NEWS RELEASE

Lantern Pharma Reports Third Quarter 2024 Financial Results and Business Updates

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- Lantern is advancing three AI-guided precision-oncology drug candidates in active Phase 1 and Phase 2 clinical trials, while evaluating additional ADC-based preclinical molecules for development.
- Preliminary patient data and clinical readouts for the Phase 2 LP-300 Harmonic™ Trial showed an 86% clinical benefit rate in the initial 7 patient lead-in cohort, and additional patients continue to be enrolled in the US.
- The Harmonic™ Trial has been expanded to both Japan and Taiwan with an expected 10 sites in East Asia; 5 in each country where the population of never-smokers is 33 to 35 percent of new cases in NSCLC.
- 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 50 patients dosed to-date across both trials.
- LP-184, which will be developed as STAR-001 for CNS and other neuro-oncology indications, received Fast Track Designation in Glioblastoma (GBM) from the FDA.
- Patients with recurrent GBM have been enrolled in the LP-184 Phase 1a trial at 2 academic centers, including Johns Hopkins, and 1 community site; the data will help guide later stage clinical development planned to be sponsored by Starlight Therapeutics during early 2025.
- Biomarker analysis for PTGR1 expression using qPCR for the first 7 cohorts of patients enrolled in the Phase 1a LP-184 clinical trial has begun, and will help guide the advancement of PTGR1 as a key RNA biomarker that can guide patient response prediction.
- Three U.S. FDA Rare Pediatric Disease Designations were granted to LP-184 in three ultra rare children's

cancers.

- Three scientific publications in Q3 including: a peer-reviewed paper regarding the unique AI-powered module for ADC development as part of the RADR® platform; and findings presented at conferences regarding the ongoing development of Lantern's synthetically-lethal drug candidates at the Immuno-Oncology Summit for LP-184 and The Society of Hematologic Oncology for LP-284.
- Approximately $28.1 million in cash, cash equivalents, and marketable securities as of September 30, 2024.
- The conference call and webcast are scheduled for Thursday, November 7, 2024 at 4:30 p.m. ET.

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 third quarter 2024, ending September 30, 2024.

"Lantern is achieving remarkable momentum, balancing meticulous execution with innovation. While progressing on the initial positive results from our Harmonic™ trial in both the US and Asia, we are also advancing our RADR® AI platform to strategically guide our therapeutic pipeline. The emerging combination therapy opportunities we are identifying for both LP-184 and LP-284 underscore the strength of our AI-guided approach. Seeing our drug candidates advance in clinical trials, with the potential to meaningfully impact cancer patients' lives, reinforces our mission. Additionally, as **Starlight Therapeutics** enters its next chapter of growth in CNS cancers, we look ahead to our plans for a Phase1b/2 clinical trial for STAR-001. We remain focused on the objective of developing therapies—at a fraction of the cost and time of traditional drug development by using our AI platform and data-driven methodologies. Our goal is ultimately to address critical and often unmet patient needs in oncology," said Panna Sharma, President and CEO of Lantern Pharma.

Highlights of AI-Powered Pipeline:

- LP-300: The Harmonic™ Phase 2 Clinical Trial – The Phase 2 **Harmonic™ trial** is aimed at making a significant advancement in addressing an urgent unmet need for never-smoker patients with non-small cell lung cancer (NSCLC). In the initial safety lead-in cohort of 7 patients, **LP-300 demonstrated encouraging preliminary results** when combined with standard-of-care chemotherapy (pemetrexed and carboplatin), achieving an 86% clinical benefit rate and a 43% objective response rate. Of particular note, 3 patients achieved partial responses with an average tumor size reduction of 51%, while 3 additional patients achieved stable disease with an average tumor reduction of 13%. Importantly, these preliminary results were observed regardless of prior tyrosine kinase inhibitor (TKI) treatments, patient demographics, or metastatic disease sites, suggesting broad potential applicability across the never-smoker NSCLC population.

The trial's safety profile has been especially promising, with no dose-limiting toxicities observed and no

discontinuations due to LP-300 treatment-related toxicity. The most common adverse events were manageable decreases in white blood cell count and thrombocytopenia.

The Harmonic™ trial has now progressed to its randomization and expansion phase, which is designed to enroll up to an additional 84 patients in a 2:1 ratio comparing LP-300 plus standard-of-care chemotherapy versus chemotherapy alone. With regulatory approval to expand into multiple Asian countries, the trial is positioned to accelerate enrollment in the targeted patient population of never-smokers with NSCLC, which we believe represents a potential global market estimated at over $4 billion annually. Leading our Harmonic™ trial efforts in Japan is Dr. Yasushi Goto, a renowned physician and researcher at the **National Cancer Center Japan**, where the incidence of never-smoker NSCLC is more than double that of the United States. The company has also initiated five trial sites in Taiwan, where over 40% of the new lung cancer diagnoses are among never-smokers, strategically positioning the Harmonic™ trial in regions with the highest prevalence of the target patient population. Lantern believes that this improves the potential for drug-candidate LP-300 to develop collaboration and co-development partnerships with global biopharma companies with a primary focus in serving the Asian markets. The study's co-primary endpoints are progression-free survival (PFS) and overall survival (OS), with planned interim analysis after 31 patients have experienced disease progression which is expected by mid 2025.

- LP-184 – LP-184 continues to advance through its Phase 1a first-in-human basket trial (NCT05933265) across multiple solid tumor indications. Nine patient cohorts have been successfully dosed at escalating dose levels, and no dose-limiting toxicities observed to date. The trial is actively enrolling patients with relapsed/refractory advanced solid tumors, including pancreatic cancer, glioblastoma (GBM), triple-negative breast cancer, and other solid tumor types with DNA damage response deficiencies. Based on pharmacokinetic analyses, the upcoming cohorts are expected to reach dosage levels where therapeutic concentrations should be attainable, with enrollment projected to complete this year and initial safety and molecular correlation data expected by year-end 2024 or early 2025.

The LP-184 development program received a significant boost with the FDA granting Fast Track Designation in glioblastoma, recognizing both the serious nature of GBM and the significant unmet medical need in this indication which affects more than 13,000 U.S. adults annually. Through Lantern's wholly-owned subsidiary Starlight Therapeutics, LP-184 (designated as STAR-001 for CNS indications) is being positioned for a Phase 1b/2a clinical trial in recurrent GBM that is targeted to begin in early 2025. Lantern has also made important progress towards developing a quantitative PCR-based molecular diagnostic test that could help identify patients most likely to respond to LP-184 treatment. Lantern is in the process of validating the PCR assay with patient samples from the initial seven cohorts from the LP-184 Phase 1a trial and we plan on using the molecular correlations to power future development and trial design.

Additional ongoing preclinical studies continue to demonstrate LP-184's potential, particularly in combination

therapy settings with some of the most widely used FDA approved drugs. One of these combinations using an FDA approved agent, spironolactone, is directed at the treatment of GBM and will be part of the planned Phase 1b study. Recent data presented at scientific conferences has highlighted promising synergy when LP-184 is combined with various FDA-approved treatments, including PARP inhibitors and immune checkpoint inhibitors. LP-184 has also shown promise in cancers with DNA damage response deficiencies beyond deficiencies in homologous recombination repair, demonstrating synthetic lethality in indications beyond those traditionally considered for PARP inhibitors. With an estimated aggregate annual market potential of approximately $12+ billion across its target indications ($4.5+ billion for CNS cancers and $7.5+ billion for solid tumors), we believe LP-184 represents a significant commercial opportunity while potentially addressing critical unmet patient needs across multiple cancer types.

- LP-284 – The fourth cohort of patients are being dosed, and no dose-limiting toxicities have been observed in the LP-284 Phase 1a clinical trial. We are in the process of opening additional hematology-focused sites later this year, with the potential to advance to Phase 1b or 2 by early to mid 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 these indications represent an estimated annual market potential of over $3+ billion.

Third Quarter 2024 Financial Highlights

- Balance Sheet: Cash, cash equivalents, and marketable securities were approximately $28.1 million as of September 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 $3.7 million for the quarter ended September 30, 2024, compared to approximately $2.2 million for the quarter ended September 30, 2023.
- G&A Expenses: General and administrative expenses were approximately $1.5 million for the quarter ended September 30, 2024, compared to approximately $1.3 million for the quarter ended September 30, 2023.
- Net Loss: Net loss was approximately $4.5 million (or $0.42 per share) for the quarter ended September 30, 2024, compared to a net loss of approximately $3.2 million (or $0.29 per share) for the quarter ended September 30, 2023.
- Total Share and Warrant Count: During the three months ended September 30, 2024, the Company issued 2,088 shares of common stock relating to the cashless exercise of warrants to purchase 7,664 shares, which warrants were expiring. Also during the three months ended September 30, 2024, the Company issued 3,832

shares of common stock for aggregate proceeds of $11,994 relating to the exercise of warrants that were expiring. As of the date of this press release, the Company has 10,784,725 shares of common stock outstanding, and outstanding warrants to purchase 70,000 shares of common stock.

Additional Operational Highlights:

- Lantern is building an efficient internal clinical operations team that it is leveraging across a range of clinical activities, from project management to site startup through data and quality management, and as a result is expected to rely less on external CRO providers with the aim of further managing ongoing clinical trial costs.
- Lantern published new research in PLOS ONE highlighting its data-driven approach to ADC design and development. The publication, titled **'Expanding the repertoire of Antibody Drug Conjugate (ADC) targets with improved tumor selectivity and range of potent payloads through in-silico analysis,'** demonstrates a multi-step filtering approach to identify optimal ADC targets and payloads. Starting with over 20,000 protein-coding genes, they systematically narrowed candidates using membrane protein status, expression levels in critical tissues, and surface protein validation. The study uniquely analyzed how 416 different mutations across 22 tumor types affect target expression, revealing how specific mutations like KRAS in pancreatic cancer and EGFR in gliomas influence target levels. The analysis identified 82 promising ADC targets and 729 potential payloads, including novel candidates and repurposing opportunities for existing compounds with picomolar to nanomolar potency. We believe this comprehensive approach provides a framework for developing more precise and effective ADC therapeutics and assessing the utility and viability of an ADC design earlier in the development process.
- New data and scientific findings conducted in conjunction with Drs. Yong Du and **Shiaw-Yih (Phoebus) Lin** at MD Anderson were presented at **The 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**.
- Lantern will host its final **Webinar Wednesday** of 2024 on December 11, 2024, focusing on the company's unique ability to predict blood-brain barrier penetration of drug compounds. The webinar will also discuss future development plans and potential commercial availability of this RADR® platform module, which leverages extensive molecular feature analysis enriched with proprietary insights and data. According to the **Therapeutic Data Commons**, a coordinated initiative to access and evaluate artificial intelligence capability across therapeutic modalities and stages of discovery, Lantern's BBB algorithms are 5 of the top 10 performing algorithms on the "**Leaderboard**".

Earnings Call and Webinar Details:

Lantern will host its 3rd quarter 2024 earnings call and webinar today, November 7th, 2024, at 4:30 p.m. ET. A link to register can be accessed at: **(LTRN: 3rd Quarter Earnings Call & Zoom link)**

- Related presentation materials will be accessible at: **https://ir.lanternpharma.com**
- A replay of the 3rd 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 able to secure sufficient future funding when needed and as required to advance and support existing and planned clinical trials and operations, (iv) the risk that we may not be successful in licensing potential candidates or in completing potential partnerships and collaborations, (v) 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, (vi) 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 (vii) 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 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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