NEWS RELEASE

Lantern Pharma Reports Third Quarter 2023 Financial Results and Operational Highlights

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- Received IND clearance from FDA to initiate Phase 1 clinical trial for LP-284, a first-in-human trial for advanced, refractory non-Hodgkin's lymphomas (NHL).
- Dosed initial patient in Phase 1 with LP-184, a clinical trial for multiple advanced solid tumors that are refractory to standard-of-care therapies.
- Progressed Phase 2 LP-300 Harmonic™ clinical trial towards enrollment in East Asian countries where 30-35+% of all lung cancer cases occur in never-smokers with NSCLC; continued expansion of additional clinical trial sites in the US and increased focus on recruitment activity with advocacy groups.
- Developed initial proof-of-concept and preclinical evidence for a novel cryptophycin-based ADC (antibody-drug conjugate); initial data is planned to be shared in January 2024.
- Furthered development of Lantern's AI platform, RADR®, to include modules for the streamlined development of ADCs and the prediction of drug combinations with existing approved checkpoint inhibitors.
- Approximately $45 million in cash, cash equivalents, and marketable securities as of September 30, 2023, is anticipated to provide a cash runway into at least Q3 of 2025.
- The conference call and webcast are scheduled for today, Wednesday, 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 third quarter ended September 30, 2023.

"Lantern had a very productive and efficient third quarter where the team made excellent and continued progress across our lead clinical programs, launched a new program into the clinic, and accelerated our efforts to ensure that our AI platform for cancer drug development, RADR®, maintains its industry-leading position. We now have three active clinical programs that we are confident will make significant strides in Q4 and throughout 2024 – with multiple readouts expected during 2024. In addition, we continued to maintain a financially disciplined operation that will allow us to achieve milestones in both our drug programs and our AI platform over the next several years. Our RADR® AI platform is revolutionizing the way we understand and predict drug-cancer interactions, enabling us to advance our newly developed drug programs from initial AI insights to first-in-human clinical trials in 2 to 3 years and at a cost of roughly $1 to 2.5 million per program - a milestone unheard of in the realm of oncology drug discovery," said Panna Sharma, CEO of Lantern Pharma.

Sharma continued, "This past quarter we launched another first-in-human, Phase 1 program, with LP-284, a synthetically lethal small-molecule, in refractory NHL where there is significant patient need for improved therapies. Therapies that can work with proven monotherapy efficacy and in combination with existing standard-of-care agents are critically needed in cancers where relapse from existing treatments can be a dire consequence. Computational and AI-driven approaches are increasing their ability to predict meaningful and clinically relevant combination regimens for cancer, and our team continues to increase the value of our platform in this regard while helping to also de-risk and sharpen the focus of our existing clinical drug candidates. Our leadership in the innovative use of AI and machine learning to transform costs and timelines in the development of precision oncology therapies should yield significant returns for investors and patients as our industry matures and adopts an AI-centric approach to drug development."

Highlights of AI-Powered Pipeline:

- LP-284 – Launched the first-in-human Phase 1 clinical trial with LP-284 targeting recurrent non-Hodgkin's lymphomas (NHL). LP-284 has shown nanomolar potency across multiple 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.

  In xenograft PDX models of high-grade B cell lymphomas (HGBL), LP-284 showed synergistic and significantly enhanced anti-cancer activity when used in combination with rituximab. In in-vivo PDX models, the combined synergy of rituximab with LP-284 was 63% more effective in destroying HGBL tumors—93% tumor growth inhibition with both rituximab and LP-284 versus 57% tumor growth inhibition with rituximab alone. Rituximab is a standard-of-care approved therapy used in a wide range of B-cell cancers and non-Hodgkin's lymphomas. Lantern plans to release additional details and data on this set of results with LP-284 in this

setting in the coming month.

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-184 – Dosed the first patient in 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. The trial is anticipated to enroll patients that have relapsed/refractory advanced solid tumors, such as pancreatic cancer, glioblastoma (GBM), brain metastases (brain mets.), lung, triple-negative breast cancer, and multiple other solid tumor types with DNA damage response deficiencies. Lantern expects to continue Phase 1 enrollment throughout the remainder of 2023 and the first half of 2024 across a growing number of US clinical trial sites, including Fox Chase Cancer Center and Johns Hopkins Medicine.

  The dosage and safety data obtained in the Phase 1 trial will 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. Globally, the aggregate annual market potential of LP-184's target indications is estimated to be approximately $11+ billion, consisting of $5+ billion for CNS cancers and $6+ billion for solid tumors.

- LP-300 – Activated additional sites in the US which will increase the potential for dosing additional patients in the Phase 2 Harmonic™ trial during 2023. The Harmonic trial is assessing the effect of LP-300 in combination with standard-of-care chemotherapy in never-smoker patients with relapsed non-small cell lung cancer (NSCLC). In addition to the dosed patients, more than two dozen potential patients have been pre-screened and are being monitored for possible enrollment during Q4 across 10 clinical sites in the US. The Company is also actively advancing the Harmonic™ clinical trial to countries in Asia that are known to have a significantly higher incidence of never-smokers with NSCLC – Taiwan, Japan, and South Korea. In these countries, the incidence of never-smokers with NSCLC is double or higher than that of patients in the US.

Dr. Joseph Treat MD of Fox Chase Cancer Center has been appointed the lead principal investigator of the Harmonic™ study. Dr. Treat is a leading expert in lung malignancies, including NSCLC in never smokers, and has dedicated his career, since 1991, to serving patients with lung cancer.

Globally, never-smokers with NSCLC are a growing population of patients and do not respond well to PD-1/PD-L1-based therapies, leaving them with reduced treatment options. In the US, there are approximately 20,000-40,000 never-smokers with NSCLC diagnosed annually, representing an estimated US annual market potential of $1.5 billion and a global estimated annual market potential of over $2.6 billion. Additional

information on the Harmonic™ trial can be found at the **Harmonic™ website** and **clinicaltrials.gov**.

RADR® Platform Growth and Development:

- RADR® continues to advance in size, scope, and capabilities and is also 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. RADR® has now surpassed 36 billion oncology-focused datapoints and is projected to reach over 50 billion datapoints by the end of 2023. The scope of RADR®'s data has broadened with a strategic focus on additional classes of compounds, including antibodies, checkpoint inhibitors, and DNA-damaging agents. 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®.
- These datapoints, the associated advancements in automation, along with algorithms and code comprise a functional module and have advanced RADR®'s drug development capabilities. Key modules that are being advanced are those for 1) predicting patient responses and identifying optimal combination regimens for immuno-oncology (IO) drugs such as immune checkpoint inhibitors, 2) predicting the BBB permeability, with 89% to 92% accuracy, of any compound at a scale and speed that allows the analysis of tens of thousands of compounds a day, and 3) accelerating the design and development of drug-conjugate templates for next-generation antibody-drug conjugates (ADCs) that have increased potential for improved safety and efficacy. These 3 additional modules exemplify the type of rapid and meaningful progress the RADR® platform is expected to make over the next several quarters as it aims to improve the speed and reduce the costs and risks associated with creating cancer medicines.

Starlight Therapeutics:

- In Q1 2023, Lantern formed a wholly-owned subsidiary, **Starlight Therapeutics Inc.** ("Starlight"), 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".
- Lantern expects to recruit additional management focused on Starlight operations during Q4, 2023. Lantern has also begun discussions with leading clinicians and key opinion leaders at CNS-focused cancer centers to serve as clinical trial sites for planned upcoming clinical trials in adult and pediatric CNS cancers.

Additional Operational Highlights:

- During the 3rd quarter of 2023, Lantern filed 4 new patent applications for LP-184 and LP-284 relating to breast, liver, and blood cancers and an additional application directed to lyophilized formulations of these molecules.

- New data and scientific findings along with AI platform updates to be presented at several upcoming conferences:

    - SNO (Society for Neuro-Oncology) 28th Annual Meeting and Education Day in Vancouver, Canada
        - Date: November 17, 2023, 10:55a-11:05a PST
        - Presentation Title: LP-184, an MGMT-agnostic small molecule, has potent synergy with Spironolactone to effectively inhibit orthotopic GBM xenograft tumors
        - Presenter: **Dr. John Laterra** (clinician-scientist collaborator from Johns Hopkins Medicine & Kennedy Krieger Institute)

    - Bengaluru Tech Summit 23 in Bengaluru, India
        - Date: December 1, 2023, 12p-12:50p IST
        - Presentation Topic: Biotech Future Forward – Pharma 4.0 & How AI is changing the playing field in Biopharma
        - Presenter: Panna Sharma (President & CEO)

    - 5th Annual CNS Drug Delivery Summit in Boston, MA
        - Date: December 5, 2023 at 1:30p EST
        - Presentation Topic: Leveraging AI & Machine Learning to Accelerate the Development of CNS & Brain Cancer Molecules
        - Presenter: Kishor Bhatia, Ph.D. (CSO)

Third Quarter 2023 Financial Overview:

- Balance Sheet: Cash, cash equivalents, and marketable securities were approximately $44.9 million as of September 30, 2023, compared to approximately $55.2 million as of December 31, 2022. The quarterly cash burn rate continues to reflect our capital-efficient, collaborator-centered business model.
- R&D Expenses: Research and development expenses were approximately $2.2 million for the quarter ended September 30, 2023, compared to approximately $0.7 million for the quarter ended September 30, 2022. R&D expenses for the 3rd quarter of 2022 were significantly reduced, by $0.9 million, due to a one-time payment received from a service provider to resolve a difference of views regarding the service agreement.
- G&A Expenses: General and administrative expenses were approximately $1.3 million for the quarter ended September 30, 2023, compared to approximately $1.4 million for the quarter ended September 30, 2022.
- Net Loss: Net loss was approximately $3.2 million (or $0.29 per share) for the quarter ended September 30, 2023, compared to a net loss of approximately $2.3 million (or $0.21 per share) for the quarter ended September 30, 2022.

Earnings Call and Webinar Details:

Lantern will host its third quarter 2023 earnings call and webinar today, November 8, 2023, at 4:30 p.m. ET.

- **https://us06web.zoom.us/webinar/register/8716986910268/WN_9BISSepwSbeLD4x9Wgi_eA#/registration**
- Related presentation materials will be accessible at: **https://ir.lanternpharma.com**
- A replay of the third quarter 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 over 36 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**
- Newsletter – The Spark: 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 biomarker 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 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, (iii) 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 (iv) those other factors set forth in the Risk Factors section in our Annual Report on Form 10-K for the year ended December 31, 2022, filed with the Securities and Exchange Commission on March 20, 2023. You may access our Annual Report on Form 10-K for the year ended December 31, 2022 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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