UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): August 8, 2022

Lantern Pharma Inc.

(Exact name of registrant as specified in its charter)

Delaware	**001-39318**	**46-3973463**
(State or Other Jurisdiction of Incorporation)	(Commission File Number)	(IRS Employer Identification No.)

1920 McKinney Avenue, 7th Floor Dallas, Texas	**75201**
(Address of Principal Executive Offices)	(Zip Code)

(972) 277-1136
(Registrant's telephone number, including area code)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act: Common Stock

Title of each class	**Trading Symbol**	**Name of each exchange on which registered**
Common Stock, $0.0001 par value	LTRN	The Nasdaq Stock Market

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company ☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☒

Item 2.02 Results of Operations and Financial Condition.

On August 8, 2022, Lantern Pharma Inc. (the "Company") will issue a press release announcing its financial results for the second quarter endedJune 30, 2022. A copy of the press release is furnished as Exhibit 99.1 to this Current Report on Form 8-K and is incorporated herein by reference.

The information in this Item 2.02, including Exhibit 99.1 hereto, shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filings under the Securities Act of 1933, as amended, or the Exchange Act, regardless of any general incorporation language in such filings, unless expressly incorporated by specific reference in such filing.

Item 7.01 Regulation FD Disclosure.

On August 8, 2022, the Company will utilize a presentation to assist with the Company's discussions during a conference call and live webinar hosted by the Company to discuss financial and operating results for the second quarter ended June 30, 2022. A copy of the presentation is furnished as Exhibit 99.2 to this Current Report on Form 8-K and is incorporated herein by reference.

The information in this Item 7.01, including Exhibit 99.2 hereto, shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filings under the Securities Act of 1933, as amended, or the Exchange Act, regardless of any general incorporation language in such filings, unless expressly incorporated by specific reference in such filing.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits.

Exhibit No.	**Exhibit Description**

99.1	Press Release dated August 8, 2022 announcing financial results for quarter ended June 30, 2022.
99.2	Presentation relating to August 8, 2022 conference call and live webinar to discuss financial and operating results for quarter ended June 30, 2022.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Lantern Pharma Inc.,
A Delaware Corporation

Dated: August 8, 2022

By: */s/ David R. Margrave*
David R. Margrave, Chief Financial Officer

Exhibit 99.1

Lantern Pharma Reports Second Quarter 2022 Financial Results and Operational Highlights

- Lantern has launched the Phase 2 clinical trial, Harmonic™, for LP-300. The Harmonic™ clinical trial is focused on never smokers with advanced non-small cell lung cancer (NSCLC) and will begin patient enrollment during Q3 2022.
- The IND applications for both LP-184 and LP-284 are being targeted for submission in early 2023.
- Lantern anticipates launching two Phase 1 clinical trials for LP-184 and one Phase 1 clinical trial for LP-284 in early 2023.
- RADR® has surpassed 21 billion data points and has had significant improvements in performance, parallelization and the robustness of the algorithms which can facilitate future partnering.
- New preclinical results from several programs will be presented at multiple conferences in the second half of 2022.
- $62.2 million of cash, cash equivalents, and marketable securities as of June 30, 2022.
- A net decrease of $3.1 million in cash, cash equivalents, and marketable securities occurred during the three months ended June 30, 2022.
- Lantern has a cash runway into 2025.
- Conference call scheduled for 4:30 p.m. ET / 1:30 p.m. PT today.

DALLAS--(BUSINESS WIRE)--Lantern Pharma Inc. (NASDAQ:LTRN), a clinical stage biopharmaceutical company using its proprietary RADR® artificial intelligence ("A.I.") and machine learning ("M.L.") platform to transform the cost, pace, and timeline of oncology drug discovery and development, today announced operational highlights and financial results for the second quarter ended June 30, 2022.

"This quarter was marked with very exciting and important milestones for Lantern as we advance the majority of our drug candidates into and towards clinical trials. In mid-July, we received notice from the FDA that our Phase 2, Harmonic™ trial, for LP-300 was cleared to launch and we anticipate enrolling the first patients in the third quarter of this year. The Harmonic™ trial is focused on a unique population of lung cancer patients who are never smokers and have relapsed non-small cell lung cancer (NSCLC). Not only are never smokers with NSCLC unique, but they also represent a large population of patients with over 200,000 people diagnosed annually worldwide," stated Panna Sharma, President and CEO of Lantern Pharma.

"Lantern has also established a path to bring our drug candidates LP-184 and LP-284 into Phase 1 clinical trials in the first half of 2023. The structural similarities of these molecules have allowed us to develop synergies in manufacturing, chemical synthesis, and scale-up and we now believe we can bring both of these drug candidates to the clinic near-simultaneously. We are anticipating two Phase 1 clinical trials for LP-184, one in central nervous system (CNS) indications and one in genomically-defined solid tumors, and one Phase 1 clinical trial for LP-284 in non-Hodgkin's B-cell lymphomas," continued Sharma.

"In addition to the exciting clinical developments, the RADR® team has been focused on making substantial improvements to RADR®'s infrastructure, automation capabilities, and algorithms. These advances will not only streamline RADR® insights for Lantern, but will facilitate future commercial partnering opportunities."

Operational Highlights:

Lantern's Portfolio:

- **LP-300** – In July, Lantern announced the launch of the Phase 2 clinical trial, Harmonic™, for LP-300. Harmonic™ is a clinical trial for never smoker patients with relapsed NSCLC and will assess the effect of LP-300 in combination with standard of care (SOC) chemotherapy, pemetrexed and carboplatin, on patient overall and progression-free survival. The trial will begin enrolling patients this quarter across multiple sites in the US, and enrollment is anticipated to last from 12-16 months. The Company anticipates initial results from the trial will be available in Q4 2023.

  The Company is also engaging in global partnering discussions for regions of the world where there is a higher prevalence of never smokers with NSCLC, including parts of Asia, South America, and Europe. Additional trial information on the Harmonic ™ clinical trial can be found at theclinicaltrials.gov website and in the press release for the Harmonic™ trial launch.

- **LP-184 –** Lantern anticipates completing the IND enabling studies and submitting an IND application for LP-184 to the U.S. Food and Drug Administration in Q1 2023. A Phase 1 clinical trial in genomically defined pancreatic, bladder cancers, and other solid tumors is anticipated for Q2 2023.

  This quarter Lantern has also established a pathway towards a second Phase 1 trial for LP-184 in central nervous system (CNS) tumors in collaboration with Johns Hopkins University. Indications for this trial are anticipated to include gliomas and brain metastases, which collectively are diagnosed in over 100,000 patients in the US annually and are estimated to represent a $4 billion global market size. Conducting two Phase 1 trials will allow Lantern to maximize the potential of LP-184 for these two different cancer classes that have varying clinical needs and standards of care.

- **LP-284** – Lantern has accelerated the development of LP-284, aided by manufacturing process and synthesis similarities between LP-284 and LP-184. IND enabling animal studies for LP-284 have been initiated and are targeted to be completed by Q1 2023, with the IND filing for an LP-284 Phase 1 clinical trial anticipated for Q1 2023. Lantern is developing LP-284 for non-Hodgkin's B-cell lymphomas (NHL), where LP-284 has shown nanomolar potency across multiple in vitro and in vivo studies and where there is a demonstrated clinical need. Early NHL indications for LP-284 may include: Mantle Cell Lymphoma (MCL), Double Hit Lymphoma (DHL), and other NHL cancer subtypes.

  Based on new and ongoing preclinical studies as well as modeling driven by RADR®, LP-284 has demonstrated nanomolar potency across a range of NHL cancers both as a stand-alone agent and in synergy with today's standard of care drugs such as Ibrutinib and Bortezomib. Lantern will be presenting additional data from these studies later this year. Globally, MCL and DHL alone are estimated to impact over 45,000 patients each year, with virtually all patients relapsing 2-5 years after treatment. There is a significant clinical need for additional late stage therapeutic options for these patients.

- **LP-100** – is in a Phase 2 trial in Denmark for patients with metastatic castration resistant prostate cancer (mCRPC) that meet a certain genomic signature that correlates to enhanced sensitivity to LP-100. In the initial cohort of patients, nine patients experienced a median overall survival of 12.5 months. We are continuing to evaluate clinical development possibilities for LP-100 that we believe can further de-risk the program while increasing the potential for patient benefit that exceeds the current standards of care. At this time, our in silico, in vitro, and in vivo data indicate that co-administration of LP-100 in conjunction with PARP (Poly ADP-Ribose Polymerase) inhibitors can have a synergistic effect in cancer treatment and may represent an improvement over existing standards of care for prostate cancer patients with loss of HRR (homologous recombination repair) function.

  About 20-25% of all patients with advanced prostate cancer present germline or tumor mutations in HRR-related genes, the most common being BRCA2, mutated in approximately 10-12% of all advanced prostate cancers - representing an estimated global opportunity approaching 2.5 billion USD annually in prostate cancer alone.

RADR® Platform Growth and Development

- RADR®, Lantern's A.I. and M.L. platform, surpassed 21 billion data points and is on pace to reach our year end goal of over 25 billion data points. This past quarter, RADR® has undergone significant upgrades to its automation, data interfaces, infrastructure, and integration of a wider range of algorithms. The algorithms are additionally being automated to track performance and precision and also to leverage an ensemble approach to determine fit based on both biological and statistical measures. Further automation is expected to increase the performance of RADR® by a factor of 2x to 4x in the coming months. These advances will increase the power and speed of generating insights from RADR® for Lantern and its collaborators, as well as facilitate additional partnering opportunities.

- In May 2021, Lantern entered a collaboration with Actuate Therapeutics, Inc. to leverage RADR® to accelerate the identification and development of actionable clinical biomarkers for Actuate's drug candidate, elraglusib (9-ING-41). Using advanced ML ensemble algorithms RADR®-aided computational approaches have been successful in identifying candidate predictive biomarkers and modeling clinical response to elraglusib. These insights are being used to inform the development of elraglusib and the design of Phase II randomized clinical trials. These methods will be further applied to future biomarker validation and will be expanded to incorporate modeling with additional forms of patient data in the future, including RNA, ctDNA, soluble biomarkers, and others. Based on our collaboration agreement with Actuate, Lantern will receive equity based on meeting development milestones and the application of computational models to elraglusib pharmacodynamics in future development.

Scientific Collaborations Updates

- This May, Lantern hosted a key opinion leader webinar for Brain Tumor Awareness Month which focused on glioblastoma (GBM) and the potential of LP-184 for GBM and other brain cancers. The webinar featured two leading experts in GBM and brain cancer research from John Hopkins, John Laterra, M.D., Ph.D. and Matthias Holdhoff, M.D., Ph.D. A replay of the webcast can be found here.

- During Childhood Cancer Awareness Month in September , Lantern will host a KOL webinar featuring Dr. Peter Houghton, Ph.D., a leading expert in childhood cancers at the Greehey Children's Cancer Institute at the University of Texas San Antonio Health Science Center. The webinar will focus on challenges in drug development for pediatric cancers and preliminary results from Lantern's drug candidates in preclinical pediatric cancer models. Details of the KOL webinar will be released in early September.

Upcoming Conferences

- In the second half of 2022, Lantern will be presenting new preclinical data at several scientific conferences, including the American Association for Cancer Research (AACR) special conference for pancreatic cancer, the Society of Hematologic Oncology (SOHO) Tenth Annual Meeting, and several others. Results and conference details will be announced in the coming weeks.

- Lantern Pharma's President and CEO, Panna Sharma will be presenting at two investor conferences in the fall, the MicroCap Rodeo in Chicago, October 12-13th and at the ThinkEquity Conference in New York, October 26th , where he will also be leading a panel discussion on "How established and emerging biopharma companies are leveraging AI to transform drug development costs and timelines".

Additional Highlights

- At Lantern's annual meeting of stockholders held on June 8th, 2022, Dr. Maria Maccecchini, Ph.D. was elected to Lantern's Board of Directors, along with 5 existing Directors.

Second Quarter 2022 Financial Overview

- **Balance Sheet**: Cash, cash equivalents, and marketable securities were approximately $62.2 million as of June 30, 2022, compared to approximately $79.6 million as of June 30, 2021. The quarterly cash burn continues to reflect our capital-efficient, collaborator-centered business model.
- **R&D Expenses**: Research and development expenses were approximately $3.0 million for the quarter ended June 30, 2022 compared to approximately $1.2 million for the quarter ended June 30, 2021.
- **G&A Expenses**: General and administrative expenses were approximately $1.4 million for the quarter ended June 30, 2022, compared to approximately $1.3 million for the quarter ended June 30, 2021.
- **Net Loss**: Net loss was approximately $4.5 million (or $0.41 per share) for the quarter ended June 30, 2022, compared to a net loss of approximately $2.3 million (or $0.21 per share) for the quarter ended June 30, 2021.

Earnings Call and Webinar Details

Lantern will host its second quarter fiscal year 2022 earnings call and webinar today, Monday, August 8th, 2022 at 4:30 p.m. ET.

- https://us06web.zoom.us/webinar/register/4016584141964/WN_OUXnk5T_Tb6cMYD6uGhSng
- Related presentation materials will be accessible at: https://ir.lanternpharma.com

Replay Details

- A replay of the Q2 2022 earnings call and webinar will be available at https://ir.lanternpharma.com.

Lantern's Investor Relations Contact
Nicole Leber
Investor Relations Associate
ir@lanternpharma.com

About Lantern Pharma

Lantern Pharma (NASDAQ: LTRN) is a clinical-stage oncology-focused biopharmaceutical company leveraging its proprietary RADR® A.I. and machine learning platform to discover biomarker signatures that identify patients most likely to respond to its pipeline of genomically targeted therapeutics. Lantern is currently developing four drug candidates and an ADC program across nine disclosed tumor targets, including two phase 2 programs. By targeting drugs to patients whose genomic profile identifies them as having the highest probability of benefiting from the drug, Lantern's approach represents the potential to deliver best-in-class outcomes.

Please find more information at:
Website: www.lanternpharma.com
LinkedIn: https://www.linkedin.com/company/lanternpharma/
Twitter: @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," "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 impact of the COVID-19 pandemic, (ii) the risk that our research and the research of our collaborators may not be successful, (iii) 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, (iv) the risk that no drug product based on our proprietary RADR® A.I. platform has received FDA marketing approval or otherwise been incorporated into a commercial product, and (v) those other factors set forth in the Risk Factors section in our Annual Report on Form 10-K for the year ended December 31, 2021, filed with the Securities and Exchange Commission on March 10, 2022. You may access our Annual Report on Form 10-K for the year ended December 31, 2021 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.

Exhibit 99.2

Second Quarter 2022
Operating & Financial Results Conference Call / Webinar

August 8th, 2022
4:30 PM Eastern Time

Lantern Pharma

NASDAQ :LTRN

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," "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 impact of the COVID-19 pandemic, (ii) the risk that our research and the research of our collaborators may not be successful, (iii) 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, (iv) the risk that no drug product based on our proprietary RADR® A.I. platform has received FDA marketing approval or otherwise been incorporated into a commercial product, and (v) those other factors set forth in the Risk Factors section in our Annual Report on Form 10-K for the year ended December 31, 2021, filed with the Securities and Exchange Commission on March 10, 2022. You may access our Annual Report on Form 10-K for the year ended December 31, 2021 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.

Contents

Speakers

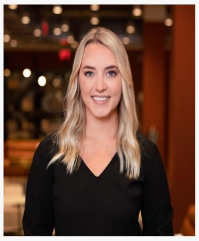
Panna Sharma

Chief Executive Officer,
President and Director

David Margrave

Chief Financial Officer

Host

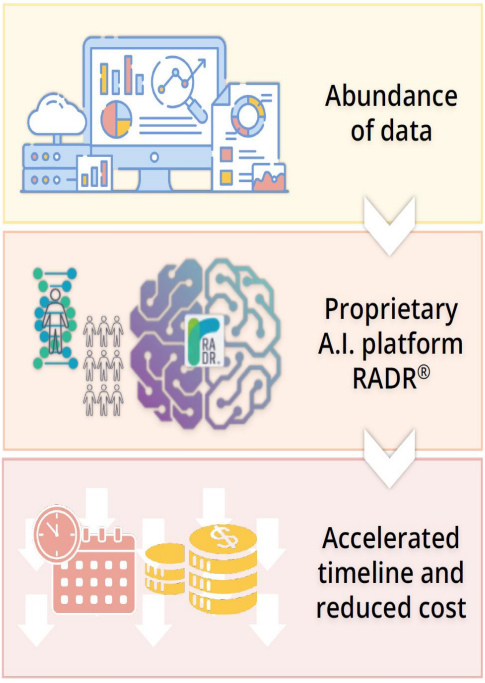


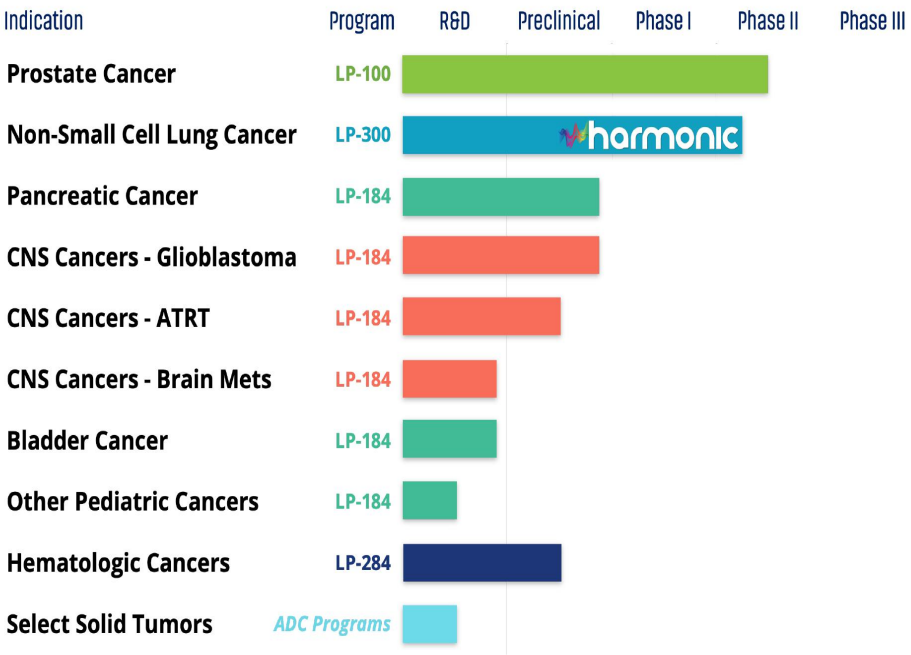
Nicole Leber

Investor Relations

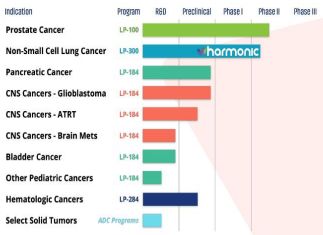
Lantern Pharma

Leveraging A.I. to reduce oncology drug development costs and improve the likelihood of success





Lantern Pharma's CNS Indications Have Significant Stand-alone Value



Lantern's CNS indications represent market potential of over $4 Billion USD

Indication	Program	R&D	Preclinical	Phase I
Glioblastoma	LP-184			
ATRT	LP-184			
Other High-grade Gliomas	LP-184			
Brain Mets (Lung)	LP-184			
Brain Mets (Breast)	LP-184			

GBM
Estimated
$1.5-2 Billion
Market Potential

ATRT & Pediatric CNS
Estimated
$0.2 Billion
Market Potential

Brain Mets
Estimated
$2+ Billion
Market Potential

Other High-Grade Gliomas
Estimated
$0.5 Billion
Market Potential

Second Quarter 2022 Highlights

Harmonic™ Trial

- Submitted IND amendment including a finalized clinical study protocol to the FDA in April 2022 for Phase 2 trial.
- 1st patient is anticipated during Q3 2022.

LP-184 for Solid Tumors

- Anticipate completing IND enabling studies and submitting an IND application in Q1 2023.
- A Phase 1 clinical trial in solid tumors, including pancreatic & bladder cancers, is anticipated for Q2 2023.

LP-184 for CNS Cancers

- Preparing a second Phase 1 trial for LP-184 in central nervous system (CNS) tumors in collaboration with Johns Hopkins University.

LP-284

- Initiated IND enabling studies for LP-284 in the first half of 2022 that are targeted to be completed in Q1 2023.
- Phase 1 clinical trial anticipated for Q2 2023.

RADR® Expansion

- RADR® has surpassed 21 billion datapoints.
- Significant improvements to machine learning algorithms & modeling tools.
- Additional performance enhancements to platform including large-scale parallelization.

Collaborations

- Hosted a KOL webinar for GBM and LP-184 for Brain Tumor Awareness Month in May 2022.
- Hosting a KOL Webinar in September for Childhood Cancer Awareness Month featuring Dr. Peter Houghton.

Upcoming Scientific Conferences

- Lantern will present data from preclinical programs at multiple conferences in the second half of 2022.

Financial Updates

- $62.2 million of cash, cash equivalents, and marketable securities as of June 30, 2022.
- Lantern has a cash runway into 2025.

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

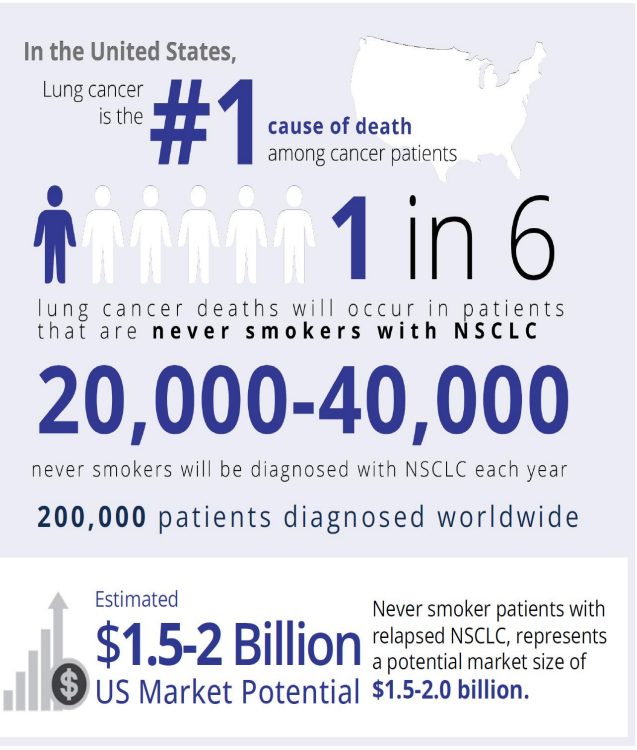
The Harmonic Trial for LP-300 Launched in Q2 and Will Begin Enrolling Patients in Q3

harmonic

Harmonic™ is a clinical trial for never smoker patients with relapsed NSCLC

multi-site	90 patients	two arm, open-label, randomized trial	never smoker	Non-Small Cell Lung Cancer

- Harmonic™ trial will assess the effect of LP-300 in combination with standard of care (SOC) chemotherapy, pemetrexed and carboplatin, on patient overall and progression-free survival.
- Begin enrolling patients in **Q3 2022** across **multiple sites** in the US, and enrollment is anticipated to last from 12-16 months.
- Initial interim results anticipated to be available during Q4 2023.
- Global partnering discussions for regions of the world with higher prevalence of never smokers with NSCLC, including parts of Asia, South America, and Europe.
- More info: https://clinicaltrials.gov/ct2/show/NCT05456256



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

LP-300 with Chemotherapy Shows a Doubling of Overall and Two Year Survival

Never Smokers and NSCLC

What is a "Never Smoker"?

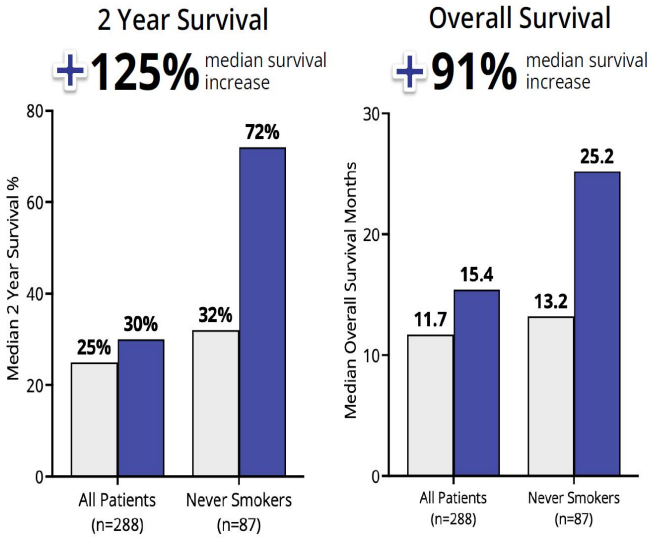
CDC defines a never smoker as an adult who has never smoked or has smoked less than 100 cigarettes in his or her lifetime.

Lung cancer is different in a Never Smoker

NSCLC presents differently in never smokers compared to smokers. These differences are believed due to a higher percentage of genetic mutations in a family of cancer-promoting genes called Tyrosine Kinases (TK). Changes in TK genes, such as EGFR, ALK, ROS and MET, can contribute to the development of healthy cells into cancer cells, leading to tumor formation and growth.

Mechanism of Action of LP-300

LP-300 works together with chemotherapy by interacting in the TK gene pathways and receptors; interrupting their activity to slow or prevent tumor growth and spread.



- In a subset of never smoker patients from a larger NSCLC trial, patients who received LP-300 with chemotherapy showed **increased overall and 2-year patient survival by 91% and 125%**, respectively.
- LP-300 has been administered in multiple clinical trials to more than 1,000 people and has been generally well tolerated.

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

Harmonic™ Trial Will Provide Unique Longitudinal Assessment of Liquid Biopsies of Never Smokers with NSCLC

Liquid biopsies will be taken from Harmonic™ clinical trial participants at **4 time points**

- At enrollment, prior to treatment
- After the initial 3 treatments
- After 6 treatments
- At completion of treatment

- The patient samples will be assessed for both genomic and transcriptomic changes & response
- We believe this will represent one of largest and most comprehensive biomarker studies done on the never smoker NSCLC population during treatment
- These insights may be integrated into RADR® to assist in potential patient selection for a future pivotal trial
- This data and analysis may also uncover additional indications and targets for LP-300

Progress of LP-184 Towards Trials

LP-184 IND Filing Anticipated in Q1 2023 with Multiple Trial Launches in Q2 2023

01. Phase 1 Clinical Trial for **LP-184** in Solid Tumors

Genomically defined pancreatic, bladder cancers, and other solid tumors

Expected Timeline

Collaborators and potential sites

FOX CHASE CANCER CENTER – TEMPLE HEALTH; THE UNIVERSITY OF TEXAS MD Anderson Cancer Center – Making Cancer History®; BCM – Baylor College of Medicine; UT Southwestern Medical Center

02. Phase 1 Clinical Trial for **LP-184** in CNS Tumors

CNS cancers including gliomas and brain metastases (anticipated)

Expected Timeline

Collaborator

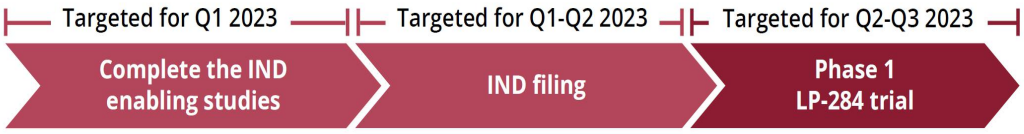
JOHNS HOPKINS MEDICINE

Progress of LP-284 towards trials

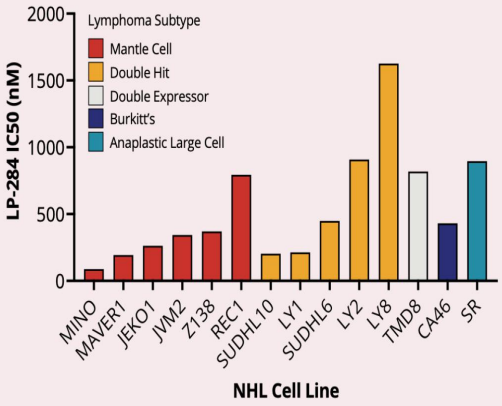
LP-284 IND Filing Anticipated in Q1 2023 With Trial Launch in 2023

01. Phase 1 Clinical Trial for **LP-284** in non-Hodgkin's B-cell Lymphomas

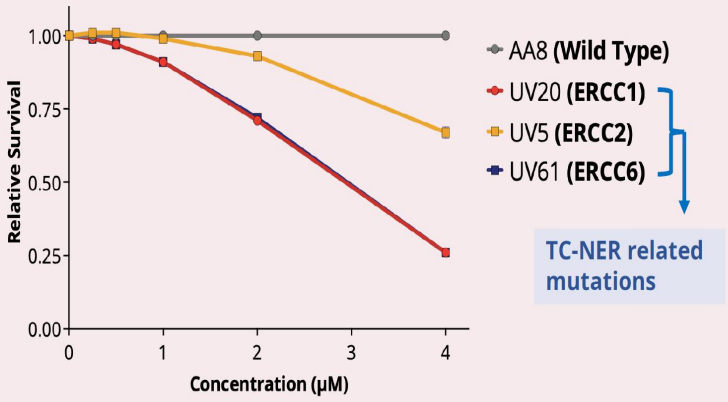
Expected Timeline



LP-284 Exhibits Nanomolar Potency in NHL



LP-284 Reduces Viability in Cells with Specific DDR Mutations

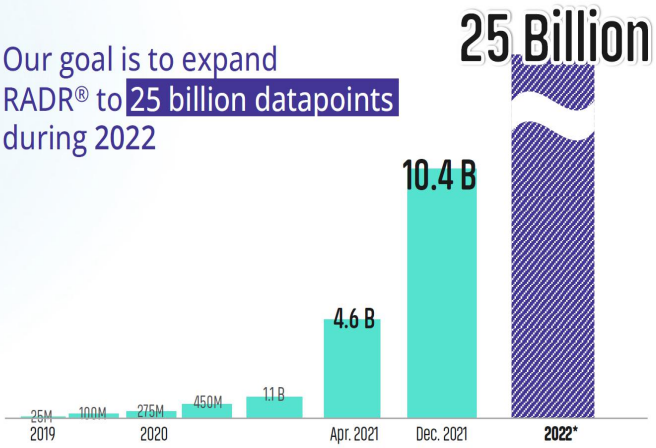


RADR® Has Surpassed 21 Billion Datapoints and Undergone Significant Improvements

Future Goals For A.I. Platform

1. Focus on automation of data acquisition
2. Improve data interface to other analytical tools & containers
3. Improve tagging of metadata and algorithms
4. Enter into additional value-based biopharma collaborations

Our goal is to expand RADR® to **25 billion datapoints** during 2022



Lantern Will Host a KOL Webinar Sept. 22nd for Childhood Cancer Awareness Month

Key Opinion Leader (KOL) Webinar on LP-184, LP-284, and the treatment of pediatric cancer

Lantern Collaboration Partner

UT Health San Antonio
Greehey Children's Cancer Research Institute

Peter Houghton Ph.D.
Professor & Principal Investigator at Greehey Children's Cancer Research Institute (GCCRI) at UT Health Science Center-San Antonio

Every three minutes, a child is diagnosed with cancer

300,000 children are diagnosed with cancer each year world wide

250 kids daily and **91,250 kids** yearly lose their life to cancer

There are **only 6 drugs** that have been developed specifically for children

New Preclinical Data will Be Presented at Multiple Scientific Conferences in Q3/Q4

September

13 — AACR 2022 Annual Meeting

September 13th -16th , 2022
in Boston, MA

28 — SOHO 2022 Annual Meeting

September 28th – October 1st, 2022
in Houston, TX

October

12 — MicroCap Rodeo Presents: Windy City Roundup 2022

October 12th – 13th , 2022
in Chicago, IL

26 — ThinkEquity Conference

October 26th , 2022
in New York, NY

Financial Update Q2 2022

Summary Results of Operations

	Three Months Ended June 30, (unaudited) 2022	2021
Operating expenses:		
General and administrative	$ 1,405,998	$ 1,314,201
Research and development	2,988,823	1,164,892
Total operating expenses	4,394,821	2,479,093
Loss from operations	**(4,394,821)**	**(2,479,093)**
Interest + Other income, net	(97,565)	162,612
NET LOSS	**$ (4,492,386)**	**$ (2,316,481)**
Net loss per common share, basic and diluted	$ (0.41)	$ (0.21)
Weighted Avg. Common Shares Outstanding - Basic and Diluted	10,830,947	11,181,504

Balance Sheet Highlights & Summary

	(unaudited) 6/30/2022	12/31/2021
Cash, Cash Equivalents & Marketable Securities	**$ 62,149,497**	**$ 70,725,447**
Prepaid Expenses & Other Current Assets	$ 3,513,485	$ 1,990,953
Total Assets	**$ 66,379,800**	**$ 73,950,477**
Total Liabilities	**$ 5,304,293**	**$ 2,379,057**
Total Stockholders' Equity	**$ 61,075,507**	**$ 71,571,420**

> *We believe our **solid financial position** will fuel continued growth and evolution of our RADR® A.I. platform, accelerate the development of our portfolio of targeted oncology drug candidates and allow us to introduce additional targeted product and collaboration opportunities in **a capital efficient manner.***

Key Corporate Objectives and Milestones

2022 Objectives and Milestones

- Advance enrollment of **The Harmonic™ Trial** – Phase 2 clinical trial for LP-300 in NSCLC & increase patient & clinician awareness
- Assess LP-100 clinical development in conjunction with PARP*i*
- Finalize IND-Enabling studies & clinical trial design for LP-184
- Design Ph. 2 clinical trial for LP-184 in GBM
- Progress LP-184 towards Ph. ½ pediatric clinical trial, including ATRT
- Finalize additional LP-284 studies to support Ph.1 launch in 2023
- Advance ADC preclinical studies to support future Phase 1 launch
- Explore potential combinations for LP-100, LP-184, LP-284 & LP-300 with other existing approved drugs
- Strategically grow RADR® A.I. platform to 25 billion datapoints
- Explore licensing and partnership opportunities

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connect with us!