities	234,000	294,000
Total liabilities	11,209,167	10,216,495
Commitments and contingencies (Note 8)		
Stockholders' deficiency: (Note 6)		
Series B convertible preferred stock, \$0.001 par value; \$0.6667 per share liquidation preference; aggregate liquidation preference \$25,001; shares authorized: 37,500; shares issued and outstanding: 37,500; common shares issuable upon conversion at 0.000030 common shares per Series B share: 1	21,703	21,703
Common stock, \$0.001 par value; shares authorized: 2,000,000,000; shares issued and outstanding: 117,069,276 outstanding at June 30, 2022 and 97,894,276 at December 31, 2021, respectively	117,069	97,894
Additional paid-in capital	164,025,356	163,827,781
Accumulated deficit	(175,295,587)	(173,955,136)
Total stockholders' deficiency	(11,131,459)	(10,007,758)
Total liabilities and stockholders' deficiency	\$ 77,708	\$ 208,737

See accompanying notes to condensed consolidated financial statements (unaudited).

**RESPIRERX PHARMACEUTICALS INC.  
AND SUBSIDIARY**

**CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS  
(Unaudited)**

	Three-Months Ended June 30,		Six-Months Ended June 30,	
	2022	2021	2022	2021
Operating expenses:				
General and administrative, including related parties	\$ 211,376	\$ 426,169	\$ 707,170	\$ 1,071,545
Research and development, including related parties	141,099	237,828	262,257	392,592
Total operating expenses	352,475	663,997	969,427	1,464,137
Loss from operations	(352,475)	(663,997)	(969,427)	(1,464,137)
Gain on warrant exchange	-	1,099	-	1,099
Interest expense, including related parties	(179,521)	(151,842)	(439,169)	(231,312)
Foreign currency transaction gain (loss)	51,708	2,526	68,145	31,887
Net loss attributable to common stockholders	\$ (480,288)	\$ (812,214)	\$ (1,340,451)	\$ (1,662,463)
Deemed dividend associated with most favored nation provisions of convertible notes	\$ (351,738)	\$ -	\$ (351,738)	\$ -
Net loss attributable to common stockholders	\$ (832,026)	\$ (812,214)	\$ (1,692,189)	\$ (1,662,463)
Net loss per common share - basic and diluted	\$ (0.01)	\$ (0.01)	\$ (0.02)	\$ (0.02)
Weighted average common shares outstanding - basic and diluted	106,081,803	89,832,860	102,010,657	82,212,945

See accompanying notes to condensed consolidated financial statements (unaudited).

**RESPIRERX PHARMACEUTICALS INC.  
AND SUBSIDIARY**

**CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' DEFICIENCY  
(Unaudited)**

**Three-months and Six-months Ended June 30, 2022**

	<b>Series B Convertible Preferred Stock</b>		<b>Common Stock</b>		<b>Additional Paid-in Capital</b>	<b>Accumulated Deficit</b>	<b>Total Stockholders' Deficiency</b>
	<b>Shares</b>	<b>Amount</b>	<b>Shares</b>	<b>Par Value</b>			
Balance, December 31, 2021	37,500	\$ 21,703	97,894,276	\$ 97,894	\$163,827,781	\$(173,955,136)	\$ (10,007,758)
Net loss	-	-	-	-	-	(860,163)	(860,163)
Balance, March 31, 2022	37,500	\$ 21,703	97,894,276	\$ 97,894	\$163,827,781	\$(174,815,299)	\$ (10,867,921)
Warrant value for issuance of convertible note					25,000		25,000
Issuance of common stock upon convertible notes conversions			19,175,000	19,175	172,575		191,750
Net loss						(480,288)	(480,288)
Balance, June 30, 2022	<u>37,500</u>	<u>\$ 21,703</u>	<u>117,069,276</u>	<u>\$117,069</u>	<u>\$164,025,356</u>	<u>\$(175,295,587)</u>	<u>\$ (11,131,459)</u>

**Three-months and Six-months Ended June 30, 2021**

	<b>Series B Convertible Preferred Stock</b>		<b>Common Stock</b>		<b>Additional Paid-in Capital</b>	<b>Accumulated Deficit</b>	<b>Total Stockholders' Deficiency</b>
	<b>Shares</b>	<b>Amount</b>	<b>Shares</b>	<b>Par Value</b>			
Balance, December 31, 2020	37,500	\$ 21,703	71,271,095	\$71,271	\$162,654,002	\$(170,810,296)	\$ (8,063,320)
Sale of common stock	-	-	3,600,000	3,600	113,699	-	117,299
Costs of stock issuance	-	-		-	(52,609)	-	(52,609)
Issuance of note commitment shares and beneficial conversion feature	-	-	2,000,000	2,000	95,500	-	97,500
Issuance of common stock upon conversion of convertible notes	-	-	12,625,557	12,626	239,885	-	252,511
Stock -based compensation	-	-	-	-	44,250		44,250
Adjustment due to reverse stock split	-	-	(56)	-	-	-	-
Net loss	-	-	-	-	-	(850,249)	(850,249)
Balance, March 31, 2021	37,500	\$ 21,703	89,496,596	\$89,497	\$163,094,727	\$(171,660,545)	\$ (8,454,618)
Issuance of common stock upon cashless warrant exercise			900,000	900	(900)		
Stock-based compensation					7,500		7,500
Gain on warrant exchanges					(1,099)		(1,099)
Note discounts					443,550		443,550
Net loss						(812,214)	(812,214)
Balance, June 30, 2021	<u>37,500</u>	<u>\$ 21,703</u>	<u>90,396,596</u>	<u>\$90,397</u>	<u>\$163,543,778</u>	<u>\$(172,472,759)</u>	<u>\$ (8,816,881)</u>

See accompanying notes to condensed consolidated financial statements (unaudited).

**RESPIRERX PHARMACEUTICALS INC.  
AND SUBSIDIARY**

**CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS  
(Unaudited)**

	<b>Six-months Ended June 30,</b>	
	<b>2022</b>	<b>2021</b>
Cash flows from operating activities:		
Net loss	\$ (1,340,451)	\$ (1,662,463)
Adjustments to reconcile net loss to net cash used in operating activities:		
Amortization of original issue discount, capitalized note costs and debt discounts to interest expense	336,728	161,589
Stock-based compensation included in -		
General and administrative expenses	-	36,750
Research and development expenses	-	15,000
Gain on warrant exchange	-	(1,099)
Foreign currency transaction (gain) loss	(68,145)	(32,255)
Changes in operating assets and liabilities:		
(Increase) decrease in cash from		
Deferred financing costs	177,883	-
Prepaid expenses	47,619	(78,744)
Fees paid with shares of Common Stock	-	4,000
Accounts payable and accrued expenses	304,382	214,828
Accrued compensation and related expenses	360,100	590,850
Accrued interest payable	96,762	62,973
Net cash used in operating activities	<u>(85,122)</u>	<u>(688,571)</u>
Cash flows from financing activities:		
Proceeds from convertible note financing	25,000	541,050
Payment of fees associated with conversions of convertible notes by issuance of stock	1,500	-
Proceeds from sale of Common Stock	-	117,299
Borrowings on or repayments of short-term notes payable	(37,752)	66,453
Proceeds from or repayment of officer advance	94,997	(5,000)
Net cash provided by financing activities	<u>83,745</u>	<u>719,802</u>
Cash and cash equivalents:		
Net (decrease)/increase	(1,377)	31,231
Balance at beginning of period	<u>1,398</u>	<u>825</u>
Balance at end of period	<u>\$ 21</u>	<u>\$ 32,056</u>

(Continued)

RESPIRERX PHARMACEUTICALS INC.  
AND SUBSIDIARY

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS  
(Unaudited)

(Continued)

	Six-months Ended June 30,	
	2022	2021
Supplemental disclosures of cash flow information:		
Cash paid for -		
Interest	\$ 5,657	\$ 2,926
Income taxes	\$ -	\$ -
Non-cash financing activities:		
Amortization of deferred financing costs	\$ -	\$ 52,609
Insurance policies	95,850	-
Reclassification of long-term liabilities to short-term liabilities	\$ 60,000	\$ -
Debt discounts established for convertible debt	\$ 25,000	\$ 541,040
Debt and accrued interest and related fees converted to common stock	\$ 190,250	\$ 4,000
Cashless warrant exercises	\$ -	\$ 900

See accompanying notes to condensed consolidated financial statements (unaudited).



**RESPIRERX PHARMACEUTICALS INC.  
AND SUBSIDIARY**

**NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS  
(Unaudited)**

**1. Organization and Basis of Presentation**

**Organization**

RespireRx Pharmaceuticals Inc. (“RespireRx”) was formed in 1987 under the name Cortex Pharmaceuticals, Inc. to engage in the discovery, development and commercialization of innovative pharmaceuticals for the treatment of neurological and psychiatric disorders. On December 16, 2015, RespireRx filed a Certificate of Amendment to its Second Restated Certificate of Incorporation (as amended, the “Certificate of Incorporation”) with the Secretary of State of the State of Delaware to amend its Second Restated Certificate of Incorporation to change its name from Cortex Pharmaceuticals, Inc. to RespireRx Pharmaceuticals Inc. In August 2012, RespireRx acquired Pier Pharmaceuticals, Inc. (“Pier”), which is now a wholly owned subsidiary. Pier was a clinical stage biopharmaceutical company developing a pharmacologic treatment for obstructive sleep apnea (“OSA”) and had been engaged in research and clinical development activities which activities are now in RespireRx.

**Basis of Presentation**

The condensed consolidated financial statements are of RespireRx and its wholly-owned subsidiary, Pier (collectively referred to herein as the “Company,” “we” or “our,” unless the context indicates otherwise). The condensed consolidated financial statements of the Company at June 30, 2022 and for the six months and the three-months ended June 30, 2022 and 2021, are unaudited. In the opinion of management, all adjustments (including normal recurring adjustments) have been made that are necessary to present fairly the condensed consolidated financial position of the Company, the condensed results of operations, condensed changes in stockholders’ deficiency and condensed changes in cash flows as of and for the periods ended June 30, 2022 and 2021. Condensed consolidated operating results for the interim periods presented are not necessarily indicative of the results to be expected for a full fiscal year. The consolidated balance sheet at December 31, 2021 has been derived from the Company’s audited consolidated financial statements at such date.

The condensed consolidated financial statements and related notes have been prepared pursuant to the rules and regulations of the Securities and Exchange Commission (the “SEC”). Accordingly, certain information and note disclosures normally included in financial statements prepared in accordance with United States generally accepted accounting principles (“GAAP”) have been omitted pursuant to such rules and regulations. These condensed consolidated financial statements should be read in conjunction with the consolidated financial statements and other information included in the Company’s Annual Report on Form 10-K for the fiscal year ended December 31, 2021 as filed with the SEC on April 15, 2022 (“2021 Form 10-K”).

**2. Business**

The mission of the Company is to develop innovative and revolutionary treatments to combat disorders caused by disruption of neuronal signalling. We are developing treatment options that address conditions affecting millions of people, but for which there are limited or poor treatment options, including OSA, attention deficit hyperactivity disorder (“ADHD”), epilepsy, acute and chronic pain, including inflammatory and neuropathic pain, recovery from spinal cord injury (“SCI”) and certain orphan disorders. We are also considering developing treatment options for other conditions based on results of preclinical and clinical studies to date. To achieve these goals, the Company has determined that some or all of these opportunities should be licensed, sub-licensed, joint ventured or even sold and has initiated efforts to do so.

In order to facilitate our business activities and product development and to set up its programs for partnering or sale, the Company has implemented an internal restructuring plan based upon our two research platforms: pharmaceutical cannabinoids and neuromodulators. The business unit focused on pharmaceutical cannabinoids is referred to as ResolutionRx and the business unit focused on neuromodulators is referred to as EndeavourRx. It is anticipated that the Company will use, at least initially, its management personnel to provide management, operational and oversight services to these two business units.

- (i) ResolutionRx, our pharmaceutical cannabinoids platform is developing compounds that target the body’s endocannabinoid system, and in particular, the re-purposing of dronabinol, an endocannabinoid CB1 and CB2 receptor agonist, for the treatment of OSA. Dronabinol is already approved by the FDA for other indications.
- (ii) EndeavourRx, our neuromodulators platform is made up of two programs: (a) our AMPAkinase program, which is developing proprietary compounds that act as positive allosteric modulators (“PAMs”) of AMPA-type glutamate receptors to promote neuronal function and (b) our GABAkinase program, which is developing proprietary compounds that act as PAMs of GABAA receptors, and which was recently established pursuant to our entry into a patent license agreement (the “UWMRF Patent License Agreement”) with the University of Wisconsin-Milwaukee Research Foundation, Inc., an affiliate of the University of Wisconsin-Milwaukee (“UWMRF”).

Management intends to organize our ResolutionRx and EndeavourRx business units into two subsidiaries: (i) a ResolutionRx subsidiary, into which we would contribute our pharmaceutical cannabinoid platform and its related tangible and intangible assets and certain of its liabilities and (ii) an EndeavourRx subsidiary, into which we would contribute our neuromodulator platform, including either or both of the AMPAkinase and GABAkinase programs and their related tangible and intangible assets and certain of their liabilities.

Management believes that there are advantages to separating these platforms formally into newly formed subsidiaries, including but not limited to optimizing their asset values by making them attractive to separate financing and strategic partnering channels.

The Company’s business development efforts (licensing, sub-licensing, joint venture and other commercial structures), if successful, would represent strategic and operational infrastructure additions, as well as cash and in-kind funding opportunities. These efforts have focused on, but have not been limited to, transacting with brand and generic pharmaceutical and biopharmaceutical

companies as well as companies with potentially useful clinical development, formulation or manufacturing capabilities, significant subject matter expertise and financial resources. No assurance can be given that any transaction will come to fruition and that, if it does, the terms will be favorable to the Company.

***Financing our Platforms***

Our major challenge has been to raise substantial equity or equity-linked financing to support research and development plans for our cannabinoid and neuromodulator platforms, while minimizing the dilutive effect to pre-existing stockholders. At present, we believe that we are hindered primarily by our public corporate structure, our OTCQB listing, and low market capitalization as a result of our low stock price as well as the weakness of our balance sheet.

For this reason, the Company has effected an internal restructuring plan through which our two drug platforms have been reorganized into separate business units and may in the future, be organized into subsidiaries of RespireRx. We believe that by creating one or more subsidiaries to further the aims of ResolutionRx and EndeavourRx, it may be possible, through separate finance channels, to unlock the unrealized asset values of each and set up its programs for partnering or sale,.

The Company is also engaged in business development efforts (licensing/sub-licensing, joint venture and other commercial structures) with a view to securing strategic partnerships that represent strategic and operational infrastructure additions, as well as cash and in-kind funding opportunities. These efforts have focused on, but have not been limited to, transacting with brand and generic pharmaceutical and biopharmaceutical companies as well as companies with potentially useful formulation or manufacturing capabilities, significant subject matter expertise and financial resources. We believe that some or all of our assets should be licensed, sub-licensed, joint ventured or even sold and have initiated efforts to do so. No assurance can be given that any transaction will come to fruition and that if it does, that the terms will be favorable to the Company.

The Company filed a Form 1-A which included an offering circular that was qualified by The Securities and Exchange Commission on December 13, 2021 and subsequently amended. The offering is of the Company’s common stock and is up to \$7.5 million at \$0.02 per share and allows for multiple closings until October 31, 2023 unless earlier terminated by the Company. As of June 30, 2022, no closings had taken place, the Company’s stock price had been below the offering price and given that our stock price is substantially below the offering price, it would be unlikely that this particular offering will provide significant, if any, new funds.

### ***Going Concern***

The Company's condensed consolidated financial statements have been presented on the basis that it is a going concern, which contemplates the realization of assets and satisfaction of liabilities in the normal course of business. The Company has incurred net losses of \$480,288 and \$1,340,451 for the three-months and six-months ended June 30, 2022, respectively and a net loss attributable to common stockholders of \$832,026 and \$1,692,189 for the three-months and six-months ended June 30, 2022, respectively after accounting for deemed dividends as well as negative operating cash flows of \$85,122 and 688,571 for the six-months ended June 30, 2022 and 2021 respectively and \$956,172 for the fiscal year ended December 31, 2021. The Company also had a stockholders' deficiency of \$11,131,459 at June 30, 2022 and expects to continue to incur net losses and negative operating cash flows for at least the next few years. Additionally, all of the Company's convertible notes have either matured or have maturity dates within one year and must be paid, converted or otherwise have maturity dates extended in order to avoid a default on such convertible notes. The Company has not received any notifications of default that would trigger default provisions under the notes. In addition, the Company's obligation to the University of Illinois of \$100,000 that was due on December 31, 2021, was extended to May 31, 2022 and then further extended to an indefinite future date while discussions to amend the obligation are taking place. In the past, the Company has been successful in getting maturity dates extended or having convertible note holders repaid via conversion. In addition, the Company has been successful in having license payment due dates extended and then meeting the payment obligations on such extended dates. There can be no assurance that the Company will remain successful in those efforts. As a result, management has concluded that there is substantial doubt about the Company's ability to continue as a going concern, and the Company's independent registered public accounting firm, in its report on the Company's consolidated financial statements for the year ended December 31, 2021, expressed substantial doubt about the Company's ability to continue as a going concern.

The Company is currently, and has for some time, been in significant financial distress. It has extremely limited cash resources and current assets and has no ongoing source of sustainable revenue. Management is continuing to address various aspects of the Company's operations and obligations, including, without limitation, outstanding accounts payable and accrued expenses, including accrued compensation, debt obligations, financing needs, intellectual property, including patent matters, licensing agreements, legal, regulatory compliance and other matters and has taken steps to continue to raise new debt and equity capital to fund the Company's business activities from both related and unrelated parties.

The Company is continuing its efforts to raise additional capital in order to be able to pay its liabilities and fund its business activities on a going forward basis, including the pursuit of the Company's planned research and development activities. The Company regularly evaluates various measures to satisfy the Company's liquidity needs, including development and other agreements with collaborative partners and, when necessary, seeking to exchange or restructure the Company's outstanding securities. The Company is evaluating certain changes to its operations and structure to facilitate raising capital from sources that may be interested in financing only discrete aspects of the Company's development programs. Such changes could include a significant reorganization, which may include the formation of one or more subsidiaries into which one or more programs may be contributed. As a result of the Company's current financial situation, the Company has limited access to external sources of debt and equity financing. Accordingly, there can be no assurances that the Company will be able to secure additional financing in the amounts necessary to fully fund its operating and debt service requirements. If the Company is unable to access sufficient cash resources, the Company may be forced to discontinue its operations entirely and liquidate.

### **3. Summary of Significant Accounting Policies**

#### ***Principles of Consolidation***

The accompanying condensed consolidated financial statements are prepared in accordance with GAAP and include the financial statements of RespireRx and its wholly-owned subsidiary, Pier. Intercompany balances and transactions have been eliminated in consolidation.

#### ***Use of Estimates***

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions. These estimates and assumptions 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 reporting period. Significant estimates include, among other things, accounting for potential liabilities, and the assumptions used in valuing stock-based compensation issued for services. Actual amounts may differ from those estimates.

### ***Concentration of Credit Risk***

Financial instruments that potentially subject the Company to concentrations of credit risk consist primarily of cash and cash equivalents. The Company limits its exposure to credit risk by investing its cash with high quality financial institutions. The Company's cash balances may periodically exceed federally insured limits. The Company has not experienced a loss in such accounts to date.

### ***Value of Financial Instruments***

The authoritative guidance with respect to value of financial instruments established a value hierarchy that prioritizes the inputs to valuation techniques used to measure value into three levels and requires that assets and liabilities carried at value be classified and disclosed in one of three categories, as presented below. Disclosure as to transfers into and out of Levels 1 and 2, and activity in Level 3 value measurements, is also required.

Level 1. Observable inputs such as quoted prices in active markets for an identical asset or liability that the Company has the ability to access as of the measurement date. Financial assets and liabilities utilizing Level 1 inputs include active-exchange traded securities and exchange-based derivatives.

Level 2. Inputs, other than quoted prices included within Level 1, which are directly observable for the asset or liability or indirectly observable through corroboration with observable market data. Financial assets and liabilities utilizing Level 2 inputs include fixed income securities, non-exchange based derivatives, mutual funds, and fair-value hedges.

Level 3. Unobservable inputs in which there is little or no market data for the asset or liability which requires the reporting entity to develop its own assumptions. Financial assets and liabilities utilizing Level 3 inputs include infrequently-traded, non-exchange-based derivatives and commingled investment funds, and are measured using present value pricing models.

The Company determines the level in the value hierarchy within which each value measurement falls in its entirety, based on the lowest level input that is significant to the value measurement in its entirety. In determining the appropriate levels, the Company performs an analysis of the assets and liabilities at each reporting period end.

The carrying amounts of financial instruments (consisting of cash, cash equivalents, and accounts payable and accrued expenses) are considered by the Company to be representative of the respective values of these instruments due to the short-term nature of those instruments. With respect to the note payable to SY Corporation Co., Ltd. ("SY Corporation") and the convertible notes payable, management does not believe that the credit markets have materially changed for these types of borrowings since the original borrowing date. The Company considers the carrying amounts of the notes payable to officers, inclusive of accrued interest, to be representative of the respective values of such instruments due to the short-term nature of those instruments and their terms.

### ***Deferred Financing Costs***

Costs incurred in connection with ongoing debt and equity financings, including legal fees, are deferred until the related financing is either completed or abandoned or are unlikely to be completed.

Costs related to abandoned debt or equity financings are charged to operations in the period of abandonment. Costs related to completed equity financings are netted against the proceeds.

### ***Debt Issuance Costs***

The Company presents debt issuance costs related to debt obligations in its consolidated balance sheet as a direct deduction from the carrying amount of that debt obligation, consistent with the presentation for debt discounts.

### ***Convertible Notes Payable***

Convertible notes are evaluated to determine if they should be recorded at amortized cost. To the extent that there are associated warrants, commitment shares of Common Stock or a beneficial conversion feature, the convertible notes and equity or equity-linked securities are evaluated to determine if there are embedded derivatives to be identified, bifurcated and valued in connection with and at the time of such financing.

### ***Extinguishment of Debt and Settlement of Liabilities***

The Company accounts for the extinguishment of debt and settlement of liabilities by comparing the carrying value of the debt or liability to the value of consideration paid or assets given up and recognizing a loss or gain in the condensed consolidated statement of operations in the amount of the difference in the period in which such transaction occurs. See Note 4. Notes Payable.

### ***Prepaid Insurance***

Prepaid insurance represents the premium due in March 2022 for directors and officers insurance. The amounts of prepaid insurance amortizable in the ensuing twelve-month period are recorded as prepaid insurance in the Company's consolidated balance sheet at each reporting date and amortized to the Company's consolidated statement of operations for each reporting period.

### ***Stock-Based Awards***

The Company periodically issues common stock and stock options to officers, directors, Scientific Advisory Board members, consultants and vendors for services rendered. Such issuances vest and expire according to terms established at the issuance date of each grant.

The Company accounts for stock-based payments to officers, directors, outside consultants and vendors by measuring the cost of services received in exchange for equity awards based on the grant date fair value of the awards, with the cost recognized as compensation expense on the straight-line basis in the Company's consolidated financial statements over the vesting period of the awards.

Stock grants and stock options, which are sometimes subject to time-based vesting, are measured at the grant date fair value and charged to operations ratably over the vesting period.

The value of stock options granted as stock-based payments is determined utilizing the Black-Scholes option-pricing model, and is affected by several variables, the most significant of which are the life of the equity award, the exercise price of the stock option as compared to the fair market value of the common stock on the grant date, and the estimated volatility of the common stock over the term of the equity award. Estimated volatility is based on the historical volatility of the Company's common stock. The risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of grant. The fair market value of common stock is determined by reference to the quoted market price of the Company's common stock.

Stock and stock option grants and warrants issued to non-employees as compensation for services to be provided to the Company or in settlement of debt are accounted for based upon the fair value of the services provided or the estimated fair value of the stock option or warrant, whichever can be more clearly determined. Management uses the Black-Scholes option-pricing model to determine the fair value of the stock options and warrants issued by the Company. The Company recognizes this expense over the period in which the services are provided.

There were no stock or stock option grants during the six-months ended June 30, 2022.

The Company recognizes the amortized value of stock-based payments in general and administrative costs and in research and development costs, as appropriate, in the Company's condensed consolidated statements of operations. The Company issues new shares of common stock to satisfy stock option and warrant exercises. There were no stock options exercised during the six-months ended June 30, 2022 and 2021, respectively.

There were no warrants issued as compensation or for services during the six-months ended June 30, 2022 and 2021. Warrants, if issued for services, are typically issued to placement agents or brokers for fund raising services, or to lenders, and are not issued from any of the Company's stock and option plans, from which options issued to non-employees for services are typically issued.

### ***Income Taxes***

The Company accounts for income taxes under an asset and liability approach for financial accounting and reporting for income taxes. Accordingly, the Company recognizes deferred tax assets and liabilities for the expected impact of differences between the financial statements and the tax basis of assets and liabilities.

The Company records a valuation allowance to reduce its deferred tax assets to the amount that is more likely than not to be realized. In the event the Company was to determine that it would be able to realize its deferred tax assets in the future in excess of its recorded amount, an adjustment to the deferred tax assets would be credited to operations in the period such determination was made. Likewise, should the Company determine that it would not be able to realize all or part of its deferred tax assets in the future, an adjustment to the deferred tax assets would be charged to operations in the period such determination was made.

Pursuant to Internal Revenue Code Sections 382 and 383, use of the Company's net operating loss and credit carry-forwards may be limited if a cumulative change in ownership of more than 50% occurs within any three-year period since the last ownership change. The Company may have had a change in control under these Sections. However, the Company does not anticipate performing a complete analysis of the limitation on the annual use of the net operating loss and tax credit carry-forwards until the time that it anticipates it will be able to utilize these tax attributes.

As of June 30, 2022, the Company did not have any unrecognized tax benefits related to various federal and state income tax matters and does not anticipate any material amount of unrecognized tax benefits within the next 12 months.

The Company is subject to U.S. federal income taxes and income taxes of various state tax jurisdictions. As the Company's net operating losses have yet to be utilized, all previous tax years remain open to examination by Federal authorities and other jurisdictions in which the Company currently operates or has operated in the past.

The Company accounts for uncertainties in income tax law under a comprehensive model for the financial statement recognition, measurement, presentation and disclosure of uncertain tax positions taken or expected to be taken in income tax returns as prescribed by GAAP. The tax effects of a position are recognized only if it is "more-likely-than-not" to be sustained by the taxing authority as of the reporting date. If the tax position is not considered "more-likely-than-not" to be sustained, then no benefits of the position are recognized. As of June 30, 2022, the Company had not recorded any liability for uncertain tax positions. In subsequent periods, any interest and penalties related to uncertain tax positions will be recognized as a component of income tax expense.

### ***Foreign Currency Transactions***

The note payable to SY Corporation, which is denominated in a foreign currency (the South Korean Won), is translated into the Company's functional currency (the United States Dollar) at the exchange rate on the balance sheet date. The foreign currency exchange gain or loss resulting from translation is recognized in the related condensed consolidated statements of operations.

*Research and Development*

Research and development costs include compensation paid to management directing the Company’s research and development activities, including but not limited to compensation paid to our Chief Scientific Officer who is also our Executive Chairman, Interim President and Interim Chief Executive Officer, and fees paid to consultants and outside service providers and organizations (including research institutes at universities), and other expenses relating to the acquisition, design, development and clinical testing of the Company’s treatments and product candidates.

*License Agreements*

Obligations incurred with respect to mandatory payments provided for in-license agreements are recognized ratably over the appropriate term, as specified in the underlying license agreement, and are recorded as liabilities in the Company’s condensed consolidated balance sheet, with a corresponding charge to research and development costs in the Company’s condensed consolidated statement of operations. Obligations incurred with respect to milestone payments provided for in-license agreements are recognized when it is probable that such milestone will be reached and are recorded as liabilities in the Company’s condensed consolidated balance sheet, with a corresponding charge to research and development expenses in the Company’s condensed consolidated statement of operations.

*Patent Costs*

Due to the significant uncertainty associated with the successful development of one or more commercially viable products based on the Company’s research efforts and any related patent applications, all patent costs, including patent-related legal and filing fees, are expensed as incurred and recorded as general and administrative expenses.

*Earnings (Loss) per Share*

The Company’s computation of earnings (loss) per common share (“EPS”) includes basic and diluted EPS. Basic EPS is measured as the income (loss) attributable to common stockholders divided by the weighted average common shares outstanding for the period. Diluted EPS is similar to basic EPS but presents the dilutive effect on a per share basis of potential common shares (e.g., warrants and options) as if they had been converted at the beginning of the periods presented, or issuance date, if later. Potential common shares that have an anti-dilutive effect (i.e., those that increase income per share or decrease loss per share) are excluded from the calculation of diluted EPS.

Net loss attributable to common stockholders consists of net loss, as adjusted for actual and deemed stock dividends declared, amortized or accumulated.

Loss per common share is computed by dividing net loss by the weighted average number of shares of common stock outstanding during the respective periods. Basic and diluted loss per common share is the same for all periods presented because all warrants and stock options outstanding are anti-dilutive.

At June 30, 2022 and 2021 the Company excluded the outstanding securities summarized below, which entitle the holders thereof to acquire shares of common stock, from its calculation of earnings per share, as their effect would have been anti-dilutive.

	June 30,	
	2022	2021
Series B convertible preferred stock	1	1
Convertible notes payable	83,699,516	33,623,313
Common stock warrants	93,310,598	38,633,473
Common stock options	9,221,445	7,112,907
Total	186,231,560	79,369,694

*Reclassifications*

Certain comparative figures in 2021 have been reclassified to conform to the current quarter’s presentation. These reclassifications were immaterial, both individually and in the aggregate.

*Recent Accounting Pronouncements*

In August 2020, the FASB issued Accounting Standards Update No. 2020-06, Debt – Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity’s Own Equity (Subtopic 815-40). The subtitle is Accounting for Convertible Instruments and Contracts in an Entity’s Own Equity. This Accounting Standard Update (“ASU”) addresses complex financial instruments that have characteristics of both debt and equity. The application of this ASU would reduce the number of accounting models for convertible debt instruments and convertible preferred stock. Limiting the accounting models would result in fewer embedded conversion features being separately recognized from the host contract as compared with current GAAP. Convertible instruments that continue to be subject to separation models are (1) those with embedded conversion features that are not clearly and closely related to the host contract, that meet the definition of a derivative, and that do not qualify for a scope exception from derivative accounting and (2) convertible debt instruments issued with substantial premiums for which the premiums are recorded as paid-in capital. The Company has historically issued complex financial instruments and has considered whether embedded conversion features have existed within those contracts or whether derivatives would appropriately be bifurcated. To date, no such bifurcation has been necessary. However, it is possible that this ASU may have a substantial impact on the Company’s financial statements. Management has evaluated the potential impact and has early adopted as of January 1, 2022.

**4. Notes Payable**

*Convertible Notes Payable*

The Company periodically issues convertible notes with similar characteristics. As described in the table below, during the six-months ended June 30, 2022, there were 10 such notes outstanding. Notes all had a fixed conversion price of \$0.02 per share of Common Stock, subject to adjustment in certain circumstances. An adjustment to \$0.01 per share of Common Stock was made on April 14, 2022 pursuant to the “most favored nation clauses” of such notes upon the issuance of a similar convertible note, but with a \$0.01 per share of Common Stock conversion price. All but one of the notes had an annual interest rate of 10% which was guaranteed in full. The note that did not have a 10% annual interest rate had an 8% rate. The convertible notes had an original issue discount (“OID”), certain notes had debt issuance costs (“DIC”) that were capitalized by the Company, a warrant (“WT”) or commitment shares (“CS”) and in seven cases a beneficial conversion feature (“BCF”). The OID, CN, WTs, CSs and BCF allocated values are amortized over the life of the notes to interest expense. All notes mature or matured nine to fifteen months from their issuance date. All notes were pre-payable by the Company during the first six months, subject to prepayment premiums that range from 100% to 115% of the maturity amount plus accrued interest. If not earlier paid, the notes are convertible by the holder into the Company’s Common Stock.



The table below summarizes the convertible notes outstanding during the six months ended and as of June 30, 2022. There were several partial repayments made by conversion during the six-months ended June 30, 2022:

Inception Date	Maturity date	Original Principal Amount	Interest rate	Original aggregate DIC, OID, Wts, CS and BCF	Cumulative amortization of DIC, OID, Wts, CS and BCF	Accrued coupon interest	Repayment by conversion	Balance sheet carrying amount at June 30, 2022 inclusive of accrued interest
July 28, 2020	June 30, 2022 <sup>1</sup>	\$ 53,000	8.00%	\$ (13,000)	\$ 13,000	\$ 8,471	\$ (25,000)	\$ 36,471
February 17, 2021	June 17, 2022 <sup>1</sup>	112,000	10.00%	(112,000)	112,000	10,283	(80,000)	42,283
April 1, 2021	July 31, 2022 <sup>1</sup>	112,500	10.00%	(112,500)	112,500	14,055	-	126,555
May 3, 2021	July 31, 2022 <sup>1</sup>	150,000	10.00%	(150,000)	150,000	15,000	(140,250)	24,750
May 10, 2021	August 10, 2022 <sup>1</sup>	150,000	10.00%	(150,000)	150,000	17,096	(50,000)	117,096
June 30, 2021	June 29, 2022 <sup>1</sup>	115,000	10.00%	(115,000)	115,000	11,532	-	126,532
August 31, 2021	August 31, 2022	115,000	10.00%	(109,675)	91,045	9,547	-	105,917
October 7, 2021	October 7, 2022	115,000	10.00%	(96,705)	70,475	8,381	-	97,151
December 23, 2021	June 21, 2022 <sup>1</sup>	87,000	10.00%	(36,301)	36,301	4,505	-	91,505
April 14, 2022	April 14, 2023	27,778	10.00%	(27,778)	5,860	586	-	6,446
Total		<u>\$1,037,278</u>		<u>\$ (922,959)</u>	<u>\$ 856,181</u>	<u>\$ 99,456</u>	<u>\$ (295,250)</u>	<u>\$774,706</u>

Footnote to table above:

See Note 9 – Subsequent Events for a description of amendments to note agreements effective August 19, 2022

In addition to what appears in the table above, there is outstanding accrued interest of \$2,747 from a prior floating rate convertible note that has not been paid in cash or by conversion as of June 30, 2022.

On April 14, 2022, the Company issued a convertible note and related warrants to an investor with a maturity amount of \$27,778, bearing interest at 10% per annum, maturing on April 14, 2023, convertible at \$0.01 per share of common stock. A warrant is exercisable into 2,777,800 shares of Common Stock for a term of five years. The issuance triggered most-favored-nation (“MFN”) clauses in certain convertible notes in the above table.

As a result of the MFN triggering events that occurred on September 7, 2021, August 31, 2021 and April 14, 2022, an additional 41,450,366 shares of Common Stock would be issued upon conversion at \$0.01 per share of Common Stock of convertible notes and an additional 45,111,667 shares of Common Stock would be issued upon exercise of warrants with an exercise price of \$0.01 per share of Common Stock. Those triggering events reduced the conversion and exercise prices of the convertible notes and warrants respectively, from \$0.02 per share to \$0.01 per share and adjusted the number of warrants for certain convertible notes from less than 100% warrant coverage to 100% coverage.

On December 31, 2018 and January 2, 2019, the Company issued convertible notes to a single investor totaling \$35,000 of maturity amount with accrued interest of \$14,141 as of June 30, 2022. The number of shares of common stock (or preferred stock) into which these notes may convert is not determinable. The warrants to purchase 19,000 shares of common stock issued in connection with the sale of these notes and other convertible notes issued December 2018 and March 2019 are exercisable at a fixed price of \$15.00 per share of common stock, provide no right to receive a cash payment, and included no reset rights or other protections based on subsequent equity transactions, equity-linked transactions or other events and expire on December 30, 2023.

Other convertible notes were also sold to investors in 2014 and 2015 (“Original Convertible Notes”), which aggregated a total of \$579,500, and had a fixed interest rate of 10% per annum. The Original Convertible Notes have no reset rights or other protections based on subsequent equity transactions, equity-linked transactions or other events. The warrants to purchase shares of common stock issued in connection with the sale of the convertible notes have either been exchanged as part of April and May 2016 note and warrant exchange agreements or expired on September 15, 2016.

The remaining outstanding Original Convertible Notes (including those for which default notices have been received) consist of the following at June 30, 2022 and December 31, 2021:

	June 30, 2022	December 31, 2021
Principal amount of notes payable	\$ 75,000	\$ 75,000
Accrued interest payable	91,123	80,961
	<u>\$ 166,123</u>	<u>\$ 155,961</u>

As of June 30, 2022, principal and accrued interest on the Original Convertible Note that is subject to a default notice accrues annual interest at 12% instead of 10%, totaled \$59,728, of which \$34,728 was accrued interest. As of December 31, 2021, principal and accrued interest on Original Convertible Notes subject to default notices totaled \$57,084 of which \$32,085 was accrued interest.

As of June 30, 2022 all of the outstanding Original Convertible Notes, inclusive of accrued interest, were convertible into an aggregate of 1,412 shares of the Company’s common stock at a conversion price of approximately \$114 per share of Common Stock. Such Original Convertible Notes will continue to accrue interest until exchanged, paid or otherwise discharged. There can be no assurance that any of the additional holders of the remaining Original Convertible Notes will exchange their Original Convertible Notes.

***Note Payable to SY Corporation Co., Ltd.***

On June 25, 2012, the Company borrowed 465,000,000 Won (the currency of South Korea, equivalent to approximately \$400,000 United States Dollars as of that date) from and executed a secured note payable to SY Corporation Co., Ltd., (“SY Corporation”). The note accrues simple interest at the rate of 12% per annum and had a maturity date of June 25, 2013. The Company has not made any payments on the promissory note. At June 30, 2013 and subsequently, the promissory note was outstanding and in default, although SY Corporation has not issued a notice of default or a demand for repayment. Management believes that SY Corporation is in default of its obligations under its January 2012 license agreement, as amended, with the Company, but the Company has not yet issued a notice of default. The Company has in the past made several efforts towards a comprehensive resolution of the aforementioned matters involving SY Corporation. During the six-months ended June 30, 2022, there were no further communications between the Company and SY Corporation.

The promissory note is secured by collateral that represents a lien on certain patents owned by the Company, dating back to January, August and September 2007, including composition of matter patents for certain of the Company’s high impact ampakine compounds and the low impact ampakine compounds CX2007 and CX2076, and other related compounds that the Company is no longer developing and where patent rights date back to January, August and September 2007. The security interest does not extend to the Company’s patents for its ampakine compounds CX1739 and CX1942 or certain related method of use patents.

The note payable to SY Corporation consists of the following at June 30, 2022 and December 31, 2021:

	June 30, 2022	December 31, 2021
Principal amount of note payable	\$ 399,774	\$ 399,774
Accrued interest payable	483,146	459,358
Foreign currency transaction adjustment	(90,172)	(22,028)
	<u>\$ 792,748</u>	<u>\$ 837,104</u>

Interest expense with respect to this promissory note was \$11,960 and 23,789 for the three-months and six-months ended June 30, 2022 and for the three-months and six-months ended June 30, 2021, respectively.

***Notes Payable to Officers and Former Officers***

For the three-months and six-months ended June 30, 2022, \$3,374 and \$6,712 was charged to interest expense and \$12,289 of accrued interest prior to January 1, 2022, not previously added to principal, was added to principal, and for the three-months and six months ended June 30, 2021, 3,062 and 6,097 was charged to interest expense and \$46,717 of accrued interest prior to January 1, 2021 was capitalized to principal, with respect to Dr. Arnold S. Lippa’s notes, respectively.

In addition, Dr. Lippa periodically makes advances to the Company which are re-payable upon demand, do not accrue interest and are included in the total of notes payable to Officers. As of June 30, 2022, such advances totaled \$203,606.

For the three-months and six-months ended June 30, 2022 \$5,116 and \$5,060 was charged to interest expense and \$18,657 of accrued interest prior to January 1, 2022, not previously added to principal, was added to principal, and for the three-months and six-months ended June 30, 2021 \$4,651 and \$9,252, respectively, was charged to interest expense and \$58,965 of accrued interest prior to January 1, 2021, not previously capitalized, was capitalized to principal, with respect to former executive officer, Dr. James S. Manuso’s notes.

### ***Other Short-Term Notes Payable***

Other short-term notes payable at June 30, 2022 and December 31, 2021 consisted of premium financing agreements with respect to various insurance policies. At June 30, 2022, a premium financing agreement was payable in the initial amount of \$85,457 (after payment of a deposit of \$21,364), with interest at 11% per annum, in nine monthly installments of \$9,971. In addition, there is \$4,214 of short-term financing of office and clinical trials insurance premiums. At June 30, 2022 and December 31, 2021, the aggregate amount of the short-term notes payable was \$73,283 and \$15,185 respectively. As of August 15, 2022, the Company did pay its monthly installment payment on its directors and officers insurance policy, nor its property, office and automobile policies, all of which policies are subject to cancellation.

### **5. Settlement and Payment Agreements**

On April 29, 2021, RespireRx agreed to a payment and settlement agreement with the University of California Innovation and Entrepreneurship with respect to accounts payable in an amount that was not in dispute and is reflected in accounts payable and accrued expenses in the Company's condensed consolidated financial statements as of June 30, 2022. The total amount due is \$234,657. The agreed payment schedule is for the Company to pay \$10,000 on each of July 1, 2021, September 1, 2021, November 1, 2021, January 1, 2022 and March 31, 2022. If RespireRx paid an aggregate of \$175,000 on or before March 31, 2022, the amounts would have been considered paid in full with no further amounts due. RespireRx has not made any payments after the September, 2021 payment. According to the terms of the agreement, if an aggregate of \$175,000 was not paid by March 31, 2022, the remaining unpaid amount up to an aggregate of the original amount of \$234,657 would be due and payable. Payment was not made and the original amount of \$234,657 was been recorded in accounts payable at June 30, 2022.

On February 21, 2020, Sharp Clinical Services, Inc. ("Sharp"), a vendor of the Company, filed a complaint against the Company in the Superior Court of New Jersey Law Division, Bergen County related to a December 16, 2019 demand for payment of past due invoices inclusive of late fees totaling \$103,890. On May 29, 2020, a default was entered against the Company, and on September 4, 2020, a final judgment was entered against the Company in the amount of \$104,217. On March 3, 2021, we executed a settlement agreement with Sharp (the "Sharp Settlement Agreement"), and on March 9, 2021, Sharp requested of the Bergen (NJ) County Sheriff, the return of the Writ of Execution which resulted in a release of the lien in favor of Sharp. The Sharp Settlement Agreement calls for a payment schedule of ten \$10,000 payments due on April 1, 2021 and every other month thereafter, and permitted early settlement at \$75,000 if the Company had paid Sharp that lower total by August 1, 2021. The Company did not pay Sharp that lower amount by that date. The Company has recorded a liability to Sharp of \$53,568 as of June 30, 2022 after payments totaling \$30,000 pursuant to the Sharp Settlement Agreement. The Company has not made the October 1, 2021, December 1, 2021, February 1, 2022, April 1, 2022 and June 1, 2022 payments that were due. The Company did not make the August 1, 2022 payment when due. On March 3, 2022, Company's then counsel received a default notice from counsel to Sharp with respect to the Sharp Settlement Agreement, which stated that Sharp may exercise its remedies. Company's then counsel communicated with counsel to Sharp. On March 28, 2022, one of the Company's bank accounts was debited for the benefit of Sharp \$415 inclusive of fees about which the Company is seeking additional information but which the Company believes indicates that either a new Writ of Execution was established or the original writ was re-established.

By letter dated February 5, 2016, the Company received a demand from a law firm representing Salamandra, LLC ("Salamandra") alleging an amount due and owing for unpaid services rendered. On January 18, 2017, following an arbitration proceeding, an arbitrator awarded Salamandra the full amount sought in arbitration of \$146,082. Additionally, the arbitrator granted Salamandra attorneys' fees and costs of \$47,937. All such amounts have been accrued as of June 30, 2022, including accrued interest at 4.5% annually from February 26, 2018, the date of the judgment, through June 30, 2022, totaling \$35,665. The Company had previously entered into a settlement agreement with Salamandra that is no longer in effect. The Company has approached Salamandra seeking to negotiate a new settlement agreement. A lien with respect to the amounts owed is in effect.

On February 23, 2021 our bank received two New Jersey Superior Court Levies totaling \$320,911 related to amounts owed to two vendors (Sharp and Salamandra as defined above) which amounts were not in dispute, debited our accounts and restricted access to those accounts. Our accounts were debited for \$1,559 on February 23, 2021 which represented all of the cash in our accounts on that date.

On September 14, 2021, the Company and DNA Healthlink, Inc. ("DNA Healthlink") entered into a settlement agreement (the "DNA Healthlink Settlement Agreement") regarding \$410,000 in unpaid accounts payable owed by the Company to DNA Healthlink (the "DNA Healthlink Settlement Amount") for services provided by DNA Healthlink to the Company pursuant to an agreement by and between the Company and DNA Healthlink dated October 15, 2014. Under the terms of the DNA Healthlink Settlement Agreement, the Company is obligated to pay to DNA Healthlink the full DNA Healthlink Settlement Amount as follows: twelve monthly payments of \$8,000 each commencing on November 15, 2021, followed by twelve monthly payments of \$10,000 each commencing on November 15, 2022, followed by twelve monthly payments of \$15,000 each commencing on November 15, 2023, followed by one final payment of \$14,000 on November 15, 2024. If, prior to March 14, 2023, the Company receives one or more upfront license fee payments or any other similar fee or fees from one or more strategic partners that aggregate at least fifteen million dollars (\$15,000,000) ("Upfront Fees"), then the full DNA Healthlink Settlement Amount, less any amounts previously paid, will be accelerated and become due and payable in full within ninety (90) days of receipt of any Upfront Fees. As a result of the DNA Healthlink Settlement Agreement, the Company recorded a gain with respect to vendor settlements of \$62,548 for the fiscal year ended December 31, 2021. The Company made payments of \$8,000 in November 2021 and December 2021, but has not made payments in January through June 2022.

An annual obligation payable to the University of Illinois of \$100,000 that was originally due on December 31, 2021 pursuant to the 2014 License Agreement was extended to an indefinite future date while discussions to amend the obligation are taking place.

By email dated July 21, 2016, the Company received a demand from an investment banking consulting firm that represented the Company in 2012 in conjunction with the Pier transaction alleging that \$225,000 is due and payable for investment banking services rendered. Such amount has been included in accrued expenses at June 30, 2022 and December 31, 2021.

The Company is periodically the subject of various pending and threatened legal actions and claims. In the opinion of management of the Company, adequate provision has been made in the Company's consolidated financial statements as of June 30,

2022 and December 31, 2021 with respect to such matters, including, specifically, the matters noted above. The Company intends to vigorously defend itself if any of the matters described above results in the filing of a lawsuit or formal claim.

6. Stockholders’ Deficiency

Preferred Stock

RespireRx has authorized a total of 5,000,000 shares of preferred stock, par value \$0.001 per share. As of June 30, 2022 and December 31, 2021, 37,500 shares were designated as Series B Convertible Preferred Stock (non-voting, “Series B Preferred Stock”).

Series B Preferred Stock outstanding as of June 30, 2022 and December 31, 2021 consisted of 37,500 shares issued in a May 1991 private placement. The shares of Series B Preferred Stock are convertible into 1 share of common stock. RespireRx may redeem the Series B Preferred Stock for \$25,001 at any time upon 30 days prior notice.

Although other series of preferred stock have been designated, no other shares of preferred stock are outstanding. As of June 30, 2022 and December 31, 2021, 3,504,424 shares of preferred stock were undesignated and may be issued with such rights and powers as the Board of Directors may designate.

Common Stock

RespireRx has authorized 2,000,000,000 (2 billion) shares of Common Stock, par value \$0.001 (“Common Stock”). There are 117,069,276 shares of the Company’s Common Stock outstanding as of June 30, 2022. After reserving for conversions of convertible debt and convertible preferred stock, as well as exercises of common stock purchase options (granted and available for grant within the 2014 and 2015 stock and stock option plans) and warrants and the issuance of Pier contingent shares and before accounting for incremental contract excess reserves, there were 1,683,044,169 shares of the Company’s Common Stock available for future issuances as of June 30, 2022. After accounting for incremental excess reserves contractually required by the various convertible notes and certain warrants, there were 1,519,613,684 shares of common stock available for future issuances as of June 30, 2022. No warrants or options were exercised after June 30, 2022. Options to purchase 84,923 shares of Common Stock expired during the six-month period ended June 30, 2022 and such shares were added back to the shares of common stock available for issuance from the 2015 Plan.

Common Stock Warrants

A summary of warrant activity for the six-months ended June 30, 2022 is presented below.

	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (in Years)
Warrants outstanding at December 31, 2021	59,420,298	\$ 0.0718	3.3300
Issued as a result of most favored nation provisions	36,102,800	0.0100	4.2976
Expired	(2,212,500)	0.0160	
Warrants outstanding and exercisable at June 30, 2022	93,310,598	\$ 0.0472	2.5557

The exercise prices of common stock warrants outstanding and exercisable are as follows at June 30, 2022:

Exercise Price	Warrants Outstanding (Shares)	Warrants Exercisable (Shares)	Expiration Date
\$ 0.010	67,405,073	67,405,073	September 30, 2023-April 14, 2027
\$ 0.0389	208,227	208,227	May 10, 2026
\$ 0.047	172,341	172,341	May 3, 2026
\$ 0.070	25,377,426	25,377,426	September 30, 2023
\$ 11.00 -15.750	147,531	147,531	September 29, 2022-December 30, 2023
	93,310,598	93,310,598	

Based on a value of \$0.0038 per share on June 30, 2022, there were no exercisable in-the-money common stock warrants as of June 30, 2022.

A summary of warrant activity for the six-months ended June 30, 2021 is presented below.

	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (in Years)
Warrants outstanding at December 31, 2020	28,809,352	\$ 0.1528	2.64
Issued	12,561,174	0.02	
Expired	(8,595)	79.3000	
Cancelled upon exchange	(1,062,500)	0.07	
Excercised	(1,665,958)	0.02	
Warrants outstanding at June 30, 2021	38,633,473	\$ 0.1002	1.78

The exercise prices of common stock warrants outstanding and exercisable are as follows at June 30, 2021:

Exercise Price	Warrants Outstanding and Exercisable	Expiration Date
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		(Shares)	
\$	0.016	2,212,500	May 17, 2022
\$	0.020	10,514,648	March 31, 2026-September 30, 2023
\$	0.039	208,227	May 10, 2026
	0.047	172,341	May 3, 2026
\$	0.070	25,377,426	September 30, 2023
\$	11.00 -27.50	148,331	December 31, 2021-December 30, 2023
		<u>38,633,473</u>	

Based on a value of \$0.0365 per share on June 30, 2021, there were 12,727,148 exercisable in-the-money common stock warrants as of June 30, 2021.

*Stock Options*

On March 18, 2014, the stockholders of RespireRx holding a majority of the votes to be cast on the issue approved the adoption of RespireRx’s 2014 Equity, Equity-Linked and Equity Derivative Incentive Plan (the “2014 Plan”), which had been previously adopted by the Board of Directors, subject to stockholder approval. The Plan permits the grant of options and restricted stock in addition to stock appreciation rights and phantom stock, to directors, officers, employees, consultants and other service providers of the Company. As of June 30, 2022, there are 6,325 shares available in the 2014 Plan.

On June 30, 2015, the Board of Directors adopted the 2015 Stock and Stock Option Plan (as amended, the “2015 Plan”). As of June 30, 2022, there are 13,648,021 shares available in the 2015 Plan. The Company has not and does not intend to present the 2015 Plan to stockholders for approval.

Information with respect to the Black-Scholes variables used in connection with the evaluation of the fair value of stock-based compensation costs and fees is provided at Note 3.

A summary of stock option activity for the six-months ended June 30, 2022 is presented below.

	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (in Years)
Options outstanding at December 31, 2021	9,306,368	\$ 1.09	3.95
Expired	(84,923)	41.04	-
Options outstanding and exercisable at June 30, 2022	9,221,445	\$ 0.73	3.74

The exercise prices of common stock options outstanding and exercisable were as follows at June 30, 2022:

Exercise Price	Options Outstanding (Shares)	Options Exercisable (Shares)	Expiration Date
\$ 0.0190	2,194,444	2,194,444	December 31, 2026
\$ 0.0540	1,700,000	1,700,000	September 30, 2025
\$ 0.072	5,050,000	5,050,000	July 31, 2025
\$ 7.00-\$195.00	277,001	277,001	July 17, 2022 - December 9, 2027
	<u>9,221,445</u>	<u>9,221,445</u>	

There was no deferred compensation expense for the outstanding and unvested stock options at June 30, 2022.

Based on a fair value of \$0.0038 per share on June 30, 2022, there were no exercisable in-the-money common stock options as of June 30, 2022.

#### ***Reserved and Unreserved Shares of Common Stock***

As of June 30, 2022, there are 2,000,000,000 shares of Common Stock, par value \$0.001 authorized, of which 117,069,276 are issued and outstanding. As of June 30, 2022, there are outstanding options to purchase 9,221,445 shares of Common Stock and 6,325 and 13,648,021 shares available for issuance under the 2014 Plan and 2015 Plan respectively. There are 649 Pier contingent shares of Common Stock that may be issued under certain circumstances. As of June 30, 2022, there are 83,699,517 issuable upon conversion of convertible notes. As of June 30, 2022, there are 93,310,598 shares that may be issued upon exercise of outstanding warrants. As of June 30, 2022, the Series B Preferred Stock may convert into 1 share of Common Stock. Therefore, the Company is reserving 203,511,709 shares of Common Stock for future issuances with respect to conversions and exercises as well as for the Pier contingent shares. In addition, certain convertible notes and related warrants impose an additional contractual reserve requirement, above the number of shares into which such convertible notes and related warrants may convert or exercise respectively. Although the Company does not anticipate having to issue such shares, such incremental additional contractual reserves total an additional 163,430,485 shares of Common Stock.

#### **7. Related Party Transactions**

Dr. Arnold S. Lipa and Jeff E. Margolis, officers and directors of RespireRx since March 22, 2013, have indirect ownership and managing membership interests in Aurora Capital LLC (“Aurora”) through interests held in its members, and Jeff. E. Margolis is also an officer of Aurora. Aurora, was a boutique investment banking firm specializing in the life sciences sector that ceased its securities related activities in April 2021 and withdraw its membership with FINRA and its registration with the SEC in July 2021. Although Aurora has not provided services to RespireRx during the six-months ended June 30, 2022 or the fiscal year ended December 31, 2021, Aurora had previously provided services to the Company and there remains \$96,000 owed to Aurora by RespireRx which amount is included in accounts payable and accrued expenses as of June 30, 2022.

A description of advances and notes payable to officers is provided at Note 4. Notes Payable.

#### **8. Commitments and Contingencies**

##### ***Pending or Threatened Legal Action and Claims***

The Company is periodically the subject of various pending and threatened legal actions and claims. In the opinion of management of the Company, adequate provision has been made in the Company’s condensed consolidated financial statements as of June 30, 2022 and December 31, 2021 with respect to such matters. See Note 5. Settlement and Payment Agreements for additional items and details.

##### ***Significant Agreements and Contracts***

###### **Consulting Agreements**

Richard Purcell, the Company’s Senior Vice President of Research and Development since October 15, 2014, has provided his services to the Company on an at will and month-to-month basis. Since agreeing to a payment and settlement agreement, the Company has contracted for his services on a prepaid hourly basis at a rate of \$250 per hour, through his consulting firm, DNA Healthlink, Inc. See Note 5. Payment and Settlement Agreements for a description of the current payment terms. During the six-months ended June 30, 2022 Mr. Purcell did not provide any services to the Company.



The Company entered into a consulting contract with David Dickason effective September 15, 2020 pursuant to which Mr. Dickason was appointed to and serves as the Company’s Senior Vice President of Pre-Clinical Product Development on an at-will basis at the rate of \$250 per hour. During the six-months ended June 30, 2022 Mr. Dickason did not provide any services to the Company.

**Employment Agreements**

Effective on May 6, 2020, Timothy Jones was appointed as RespireRx’s President and Chief Executive Officer and entered into an employment agreement as of that date. Effective January 31 2022, Mr. Jones resigned as RespireRx’s President and Chief Executive Officer as well as a member of RespireRx’s Board of Directors pursuant to an Employment Agreement Termination and Separation Agreement dated February 8, 2022.

Effective January 31, 2022, Dr. Lipa was appointed as RespireRx’s Interim President and Interim Chief Executive Officer. Dr. Lipa continues to serve as RespireRx’s Executive Chairman and as a member of the Board of Directors as well as the Company’s Chief Scientific Officer.

Jeff E. Margolis currently serves as the Company’s Senior Vice President, Chief Financial Officer, Treasurer and Secretary. Mr. Margolis also serves on the Company’s Board of Directors.

The table below summarized the current cash commitments to Dr. Lipa and Mr. Margolis through the next September 30<sup>th</sup> renewal date.

	Contract year ending September 30, 2022		
	Three months		
	Base Salary	Benefits	Total
Arnold S. Lipa	\$ 150,000	\$ 19,800	\$ 169,800
Jeff E. Margolis	150,000	10,800	160,800
	<u>\$ 300,000</u>	<u>\$ 30,600</u>	<u>\$ 330,600</u>

Under certain circumstances base salaries may be contractually increased or the executives may become eligible for additional benefits and base salaries may be increased at the discretion of the Board of Directors. All executives are eligible for stock and stock option and similar grants at the discretion of the Board or Directors.

The payment of certain amounts reflected in the table above have been voluntarily deferred indefinitely and payments against accrued compensation may be made based upon the Company’s ability to make such payments.

**UWMRF Patent License Agreement**

On August 1, 2020, RespireRx exercised its option pursuant to its option agreement dated March 2, 2020, between RespireRx and UWM Research Foundation, an affiliate of the University of Wisconsin-Milwaukee (“UWMRF”). Upon exercise, RespireRx and UWMRF executed the UWMRF Patent License Agreement effective August 1, 2020 pursuant to which RespireRx licensed the identified intellectual property.

Under the UWMRF Patent License Agreement, the Company has an exclusive license to commercialize GABAkine products based on UWMRF’s rights in certain patents and patent applications, and a non-exclusive license to commercialize products based on UWMRF’s rights in certain technology that is not the subject of the patents or patent applications. UWMRF maintains the right to use, and, upon the approval of the Company, to license, these patent and technology rights for any non-commercial purpose, including research and education. The UWMRF Patent License Agreement expires upon the later of the expiration of the Company’s payment obligations to UWMRF or the expiration of the last remaining licensed patent granted thereunder, subject to early termination upon the occurrence of certain events. The License Agreement also contains a standard indemnification provision in favor of UWMRF and confidentiality provisions obligating both parties.

Under the UWMRF Patent License Agreement, in consideration for the licenses granted, the Company will pay to UWMRF the following: (i) patent filing and prosecution costs incurred by UWMRF prior to the effective date, paid in yearly installments over three years from the Effective Date; (ii) annual maintenance fees, beginning on the second anniversary of the Effective Date, which annual maintenance fees terminate upon the Company’s payment of royalties pursuant to clause (iv) below; (iii) milestone payments, paid upon the occurrence of certain dosing events of patients during clinical trials and certain approvals by the FDA; and (iv) royalties on net sales of products developed with the licenses, subject to minimum annual payments and to royalty rate adjustments based on whether separate royalty payments by the Company yield an aggregate rate beyond a stated threshold. The Company has also granted UWMRF certain stock appreciation rights with respect to the Company’s neuromodulator programs, subject to certain limitations, and will pay to UWMRF certain percentages of revenues generated from sublicenses of the licenses provided under the UWMRF Patent License Agreement by the Company to third parties.

### **University of Wisconsin-Milwaukee Outreach Services Agreement**

On July 12, 2021, the Company and the Board of Regents of the University of Wisconsin System on behalf of the University of Wisconsin-Milwaukee (“UWM”) entered into an Outreach Services Agreement pursuant to which UWM agreed to provide, among other molecules, multiple milligram to gram quantities of KRM-II-81 (GABAKine) and the Company agreed to pay UWM an annual sum of \$75,000 payable in three installments of \$25,000 each beginning October 12, 2021, which amount was timely paid, and on a quarterly basis thereafter. The payments that were due on January 12, 2022 and April 12, 2022 have not yet been paid. The agreement terminated on June 30, 2022. Amounts due on January 12, 2022 and April 12, 2022 are recorded in accounts payable as of June 30, 2022.

### **University of Illinois 2014 Exclusive License Agreement**

On June 27, 2014, the Company entered into an Exclusive License Agreement (the “2014 License Agreement”) with the University of Illinois, the material terms of which were similar to a License Agreement between the parties that had been previously terminated on March 21, 2013. The 2014 License Agreement became effective on September 18, 2014, upon the completion of certain conditions set forth in the 2014 License Agreement, including: (i) the payment by the Company of a \$25,000 licensing fee, (ii) the payment by the Company of outstanding patent costs aggregating \$15,840, and (iii) the assignment to the University of Illinois of rights the Company held in certain patent applications, all of which conditions were fulfilled.

The 2014 License Agreement granted the Company (i) exclusive rights to several issued and pending patents in numerous jurisdictions and (ii) the non-exclusive right to certain technical information that is generated by the University of Illinois in connection with certain clinical trials as specified in the 2014 License Agreement, all of which relate to the use of cannabinoids for the treatment of sleep related breathing disorders. The Company is developing dronabinol ( $\Delta^9$ -tetrahydrocannabinol), a cannabinoid, for the treatment of OSA, the most common form of sleep apnea.

The 2014 License Agreement provides for various commercialization and reporting requirements commencing on June 30, 2015. In addition, the 2014 License Agreement provides for various royalty payments, including a royalty on net sales of 4%, payment on sub-licensee revenues of 12.5%, and a minimum annual royalty beginning in 2015 of \$100,000, which is due and payable on December 31 of each year beginning on December 31, 2015. The minimum annual royalty obligation of \$100,000 due on December 31, 2021, was extended to May 31, 2022 and then further extended to an indefinite future date while discussions to amend the obligation are taking place. The minimum annual royalty obligation due on December 31, 2021 has not yet been paid.

One-time milestone payments may become due based upon the achievement of certain development milestones. \$75,000 will be due within 5 days of any one of the following, (a) dosing of the first patient with a dronabinol product in a Phase 2 human clinical study anywhere in the world that is not sponsored by the University of Illinois, (b) dosing of the first patient in a Phase 2 human clinical study anywhere in the world with a low dose dronabinol (defined as less than or equal to 1 mg), or (c) dosing of the first patient in a Phase 1 human clinical study anywhere in the world with a proprietary reformulation of dronabinol. \$350,000 will be due within five days after the dosing of the first patient is a Phase III human clinical trial anywhere in the world. \$500,000 will be due within five days after the first NDA filing with FDA or a foreign equivalent. \$1,000,000 will be due within twelve months of the first commercial sale. One-time royalty payments may also become due and payable. Annual royalty payments may also become due. In the year after the first application for market approval is submitted to the FDA or a foreign equivalent and until approval is obtained, the minimum annual royalty will increase to \$150,000. In the year after the first market approval is obtained from the FDA or a foreign equivalent and until the first sale of a product, the minimum annual royalty will increase to \$200,000. In the year after the first commercial sale of a product, the minimum annual royalty will increase to \$250,000.

During the six-months and three-months ended June 30, 2022 and 2021, the Company recorded charges to operations of \$50,000 and \$25,000, respectively representing the allocated portion of the annual minimum royalty, which is included in research and development expenses in the Company’s condensed consolidated statement of operations for the six months and three-months ended June 30, 2022 and 2021, respectively. The Company did not pay the amount due on December 31, 2021 for which the Company was granted an extension until May 31, 2022 and then a further extension to an indefinite future date while discussions to amend the obligation are taking place.

Noramco Inc. - Dronabinol Development and Supply Agreement

On September 4, 2018, RespireRx entered into a dronabinol Development and Supply Agreement with Noramco Inc., one of the world’s major dronabinol manufacturers, which Noramco subsequently assigned to its subsidiary, Purisys LLC (the “Purisys Agreement”). Under the terms of the Purisys Agreement, Purisys has agreed to (i) provide all of the active pharmaceutical ingredient (“API”) estimated to be needed for the clinical development process for both the first- and second-generation products (each a “Product” and collectively, the “Products”), three validation batches for New Drug Application (“NDA”) filing(s) and adequate supply for the initial inventory stocking for the wholesale and retail channels, subject to certain limitations, (ii) maintain or file valid drug master files (“DMFs”) with the FDA or any other regulatory authority and provide the Company with access or a right of reference letter entitling the Company to make continuing reference to the DMFs during the term of the agreement in connection with any regulatory filings made with the FDA by the Company, (iii) participate on a development committee, and (iv) make available its regulatory consultants, collaborate with any regulatory consulting firms engaged by the Company and participate in all FDA or Drug Enforcement Agency (“DEA”) meetings as appropriate and as related to the API. We now refer to the second-generation product as our proprietary formulation or proprietary product and have de-emphasized the first-generation product.

In consideration for these supplies and services, the Company has agreed to purchase exclusively from Purisys during the commercialization phase all API for its Products (as defined in the Development and Supply Agreement) at a pre-determined price subject to certain producer price index adjustments and agreed to Purisys’ participation in the economic success of the commercialized Product or Products up to the earlier of the achievement of a maximum dollar amount or the expiration of a period of time.

There was no activity during the six-months ended June 30, 2022 or 2021 with respect to the Purisys Agreement.

Summary of Principal Cash Obligations and Commitments

The following table sets forth the Company’s principal cash obligations and commitments for the next five fiscal years as of June 30, 2021, aggregating \$990,877. License agreement amounts included in the 2022 column represent amounts contractually due from July 1, 2022 through December 31, 2022 (six months) and in each of the subsequent years, represents the full year. Employment agreement amounts included in the 2022 column represent amounts contractually due from July 1, 2022 through September 30, 2022 (three months) when such contracts expire unless extended pursuant to the terms of the contracts.

	Total	Payments Due By Year				
		2022	2023	2024	2025	2026
License agreements	\$ 600,277	\$ 120,092	\$ 125,093	\$ 125,092	\$ 115,000	\$ 115,000
Employment agreements <sup>(1)</sup>	165,300	165,300	-	-	-	-
Total	\$ 765,577	\$ 285,392	\$ 125,093	\$ 125,092	\$ 115,000	\$ 115,000

(1)The payment of certain of such amounts has been deferred indefinitely, as described above in “Employment Agreements”.

## 9. Subsequent Events

### *Convertible Note Conversion*

On July 13, 2022, a convertible note holder converted as a partial conversion, \$24,750 of principal, no accrued interest as all guaranteed accrued interest had been paid as part of a prior conversion and \$500 of conversion fees for a total of \$25,250 at a conversion price of \$0.01 into 2,525,000 shares of Common Stock. This represented the final payment and there is no remaining principal or accrued interest with respect to this convertible note.

### *Entry into Payment Settlement Agreement and Release*

Effective August 1, 2022, the Company and the Company's former legal counsel, entered into a payment settlement agreement and release pursuant to which the Company and its former legal counsel agreed that the Company owed \$2,608,914 to such counsel and that under the terms of the agreement the amount owed and payable by wire transfer on or before December 30, 2022 shall be \$250,000. If that amount is paid on or before December 30, 2022, certain mutual releases would become effective and no further amounts would be due. If the \$250,000 amount is not paid by December 30, 2022, the section of the agreement related to mutual releases would be null and void ab initio and the amount immediately due and payable by the Company to its former counsel would be adjusted to \$2,608,914 less any amounts paid on or after the date of the agreement.

### *Suspension of Services by American Stock Transfer & Trust Company LLC, a/k/a AST Financial*

On August 2, 2022, the Company's transfer agent, American Stock Transfer & Trust Company LLC, a/k/a AST Financial ("AST") informed the Company that services had been suspended until AST receives payment of outstanding invoices.

### *Resignation of Member of the Board of Directors*

By letter dated July 31, 2022, Ms. Kathryn MacFarlane, a member of the Board of Directors ("BOD") of the Company notified the Company of her resignation. Ms. MacFarlane did not resign because of any disagreement with the Company relating to the Company's operations, policies or practices.

### *Convertible Note and Related Transactions*

Effective August 22, 2022, the Company and three investors entered into three separate Securities Purchase Agreements and the Company issued to those three investors, three separate convertible notes in the aggregate amount of \$111,111 and subject to original issue discount of \$11,111. The Company is to receive \$100,000 upon closing. The notes carry interest at 10% per annum which interest is guaranteed during the term of the note which matures on May 31, 2023. The notes inclusive of accrued interest are repayable in full at maturity or may be converted at any time until maturity at a conversion price of \$0.0015 per share of Common Stock. In addition, the Company and the three investors entered into three separate registration rights agreements similar to those associated with prior convertible notes.

### *Amendments to Convertible Notes*

By email confirmation, three convertible note holders agreed to waive certain provisions of their convertible notes and related documents, including but not limited to an extension of maturity dates to February 28, 2023, waiver of MFN provisions with respect to the August 2022 financing described above, an increase in their maturity amounts and the issuance of certain incentive restricted shares of Common Stock and certain other provisions. One convertible note holder has not agreed to the waivers and incentives, but instead has agreed, as of August 22, 2022, to a three month standstill.

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

*The following discussion and analysis should be read in conjunction with the condensed consolidated financial statements (unaudited) and notes related thereto appearing elsewhere in this document, as well as the audited consolidated financial statements, notes related thereto, and Management’s Discussion and Analysis of Financial Condition and Results of Operations in our 2021 Form 10-K.*

### Overview

The mission of the Company is to develop innovative and revolutionary treatments to combat disorders caused by disruption of neuronal signaling. We are developing treatment options that address OSA, ADHD, epilepsy, acute and chronic pain, including inflammatory and neuropathic pain, and recovery from SCI”, which are conditions that affect millions of people but for which there are limited or poor treatment options. We are also considering developing treatment options for other conditions based on results of preclinical and clinical studies to date.

RespireRx is developing a pipeline of new drug products supported by our broad patent portfolios across two distinct drug platforms:

- (i) ResolutionRx, our pharmaceutical cannabinoids platform, is developing compounds that target the body’s endocannabinoid system, and in particular, the re-purposing of dronabinol, an endocannabinoid CB1 and CB2 receptor agonist, for the treatment of OSA. Dronabinol is already approved by the FDA for other indications.
- (ii) EndeavourRx, our neuromodulators platform, is made up of two programs: (a) our AMPAkinases program, which is developing proprietary compounds that act as PAMs of AMPA-type glutamate receptors to promote neuronal function and (b) our GABAkinases program, which is developing proprietary compounds that act as PAMs of GABAA receptors, and which was recently established pursuant to our entry into a patent license agreement (the “UWMRF Patent License Agreement”) with the University of Wisconsin-Milwaukee Research Foundation, Inc., an affiliate of the University of Wisconsin-Milwaukee (“UWMRF”).

Management intends to organize our ResolutionRx and EndeavourRx business units into two subsidiaries: (i) a ResolutionRx subsidiary, into which we would contribute our pharmaceutical cannabinoid platform and its related tangible and intangible assets and certain of its liabilities and (ii) an EndeavourRx subsidiary, into which we would contribute our neuromodulator platform, including both the AMPAkinase and GABAkinase programs and their related tangible and intangible assets and certain of their liabilities.

Management believes that there are advantages to separating these platforms formally into newly formed subsidiaries, including but not limited to optimizing their asset values by making them attractive to separate financing and strategic partnering channels.

### ***Financing our Platforms***

Our major challenge has been to raise substantial equity or equity-linked financing to support research and development plans for our cannabinoid and neuromodulator platforms, while minimizing the dilutive effect to pre-existing stockholders. At present, we believe that we are hindered primarily by our public corporate structure, our OTCQB listing, and low market capitalization as a result of our low stock price, as well as the weakness of our balance sheet.

The Company is also engaged in business development efforts (licensing/sub-licensing, joint venture and other commercial structures) with a view to securing strategic partnerships that represent strategic and operational infrastructure additions, as well as cash and in-kind funding opportunities. These efforts have focused on, but have not been limited to, transacting with brand and generic pharmaceutical and biopharmaceutical companies as well as companies with potentially useful formulation or manufacturing capabilities, significant subject matter expertise and financial resources. We believe that some or all of our assets should be licensed, sub-licensed, joint ventured or even sold and have initiated efforts to do so. No assurance can be given that any transaction will come to fruition and that if it does, that the terms will be favorable to the Company.

The Company filed a Form 1-A which included an offering circular that was qualified by The Securities and Exchange Commission on December 13, 2021 and subsequently amended. The offering is of the Company's common stock and is up to \$7.5 million at \$0.02 per share and allows for multiple closings until October 31, 2023 unless earlier terminated by the Company. As of June 30, 2022, no closings had taken place, the Company's stock price had been below the offering price and given that our stock price is substantially below the offering price, it would be unlikely that this particular offering will provide significant, if any, new funds.

### **Recent Developments**

#### ***UIC Extension***

UIC has granted the Company an extension of the due date for the payment of the minimum annual royal obligation of \$100,000 that was originally due on December 31, 2021 until May 31, 2022 and then to an indefinite future date while discussions to amend the obligation are taking place.

#### ***Outreach Services Agreement with the Board of Regents of the University of Wisconsin System***

On July 12, 2021, the Board of Regents of the University of Wisconsin System on behalf of the University of Wisconsin Milwaukee ("UWM") and RespireRx entered into an agreement pursuant to which UWM agreed to provide multiple milligram to gram quantities of KRM-II-81 and its salts. In addition, UWM is to supply KRM-II-81 to RespireRx within three months of the effective date. RespireRx agreed to pay \$75,000 in three installments of \$25,000 each beginning on October 12, 2021 and on a quarterly basis thereafter within thirty (30) days receipt of invoice. The payments that were due on January 12, 2022 and April 12, 2022 have not yet been paid. The agreement terminate on June 30, 2022.

#### ***Sharp Settlement Agreement and related Complaint***

See Note 5. Settlement and Payment Agreements for detailed information about the status of the Sharp Settlement Agreement. All amounts owed have been recorded on the Company's balance sheet as of June 30, 2022.

#### ***Salamandra***

See Note 5. Settlement and Payment Agreements for detailed information about the status of the Salamandra settlement agreement. All amounts owed have been recorded on the Company's balance sheet as of June 30, 2022.

#### ***University of California Innovation and Entrepreneurship affiliated with the Regents of the University of California***

See Note 5. Settlement and Payment Agreements for detailed information about the status of the University of California Innovation and Entrepreneurship payment settlement agreement. All amounts owed have been recorded on the Company's balance sheet as of June 30, 2022.

***DNA Healthink Inc.***

See Note 5. Settlement and Payment Agreements to the Company's condensed consolidated financial statements at June 30, 2022.

**Going Concern**

See Note 2. Business – *Going Concern* to our condensed consolidated financial statements at June 30, 2022.

The Company's regular efforts to raise capital and to evaluate measures to permit sustainability are time-consuming and intensive. Such efforts may not prove successful and may cause distraction, disruption or other adversity that limits the Company's development program efforts.

**Recent Accounting Pronouncements**

See Note 2 to the Company's condensed consolidated financial statements at June 30, 2022.

Management does not believe that any recently issued, but not yet effective, authoritative guidance, if currently adopted, would have a material impact on the Company's financial statement presentation or disclosures.

**Concentration of Risk**

See Note 2. Significant Accounting Policies – *Concentration of Credit Risk* to the Company's condensed consolidated financial statements at June 30, 2022.

See Note 8. Commitments and Contingencies – *University of Illinois 2014 Exclusive License Agreement* to the Company's condensed consolidated financial statements at June 30, 2022.

See Note 8. Commitments and Contingencies – *UWMRF Patent License Agreement* to the Company's condensed consolidated financial statements at June 30, 2022.

Critical Accounting Policies and Estimates

The Company prepared its condensed consolidated financial statements in accordance with GAAP. The preparation of these condensed consolidated financial statements requires the use of estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amount of revenues and expenses during the reporting period. Management periodically evaluates the estimates and judgments made. Management bases its estimates and judgments on historical experience and on various factors that are believed to be reasonable under the circumstances. Actual results may differ from these estimates as a result of different assumptions or conditions.

Critical accounting policies and estimates are described in the notes to the Company’s condensed consolidated financial statements and include:

- Stock-based awards
- Research and Development Costs
- License Agreements
- Patent Costs
- Convertible Notes

See Critical Accounting Policies and Estimates in our 2021 Form 10-K for a complete description.

Results of Operations

The Company’s consolidated statements of operations as discussed herein are presented below.

	Three-Months Ended June 30,		Six-Months Ended June 30,	
	2022	2021	2022	2021
Operating expenses:				
General and administrative, including related parties	\$ 211,376	\$ 426,169	\$ 707,170	\$ 1,071,545
Research and development, including related parties	141,099	237,828	262,257	392,592
Total operating expenses	352,475	663,997	969,427	1,464,137
Loss from operations	(352,475)	(663,997)	(969,427)	(1,464,137)
Gain on warrant exchange	-	1,099	-	1,099
Interest expense, including related parties	(179,521)	(151,842)	(439,169)	(231,312)
Foreign currency transaction gain (loss)	51,708	2,526	68,145	31,887
Net loss attributable to common stockholders	\$ (480,288)	\$ (812,214)	\$ (1,340,451)	\$ (1,662,463)
Deemed dividend associated with most favored nation provisions of convertible notes	\$ (351,738)	\$ -	\$ (351,738)	\$ -
Net loss attributable to common stockholders	\$ (832,026)	\$ (812,214)	\$ (1,692,189)	\$ (1,662,463)
Net loss per common share - basic and diluted	\$ (0.01)	\$ (0.01)	\$ (0.02)	\$ (0.02)
Weighted average common shares outstanding - basic and diluted	106,081,803	89,832,860	102,010,657	82,212,945

Three-months Ended June 30, 2022 and 2021

Revenues. The Company had no revenues during the three-months ended June 30, 2022 and 2021.

General and Administrative. For the three-months ended June 30, 2022 general and administrative expenses were \$211,376, a decrease of \$214,793, as compared to \$426,169 for the three-months ended June 30, 2021. The decrease in general and administrative expenses for the three-months ended June 30, 2022, as compared to the three-months ended June 30, 2021, is primarily due to a \$94,000 reduction in compensation and benefits during the three-months ended June 30, 2022 due to the termination of an executive officer effective January 31, 2022. In addition legal expenses for the three-months ended June 30, 2022 were \$5,377, as compared to \$76,748 for the three-months ended June 30, 2021, a decrease of \$71,371 and was a result of the cessation of services by our former legal counsel in 2022 and the incurrence of expenses with new counsel. Patent fees decreased to \$30,408 from \$39,433, a decrease of \$9,025 for the three-months ended June 30, 2022 as compared to the three-months ended June 30, 2021, a consequence of reduced utilization of patent legal counsel in the current period. Accounting fees were \$26,000 for the three-months ended June 30, 2022 as compared to \$63,215 for the three-months ended June 30, 2021, a decrease of \$37,215 as a result of decreased utilization of our contractual controller during the current three-month period as compared to the prior year comparable period. The balance of the difference was the net of several smaller increases and decreases.



Research and Development. For the three-months ended June 30, 2022, research and development expenses were \$141,099, a decrease of \$96,729, as compared to \$237,828 for the three-months ended June 30, 2021. The decrease in research and development expenses for the three-months ended June 30, 2022, as compared to the three-months ended June 30, 2021, is primarily a decrease in utilization of consultants, a share-based compensation of \$0 in the current period as compared to \$7,500 in the prior comparable period and the completion of the initial phase of the new formulation research resulting in no expenses in the current period as compared to \$21,562 in the prior comparable period.

Interest Expense. During the three-months ended June 30, 2022, interest expense was \$179,521 as compared to \$151,852 for the three-months ended June 30, 2021. The increase of \$27,679 is primarily the result of increased debt balances and the amortization to interest expense of debt discounts and capitalized note costs associated with new convertible debt.

Foreign Currency Transaction (Loss) Gain. Foreign currency transaction gain was \$51,708 for the three-months ended June 30, 2022, as compared to a foreign currency transaction gain of \$2,526 for the three-months ended June 30, 2021. The foreign currency transaction (loss) gain relates to the \$399,774 loan from SY Corporation, made in June 2012, which is denominated in the South Korean Won.

Net Loss. For the three-months ended June 30, 2022, the net loss was \$480,288, compared to \$812,214 for the three-months ended June 30, 2021.

Net Loss Attributable to Common Stockholders. For the three-months ended June 30, 2022, the Company incurred a net loss attributable to common stockholders of \$832,026 as compared to a net loss attributable to common stockholders of \$812,214 for the three-months ended June 30, 2021.

### **Six-months Ended June 30, 2022 and 2021**

Revenues. The Company had no revenues during the six-months ended June 30, 2022 and 2021.

General and Administrative. For the six-months ended June 30, 2022, general and administrative expenses were \$707,170, a decrease of \$364,375, as compared to \$1,071,545 for the six-months ended June 30, 2021. The decrease in general and administrative expenses is primarily due to the fact that the Company did not incur compensation and related benefits expenses with respect to a former executive officer effective January 31, 2022 resulting in a decrease in compensation and benefits expenses of \$378,699. There was also a decrease of \$124,102 of legal expenses as a result of the cessation of services by our former legal counsel in 2022 and the incurrence of expenses with new counsel. There was no share-based compensation during the six-months ended June 30, 2022 as compared to \$28,000 during the comparable prior year period. In addition, there was a decrease of 20,649 in accounting expenses, and \$26,231 in transfer agent expenses. These decreases were offset by an increase in expenses of \$177,883 due to the write-off of deferred financing costs during the six-months ended June 30, 2022 as compared to no write-off during the six-months ended June 30, 2021. There was also an increase of \$21,791 of directors and officers insurance premiums as well as smaller increases and decreases in other expense categories.

Research and Development. For the six-months ended June 30, 2022, research and development expenses were \$262,257, a decrease of \$130,335, as compared to \$392,592 for the six-months ended June 30, 2021. The decrease in research and development expenses for the six-months ended June 30, 2022, as compared to the six-months ended June 30, 2021, is primarily due to the decrease in utilization of research and development consultants resulting in a decrease of \$106,990. There was \$0 in share-based compensation expense during the six-month period ending June 30, 2022 resulting in a decrease of \$23,750 in share-based compensation expenses. The completion of the initial phase of the new formulation research resulted in no expenses in the current period as compared to \$21,562 in the prior comparable period with respect to new product formulation development.

Interest Expense. During the six-months ended June 30, 2022, interest expense was \$439,169 as compared to \$231,312 for the six-months ended June 30, 2021. The increase of \$207,857 is primarily the result of increased debt balances and the amortization to interest expense of debt discounts and capitalized note costs associated with new convertible debt.

Foreign Currency Transaction (Loss) Gain. Foreign currency transaction gain was \$68,145 for the six-months ended June 30, 2022, as compared to a foreign currency transaction gain of \$31,887 for the six-months ended June 30, 2021. The foreign currency transaction gains relate to the \$399,774 loan from SY Corporation, made in June 2012, which is denominated in the South Korean Won.

Net Loss. For the six-months ended June 30, 2022, the net loss was \$1,340,451, compared to \$1,662,463 for the six-months ended June 30, 2021.

Net Loss Attributable to Common Stockholders. For the six-months ended June 30, 2022, the Company incurred a net loss attributable to common stockholders of \$1,692,189 as compared to a net loss attributable to common stockholders of \$1,662,463 for the six-months ended June 30, 2021.

### **Liquidity and Capital Resources – June 30, 2022**

The Company's condensed consolidated financial statements have been presented on the basis that it is a going concern, which contemplates the realization of assets and satisfaction of liabilities in the normal course of business. The Company has incurred net losses of \$1,340,451 for the six-months ended June 30, 2022 and \$3,144,840 for the fiscal year ended December 31, 2021, and negative operating cash flows of \$85,122 for the six-months ended June 30, 2022 and \$956,172 for the fiscal year ended December 31, 2021, had a stockholders' deficiency of \$11,131,456 at June 30, 2022, and expects to continue to incur net losses and negative operating cash flows for at least the next few years. As a result, management has concluded that there is substantial doubt about the Company's ability to continue as a going concern, and the Company's independent registered public accounting firm, in its report on the Company's consolidated financial statements for the year ended December 31, 2021, expressed substantial doubt about the Company's ability to continue as a going concern.

At June 30, 2022, the Company had a working capital deficit of \$10,897,459.

At June 30, 2022, the Company had cash of \$21, as compared to \$1,398 at December 31, 2021, reflecting a decrease in cash of \$1,377 for the six-months ended June 30, 2022.

The limited cash of \$25,000 raised in financings with unaffiliated parties and all amounts raise from officers during the six-months ended June 30, 2022 were utilized for working capital. The financings completed during fiscal year ended December 31, 2021 were utilized to pay general and administrative and research and development expenses or the related accounts payable, including, but not limited to, payments to our licensors, our independent registered public accounting firm, our patent and intellectual property law firm and for other patent and intellectual property services, our transfer agent, our financial printer and limited cash payments of compensation. Cash was also utilized, among other purposes, to make payments pursuant to directors and officers insurance and other insurance financings.

The Company is currently, and has for some time, been in significant financial distress. It has limited cash resources and current assets and has no ongoing source of sustainable revenue. Management is continuing to address various aspects of the Company's operations and obligations, including, without limitation, debt obligations, financing requirements, intellectual property, licensing agreements, legal and patent matters and regulatory compliance, and has continued to raise new debt and equity capital to fund the Company's general and administrative and research and development activities from both related and unrelated parties.

The Company is continuing its efforts to raise additional capital in order to be able to pay its liabilities and fund its business activities on a going forward basis, including the pursuit of the Company's planned research and development activities. The Company filed a Form 1-A which included an offering circular that was qualified by The Securities and Exchange Commission on December 13, 2021 and subsequently amended. The offering is of the Company's common stock and is up to \$7.5 million at \$0.02 per share and allows for multiple closings until October 31, 2023 unless earlier terminated by the Company. As of June 30, 2022, no closings had taken place, the Company's stock price had been below the offering price and given that our stock price is substantially below the offering price, it would be unlikely that this particular offering will provide significant, if any, new funds. Accordingly, we wrote-off the deferred financing costs related to the Reg A Offering during the six-months ended June 30, 2022. The Company regularly evaluates various other measures to satisfy the Company's liquidity needs, including development and other agreements with collaborative partners and, when necessary, seeking to exchange or restructure the Company's outstanding securities. The Company is evaluating certain changes to its operations and structure to facilitating raising capital from sources that may be interested in financing only discrete aspects of the Company's development programs. Such changes could include a significant reorganization, which may include the formation of one or more subsidiaries into which one or more programs may be contributed. As a result of the Company's current financial situation, the Company has limited access to external sources of debt and equity financing. Accordingly, there can be no assurances that the Company will be able to secure additional financing in the amounts necessary to fully fund its operating and debt service requirements. To achieve these goals, the Company has determined that some or all of development programs should be licensed, sub-licensed, joint ventured or even sold and has initiated efforts to do so.

If the Company is unable to access sufficient cash resources, the Company may be forced to discontinue its operations entirely and liquidate.

Effective August 22, 2022, the Company and three investors entered into three separate Securities Purchase Agreements and the Company issued to those three investors, three separate convertible notes in the aggregate amount of \$111,111 and subject to original issue discount of \$11,111. The Company is to receive \$100,000 upon closing. The notes carry interest at 10% per annum which interest is guaranteed during the term of the note which matures on May 31, 2023. The notes inclusive of accrued interest are repayable in full at maturity or may be converted at any time until maturity at a conversion price of \$0.0015 per share of Common Stock. In addition, the Company and the three investors entered into three separate registration rights agreements similar to those associated with prior convertible notes.

Operating Activities. For the six-months ended June 30, 2022, operating activities utilized cash of \$85,122, as compared to utilizing cash of \$688,571 for the six-months ended June 30, 2021, to support the Company's ongoing general and administrative expenses as well as its research and development activities.

Financing Activities. For the six-months ended June 30, 2022, financing activities consisted of \$25,000 from the issuance of a convertible note and \$73,010 of advances from executive officers.

## **Principal Commitments**

### ***Employment Agreements***

See Note 8. Commitments and Contingencies – Significant Agreements and Contracts – *Employment Agreements* to our condensed consolidated financial statements at June 30, 2022.

### ***University of Illinois 2014 Exclusive License Agreement***

See Note 8. Commitments and Contingencies – Significant Agreements and Contracts – *University of Illinois 2014 Exclusive License Agreement* to our condensed consolidated financial statements at June 30, 2022.

### ***UWM Research Foundation Patent License Agreement***

See Note 8. Commitments and Contingencies – Significant Agreements and Contracts, *UWM Research Foundation Patent License Agreement* to our condensed consolidated financial statements at June 30, 2022.

A table setting forth the Company's principal cash obligations and commitments for the next five fiscal years as of June 30, 2022, aggregating \$765,577 is set forth in Note 8. Commitments and Contingencies – *Summary of Principal Cash Obligations and Commitments* to our condensed consolidated financial statements at June 30, 2022.

## **Off-Balance Sheet Arrangements**

At June 30, 2022, the Company did not have any transactions, obligations or relationships that could be considered off-balance sheet arrangements.

### ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURE ABOUT MARKET RISK

Not applicable.

### ITEM 4. CONTROLS AND PROCEDURES

#### (a) Evaluation of Disclosure Controls and Procedures

The Company maintains disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”) that are designed to ensure that information required to be disclosed in the reports that the Company files with the Securities and Exchange Commission (the “SEC”) under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms and that such information is accumulated and communicated to the Company’s management, including its Chief Executive Officer and Chief Financial Officer, to allow for timely decisions regarding required disclosures.

The Company carried out an evaluation, under the supervision and with the participation of its management, consisting of its principal executive officer and principal financial officer, of the effectiveness of the Company’s disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act). Based upon that evaluation, the Company’s principal executive officer and principal financial officer concluded that, as of the end of the period covered by this report, the Company’s disclosure controls and procedures were not effective to ensure that information required to be disclosed in reports filed under the Exchange Act is recorded, processed, summarized and reported within the required time periods and is accumulated and communicated to the Company’s management, consisting of the Company’s principal executive officer and principal financial officer, to allow timely decisions regarding required disclosure.

Management has been focusing on developing replacement controls and procedures that are adequate to ensure that information required to be disclosed in reports filed under the Exchange Act is recorded, processed, summarized and reported within the required time periods and is accumulated and communicated to the Company’s management to allow timely decisions regarding required disclosure. Although the senior executive team has been developing more formalized and regular communication and collaboration processes, thereby improving the control environment, these controls and procedures are not yet sufficient to remediate the Company’s control weaknesses. The Company is current in its SEC periodic reporting obligations, but as of the date of the filing of this Quarterly Report on Form 10-Q, the Company had not yet established adequate internal controls over financial reporting.

The Company’s management, consisting of its principal executive officer and principal financial officer, does not expect that its disclosure controls and procedures or its internal controls will prevent all error or fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Furthermore, the design of a control system must reflect the fact that there are resource constraints and the benefits of controls must be considered relative to their costs. Due to the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, have been detected. In addition, as conditions change over time, so too may the effectiveness of internal controls. However, management believes that the financial information included in this Quarterly Report on Form 10-Q fairly present, in all material respects, the Company’s financial condition, results of operations and cash flows for the periods presented.

#### (b) Changes in Internal Controls over Financial Reporting

The Company’s management, consisting of its principal executive officer and principal financial officer, has determined that no change in the Company’s internal control over financial reporting (as that term is defined in Rules 13(a)-15(f) and 15(d)-15(f) of the Securities Exchange Act of 1934) occurred during or subsequent to the end of the period covered in this report that has materially affected, or is reasonably likely to materially affect, the Company’s internal control over financial reporting.

## PART II - OTHER INFORMATION

### ITEM 1. LEGAL PROCEEDINGS

We are periodically subject to various pending and threatened legal actions and claims. See Note 8. Commitments and Contingencies – *Pending or Threatened Legal Actions and Claims* to our condensed consolidated financial statements at June 30, 2022 for details regarding these matters.

### ITEM 1A. RISK FACTORS

As of the date of this filing, there have been no material changes to the Risk Factors included in the Company's 2021 Form 10-K. The Risk Factors set forth in the 2021 Form 10-K should be read carefully in connection with evaluating the Company's business and in connection with the forward-looking statements contained in this Quarterly Report on Form 10-Q as well as our Quarterly Report on Form 10-Q as of March 31, 2022, filed with the SEC on May 23, 2022. Any of the risks described in the 2021 Form 10-K could materially adversely affect the Company's business, financial condition or future results and the actual outcome of matters as to which forward-looking statements are made. These are not the only risks that the Company faces. Additional risks and uncertainties not currently known to the Company or that the Company currently deems to be immaterial also may materially adversely affect the Company's business, financial condition and/or operating results.

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

There were no unregistered sales of equity securities during the six-months ended June 30, 2022 that were not disclosed by the Company on a Current Report on Form 8-K. There were conversions of convertible notes inclusive of accrued interest as disclosed in Note 4. Notes Payable – *Convertible Notes Payable* and Note 9. – *Subsequent Events* of our condensed consolidated financial statements at June 30, 2022 and Part I, Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations – *Liquidity and Capital Resources – June 30, 2022*.

Additional information with respect to the transactions described above is provided in the Notes to the Condensed Consolidated Financial Statements for the three-months ended June 30, 2022.

### ITEM 3. DEFAULTS UPON SENIOR SECURITIES

#### *Note Payable to SY Corporation Co., Ltd.*

On June 25, 2012, the Company borrowed 465,000,000 Won (the currency of South Korea, equivalent to approximately \$400,000 United States Dollars) from and executed a secured note payable to SY Corporation. The note accrues simple interest at the rate of 12% per annum and had a maturity date of June 25, 2013. The Company has not made any payments on the promissory note. At June 30, 2013 and subsequently, the promissory note was outstanding and in technical default, although SY Corporation has not issued a notice of default or a demand for repayment. The Company believes that SY Corporation is in default of its obligations under its January 2012 license agreement, as amended, with the Company, but the Company has not yet issued a notice of default. The Company has in the past made several efforts towards a comprehensive resolution of the aforementioned matters involving SY Corporation. During the six-months ended June 30, 2022, there were no further communications between the Company and SY Corporation.

The note payable to SY Corporation consists of the following at June 30, 2022 and December 31, 2021:

	June 30, 2022	December 31, 2021
Principal amount of note payable	\$ 399,774	\$ 399,774
Accrued interest payable	483,146	459,358
Foreign currency transaction adjustment	(90,172)	(22,028)
	<u>\$ 792,748</u>	<u>\$ 837,104</u>

Interest expense with respect to this promissory note was \$11,960 for the three-months ended June 30, 2022 and 2021 respectively and \$23,789 for the six-months ended June 30, 2022 and 2021, respectively.

#### *Default on Convertible Notes Payable*

As of June 30, 2022, principal and accrued interest on the Original Convertible Note that is subject to a default notice accrues annual interest at 12% instead of 10%, totaled \$59,728, of which \$34,728 was accrued interest.

By email confirmation, three convertible note holders agreed to waive certain provisions of their convertible notes and related documents, including but not limited to an extension of maturity dates to February 28, 2023, waiver of MFN provisions with respect to the August 2022 financing described above, an increase in their maturity amounts and the issuance of certain incentive restricted shares of Common Stock and certain other provisions. One convertible note holder has not agreed to the waivers and incentives, but instead has agreed, as of August 22, 2022, to a three month standstill.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. OTHER INFORMATION

None.

ITEM 6. EXHIBITS

The following documents are filed as part of this report:

Exhibit Number	Description of Document
10.1	<a href="#"><u>Entry into Payment and Settlement Agreement and Release (incorporated by reference to Exhibit 99.1 of the Company’s Current Report on Form 8-K (file no. 1-16467) filed August 3, 2022).</u></a>
31.1*	<a href="#"><u>Officer’s Certification Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.</u></a>
31.2*	<a href="#"><u>Officer’s Certification Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.</u></a>
32.1**	<a href="#"><u>Officer’s Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.</u></a>
32.2**	<a href="#"><u>Officer’s Certification Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.</u></a>
101.INS***	Inline XBRL Instance Document
101.SCH***	Inline XBRL Taxonomy Extension Schema Document
101.CAL***	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.LAB***	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE***	Inline XBRL Taxonomy Extension Presentation Linkbase Document
101.DEF***	Inline XBRL Taxonomy Extension Definition Linkbase Document
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

\* Filed herewith.

\*\* Furnished herewith.

\*\*\* In accordance with Regulation S-T, the XBRL related information on Exhibit No. 101 to this Quarterly Report on Form 10-Q shall be deemed “furnished” herewith not “filed.”

SIGNATURES

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

Date: August 22, 2022

RESPIRERX PHARMACEUTICALS INC.  
(Registrant)

By: /s/ Arnold S. Lippa

Arnold S. Lippa  
Interim President, Interim Chief Executive Officer and Chief  
Scientific Officer

Date: August 22, 2022

By: /s/ Jeff Eliot Margolis

Jeff Eliot Margolis  
Senior Vice President, Chief Financial Officer, Treasurer and  
Secretary

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER  
UNDER SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Arnold S. Lippa, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of RespireRx 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.

Date: August 22, 2022

By: /s/ Arnold S. Lippa

Arnold S. Lippa  
Interim President, Interim Chief Executive Officer and Chief  
Scientific Officer

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**CERTIFICATION OF CHIEF FINANCIAL OFFICER  
UNDER SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Jeff Eliot Margolis, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of RespireRx 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.

Date: August 22, 2022

By: /s/ Jeff Eliot Margolis

Jeff Eliot Margolis

Senior Vice President Chief Financial Officer, Treasurer and Secretary

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**CERTIFICATION OF CHIEF EXECUTIVE OFFICER  
UNDER SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

I, Arnold S. Lippa, the Chief Executive Officer of RespireRx Pharmaceuticals Inc. (the “Company”), certify, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350, that:

- (i) The Quarterly Report on Form 10-Q of the Company for the quarterly period ended June 30, 2022, as filed with the Securities and Exchange Commission on the date hereof (the “Report”) fully complies with the requirements of Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934; and
- (ii) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

Date: August 22, 2022

By: /s/ Arnold S. Lippa

Arnold S. Lippa  
Interim President, Interim Chief Executive Officer and Chief  
Scientific Officer

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**CERTIFICATION OF CHIEF FINANCIAL OFFICER  
UNDER SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

I, Jeff Eliot Margolis, the Senior Vice President, Chief Financial Officer, Treasurer and Secretary of RespireRx Pharmaceuticals Inc. (the “Company”), certify, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350, that:

- (i) The Quarterly Report on Form 10-Q of the Company for the quarterly period ended June 30, 2022, as filed with the Securities and Exchange Commission on the date hereof (the “Report”) fully complies with the requirements of Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934; and
- (ii) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

Date: August 22, 2022

By: /s/ Jeff Eliot Margolis

Jeff Eliot Margolis  
Senior Vice President Chief Financial Officer, Treasurer and  
Secretary

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