NEWS RELEASE

Lantern Pharma Reports Third Quarter 2022 Financial Results and Operational Highlights

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- The Harmonic™ clinical trial activated the first two clinical trial sites for a Phase 2 study in never-smoker patients with non-small lung cancer and anticipates multiple additional sites in the US during 2022
- IND-enabling studies for both LP-184 and LP-284 are expected to be complete in Q1 2023
- First in human Phase 1 clinical trials for both LP-184 and LP-284 drug candidates are targeted for launch in first half of 2023
- Intellectual property (IP) estate was strengthened with the addition of a new issued patent for LP-300 uses
- RADR®, a drug development platform focused on oncology and leveraging artificial intelligence, is ahead of schedule for both datapoint and functional module expansion
- $57.8 million in cash, cash equivalents, and marketable securities as of September 30, 2022
- A net decrease of $4.3 million in cash, cash equivalents, and marketable securities occurred during the three months ended September 30, 2022
- Lantern has a cash runway into 2025
- Conference call scheduled for 4:30 p.m. ET / 1:30 p.m. PT today

DALLAS--(BUSINESS WIRE)-- Lantern Pharma Inc. (NASDAQ: LTRN), a clinical stage biopharmaceutical company using its proprietary RADR® artificial intelligence ("A.I.") and machine learning (“M.L.”) platform to transform the cost, pace, and timeline of oncology drug discovery and development, today announced operational highlights and financial results for the third quarter ended September 30, 2022.

“Leveraging large scale biomarker and clinical data, machine learning and artificial intelligence to fundamentally transform the cost, timeline and risk in developing oncology medicines has been the focus of Lantern. We are now advancing two drug-candidates in the Phase 2 clinical stage, and expect to launch two additional drug-candidates into first in human clinical trials in early 2023. We have rapidly advanced our new drug-candidates, LP-184 and LP-284, and been focused on advancing our rescued drug-candidates, LP-100 and LP-300 towards precise and meaningful treatment indications. Also, we have several additional therapeutic programs that we expect to introduce in the coming quarters with both our existing molecules and with new molecules and combinations that we have been validating with both AI-guided development and in highly targeted wet-lab studies,” stated Panna Sharma, CEO and President of Lantern Pharma.

“The compression of costs and timeline, that we are creating with our drug development process, have allowed us to grow our portfolio from 3 programs 15 months ago to 11 programs today. We expect many of these programs to create high-value opportunities for our investors and potentially life-transforming therapies for patients,” continued Sharma.

Portfolio Highlights:

- LP-300 – Harmonic™ is a Phase 2 clinical trial for never smoker patients with relapsed NSCLC and will assess the effect of LP-300 in combination with standard-of-care (SOC) chemotherapy, pemetrexed and carboplatin, on patient overall and progression-free survival. This quarter **Northwest Oncology and Hematology** and **Gabrail Cancer Center** were activated as Harmonic™’s first two clinical trial sites. Both sites are in the process of screening patients and are targeting to enroll the first patients this quarter. Several additional trial sites across the US are expected to be activated in Q4 2022 and Q1 2023 and will bolster patient recruitment and enrollment. Additional trial information on the Harmonic™ trial can be found at the new **Harmonic™ website** and the **clinicaltrials.gov website**.

  The United States Patent and Trademark Office (USPTO) issued U.S. Patent No. 11,471,431 for LP-300 uses, extending commercial protection for uses of LP-300 until late 2032. The patent is directed at increasing the survival time of cancer patients receiving LP-300 for cancers that are marked by overexpression of the regulatory proteins thioredoxin (TRX) or glutaredoxin (GRX) and/or exhibition of TRX- or GRX-mediated resistance to one or more chemotherapeutic interventions. Lantern’s current patent estate for LP-300 includes 43 patents, covering 8 patent families. Additionally, Lantern has multiple additional pending patent applications relating to LP-300 and is continuing to file patent applications in this area. The strengthened patent estate relating to LP-300 will stimulate the opportunity for future partnering discussions with biopharma companies.

- LP-184 – The completion of IND enabling studies and the submission of the IND application to the US Food

and Drug Administration (FDA) are anticipated for Q1 2023. LP-184 is under development for two major classes of cancers: solid tumors, including genetically defined pancreatic and bladder cancers, and several central nervous system (CNS) cancers, including glioblastoma (GBM) and brain metastases (brain mets.). Based on the differences in clinical needs and SOC for these cancer classes, two separate Phase 1 clinical trials are planned for LP-184 and are anticipated to launch in Q2 2023. In the US, the stand-alone market potential of these programs is estimated to be $5.0 billion for CNS cancers and over $1.0 billion for solid tumors.

In addition to LP-184's adult cancer programs, LP-184 is also being developed for several rare pediatric cancers, including Atypical Teratoid Rhabdoid Tumors (ATRT), a highly aggressive and malignant pediatric CNS cancer with no existing SOC therapy. Lantern is in discussions with ATRT key opinion leaders (KOLs) about a pediatric trial design for a potential Phase 1 clinical trial.

Lantern presented new preclinical data at the American Association for Cancer Research (AACR) Special Conference for Pancreatic Cancer in collaboration with Igor Astsaturov, M.D., Ph.D. from **The Marvin and Concetta Greenberg Pancreatic Cancer Institute at Fox Chase Cancer Center**. The presentation highlighted results demonstrating that LP-184 has potent anti-tumor effects in pancreatic cancer mouse models harboring mutations in the DNA damage response genes ATR and BRCA1. Additionally, LP-184 was demonstrated to act synergistically in vitro and in vivo with several SOC agents including spironolactone and radiation therapy. These combined results exemplify the potential for LP-184 as a therapeutic agent for pancreatic cancer as a monotherapy or in combination with other approved therapies. The LP-184 AACR poster can be viewed on **Lantern's website**.

- LP-284 – The IND enabling studies for LP-284 are estimated to be completed in Q1 2023, with the IND filing to the US FDA and Phase 1 clinical trial launch anticipated for Q2 2023. Lantern is developing LP-284 for non-Hodgkin's B-cell lymphomas (NHL), where LP-284 has shown nanomolar potency across multiple in vitro and in vivo studies and where there is a demonstrated clinical need. NHL indications for LP-284 are targeted to include: Mantle Cell Lymphoma (MCL), Double Hit Lymphoma (DHL), and other NHL cancer subtypes. Globally, **MCL** and **DHL** alone are estimated to impact over 45,000 patients each year, with virtually all patients relapsing 2-5 years after treatment. There is a significant clinical need for additional late stage therapeutic options for these patients.

  At the Society of Hematology and Oncology (SOHO) annual meeting, Lantern scientists presented new research on LP-284 for NHLs. The poster presentation featured results demonstrating that LP-284 has nanomolar anti-tumor potency in several MCL cell lines, including those that are resistant to SOC agents Ibrutinib and Bortezomib. LP-284's anti-tumor efficacy in MCL SOC resistant cell lines supports its potential for

patients who relapse or are resistant to these agents. The LP-284 SOHO poster can be viewed on **Lantern's website**.

RADR® Platform Growth and Development:

- RADR®, Lantern's A.I and M.L. platform, continues to rapidly expand its oncology focused datapoints, at a pace well ahead of our year end goal. RADR®'s data growth has advanced concurrently with significant upgrades to its functionality, computational infrastructure, and library of 200+ advanced machine learning algorithms, all of which continue to markedly accelerate and de-risk the drug programs of Lantern and its collaborators.
- The RADR® collaboration between Lantern and Actuate Therapeutics is advancing for the development of Actuate's drug candidate elraglusib (formerly 9-ING-41). RADR®-aided insights have accelerated development initiatives for elraglusib including identification of candidate biomarkers and development of M.L. models for clinical response. Highlights from the ongoing success of this collaboration are planned to be shared in an upcoming webinar.
- Novel RADR®-driven research was recently published and provides foundational insights into how A.I. can be applied to discover new indications for cancer drugs in record times and at significantly reduced costs. The research was done in collaboration with the National Cancer Institute (NCI) and highlights how large scale biological data, A.I., and M.L. were leveraged to rapidly identify ATRT as an indication for LP-184. A PDF of the new publication can be downloaded **here**, or read online on the Frontiers in Drug Discovery **website**.

Scientific Collaborations Update:

- Lantern and Johns Hopkins University extended their productive research collaboration until the second half 2023. The collaboration will continue to facilitate future work for Lantern's drug candidates for GBM and other CNS cancers.
- In December, Lantern will host a KOL webinar on synthetic lethality, a key mechanism of action of Lantern's drug candidates LP-184, LP-284, and LP-100. The webinar will feature an internationally recognized expert in synthetic lethality, Zoltan Szallasi, M.D., who serves joint appointments as principal investigator at The Danish Cancer Research Center and as assistant professor of pediatrics at Boston Children's Hospital, a Harvard Medical School affiliate. Additional details about the KOL webinar will be announced in the coming weeks.
- During **Childhood Cancer Awareness Month in September**, Lantern hosted a KOL webinar featuring Dr. Peter Houghton, Ph.D., a leading expert in childhood cancers at the Greehey Children's Cancer Research Institute at the University of Texas Health Science Center - San Antonio. The webinar focused on challenges in drug development for pediatric cancers and preliminary results from Lantern's drug candidates in preclinical pediatric cancer models. A replay of the KOL webinar can be found **here**.

Third Quarter 2022 Financial Overview

- Balance Sheet: Cash, cash equivalents, and marketable securities were approximately $57.8 million as of September 30, 2022, compared to approximately $70.7 million as of December 31, 2021. The quarterly cash burn rate continues to reflect our capital-efficient, collaborator-centered business model.
- R&D Expenses: Research and development expenses were approximately $0.7 million for the quarter ended September 30, 2022 compared to approximately $2.96 million for the quarter ended September 30, 2021.

  A substantial portion of this decrease in expenses relates to a $935,000 payment we received in July 2022 from one of our service providers in connection with the resolution of a difference of views regarding the service provider agreement. This payment contributed to an approximately $1,555,000 reduction in product candidate manufacturing related expenses during the three months ended September 30, 2022. In addition, we made a $1,000,000 upfront payment to Allarity Therapeutics during the three months ended September 30, 2021, which is nonrecurring.
- G&A Expenses: General and administrative expenses were approximately $1.4 million for the quarter ended September 30, 2022, compared to approximately $1.2 million for the quarter ended September 30, 2021.
- Net Loss: Net loss was approximately $2.3 million (or $0.21 per share) for the quarter ended September 30, 2022, compared to a net loss of approximately $4.1 million (or $0.36 per share) for the quarter ended September 30, 2021.

Earnings Call and Webinar Details

Lantern will host its third quarter fiscal year 2022 earnings call and webinar today, Monday, November 7, 2022 at 4:30 p.m. ET.

- **https://us06web.zoom.us/webinar/register/3516649838262/WN_xlduE8e8Q_Wm_KgnTUDYVg**
- Related presentation materials will be accessible at: **https://ir.lanternpharma.com**

Replay Details

A replay of the Q3 2022 earnings call and webinar will be available at **https://ir.lanternpharma.com**.

About Lantern Pharma:

Lantern Pharma (NASDAQ: LTRN) is a clinical-stage oncology-focused biopharmaceutical company leveraging its proprietary RADR® A.I. and machine learning platform to discover biomarker signatures that identify patients most

likely to respond to its pipeline of genomically-targeted therapeutics. Lantern is currently developing four drug candidates and an ADC program across eleven disclosed tumor targets, including two phase 2 programs. By targeting drugs to patients whose genomic profile identifies them as having the highest probability of benefiting from the drug, Lantern's approach represents the potential to deliver best-in-class outcomes.

Please find more information at:
Website: **www.lanternpharma.com**
LinkedIn: **https://www.linkedin.com/company/lanternpharma/**
Twitter: **@lanternpharma**
Monthly Newsletter: Sign-up **here**

Forward-looking Statements:

This press release contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These forward-looking statements include, among other things, statements relating to: future events or our future financial performance; the potential advantages of our RADR® platform in identifying drug candidates and patient populations that are likely to respond to a drug candidate; our strategic plans to advance the development of our drug candidates and antibody drug conjugate (ADC) development program; estimates regarding the development timing for our drug candidates and ADC development program; expectations and estimates regarding clinical trial timing and patient enrollment; our research and development efforts of our internal drug discovery programs and the utilization of our RADR® platform to streamline the drug development process; our intention to leverage artificial intelligence, machine learning and genomic data to streamline and transform the pace, risk and cost of oncology drug discovery and development and to identify patient populations that would likely respond to a drug candidate; estimates regarding patient populations, potential markets and potential market sizes; sales estimates for our drug candidates and our plans to discover and develop drug candidates and to maximize their commercial potential by advancing such drug candidates ourselves or in collaboration with others. Any statements that are not statements of historical fact (including, without limitation, statements that use words such as "anticipate," "believe," "contemplate," "could," "estimate," "expect," "intend," "seek," "may," "might," "plan," "potential," "predict," "project," "target," "model," "objective," "aim," "upcoming," "should," "will," "would," or the negative of these words or other similar expressions) should be considered forward-looking statements. There are a number of important factors that could cause our actual results to differ materially from those indicated by the forward-looking statements, such as (i) the impact of the COVID-19 pandemic, (ii) the risk that our research and the research of our collaborators may not be successful, (iii) the risk that none of our product candidates has received FDA marketing approval, and we may not be able to successfully initiate, conduct, or conclude clinical testing for or obtain marketing approval for our product candidates, (iv) the risk that no drug product based on our proprietary RADR® A.I. platform has

received FDA marketing approval or otherwise been incorporated into a commercial product, and (v) those other factors set forth in the Risk Factors section in our Annual Report on Form 10-K for the year ended December 31, 2021, filed with the Securities and Exchange Commission on March 10, 2022. You may access our Annual Report on Form 10-K for the year ended December 31, 2021 under the investor SEC filings tab of our website at **www.lanternpharma.com** or on the SEC's website at **www.sec.gov**. Given these risks and uncertainties, we can give no assurances that our forward-looking statements will prove to be accurate, or that any other results or events projected or contemplated by our forward-looking statements will in fact occur, and we caution investors not to place undue reliance on these statements. All forward-looking statements in this press release represent our judgment as of the date hereof, and, except as otherwise required by law, we disclaim any obligation to update any forward-looking statements to conform the statement to actual results or changes in our expectations.

Lantern Pharma Disclosure Channels to Disseminate Information:

Lantern Pharma's investors and others should note that we announce material information to the public about our company and its technologies, clinical developments, licensing matters and other matters through a variety of means, including Lantern Pharma's website, press releases, SEC filings, digital newsletters and social media, in order to achieve broad, non-exclusionary distribution of information to the public. We encourage our investors and others to review the information we make public in the locations above as such information could be deemed to be material information. Please note that this list may be updated from time to time.

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