RespireRx Pharmaceuticals Inc. Announces Extension to Long-Term Employment Contract with Tim Jones as President and Chief Executive Officer

Glen Rock, N.J., August 3, 2020/Globe Newswire - RespireRx Pharmaceuticals Inc. (OTC: RSPI) ("RespireRx" or the "Company"), is pleased to announce that today, Mr. Tim Jones and RespireRx have transitioned from the provisional period that commenced on May 6, 2020 to the three year, long-term portion of the employment contract with Mr. Jones as its President and Chief Executive Officer. Mr. Jones has been a member of the Company's Board of Directors since January 28, 2020 and as of July 31st. 2020, successfully completed the 3-month contractual provisional period. RespireRx is a leader in the development of innovative and revolutionary treatments to combat disorders caused by disruption of neuronal signaling, which affect millions of people, but for which there are limited or poor treatment options, including obstructive sleep apnea ("OSA"), attention deficit hyperactivity disorder ("ADHD") and recovery from spinal cord injury ("SCI"), as well as certain neurological orphan diseases such as Fragile X Syndrome.

On August 1, 2020, RespireRx has formally entered into the three-year phase of the employment contract with Tim Jones serving as its President and Chief Executive Officer ("CEO"). The original employment contract had an initial provisional term of approximately 3 months, through July 31, 2020. The employment contract having not been terminated by either party during the provisional term automatically extended into the long-term portion. The Board has acknowledged that it wishes the term of the employment contract to extend beyond the Provisional Period and Mr. Jones has acknowledged the same. The contract will expire on September 30, 2023 unless earlier terminated in accordance with the terms of the employment contract. The Agreement shall be deemed to be automatically extended, upon the same terms and conditions, for successive periods of one year, unless either party provides written notice of its intention not to extend the term of the Agreement at least ninety (90) days prior to the applicable Renewal Date. As previously disclosed in the Company's Current Report on Form 8-K filed February 3, 2020, Mr. Jones joined the Company's board of directors on January 28, 2020.

Mr. Jones stated that "this transition into the long-term portion of my employment contract with RespireRx is an expression of my belief in the value of the assets, the synergies of working with the other members of the management team and my confidence that I will continue to be a contributing senior member of that team that intends to add to and then realize the value of the Company for the benefit of all stakeholders."

Dr. Lippa, Executive Chairman and Chief Scientific Officer said, "I am thrilled that both Tim and the Board are in complete agreement about the transition from the provisional period to the long-term phase of Tim's employment contract and, speaking for the Board and the rest of the management team, we are excited to continue working in partnership with him going forward."

Mr. Jones is a highly experienced senior executive with a proven and outstanding track record in global commercial business development, specializing in developing and sustaining high value strategic and tactical partnerships. He is recognized for his expertise in the strategic development and growth of active pharmaceutical ingredient categories through partnerships with a broad cross section of brand and generic pharmaceutical and biopharmaceutical companies worldwide. His extensive knowledge base and expertise across multiple pharmaceutical disciplines have contributed to his successful track record of financial growth. For the past three years, as Vice President of Global Pharmaceutical and Medical OTC at Purisys LLC, an affiliate of Noramco Inc., and as Vice President Business Development-Global Cannabinoids Portfolio at Noramco Inc., Mr. Jones was instrumental in building a fully operational and highly successful global commercial cannabinoids business. Prior to that, he was Vice President Strategic Portfolio Management at Midas Pharmaceuticals Inc. and also has previously held leadership roles with Par Sterile Products, and Johnson Matthey.

About RespireRx Pharmaceuticals Inc.

RespireRx Pharmaceuticals Inc. is a leader in the development of medicines for respiratory disorders and central nervous system ("CNS") indications, with a focus on OSA, ADHD, SCI and other neurological conditions. The Company owns and has exclusive rights to patents and patent applications for certain families of chemical compounds that claim the chemical structures, formulations and their uses in the treatment of a variety of disorders, as well as claims for novel uses of known drugs.

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

Pharmaceutical Cannabinoids, including dronabinol, a synthetic version of Δ-9-tetrahydrocannabinol ("Δ-9-THC"), a naturally occurring substance in the cannabis plant that acts upon the nervous system's endogenous cannabinoid receptors.

RespireRx is developing dronabinol for the treatment of OSA, a serious respiratory disorder that impacts an estimated 29.4 million people in the United States according to the American Academy of Sleep Medicine. OSA has been linked to increased risk for hypertension, heart failure, depression, and diabetes, and has an annual economic cost in the United States of $162 billion according to the AASM. There are no approved drug treatments for OSA.

Pending the completion of a new formulation of dronabinol and an intended pre-IND meeting with the FDA, RespireRx believes that it will be able to commence a pharmacokinetic study for the new formulation followed by a Phase 3 clinical study for the treatment of OSA. Because dronabinol is already FDA approved for the treatment of AIDS related anorexia and chemotherapy induced nausea and vomiting, the Company further believes that its re-purposing strategy would only require approval by the FDA of a 505(b)(2) new drug application ("NDA"), an efficient regulatory pathway that allows the use of publicly available data.

Neuromodulators, which we now call Project Endeavor, including (a) ampakines, proprietary compounds that positively modulate AMPA-type glutamate receptors to promote neuronal function and (b) positive allosteric modulators ("PAMs") of the gamma-amino-butyric acid type A ("$GABA_A$") receptors that are the subject of an option agreement dated March 2, 2020 between the Company and the UWM Research Foundation, Inc. ("UWMRF"), an affiliate of the University of Wisconsin-Milwaukee.

Several ampakines, in both oral and injectable forms, are being developed by the Company for the treatment of a variety of CNS disorders. In clinical studies of respiratory function, select ampakines have shown preliminary efficacy in central sleep apnea and in the control of respiratory depression produced by opioids, without altering the opioid analgesic effects. In animal models of certain orphan disorders, such as Pompe Disease, Rett's Syndrome and perinatal respiratory distress, certain ampakines have been shown to improve breathing function. Although the Company does not intend to pursue respiratory indications for ampakines at the present time, we view these findings as proof of target engagement and signals of clinical efficacy.

Ampakines have shown potential as possible therapeutic agents for the treatment of certain neuropsychiatric and neurological disorders. Ampakines have demonstrated positive activity in animal models of ADHD, results that have been extended translationally into statistically significant improvement of symptoms observed in a Phase 2 human clinical trial of CX717 in adults with ADHD. At present, the major pharmacotherapies available for ADHD are made up of two types of drugs. Stimulants, such as amphetamine, rapidly produce robust effects, but suffer from side effects typical of stimulants, including tolerance, dependence, withdrawal and abuse. For these reasons, stimulants are scheduled by the FDA. Non-stimulants, such as Strattera® (atomoxetine) tend to be less effective than stimulants, with a much longer (approximately 4 – 8 week) latency to onset of action. In a number of animal and human studies, CX717 and other ampakines did not display any stimulant properties typically associated with drugs like amphetamine. In the Phase 2 ADHD clinical trial, statistically significant therapeutic effects were observed within one week. Therefore, we believe ampakines may represent a novel, non-stimulant treatment for ADHD with a more rapid onset of action than alternative non-stimulant treatment options.

RespireRx owns certain composition of matter and use patents and patent applications with respect to ampakines CX1739, CX717 and other ampakines.

The lead compound in the $GABA_A$ PAM program has shown strong activity in a large number of animal models of epilepsy, including treatment refractory epilepsy, where there exists a great clinical need. Furthermore, it has reduced epileptogenic electrical activity in brain slices from treatment resistant epilepsy patients who had undergone surgical removal of the tissue. This lead compound also has shown activity in animal models of anxiety and neuropathic pain.

Additional information about the Company and the matters discussed herein can be obtained on the Company's web-site at www.RespireRx.com or in the Company's filings with the Securities and Exchange Commission at www.sec.gov.

Cautionary Note Regarding Forward-Looking Statements

This press release contains certain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934 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 "anticipates," "believes," "intends," "estimates," "expects," "plans," "contemplates," "targets," "continues," "budgets," "may," and similar expressions 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 proposed products, (iv)

reorganization plans, and (v) the need for, and availability of, additional financing. The forward-looking statements included herein are based on current expectations that involve a number of risks and uncertainties. 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 the Company believes that the assumptions underlying the forward-looking statements are reasonable, actual results may differ materially from those set forth in the forward- looking statements. In light of the significant uncertainties inherent in the forward-looking information included herein, the inclusion of such information should not be regarded as a representation by the Company or any other person that the Company's objectives or plans will be achieved. Factors that could cause or contribute to such differences include, but are not limited to, regulatory policies or changes thereto, available cash, research and development results, competition from other similar businesses, interest of third parties in collaborations with us, and market and general economic factors. For more information about the risks and uncertainties the Company faces, see "Item 1A. Risk Factors" of the RespireRx Pharmaceuticals Inc. Annual Report on Form 10-K as of December 31, 2019. 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-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.

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