Third Quarter 2025
Operating & Financial Results Conference Call / Webinar

Nov 13th, 2025
9AM Eastern Time

Forward Looking Statements

This presentation 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 we may not be able to secure sufficient future funding when needed and as required to advance and support our existing and planned clinical trials and operations, (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 our research and the research of our collaborators may not be successful, (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, 2024, filed with the Securities and Exchange Commission on March 27, 2025. You may access our Annual Report on Form 10-K for the year ended December 31, 2024 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 presentation 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.

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Speakers

Panna Sharma
CEO and President

David Margrave
CFO

2025 3rd Quarter Highlights

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Lantern Pharma®

NASDAQ: LTRN

- ✓ **LP-184 Phase 1a clinical trial results demonstrate all primary endpoints achieved** with 48% clinical benefit rate in evaluable cancer patients at or above therapeutic dose threshold; marked tumor reductions observed in patients with DNA damage repair mutations including CHK2, ATM, and STK11/KEAP1 alterations.

- ✓ **FDA Type C meeting completed**, providing regulatory guidance and pathway clarity for Starlight Therapeutics' planned pediatric CNS cancer trial in Atypical Teratoid Rhabdoid Tumor (ATRT) and confirming spironolactone combination strategy.

- ✓ **LP-300 preliminary Phase 2 data presented** from the HARMONIC™ trial at the 66th Annual Meeting of the Japan Lung Cancer Society with further interim data planned for a webinar in December.

2025 3rd Quarter Highlights

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Lantern Pharma®

NASDAQ: LTRN

- ✓ **LP-284 clinical data showcased at 25th Annual Lymphoma, Leukemia & Myeloma (LL&M) Congress**, generating interest from the biopharma and clinical communities and initiating discussions for combination therapy potential.

- ✓ **KOL-hosted scientific webinar on LP-184 Phase 1a results scheduled for November 20, 2025 at 4:30 p.m. ET**, providing insights from key opinion leader at Fox Chase Cancer Center along with additional clinical data and future plans from Lantern management.

- ✓ **Precision, biomarker-driven development strategy strengthened by Phase1a data**, positioning LP-184 for targeted Phase 1b/2 trials in TNBC, NSCLC with KEAP1/STK11 mutations, bladder cancer, and first recurrent GBM—indications representing combined market potential exceeding $7 billion annually.

2025 3rd Quarter Highlights

3 of 3

Lantern Pharma®

NASDAQ: LTRN

- ✓ **AI platform commercial readiness demonstrated** at inaugural AI for Biology and Medicine symposium, showcasing RADR® platform modules as deployable tools for biopharma partners.

- ✓ **Disciplined capital management maintained** with approximately $12.4 million in cash, cash equivalents, and marketable securities as of September 30, 2025, providing expected operating runway into approximately Q3 2026.

LP-184 Phase 1a Trial Achieved All Primary Endpoints with Robust Safety Profile and Promising Antitumor Activity in Multiple Advanced Solid Tumors

TRIAL RESULT HIGHLIGHTS

- Completion of enrollment of phase 1 trial (NCT05933265) meeting all its primary endpoints
- Demonstrated a robust safety profile and encouraging antitumor activity
- Clinical benefit observed in **48%** of evaluable cancer patients at or above the therapeutic dose threshold
- **Two of 16** recurrent GBM with previous exposure to TMZ and or CCNU and radiation showed disease stabilization
- Two patients at DL10 have maintained disease control **over 8 months** and are still on treatment
- Synthetic lethality validation with evidence of disease control for tumors with mutations in CHK2, ATM, STK11/KEAP1 genes
- **Durable clinical benefits** were observed **in hard-to-treat tumor**s like glioblastoma multiforme (GBM), gastrointestinal stromal tumor (GIST) and thymic carcinoma

Upcoming Webinar

LP-184 Phase 1a Results and Future Trials
November 20th, Thursday, 4:30 PM Eastern

Join Lantern Pharma for an exclusive discussion on the Phase 1a clinical results of LP-184 — a first-in-class synthetic lethal molecule being evaluated in patients with advanced, recurrent solid tumors.

Planned Clinical Trials – LP-184 Phase 1b/2 Trials informed by RADR® AI Insights

Trial	Indication	Market potential	Trial Size	Trial Highlights
Phase 1b/2 Monotherapy & Combination with **Olaparib** for TNBC	 Triple Negative Breast Cancer	**$4+Bn** Annual US market potential	**~60** Patients expected to be enrolled	• Granted FDA Fast Track Designation for monotherapy of LP-184 • **Monotherapy Trial:** Evaluating optimal dose and early efficacy of LP-184 in advanced TNBC with DNA repair gene mutations. • **Combination Trial:** Assessing safety and efficacy of LP-184 + Olaparib in advanced TNBC with BRCA mutations.
Phase 1b/2 Combination with **Immune Checkpoint Inhibitors** for NSCLC	 KEAP1 and/or STK11 mutated NSCLC	**$2+Bn** Annual US market potential	**~34** Patients expected to be enrolled	• Submission for FDA Fast Track Designation in process • Open-label study evaluating safety and early efficacy of LP-184 with nivolumab and ipilimumab in advanced NSCLC with KEAP1/STK11 mutations and low PD-L1.
Phase 1b/2 Investigator Led Trial in Denmark for Bladder Cancer	 Bladder cancer with TC-NER deficiency	**$0.5+Bn** Annual Global market potential	**~39** Patients expected to be enrolled	• Investigator-sponsored trial (Dr. Helle Pappot, Rigshospitalet University, Denmark) • Open-label study evaluating safety and early efficacy of LP-184 in advanced/metastatic urothelial carcinoma with PTGR1 positive and TC-NER/HR deficiency
Phase 1b/2a Combination with **Spironolactone** for Glioblastoma	 Recurrent Glioblastoma	**$1+Bn** Annual US market potential	**~38** Patients expected to be enrolled	• Granted FDA Fast Track Designation and Orphan Drug Designation for monotherapy of LP-184 • First recurrent Glioblastoma • Simon 2-stage design • 2 arms; IDHm and IDHwt

Clinical Trial – The Harmonic™ Phase 2 Trial for LP-300

A growing indication with limited treatment options

harmonic

NCT05456256

Non-Small Cell Lung Cancer

Never Smokers

90

Patients

Two arm, Open-label, Randomized Trial

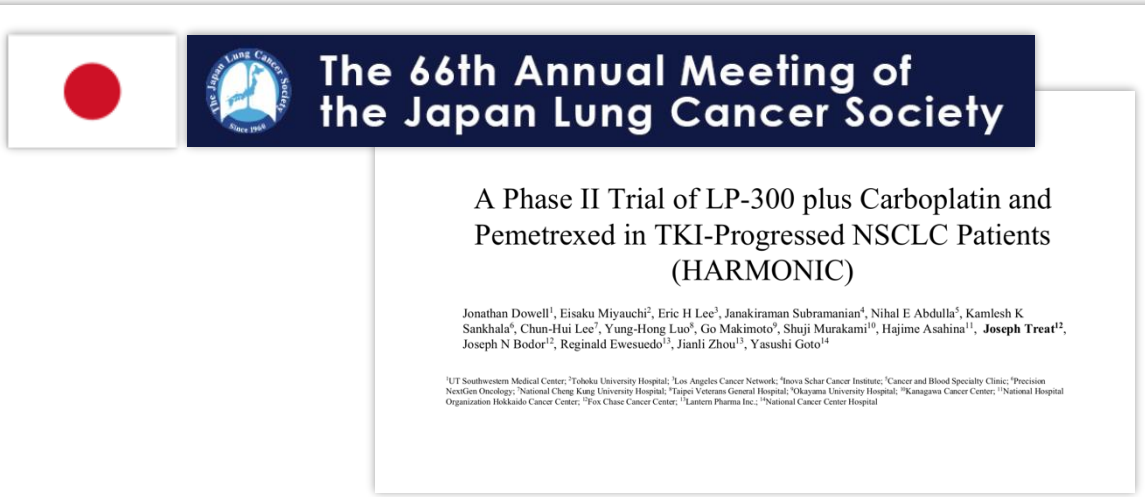
Multi-Site in US & Asia

Trial Highlights

- Completed Japanese patient cohort enrollment ahead of schedule at multiple clinical sites including the National Cancer Center in Tokyo
- Patient showed durable complete response with survival continuing for nearly **two years**
- Preliminary patient data and clinical readouts showed an **86% clinical benefit rate**

Primary Outcomes: Overall and progression free survival

Announced preliminary patient data showing an 86% clinical benefit rate - Scan the QR code for the full initial result release



- Result presented at the 66th Annual Meeting of the Japan Lung Cancer Society by Dr. Joseph Treat of Fox Chase Cancer Center
- **Enrollment completed** in Japan
- Webinar planned in December for additional information

LP-284 Highlights from NHL Clinical Trial & Potential New Indications

Phase 1a trial for recurrent NHLs with scarce therapeutic options and potential in SLE / Lupus

First-In-Human Trial for **LP-284**

Non-Hodgkin's Lymphomas

30-35
Patients expected to be enrolled

$4.0Bn
Estimated global annual market potential in NHL

Multi-Site

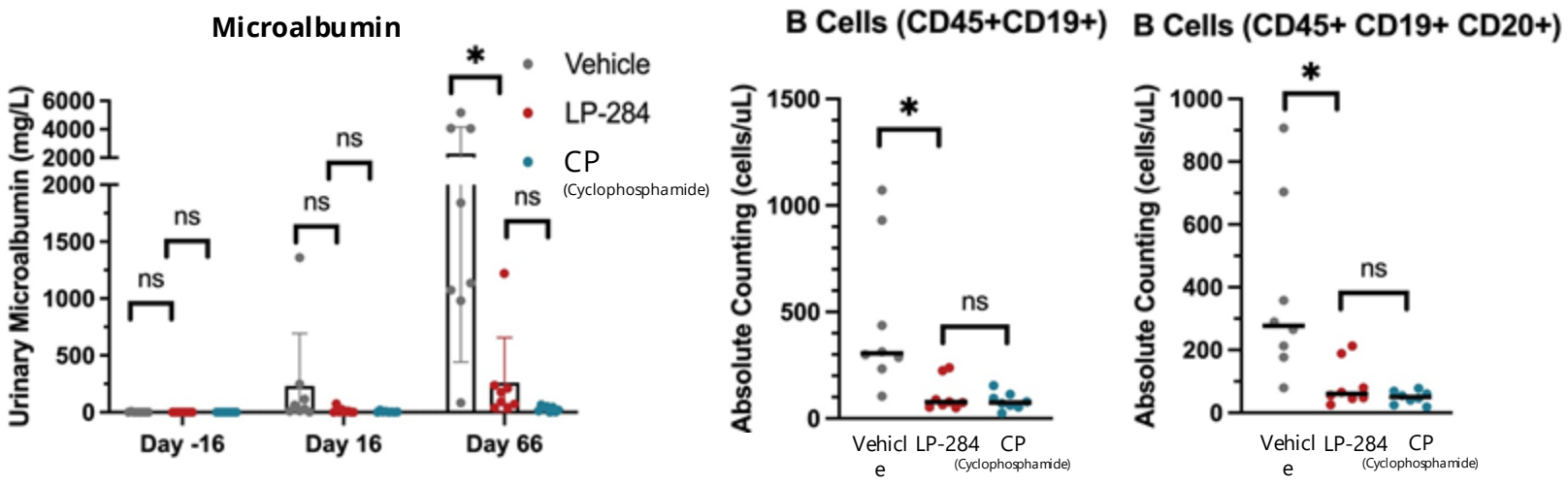
Highlights

- Heavily pretreated patient with aggressive Grade 3 B-cell lymphoma (DLBCL) achieved a **complete metabolic response**
- Exploring LP-284 and Rituximab as an alternative to Cyclophosphamide (CP) and Methotrexate in Systemic Lupus Erythematosus (SLE)
- Presented at the Lymphoma Leukemia and Myeloma Congress 2025

Check out the poster now

25 Lymphoma · Leukemia & Myeloma Congress
Celebrating 25 Years of Excellence

LP-284 + Rituximab: A Potential Next-Generation B-Cell Depleting Therapy for SLE



- **LP-284** reduced urinary **microalbumin ~10x and B cells ~4x** in an SLE mouse model
- LP-284 + Rituximab combination **further depletes B-lymphoma cells than alone.**

Precision Medicine Platform

A proprietary integrated experimental biology, oncology-focused, machine-learning-based drug development platform

200+ Billion* Data points from oncology focused real-world patient and clinical data and preclinical studies

80%+ Prediction Success

130K+ Patient Records

200+ Advanced ML Algorithms

8,163+ Data Sets

AI-Powered RADR® Modules for Oncology Drug Discovery and Development

- **m1** Discover mechanism of action
- **m2** Identify/prioritize disease indications or subtypes
- **m3** Determine optimal drug combinations
- **m4** Generate ML-driven biomarker signatures
- **m5** Characterize specialized attributes of a molecule
- **m6** Understand potential binding site interactions
- **m7** Discover combinations with checkpoint inhibitors
- **m8** ADC design and optimization

Zeta – The Multi-Agentic Co-Scientist & AI System For Rare Cancers

ζ

Zeta addresses the fundamental challenge in rare cancer research and drug development where critical insights are scattered across disconnected data sources. Our platform integrates curated databases and external sources into an agential LLM architecture, leveraging recursive reasoning loops to transform fragmented biomedical knowledge into an interconnected investigation platform.

Core Capabilities

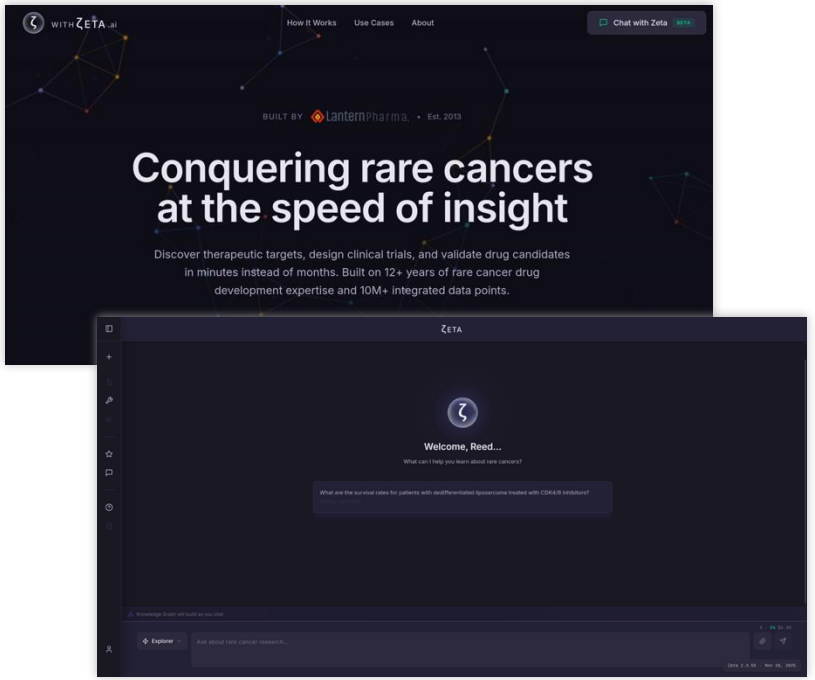
- Curated rare cancer databases and ontology
- Integrated 500k+ clinical trials, 250k+ publications, 1.2M knowledge objects
- Real-time bioinformatics and chemo informatics toolkits
- Links to RADR® predictive modules (e.g., PredictBBB.ai)

Industry & Business Value

- Faster timelines: weeks → minutes for insights
- Smarter decisions: enhanced oncology guidance
- Novel discovery: identify new drug connections
- Improved outcomes: faster access to treatments
- Efficiency: major cost and time savings

Strategic Impact

- Unified AI interface for complex, scattered data
- Accelerates novel therapy discovery and trial design
- Shortens drug development by months or more
- Positions Lantern as the “Perplexity for cancer research”



Lantern Strategy to Accelerate AI Platform Growth and Capabilities with Strategic Expansion of ML, AI, and Data Engineering Teams in India

Expansion Overview

- Establishing dedicated machine learning and data engineering teams in India
- 2x–3x increase in technical team size expected in the coming quarters

Strategic Benefits

- Round-the-clock development
- Reduced data infrastructure and talent costs
- Accelerated enhancement of Lantern's proprietary RADR® AI platform
- Improved scalability to support multiple drug programs and biopharma partnerships

Strategic Impact

- Strengthens competitive edge in AI-driven precision oncology
- Improves operational efficiency and financial flexibility
- Supports expanded biopharma collaborations

Lantern's Diverse & Unique AI Driven Pipeline of Drug Programs

Lantern has 10 disclosed drug programs including the Phase 2 Harmonic™ trial

Lantern Pharma (NASDAQ: LTRN)

Program	Indication	Discovery	Preclinical	Phase 1a	Phase 1b	Phase II	Orphan Designation	Rare Pediatric Disease	Fast Track
LP-300	Non-Small Cell Lung Cancer for Never Smokers					harmonic			
LP-184	Monotherapy & Combination w/ Olaparib for TNBC								●
	Combination w/ Immune Checkpoint Inhibitors for NSCLC								
	Advanced Bladder Cancer (Investigator led trial in Denmark)								
LP-284	Recurrent Non-Hodgkin's Lymphomas (*Mantle cell, Double-hit lymphomas*)						●		
ADC	Select Solid Tumors								

Starlight Therapeutics (Wholly Owned Subsidiary)

STAR-001 *(LP-184 for CNS and Brain Cancers Only)*	First Recurrent Glioblastoma in adults						●		●
	Newly Diagnosed MGMT Unmethylated Glioblastoma (investigator led trial)						●		●
	Phase 1a monotherapy including ATRT, DIPG and Medulloblastoma						●	●	
	Phase 1b combination select pediatric CNS cancers						●	●	

Financial Updates Q3 2025

Summary Results of Operations

	Three Months Ended September 30, (unaudited) 2025	2024
Operating expenses:		
General and administrative	$ 1,912,829	$ 1,462,930
Research and development	2,436,971	3,716,646
Total operating expenses	4,349,800	5,179,576
Loss from operations	(4,349,800)	(5,179,576)
Interest + Other income, net	172,377	673,879
NET LOSS	**$** (4,177,423)	**$** (4,505,697)
Net loss per common share, basic and diluted	$ (0.39)	$ (0.42)
Weighted Avg. Common Shares Outstanding - Basic and Diluted	10,833,393	10,763,351

Balance Sheet Highlights & Summary

	09/30/2025 (unaudited)	12/31/2024
Cash, Cash Equivalents & Marketable Securities	12,362,576	24,013,063
Prepaid Expenses & Other Current Assets	1,098,429	1,234,566
Total Assets	13,626,810	25,571,792
Total Liabilities	4,039,972	4,384,018
Total Stockholders' Equity	9,586,838	21,187,774

2025-26 Objectives

A Breakthrough Year for Lantern

TOP TEN

- Complete Phase 1a clinical trial for LP-184; pursue Phase 1b/2 and investigator led trial(s)
- Advance enrollment in first-in-human clinical trial for LP-284 in NHL + other cancers
- Report initial clinical data for Asian cohort in the Harmonic™ Trial and updates on the US patient population
- Progress and monetize Starlight Therapeutics towards planned Phase 1 / 2 adult & pediatric clinical trials
- Expand and commercialize RADR® AI platform and launch initial modules as open-source AI agents
- Further ADC preclinical and IND development to support future Phase 1 launch and/or partnership opportunities
- Explore licensing and partnership opportunities with biopharma companies
- Develop combination programs and trials for Lantern's portfolio with existing FDA approved drugs
- Continue efficient internal clinical operations capabilities
- Maintain disciplined fiscal management and pursue additional funding opportunities

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