RespireRx Pharmaceuticals Inc. Executives Participating in the
2nd Annual International Cannabinoid Derived Pharmaceuticals Summit

September 10 – 12, 2019
Workshops, September 10, 2019
Aloft Boston Seaport District
401-403 D. St., Boston, MA 02210

- Executive Chairman/CSO/Interim CEO participating as a workshop leader on Cannabinoid Formulations-Which Technology to Select for Pre & Clinical Assessments?
- SVP/CFO participating as panel member on The Investor's Perspective on the Cannabinoid Pharmaceuticals Field

Glen Rock, N.J., September 9, 2019 /Globe Newswire – RespireRx Pharmaceuticals Inc. (OTCQB: RSPI) ("RespireRx" or the "Company"), a clinical stage pharmaceutical company, focused on the development of medicines that promote neuronal signaling in diseases and disorders of neuronal dysfunction, is pleased to announce that members of its executive management team are participating at the 2nd Annual International Cannabinoid Derived Pharmaceuticals Summit at the Aloft Boston Seaport District, 401-403 D. St. Boston, MA. (http://international-cdp.com)

Arnold S. Lippa, RespireRx Executive Chairman, Chief Scientific and Interim CEO will co-lead a workshop on Tuesday, September 10th entitled "Cannabinoid Formulations-Which Technology to Select for Pre & Clinical Assessments?" (http://international-cdp.com/whats-on/workshops/)

On Wednesday, September 11th, Jeff E. Margolis, RespireRx Senior Vice President, Chief Financial Officer, Treasurer and Secretary, is scheduled to participate as a panel member on "Panel Discussion: The Investor's Perspective on the Cannabinoid Pharmaceuticals Field." (http://international-cdp.com/whats-on/agenda/?curr_day=194)

"RespireRx is at the forefront of developing cannabinoids for the treatment of neurologically based diseases, because we are focused on science and medicine", said Dr. Lippa. "Using a translational approach to understanding the neural mechanisms whereby cannabinoids produce their therapeutic actions, we and our colleagues have demonstrated that dronabinol works to improve breathing in obstructive sleep apnea (OSA) patients through a well-defined neuronal signaling pathway involving endocannabinoid CB1 and CB2 receptors on specific neurons that control the muscles in the upper airway. The clinical efficacy of dronabinol has been successfully demonstrated in two Phase 2 clinical trials. Our research and operational efforts are supported by our partnership with Noramco, Inc. for clinical and commercial supply of dronabinol. We anticipate continuing this effort with potential collaborations and/or partnerships for formulation development, clinical development and ultimately

commercialization. We are, once again, excited as a management team to participate for the second time in this important summit to advance the commercial development of pharmaceutical cannabinoids."

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, attention deficit hyperactivity disorder (ADHD), spinal cord injury, Fragile X Syndrome and other neurological conditions. The Company holds exclusive licenses and owns patents and patent applications or rights thereto for certain families of chemical compounds that claim the chemical structures and their uses in the treatment of a variety of disorders, as well as claims for novel uses of known drugs.

Cannabinoids. RespireRx is developing dronabinol, a synthetic derivative of a naturally occurring substance in the cannabis plant, 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 ("AASM"), published in August 2016. 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.

RespireRx studies to date have utilized currently available formulations and dosages of dronabinol.

RespireRx also believes that there are numerous opportunities for reformulation of dronabinol to produce a new proprietary, branded product for the treatment of OSA with an improved profile. RespireRx plans to develop a proprietary dronabinol formulation to optimize the dose and duration of action for treating OSA.

Ampakines. The second platform of proprietary medicines being developed by RespireRx are ampakines, which act to enhance the actions of the excitatory neurotransmitter glutamate at AMPA glutamate receptors. Several ampakines, in both oral and injectable forms, are being developed by the Company for the treatment of a variety of CNS disorders. In a series of preclinical and clinical translational studies, CX717 and CX1739, our lead ampakines, were able to reverse the respiratory depression produced by opioids, evidence of AMPA receptor engagement. These ampakines were able to improve the symptoms of animals with spinal cord injury, Fragile X Syndrome and certain other neurological conditions.

Ampakines also 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 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 DEA. Non-stimulants, such as 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 the 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.

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, (v) the clinical development, regulatory review and commercialization process, and (vi) 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.

This discussion should be read in conjunction with the condensed consolidated financial statements (unaudited) and notes thereto included in Item 1 of the Company's Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 2019 and the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2018, including the section entitled "Item 1A. Risk Factors." The Company does not intend to update or revise any forward-looking statements to reflect new information, future events or otherwise.

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