August 8, 2024

Lantern Pharma Reports Second Quarter 2024 Financial Results and Business Updates

- Active clinical trials across **three AI-guided drug candidates** with additional **ADC-based** preclinical molecules in evaluation for development.
- Preliminary patient data and clinical readouts for **Phase 2 LP-300 Harmonic™ Trial** released showing an **86% clinical benefit rate** in the initial 7 patient safety lead-in cohort.
- Issued a Certificate of **Patent by the Japanese Patent Office** directed to Lantern Pharma's drug candidate **LP-284**, including claims covering the new molecular entity.
- Phase 1 clinical trials for both synthetic lethal drug candidates, **LP-184 and LP-284**, continue to advance with **no dose-limiting toxicities** observed in any of the patient cohorts enrolled and **over 40 patients dosed** to-date.
- Achieved significant advancement towards key milestone in the **development of molecular diagnostic** for use with drug candidate **LP-184** in future oncology clinical trials to **improve patient selection** and stratification.
- Launched strategic **drug development collaboration** leveraging our AI platform, **RADR®**, with Oregon Therapeutics to optimize the development of first-in-class drug candidate XCE853 – a potent inhibitor of cancer metabolism.
- Starlight Therapeutics, a wholly owned subsidiary of Lantern Pharma focused on CNS and brain cancers advanced with **initiating site selection and feasibility for a Phase 1B/Phase 2** trial in recurrent GBM with drug candidate,**STAR-001.**
- Launched ***Webinar Wednesdays***, a webinar series that focuses on the areas of artificial intelligence and oncology drug development with leading physicians, scientists and Lantern collaborators.
- Approximately **$33.3 million** in cash, cash equivalents, and marketable securities as of June 30, 2024.
- The conference call and webcast are scheduled for Thursday **August 8, 2024, at 4:30 p.m. ET** / 1:30 p.m. PT.

DALLAS--(BUSINESS WIRE)-- Lantern Pharma Inc. (NASDAQ: LTRN), an artificial intelligence ("AI") company developing targeted and transformative cancer therapies using its proprietary RADR® AI and machine learning ("ML") platform with multiple clinical-stage drug programs, today announced operational highlights and financial results for the second quarter 2024, ending June 30, 2024.

"The team at Lantern Pharma is making solid, thoughtful and disciplined progress in our clinical trials and in our collaborative research and AI efforts. This past quarter saw a significant milestone where our clinical trials are getting to the point of having initial patient data that we can share, including our unique Harmonic™ clinical trial for never smokers with lung cancer. We continue to also improve the functionality and abilities of our AI platform,

RADR®, to guide the next phase of our therapeutic programs which will be heavily marked by trials with combination regimens, and ADC development," said Panna Sharma, President and CEO of Lantern Pharma.

Highlights of AI-Powered Pipeline:

- **LP-300: The Harmonic™ Phase 2 Clinical Trial** – Preliminary results at the completion of the 7-patient lead-in part of the Harmonic™ study demonstrated predictable safety profiles that are consistent with the chemotherapy regimen alone and seemed to demonstrate clinical benefit for 6 out of the 7 patients – an 86% clinical benefit rate (CBR). No patients experienced dose limiting toxicities, and no discontinuations were observed due to treatment related toxicity. Six patients experienced clinical benefit from the combination of LP-300 and chemotherapy while 1 patient experienced progressive disease. The clinical benefit rate is 86% for this group with an objective response rate (ORR) of 43%. Of the 6 patients experiencing clinical benefit – 3 patients showed partial responses with an average tumor size reduction of 51% and 3 patients have stable disease with an average tumor size reduction of 13%. Encouraging preliminary efficacy results were observed regardless of prior tyrosine kinase inhibitor (TKI) treatment(s), demographics, and metastatic disease sites. In the initial set of patients, those having low to intermediate TMB (tumor mutation burden) were found to be responsive to LP-300 + chemotherapy.

  The phase 2 Harmonic™ clinical trial sites in the US, and certain sites in Japan are screening for eligible patients and we expect the pace of enrollment to increase in the coming months. This past quarter we also initiated IRB approvals and site initiation visits in Asia. The expansion of the Phase 2 clinical trial in Japan and Taiwanis expected to accelerate the collection of patient and response data that are needed for the next-stage of development of LP-300, a therapeutic for the treatment of relapsed and inoperable primary adenocarcinoma of the lung given in combination with chemotherapy. Additionally, it may also bring a needed therapeutic option for never-smokers with NSCLC in Japan and Taiwan, where one-third or more of all lung cancer diagnosesare made among those who have never smoked. Dr. Yashushi Goto, a physician and researcher focused on lung cancer at the National Cancer Center of Japan, will be leading the phase 2 trial in Japan, where the incidence of non-small cell lung cancer (NSCLC) in never-smokers is double or more than that of the United States. Lantern believes that this improves the positioning for drug-candidate LP-300 to develop collaborative and co-development partnerships with global biopharma companies with a primary focus in serving the Asian markets.

  The Harmonic™ trial is assessing the effect of LP-300 in combination with standard-of-care chemotherapy in never-smoker patients with relapsed NSCLC where they have failed TKI therapies. Globally, never-smokers with NSCLC are a growing population of patients and do not respond well to PD-1/PD-L1-based therapies or the available chemotherapy doublets, leaving them with reduced treatment options. In the US it is estimated that the treatment indication of never smokers with NSCLC has an annual market potential of $1.5 billion, and a global estimated annual market potential of over $2.6 billion.

- **LP-184 –** Seven cohorts of patients have been enrolled and dosed – in escalating doses – in the ongoing Phase 1A clinical trial – a first-in-human Phase 1 basket trial

across multiple solid tumor indications that are advanced and refractory to existing standard-of-care therapies. We expect to reach a dosage level in the coming cohort where therapeutic concentrations of the drug should be attainable based on our pharmacokinetic and pharmacodynamic analyses. The trial is actively enrolling patients across multiple US centers that have relapsed/refractory advanced solid tumors, such as pancreatic cancer, glioblastoma (GBM), lung, triple-negative breast cancer, and multiple other solid tumor types with DNA damage response deficiencies. No dose-limiting toxicities have been observed to date in the LP-184 trial, and the Company believes that enrollment should be complete this year and on-track for an initial readout of safety and molecular correlation data by the close of the year. The dosage and safety data obtained in the Phase 1A trial are expected to be used to advance the central nervous system (CNS) indications for a future Phase 1b/2 trial to be sponsored by Lantern's wholly owned subsidiary, Starlight Therapeutics, as well as other later phase trials in select tumors that have shown superior responsiveness to LP-184 and meet with genomically guided criteria related to drug-response. Lantern has also made advancements toward a key milestone related to the development of a quantitative PCR-based molecular diagnostic test that may help in identifying patients with the best likelihood of response and benefit from treatment with LP-184.

AI and preclinical studies are also ongoing to further refine drug combination studies supporting the use of LP-184 to improve the durability or overall response rates in combination with FDA approved drugs that are widely used in cancer treatment – especially PARP inhibitors, and immune checkpoint inhibitors. Globally, the aggregate annual market potential of LP-184's target indications is estimated to be approximately $12+ billion, consisting of $4.5+ billion for CNS cancers and $7.5+ billion for solid tumors.

- **LP-284 –** The third cohort of patients are being dosed, and no dose-limiting toxicities have been observed in the LP-284 Phase 1A clinical trial. We expect to open additional sites in the US throughout the third quarter with the potential to advance to Phase 1B and 2 by the close of 2024 or early 2025. LP-284 has shown nanomolar potency across multiple published in vitro and in vivo studies, including mantle cell lymphoma (MCL), double hit lymphoma (DHL), and other advanced NHL cancer subtypes with DNA damage response deficiencies, notably those with compromised functioning of the ataxia-telangiectasia mutated (ATM) gene due to mutations or deletions. Nearly all MCL, DHL, and HGBL patients relapse from the current standard-of-care agents and there is an urgent and unmet need for novel improved therapeutic options for these patients. In the US and Europe, MCL, DHL, and HGBLs are diagnosed in 16,000-20,000 patients each year and have an estimated annual market potential of over $3+ billion.

We have also begun a review of some notable mechanisms-of-action of LP-284 that may be leveraged in other diseases and conditions. Lantern expects to review those preclinical studies and findings later this quarter.

RADR® Platform Growth and Development:

- RADR® continues to advance in size, scope, and capabilities and is also progressing towards becoming recognized as a standard for AI-driven drug development in

oncology – for both early-stage development and later-stage patient biomarker and combination therapy identification. Lantern will potentially focus additional data growth efforts of the RADR® platform on: drug sensitivity data, combination treatment outcome data, and biomarker data in rare cancers, and on emerging synthetic lethal targets that are aimed at accelerating the development of new therapies for Lantern and its partners. The scope of RADR®'s data has broadened with a strategic focus on additional classes of compounds, detailed data on chemical and biochemical features and drug-interaction data. Real-world data from clinical studies such as those being obtained from liquid biopsy, and data from preclinical combination studies that aim to define drug interaction and optimal dosage are being incorporated into the datapoints and data sets powering RADR®.

Lantern also leveraged the RADR® platform in developing a drug-development collaboration with Oregon Therapeutics with a focus on accelerating the development and decision path towards a first-in-human launch of the drug-candidate, XCE853 into the clinic. The AI-enabled collaboration with Oregon Therapeutics aims to refine and expand the positioning of XCE853, a novel protein disulfide isomerase (PDI) inhibitor, in new and targeted oncology indications, including for drug-resistant tumors. Lantern Pharma is receiving equal IP co-ownership and drug development rights in newly discovered biomarkers, novel indications, and use for new pharmacological strategies for XCE853.

Additionally, the RADR® platform's generative AI capabilities, focusing on molecular optimization and automated feature extraction to improve understanding and prediction of molecular dynamics, safety, and drug-drug interactions are planned to increase in functionality and scope in the coming quarters for both small molecule development and increasingly for ADC development, analytics and characterization.

Second Quarter 2024 Financial Highlights

- **Balance Sheet:** Cash, cash equivalents, and marketable securities were approximately $33.3 million as of June 30, 2024, compared to approximately $41.3 million as of December 31, 2023. The quarterly cash burn rate continues to reflect our capital-efficient, collaborator-centered business model.
- **R&D Expenses:** Research and development expenses were approximately $3.9 million for the quarter ended June 30, 2024, compared to approximately $3.6 million for the quarter ended June 30, 2023.
- **G&A Expenses:** General and administrative expenses were approximately $1.5 million for the quarter ended June 30, 2024, compared to approximately $1.6 million for the quarter ended June 30, 2023.
- **Net Loss:** Net loss was approximately $4.96 million (or $0.46 per share) for the quarter ended June 30, 2024, compared to a net loss of approximately $4.75 million (or $0.44 per share) for the quarter ended June 30, 2023.
- **Total Share and Warrant Count:** There were no warrant exercises during the three months ended June 30, 2024. Following June 30, 2024, additional warrants were exercised which increased the Company's total shares outstanding and reduced the number of outstanding warrants. As of the date of this press release, the Company has 10,764,725 shares of common stock outstanding, and outstanding warrants to purchase 70,000 shares of common stock.

Additional Operational Highlights:

- A publication was made in the AACR Journals, Cancer Research Communications showcasing the potential for LP-184 to synergize with PARP inhibitors in a wide range of solid tumors that are HRD (homologous repair deficient). The preclinical findings in the paper illustrate the potential of LP-184 to be a pan-HRD cancer therapeutic – which could be the first drug of this type in this class. We believe the data and results support clinical evaluation of LP-184 in a large subset of HRD solid tumors.
- New data and scientific findings conducted in conjunction with Drs. Yong Du and Shiaw-Yih (Phoebus) Lin at MD Anderson were presented atThe Immuno-Oncology Summit 2024. The findings showcased what Lantern believes to be the role of LP-184 to be combined with checkpoint inhibitors to provide greater response in TNBC due to synergy and to potentially transform TNBC tumors that are unresponsive (cold) to checkpoint inhibitors to responsive (hot). The poster was titled: *LP-184, a Novel Acylfulvene, Sensitizes Immuno-Refractory Triple Negative Breast Cancers (TNBCs) To Anti-PD1 Therapy by Affecting the Tumor Microenvironment*.
- With a focus on increasing visibility and awareness of the Lantern portfolio and capabilities, the Company launched *Webinar Wednesdays* in April. They are currently planned to be held on the last Wednesday of each month and are designed to showcase industry leaders in AI and drug development, as well as clinicians working in collaboration with Lantern's portfolio of drug-candidates. The next three *Webinar Wednesdays* will include the topics of: 1) LP-300's clinical results to-date, 2) RADR and our industry-leading ability to predict if a molecule or drug-compound will cross the BBB (Blood-Brain-Barrier), and 3) The role of LP-184 in synergizing with checkpoint inhibitors and IO agents.

Earnings Call and Webinar Details:

Lantern will host its 2nd quarter 2024 earnings call and webinar today, August 8th, 2024, at 4:30 p.m. ET. A link to register can be accessed at: Lantern 2nd Quarter 2024 Earnings Call & Webinar Link

- Related presentation materials will be accessible at: https://ir.lanternpharma.com
- A replay of the 2nd quarter 2024 earnings call and webinar will be available at: https://ir.lanternpharma.com

ABOUT LANTERN PHARMA

Lantern Pharma (NASDAQ: LTRN) is an AI company transforming the cost, pace, and timeline of oncology drug discovery and development. Our proprietary AI and machine learning (ML) platform, RADR®, leverages billions of oncology-focused data points and a library of 200+ advanced ML algorithms to help solve billion-dollar, real-world problems in oncology drug development. By harnessing the power of AI and with input from world-class scientific advisors and collaborators, we have accelerated the development of our growing pipeline of therapies that span multiple cancer indications, including both solid tumors and blood cancers and an antibody-drug conjugate (ADC) program. On average, our newly developed drug programs have been advanced from initial AI insights to first-in-human clinical trials in 2-3 years and at approximately $1.0 - 2.5 million per program.

Our lead development programs include a Phase 2 clinical program and multiple Phase 1

clinical trials. We have also established a wholly-owned subsidiary, Starlight Therapeutics, to focus exclusively on the clinical execution of our promising therapies for CNS and brain cancers, many of which have no effective treatment options. Our AI-driven pipeline of innovative product candidates is estimated to have a combined annual market potential of over $15 billion USD and have the potential to provide life-changing therapies to hundreds of thousands of cancer patients across the world.

Please find more information at:

- Website: www.lanternpharma.com
- LinkedIn: https://www.linkedin.com/company/lanternpharma/
- X: @lanternpharma

FORWARD LOOKING STATEMENT:

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 risk that our research and the research of our collaborators may not be successful, (ii) the risk that observations in preclinical studies and early or preliminary observations in clinical studies do not ensure that later observations, studies and development will be consistent or successful, (iii) the risk that we may not be successful in licensing potential candidates or in completing potential partnerships and collaborations, (iv) 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, (v) the risk that no drug product based on our proprietary RADR® AI platform has received FDA marketing approval or otherwise been incorporated into a commercial product, and (vi) those other factors set forth in the Risk Factors section in our Annual

Report on Form 10-K for the year ended December 31, 2023, filed with the Securities and Exchange Commission on March 18, 2024. You may access our Annual Report on Form 10-K for the year ended December 31, 2023 under the investor SEC filings tab of our website at www.lanternpharma.com or on the SEC's website atwww.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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