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): March 10, 2021

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 March 10, 2021, Lantern Pharma Inc. (the "Company") will issue a press release announcing its financial results for the fiscal year and fourth quarter ended December 31, 2020. 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 March 10, 2021, the Company will utilize a presentation to assist with the Company's discussions during a conference call and live webcast hosted by the Company to discuss financial and operating results for the fiscal year and fourth quarter ended December 31, 2020. 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 March 10, 2021 announcing financial results for the fiscal year and quarter ended December 31, 2020.
99.2	Presentation relating to March 10, 2021 conference call and live webcast to discuss financial and operating results for fiscal year and quarter ended December 31, 2020.

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: March 10, 2021

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

Lantern Pharma Reports Fourth Quarter and Year End 2020
Financial Results and Operational Highlights

- *RADR*® artificial intelligence ("A.I.") platform surpassed 1.2 billion datapoints
- Advanced opportunities for LP-184 in glioblastoma, prostate and pancreatic cancers in collaboration with leading cancer research centers
- Identified and validated additional genomically-driven cancer indications for LP-184
- Advanced the development of LP-300 with a Phase 2 trial launch in NSCLC planned for Q3 2021
- Initiated Antibody Drug Conjugate ("ADC") program with novel linking and conjugation technology
- Strengthened balance sheet following January 2021 public offering of $69.0 million
- Conference call scheduled for 4:00 p.m. ET today

DALLAS, TX - March 10, 2021 - Lantern Pharma Inc. (NASDAQ: LTRN) a clinical stage biopharmaceutical company using its proprietary *RADR*® artificial intelligence ("A.I.") platform to transform oncology drug discovery and development today announced financial results for the fourth quarter and fiscal year ended December 31, 2020.

"2020 was a pivotal year for Lantern Pharma, marked by a series of financial, operational and drug development achievements. We believe each of these achievements further validates our unique capital-efficient business model that leverages the power of our proprietary *RADR*® A.I. platform with the knowledge and experience of our scientific team aimed at developing precision oncology drugs," stated Panna Sharma, President and CEO of Lantern Pharma. "We anticipate 2021 to be a transformational year for Lantern and our shareholders as each of our drug programs progresses towards key milestones, including the initiation of a Phase 2 trial of LP-300 in NSCLC among non-smokers, IND-enabling studies of LP-184 in multiple solid tumors, advancing our ADC program, and continued growth in the biologically-relevant and curated data that powers our *RADR*® A.I. platform."

"As a result of our rapid development and operational progress after our June IPO, we were able to significantly strengthen our balance sheet with the closing of a $69.0 million public offering in January 2021. Our solid financial position is expected to 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 opportunities in a capital efficient manner," continued Sharma. "In a very short time since our IPO in June 2020, we have:

- More than doubled the number of programs in development, increasing our "shots on goal" and the number of opportunities for potentially accretive licensing or partnering opportunities.
- Initiated a differentiated Antibody Drug Conjugate (ADC) program with novel linking technologies.
- Grew by over 5x the number of datapoints that fuel our *RADR*® A.I. platform.
- Added significant additional functionality into our *RADR*® A.I. platform.
- Initiated multiple research and development collaborations with leading cancer centers, including: Johns Hopkins in GBM and other brain cancers, Georgetown University in prostate cancer, and Fox Chase Cancer Center in pancreatic cancer.

The rapid development and capital-efficient, collaborative approach of our business showcases the power and potential of A.I. and machine learning to transform the pace, risk and cost of oncology drug discovery and development."

Lantern is developing three drug candidates and an ADC program across seven disclosed targets, including:

- **LP-100 (Irofulven),** in a Phase 2 trial for the treatment of metastatic castration resistant prostate cancer (mCRPC) which is out-licensed to Allarity Therapeutics.
- **LP-300**, a small molecule candidate that is preparing to enter a Phase 2 trial as a combination therapy in non-smokers with Non-Small Cell Lung Cancer (NSCLC).
- **LP-184**, a small molecule DNA damaging candidate in preclinical development for genomically-defined prostate, pancreatic, glioblastoma multiforme (GBM), atypical teratoid rhabdoid tumors (ATRT) and other undisclosed tumors defined by overexpression of PTGR1.
- **Antibody Drug Conjugate (ADC)** program leverages *RADR*® and is aimed at identifying targeted or therapeutic antibodies, utilizing a unique library of linkers to conjugate with LP-184 and other compounds.

Below, a recap of milestones since the June 15, 2020 IPO that position Lantern for further achievements in 2021:

Drug Development Achievements:

- Expanded the pipeline from three tumor targets in development to seven, including: LP-184 in prostate, pancreatic and multiple CNS tumors where PTGR1 is overexpressed, such as GBM and ATRT. We anticipate disclosing additional programs in the coming year.
- Initiated an Antibody Drug Conjugate platform that adds a key dimension to Lantern's focus on leveraging biological data and innovative platforms to accelerate cancer drug development.
- *RADR*® A.I. platform grew to over 1.2 billion datapoints at year end 2020 from 275 million at IPO.
- Published several peer reviewed publications at ASCO, AACR and other symposia on the use of our *RADR*® A.I. platform, including the development of RNA expression signatures for predicting response to our portfolio of oncology drug candidates.
- Advanced LP-300 in NSCLC towards a planned launch of a Phase 2 trial in Q3 2021.

Operational Achievements:

- Established manufacturing network for the company's pipeline of targeted drug candidates.
- Initiated R&D and CRO collaborations to support capital efficient pre-clinical validation and development of novel small molecule oncology drug candidates.
- Initiated collaborations with recognized KOLs in prostate, pancreatic and CNS cancers.
- Strengthened our intellectual property estate with over 15 new patent applications.
- Significantly expanded our data sciences and research teams.

Financial Highlights:

- Successfully completed a $26.3 million IPO on June 15, 2020.
- Strengthened the Balance Sheet with a $69.0 million follow-on public offering in January 2021.
- Extended the cash runway through mid-2025, allowing the company to focus on efficiently developing our portfolio of promising oncology therapeutics.

Fourth Quarter 2020 Financial Highlights

- **Cash Position:** Cash and cash equivalents were $19.2 million as of December 31, 2020, compared to $20.8 million as of September 30, 2020 and $1.2 million as of December 31, 2019. The quarterly cash burn reflects our capital-efficient, collaborator-centered business model. The year-over-year increase in cash balance reflects proceeds from the June 2020 IPO. On January 20, 2021, we completed a follow-on public offering resulting in gross proceeds of $69.0 million.
- **R&D Expenses:** Research and development expenses were $1,348,329 for the quarter ended December 31, 2020, compared to $177,467 for the quarter ended December 31, 2019. The increase was primarily attributable to increases in research studies, expansion of the company's research team, and research and development related stock option compensation expense of $470,401 (a non-cash item) for the quarter ended December 31, 2020.
- **G&A Expenses:** General and administrative expenses were $1,547,675 for the quarter ended December 31, 2020, compared to $497,700 for the quarter ended December 31, 2019. The increase was primarily attributable to expenses associated with operating as a public company and general and administrative related stock option compensation expense of $554,503 (a non-cash item) for the quarter ended December 31, 2020.
- **Net Loss:** Net losses were $2,896,004 for the quarter ended December 31, 2020, or $0.47 per share, compared to a net loss of $675,167 for the quarter ended December 31, 2019, or $0.34 per share. The net losses include non-cash expenses related to employee stock options of $1,024,904 for the quarter ended December 31, 2020.

Fiscal Year 2020 Financial Highlights

- **R&D Expenses:** Research and development expenses were $2,243,225 for the year ended December 31, 2020, compared to $953,185 for the year ended December 31, 2019. The increase was primarily attributable to research and development labor and research study expenses, as well as an increase of $470,401 (a non-cash item) in research and development related stock option compensation expense.
- **G&A Expenses:** General and administrative expenses were $3,664,965 for the year ended December 31, 2020, compared to $1,475,000 for the year ended December 31, 2019. The increase was primarily attributable to expenses associated with transitioning to and becoming a public company, including corporate insurance expenses, general and administrative labor expenses, and $721,840 (a non-cash item) in general and administrative related stock option compensation expense.
- **Net Loss:** Net loss was $5,908,190 for the year ended December 31, 2020, or $1.37 per share, compared to a net loss of $2,428,185 for the year ended December 31, 2019, or $1.23 per share. The net loss for the fiscal year ended December 31, 2020 includes non-cash expenses related to employee stock options of $1,192,241.

Mr. Sharma continued, "The golden age of A.I. in medicine is beginning, and Lantern Pharma is among the leaders in this paradigm shift to transform the pace, risk and cost of oncology drug discovery and development. With our *RADR*® A.I. platform we are demonstrating the opportunity for attainment of significant efficiencies in the time and cost of oncology drug discovery and development. As our growing pipeline of oncology drug candidates demonstrates, the rapid, machine learning enabled identification and validation of molecular drivers of cancer provides the potential for more targeted and more effective oncology therapies. During the fourth quarter of 2020 we were able to identify and validate an entirely new indication for LP-184 in a type of ultra-rare brain cancer, ATRT, that presents primarily in children. This discovery along with additional CNS opportunities that we are in the process of validating was enabled by using our *RADR*® A.I. platform. As our *RADR*® A.I. platform grows over the coming year, we anticipate the identification of additional high value targets and indications as monotherapies, combination therapies or as part of our ADC program."

Conference Call

Lantern will host a conference call and webcast today, Wednesday, March 10 at 4:00 p.m. ET.

- **Toll-free Domestic & Canada:** 877.830.2592 conference ID: 61024
- **International:** 785.424.1739 – conference ID 61024
- **US and Canada callers one touch dial:**+1.877.830.2592,,61024#
- Live audio-only webcast and related presentation materials will be accessible at: https://www.webcaster4.com/Webcast/Page/2460/40269.

Replay Details

- A replay of the conference call will be available through 11:59 p.m. ET on April 10, 2021.
- **Replay Toll-free Domestic & Canada:** 1.800.938.2795 – passcode: 61024
- **Replay International**: 1.402.220.9029 – passcode: 61024
- **US and Canada callers one touch dial:**+1.800.938.2795,,61024#

Contact

Marek Ciszewski, JD
Director, Investor Relations
628-777-3167
ir@lanternpharma.com

About Lantern Pharma

Lantern Pharma (LTRN) is a clinical-stage biopharmaceutical company leveraging advances in genomics, artificial intelligence, and machine learning by using our proprietary RADR® A.I. platform to discover biomarker signatures that identify patients most likely to respond to our pipeline of cancer therapeutics. Our collaborator-centered business model seeks out industry partners and leading scientific advisors to capital-efficiently develop our pipeline of genomically-targeted cancer therapeutics. Lantern is currently developing three drug candidates and an ADC program across seven disclosed targets, including two phase 2 programs, all focused on cancers with unique and unmet clinical needs. By targeting drugs to patients whose genomic profile identifies them as having the highest probability of benefiting from the drug, this approach represents the potential to deliver best-in-class outcomes. More information at www.lanternpharma.com and Twitter @lanternpharma.

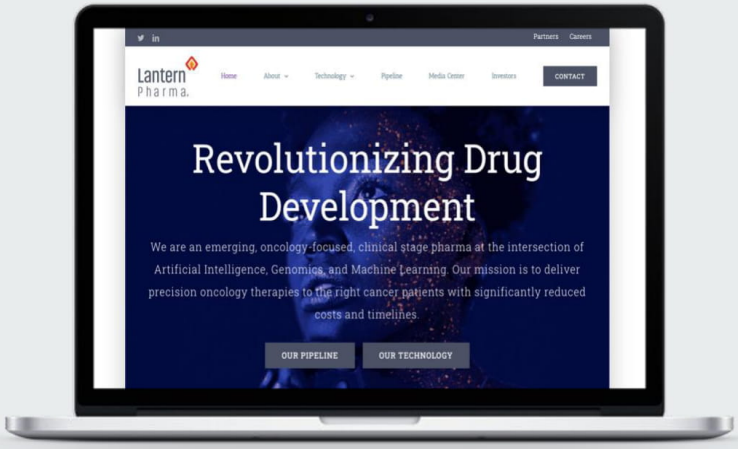
Forward-looking Statements

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; 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 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," "aim," "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 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 A.I. 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, 2020, filed with the Securities and Exchange Commission on March 10, 2021. You may access our Annual Report on Form 10-K for the year ended December 31, 2020 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

Fourth Quarter and Fiscal Year End 2020

Operating & Financial Results Conference Call



https://ir.lanternpharma.com/

March 10, 2021
4 PM Eastern

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; 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 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," "aim," "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 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 A.I. 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, 2020, filed with the Securities and Exchange Commission on March 10, 2021. You may access our Annual Report on Form 10-K for the year ended December 31, 2020 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.

Lantern Pharma

Fourth Quarter and Fiscal Year End 2020

Operating & Financial Results Conference Call

March 10, 2021
4 PM Eastern

KEY TOPICS

1. Business Overview & Background
   Panna Sharma, CEO
2. Financial Results & Highlights
   David Margrave, CFO
3. Business Updates
   Panna Sharma, CEO
4. Milestones
   Panna Sharma, CEO
5. Q&A Session

Lantern Pharma

Lantern leverages A.I. to rescue and develop cancer therapies and has the potential to transform the cost, risk and timeline of drug development

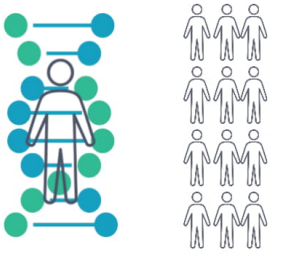
Failed or Abandoned Drug Assets & New Drug Development

Drugs that have failed clinical trials *or* have been abandoned by pharma and biotech companies in late stage trials

Development of new compounds in drug classes that leverage our AI platform

RADR®

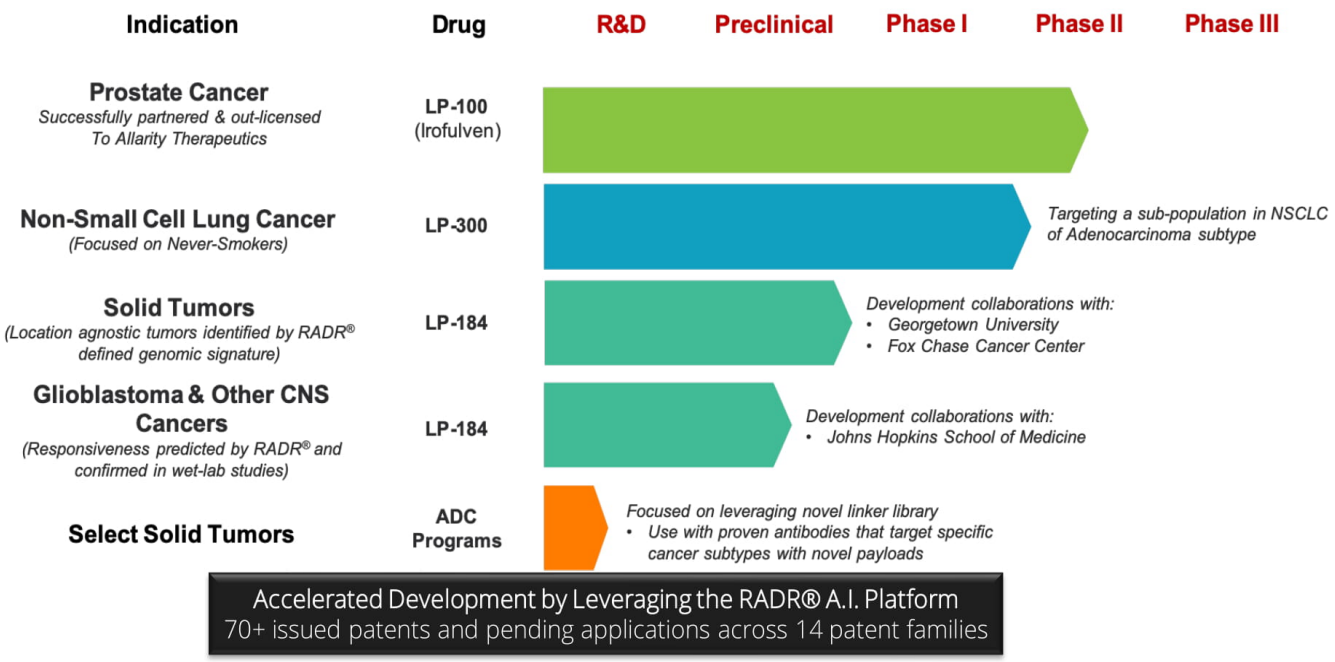
- Big data (genomic, clinical, response) assembled and analyzed
- Patient subgroups identified through machine learning and artificial intelligence
- Mechanisms of action clarified
- Potential combinations identified
- Potential for faster and more efficient path to relaunching in the clinical trial setting



Responders Non-Responders

- Patient stratification based on A.I. enabled genomic biomarker discovery
- New patient populations for failed or abandoned drugs based on validated biomarker signatures
- Aimed to shorten time to market
- Designed to reduce risk in development
- Potential for orphan or fast track status
- New Chemical Entities designed and filed

Lantern's Unique & Rapidly Developing Pipeline



Accelerated Development by Leveraging the RADR® A.I. Platform
70+ issued patents and pending applications across 14 patent families

Milestones Attained Since June 2020 IPO

Drug Development Achievements

- Expanded pipeline from 3 drug candidates in 4 tumor targets to 7 disclosed targets
- Initiated Antibody Drug Conjugate ("ADC") platform
- Grew RADR® A.I. platform to over 1.2 billion datapoints, ~5x from IPO
- Published multiple peer-reviewed publications
- Advanced LP-300 in NSCLC towards a planned launch of a Phase 2 trial in Q3 2021

Operational Achievements

- Established manufacturing network for the company's pipeline of targeted drug candidates
- R&D and CRO collaborations
- Collaborations with recognized KOLs in prostate, pancreatic and CNS cancers
- Over 15 new patent applications
- Expanded data sciences and research teams

Financial Highlights

- Completed $26.3 million IPO on June 15, 2020
- Completed $69.0 million follow-on public offering in January 2021
- Extended cash runway through mid-2025, allowing the company to focus developing our portfolio of oncology therapeutics

Summary Results of Operations

	Three Months Ended December 31, (Unaudited)		Year Ended December 31,	
	2020	**2019**	**2020**	**2019**
Operating expenses:				
General and administrative	1,547,675	497,700	3,664,965	1,475,000
Research and development	1,348,329	177,468	2,243,225	953,185
Total operating expenses	2,896,004	675,167	5,908,190	2,428,185
NET LOSS	**$ (2,896,004)**	**$ (675,167)**	**$ (5,908,190)**	**$ (2,428,185)**
Net loss per common share, basic and diluted	$ (0.47)	$ (0.34)	$ (1.37)	$ (1.23)
Weighted Avg. Common Shares Outstanding - Basic and Diluted	6,219,871	1,978,269	4,304,918	1,978,269

Balance Sheet Highlights & Summary

	12/31/2020	12/31/2019
Cash	**$ 19,229,232**	**$1,232,030**
Prepaid Expenses & Other Current Assets	$1,007,690	788
Total Assets	**$ 20,359,634**	**$ 1,432,576**
Total Liabilities	**$ 660,839**	**$ 489,292**
Total Stockholders' Equity	**$ 19,698,795**	**$ 943,284**

Cash position does not include $69.0 million (gross) raised in the January 20, 2021 follow-on public offering.

Lantern Pharma

Follow-On Offering – January 20, 2021

4,928,571 shares at $14.00 per share
$68,999,994 Gross Proceeds

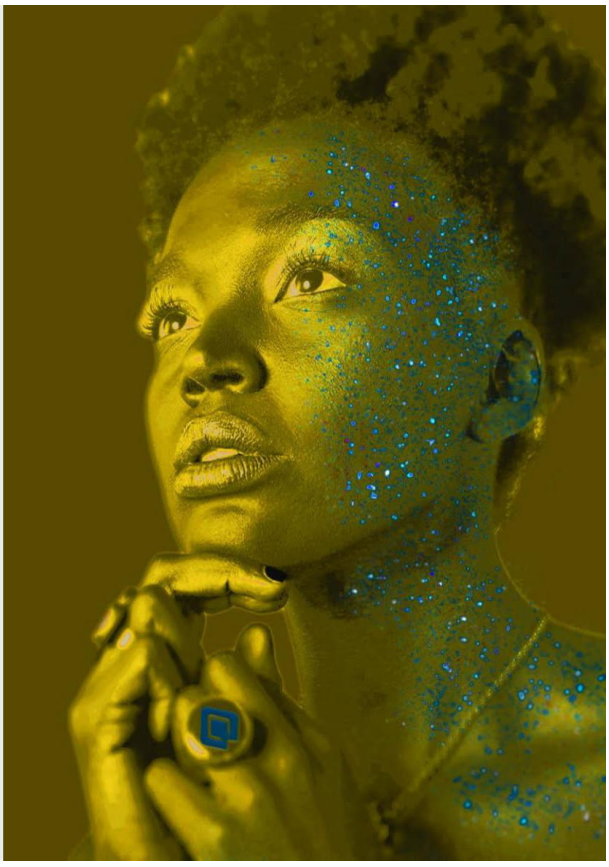
LANTERN PHARMA INC. (LTRN)	
Common Shares Outstanding	11,169,665
Warrants	305,294
Options (Employees, Management and Directors)	835,608
Fully Diluted Shares Outstanding	**12,310,567**

Entering "The Golden Age of A.I."

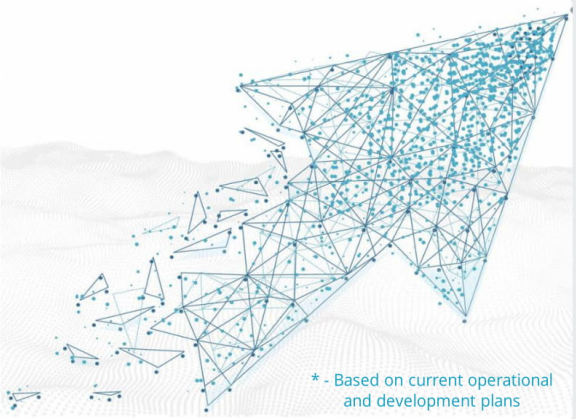
10 Mega-Trends Setting The Stage for A.I. Led Transformation in Drug Development & Medicine

- Large-scale, relevant and readily available data-sets
- Methods, technologies and algorithms that are massively scalable
- Computing, storage and transmission continue exponential advances
- Rapid rise of global talent and collaboration networks
- Tremendous increase in quality of biological data and methods
- Rise of sequencing as a highly available, on-demand, low-cost service
- Consumers willing to share personal data in near-time
- Industries that have an increasing impetus to transform
- New generation of investors demanding novel value creation
- Executives and entrepreneurs rewarded for rapid change

Lantern is at the forefront of this model of A.I. driven transformation in the area of personalized oncology drug development to drive value for cancer patients and our investors.



Precision Medicine Platform



10 Million > 2018 | 125 Million > 2019 | 1 Billion > 2020 | 3 Billion* > 2021 | 6 Billion* > 2022

Curated Data Sources Include:

- *Historical Trials*
- *Proprietary Internal Studies*
- *Studies & Collaborations w/ Partners*
- *Active Clinical Trials*
- *Trials in adjacent drug classes and tumors*
- *Proprietary Sequencing Campaigns*
- *Proprietary Drug Sensitivity Studies*
- *Open Sources from Publications and Research*
- *Clinical Outcome & Lab Data From Select Groups*

The RADR® Platform Enables…

Scientific Value +

- Rapid identification of potential compounds to rescue and develop
- Improved and more nuanced understanding of responder groups, and non-responder groups based on biological networks
- Feedback for potential mechanisms to be exploited in target-based development activity

- More rapid entry into clinical trials and patient subgroups
- Robust companion diagnostics that can be used to accelerate trials and commercial traction
- Potential for improved patient outcomes with drastically reduced costs and economic burden

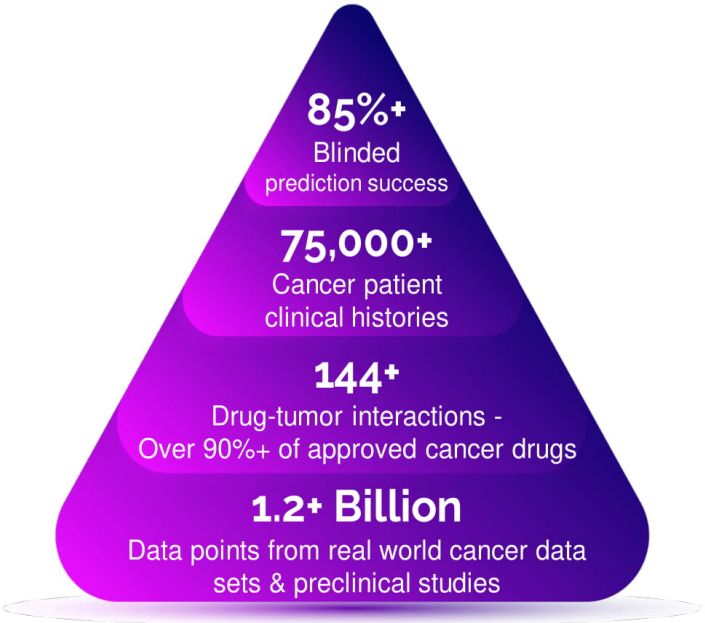
Patient Value +

Precision Medicine Platform

RADR® rapidly identifies genetic & biomarker signatures for precision oncology drug development, clinical response prediction and CDx (companion diagnostic) enablement.

We continue to invest in the platform's functionality, scale, and volume of data.

RADR® Platform Key Features & Architecture



RADR® Platform Continues to Grow in Volume and Functionality

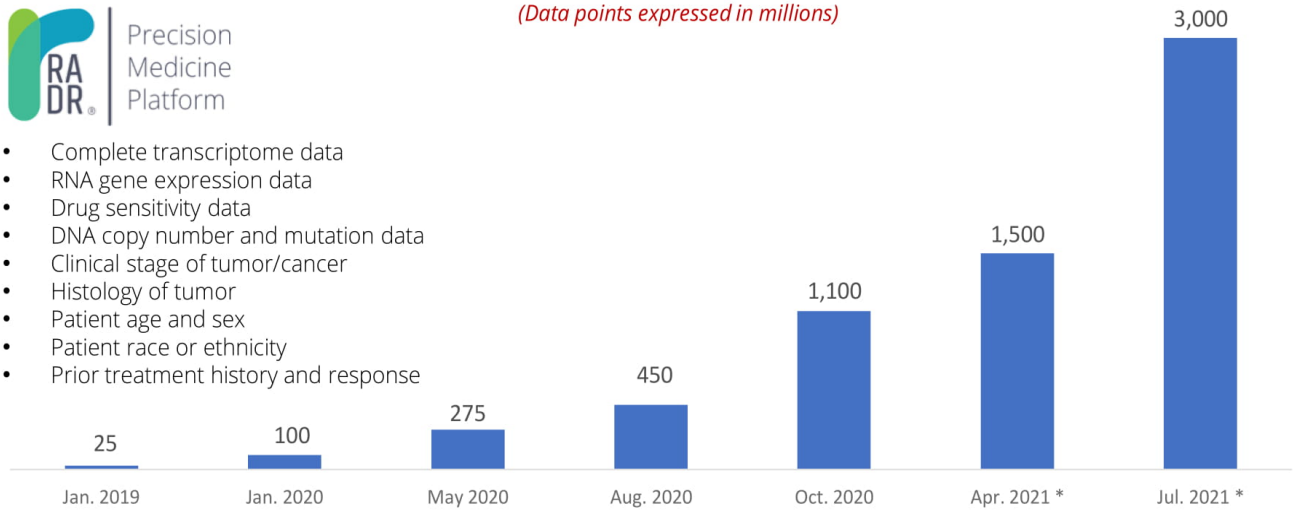
Growth in Data Drives Growth in Capabilities

The Data Powering our AI Platform is on pace to grow ~**120x** since January 2019

(Data points expressed in millions)

Precision Medicine Platform

- Complete transcriptome data
- RNA gene expression data
- Drug sensitivity data
- DNA copy number and mutation data
- Clinical stage of tumor/cancer
- Histology of tumor
- Patient age and sex
- Patient race or ethnicity
- Prior treatment history and response



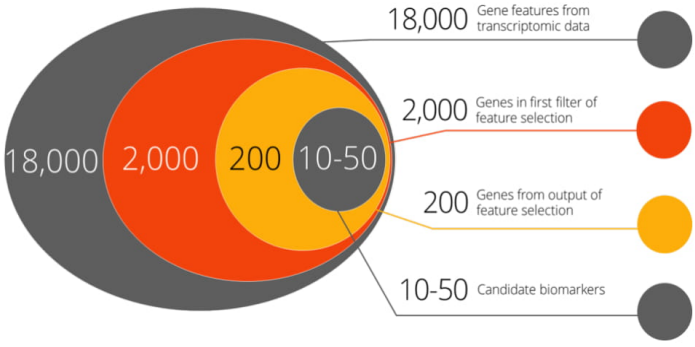
***** Expected amount of data based on development plan and pipeline

Precision Medicine Platform

RADR® automates machine-learning approaches in generating a biomarker based response signature that can be **used throughout the lifecycle of therapy development:**

1. Preclinical modeling and studies
2. Clarifying mechanisms of action
3. Launching a robust companion diagnostic (CDx).
4. Identifying additional potential combination drugs or therapies

Biomarker Signature is Based on Statistical Significance and Biological Relevance



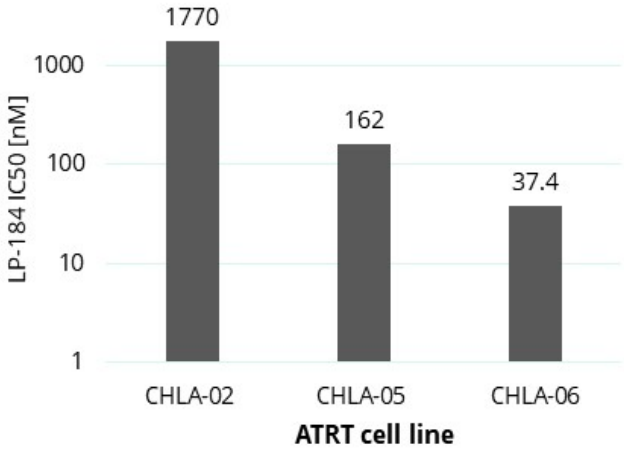
Output & Signature Development Process

Lantern Pharma

- Ultra-rare CNS cancer mostly occurring in children driven by SMARCB1 expression as predicted by **RADR®**
- Additional validation studies are anticipated in 2021 in collaboration with a leading cancer research center

LP-184 Shows In Vitro Potency in ATRT Cancer

LP-184 IC50 values in multiple ATRT cell lines suggest ability to potently kill these cancers



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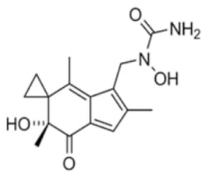
Collaboration Focused on Glioblastoma (GBM) for LP-184

Kennedy Krieger Institute

JOHNS HOPKINS MEDICINE SCHOOL OF MEDICINE

Structure of LP-184



FOCUS:
This Johns Hopkins collaboration is focused on establishing LP-184 as a superior agent in GBM, as well as qualifying LP-184 for an orphan drug designation in this rare tumor type.

GOAL:
The goal of the collaboration is to demonstrate the efficacy of LP-184 in GBM regardless of its MGMT methylation status usually underlying standard or care refractoriness. Sensitivity correlations with IDH1 mutations and synergy with Temozolomide will also be evaluated. Initial results received in Q1, 2021.

LEAD INVESTIGATOR:
The research will be led by John Laterra, MD, Ph.D., a professor in the Department of Neurology, Neuroscience and Oncology at Johns Hopkins University School of Medicine and Kennedy Krieger Institute. He is the director of the Division of Neuro-Oncology in the Department of Neurology at Johns Hopkins. Dr. Laterra's laboratory focuses on the cellular and molecular biology of primary brain tumor malignancy, with the combined goals of defining basic mechanisms and translating these discoveries into experimental therapeutics. He is particularly interested in the molecular mechanisms of glioma cell growth and survival pathways, tumor-related angiogenesis, and the functioning of the blood-brain and blood-tumor barriers.

Key Value Building Objectives

Foundational Year
Advance Platform
Prepare Trial Launches
Prioritize Additional Compounds

2021

- Planned launch of Ph. 2 clinical trial for LP-300 in NSCLC (non-smokers) in 3Q'21
- Update on LP-100 Ph. 2 EU trial in mCRPC
- Grow RADR® A.I. platform to over 3 billion datapoints
- Identify antibody target and tumor for ADC program
- Results from preclinical work w/ LP-184 in pancreatic, prostate, GBM, ATRT and other tumors
- Launch initial ADC indications in pre-clinical
- Showcase RADR® A.I. platform and drug portfolio during "Lantern Investor Day"

Multiple Streams of Value Creation
Launch Multiple Precision Trials
Leverage Platform for Pharma Partners
Secure Additional Compounds

2022

- Launch Ph. 1 ADC program in solid tumors
- Launch Ph. 1 clinical trial for LP-184 in solid tumors
- Launch Ph. 1/2 clinical trial for LP-184 in GBM
- Progress LP-184 in ATRT towards Ph. 1/2 clinical trial
- Explore potential combinations for LP-184 & LP-300 with other existing approved drugs (inc. I-O agents)
- Strategically grow RADR® A.I. platform to 6 billion datapoints
- Licensing and partnership opportunities

Upcoming Conference & Presentation Schedule

3/9-10/2021	H.C. Wainwright & Co. Global Life Sciences Conference
3/24-25/2021	Benzinga Healthcare Conference
4/12-15/2021	Needham 20th Annual Healthcare Conference
5/4-5/2021	7th Annual Truist Securities 2021 Life Sciences Summit

Unless otherwise noted, all events are virtual and based on confirmed registration and subject to the policies of the event organizer.

Lantern Pharma

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Q & A

LTRN Operating & Financial Results Call
March 10, 2021