NEWS RELEASE

# Lantern Pharma Reports First Quarter 2024 Financial Results and Business Highlights

2024-05-09

- Active clinical trials across three AI-guided drug candidates with initial data and clinical readouts for LP-184 on-track for the second half of 2024.
- Obtained regulatory allowance to begin Phase 2 **Harmonic™ clinical trial** enrollment in Japan and Taiwan where approximately 30-35+% of all lung cancer cases occur in never-smokers with NSCLC; Harmonic™ continues patient enrollment in the US.
- 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 dosed to date.
- The combined annual global sales market potential for LP-184 and LP-284 across multiple cancer indications is estimated to be over $12 billion USD.
- **Starlight Therapeutics**, a wholly owned subsidiary of Lantern Pharma focused on CNS and brain cancers with STAR-001, advanced with the filing of a clinical trial protocol for the Phase 1B dose optimization and expansion cohort in recurrent IDH wild-type high grade gliomas.
- Advanced AI-powered module for streamlining and guiding differentiated ADC development, which will be instrumental in the next-generation of drug candidates for Lantern Pharma and its collaborators.
- Established an AI driven collaboration with Oregon Therapeutics where the RADR® platform will be leveraged to sharpen, expand and derisk future clinical development strategies for a novel, first-in-class inhibitor of cancer metabolism.
- Approximately $38.4 million in cash, cash equivalents, and marketable securities as of March 31, 2024.

- The **conference call and webcast** are scheduled for today, Thursday May 9, 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 first quarter 2024, ended March 31, 2024.

"Our company made meaningful progress across multiple clinical trials and in furthering our AI platform this past quarter while advancing our internal capabilities to both support data-driven, precision oncology trials and accelerate the cost-effective development of drug-conjugates. Our team is at the forefront of demonstrating how combining emerging AI technologies, cancer biology and biomarker expertise along with focused clinical operations holds the promise of transforming timelines and costs in biopharma development." said Panna Sharma, President and CEO of Lantern Pharma.

Sharma continued, "Over the past several months, we have experienced growing interest in machine-learning enabled drug development and, in our RADR,® AI platform. Our team is energized by the growing desire to adopt and leverage AI-driven innovations in biopharma and in the meaningful progress we are making with our own drug-candidates. We are excited about the opportunities we have in front of us to drive increased collaborations on our AI platform this year, and also propel the streamlined development of our own portfolio of high-value, high-impact drug-candidates."

## Highlights of AI-Powered Pipeline:

- LP-184 – Five cohorts of patients, comprised of dose levels 1 thru 5, have been enrolled and dosed – in escalating doses – in the ongoing Phase 1A clinical trial. This is a first-in-human Phase 1 trial across multiple solid tumor indications that are advanced and refractory to existing standard-of-care therapies. The trial is actively enrolling and dosing patients at dose level 6 that have relapsed/refractory advanced solid tumors, such as pancreatic cancer, glioblastoma (GBM), lung, triple-negative breast cancer, and multiple other solid tumor types. There have not been any observed dose-limiting toxicities to date.

  The company believes that enrollment should be complete this summer and on-track for a readout of data in late summer or early fall. Current efforts are underway to focus enrollment efforts on cancer patients with tumors that have DDR(1) (DNA damage repair) deficiency. DDR deficient tumors have been observed to have higher sensitivity to LP-184. The company has also submitted a dose optimization and expansion protocol (Supplement A) to the FDA related to LP-184 in non-CNS solid tumors, including TNBC (triple negative breast cancer) with DDR alterations. Additionally, the company in collaboration with Starlight Therapeutics, has also

submitted to the FDA a dose optimization and expansion protocol in recurrent IDH wild-type high grade gliomas (Supplement B).

The dosage and safety data obtained in the Phase 1a and 1b trials are expected to be used to advance the central nervous system (CNS) indications for a future Phase 2 trial to be sponsored by Lantern's wholly owned subsidiary, **Starlight Therapeutics**. The Phase 1a data will also inform other anticipated later phase trials in select solid tumors, most likely with genomic signatures signifying DDR (DNA damage repair) deficiency, that have shown responsiveness to LP-184. Genomic identification of these patients and biomarker characterization of their underlying tumor is central to our focus of personalizing treatment and developing efficient later stage clinical trials. To further this effort, Lantern has also initiated the development of a PCR-based molecular diagnostic test that may help in identifying cancer patients with the best likelihood of response and benefit from treatment with LP-184.

AI and preclinical studies are 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. 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 initial two cohorts of patients have been dosed, and no dose-limiting toxicities have been observed in the Phase 1a clinical trial. The company expects to open additional sites in the US throughout the second quarter with the potential to advance to Phase 1b/2 by the close of 2024. 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 and certain sarcomas with DDR 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 USD 3+ billion.
- LP-300 – The phase 2 Harmonic™ clinical trial sites in the US are continuing to screen for patients and have also increased the pace of enrollment. This past quarter we also received approval to proceed with the Phase 2 clinical trial in Japan and Taiwan. This is expected to accelerate the collection of patient and response data needed for the next-stage of evaluation and development of LP-300, an investigational 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 LCINS (Lung Cancer In Never Smokers) diagnosed patients in Japan and Taiwan, where one-third of all lung cancer diagnoses are 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 (carboplatin and pemetrexed) in LCINS patients with relapsed NSCLC. Globally, LCINS patients 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 LP-300 has an annual market potential of $1.5 billion, and a global estimated annual market potential of over $2.6 billion. LCINS is the eighth leading cause of cancer-related mortality in the USA and the fifth most common cause of cancer-related deaths worldwide.[(2)]

## RADR® Platform Growth and Development:

- RADR® continues to advance in size, scope, and capabilities and is progressing towards becoming a standard for AI-driven drug development in oncology – for both early-stage development and later-stage patient biomarker and combination therapy identification. The company **recently announced a artificial intelligence (AI)-driven collaboration** to optimize the development of a protein disulfide isomerase (PDI) inhibitor drug candidate, **XCE853**, for a variety of novel and targeted cancer indications. The collaboration is leveraging RADR's AI-based capabilities, including 200+ machine learning (ML) algorithms and foundational models for oncology drug development to uncover biomarkers and molecular correlates of efficacy and define potential combination regimens to sharpen and accelerate XCE853's drug development strategy. 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.

The scope of RADR®'s data has broadened with a strategic focus on additional classes of compounds, including drug-conjugates such as ADCs and inclusion of detailed data on chemical and biochemical features and drug-interaction data. Additionally, 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 expects to pursue additional biopharma and technology partnerships during 2024 to further advance and commercialize the RADR® AI platform.

## Starlight Therapeutics:

- **Starlight Therapeutics**, a wholly owned subsidiary of Lantern Pharma focused on CNS and brain cancers with STAR-001, continues advancements with the filing of a clinical trial protocol for the Phase 1B dose optimization and expansion cohort in **recurrent IDH wild-type high grade gliomas**. IDH wild-type glioblastomas are the most malignant glial tumors with median survival of only 14–16 months after diagnosis; patients aged ≥ 65 years have reportedly worse outcomes.[3] Lantern formed a wholly-owned subsidiary, **Starlight Therapeutics Inc.** ("Starlight"), in early 2023 for the clinical development of drug candidate LP-184's central nervous system (CNS) and brain cancer indications – including GBM, brain mets., and several rare pediatric CNS cancers. Starlight will refer to the molecule LP-184, as it is developed in CNS indications, as "STAR-001". The indications and mechanistic insights powering the creation of Starlight and the identification of multiple CNS tumors that can be potentially impacted were largely driven by insights and analysis from the RADR® AI platform.

  During Q4 of 2023 **Lantern announced that it had hired a CMO**, Dr. Marc Chamberlain, who will focus on Starlight's clinical trials, development of personnel to execute on the planned clinical trials and overall support in corporate development activity. Starlight and Lantern expect to initiate Phase 1b/2 clinical trials during the second half of 2024. The market potential for the currently planned indications for Starlight's synthetically-lethal, cancer-cell DNA damaging agent – STAR-001 – is estimated to be 4.5 billion to 5+ billion USD across both adult and pediatric primary and secondary CNS cancers.

## ADC & Drug Conjugate Programs:

- During the first quarter, Lantern, in collaboration with academic research partners in Germany, advanced the development, synthesis, and preclinical proof-of-concept of a novel, highly potent, cryptophycin-based ADC (cpADC). The cpADC has shown picomolar potency in a wide range of solid tumors tested in preclinical development and is being further evaluated for clinical potential in six solid tumor indications. In preclinical work, the cpADC produced an 80% cancer cell kill rate which was more than other commonly used approved ADCs, including in a cancer sub-type, medium and low HER-2 expression cancers, which is an area of critical patient need. Lantern expects to move towards IND development of its ADC program during 2024 with a focus on select solid tumors that are unresponsive or refractory to current therapies.

  Additionally, Lantern has advanced its AI module for differentiated, machine-learning based ADC development, characterization, analysis and bioactivity prediction. The ADC module is being developed as an extension to RADR® and leverages the data and biomarker insights curated by and generated in RADR®. Lantern has plans to further advance the development through partnerships and collaborations with both technology and biopharma companies.

## Additional Operational Highlights:

- A new publication on the lethal activity of LP-184, inducing elevated levels of DNA double-strand breaks, in HR deficient (HRD) cancer cells was published by research scientists at Lantern Pharma in collaboration with Georgetown University Medical Center in Cancer Research Communications. The publication showcased that depletion of key HR components BRCA2 or ataxia telangiectasia mutated (ATM) in cancer cells conferred up to 12-fold increased sensitivity to LP- 184 and that LP-184 showed nanomolar potency in a diverse range of HRD cancer models. A link to the publication titled **"LP-184, a Novel Acylfulvene Molecule, Exhibits Anticancer Activity against Diverse Solid Tumors with Homologous Recombination Deficiency"** can be accessed here.

- New data and scientific findings for LP-284 and the ongoing clinical trial were presented at AACR (American Association for Cancer Research) during the 2024 Annual Meeting in San Diego – **Phase 1a/1b clinical trial of LP-284, a highly potent TP53 mutation agnostic DNA damaging agent, in patients with refractory or relapsed lymphomas and solid tumors (NCT06132503)**

- The company also **announced during April that it will hosting a series** of educational and informative webinars focused on updates on Lantern's areas of research, clinical trials and AI efforts titled Webinar Wednesdays. The **first of these webinars was held on April 24th and featured Dr. Joseph Treat**, a Professor in the Department of Hematology and Oncology, Vice Chair of Education, and Medical Director of Ambulatory Care at Fox Chase Cancer Center discussing LP-300 and the Harmonic clinical trial focused on LCINS patients.

## First Quarter 2024 Financial Highlights

Balance Sheet: Cash, cash equivalents, and marketable securities were approximately $38.4 million as of March 31, 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 $4.3 million for the quarter ended March 31, 2024, compared to approximately $2.6 million for the quarter ended March 31, 2023. This increase was largely driven by an increase in clinical trial activity and clinical trial site activations.

G&A Expenses: General and administrative expenses were approximately $1.5 million for the quarter ended March 31, 2024, compared to approximately $1.7 million for the quarter ended March 31, 2023.

Net Loss: Net loss was approximately $5.4 million (or $0.51 per share) for the quarter ended March 31, 2024, compared to a net loss of approximately $3.9 million (or $0.36 per share) for the quarter ended March 31, 2023.

**Warrant Exercises:** Lantern issued 20,132 shares of common stock during Q1 2024, relating to the cashless exercise of warrants to purchase 79,021 shares. Also, in Q1 2024, Lantern issued 17,481 shares of common stock for aggregate proceeds of approximately $55,000, relating to the exercise of warrants for cash. Following these exercises, there remain 81,496 warrants outstanding to purchase Lantern common stock at a weighted average exercise price of $16.55 per share.

## Earnings Call and Webinar Details:

Lantern will host its 1st quarter 2024 earnings call and webinar today, May 9, 2024, at 4:30 p.m. ET. A link to register can be accessed at: **Lantern 1st Quarter 2024 Earnings Call & Webinar Link**

- Related presentation materials will be accessible at: **https://ir.lanternpharma.com**
- A replay of the 1st quarter 2024 earnings call and webinar will be available at: **https://ir.lanternpharma.com**

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(1) DDR genomic alterations of interest for the non-CNS solid tumor trials include but are not limited to BRCA1, BRCA2, PTEN, PRKDC, ATR, POLE, ERCC6, FANCM, DDB1, PSME4, SLX4, POLR2B, POLD1, MLH3, MDC1. Additional genomic alterations might be considered or included based on emerging data.

(2) LoPiccolo, J., Gusev, A., Christiani, D.C. et al. Lung cancer in patients who have never smoked — an emerging disease. Nat Rev Clin Oncol 21, 121–146 (2024). **https://doi.org/10.1038/s41571-023-00844-0**

(3) Berger, K., Turowski, B., Felsberg, J. et al. Age-stratified clinical performance and survival of patients with IDH-wildtype glioblastoma homogeneously treated by radiotherapy with concomitant and maintenance temozolomide. J Cancer Res Clin Oncol 147, 253–262 (2021). **https://doi.org/10.1007/s00432-020-03334-3**

## 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 over 60 billion 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 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 risk that our research and the research of our collaborators may not be successful, (ii) the risk that promising observations in preclinical studies do not ensure that later studies and development will be 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 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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Source: Lantern Pharma Inc.

Released May 9, 2024