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

FORM 10-Q

(Mark One)
☒ QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended March 31, 2023

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

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**)

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 (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒	Smaller reporting company	☒
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. ☒

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of May 3, 2023 the registrant had 10,857,040 shares of common stock, $0.0001 par value per share outstanding.

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FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q contains forward-looking statements that involve substantial risks and uncertainties. We make such forward-looking statements pursuant to the safe harbor provisions of the U.S. Private Securities Litigation Reform Act, Section 21E of the Securities Exchange Act of 1934, as amended, and other federal securities laws. All statements, other than statements of historical fact, contained in this Quarterly Report on Form 10-Q, including statements regarding our strategy, future preclinical studies and clinical trials, future financial position, projected costs, prospects, plans and objectives of management, are forward-looking statements. The words "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 are intended to identify forward-looking statements, although not all forward-looking statements contain these words. Forward-looking statements reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties.

The forward-looking statements in this Quarterly Report on Form 10-Q include, among other things, statements relating to:

- 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 any of our drug candidates;
- our strategic plans to expand the number of data points that our RADR® platform can access and analyze;
- our research and development efforts of our internal drug discovery programs and the utilization of our RADR® platform to streamline the drug development process;
- the initiation, timing, progress, and results of our preclinical studies or clinical trials for any of our drug candidates;
- our intention to leverage artificial intelligence, machine learning and genomic data to streamline the drug development process and to identify patient populations that would likely respond to a drug candidate;
- 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;
- our expectations regarding our ability to fund our operating expenses and capital expenditure requirements with our existing cash and cash equivalents;
- our ability to secure sufficient funding and alternative sources of funding to support our existing and proposed preclinical studies and clinical trials;
- our estimates regarding the potential market opportunity for our drug candidates we or any of our collaborators may in the future develop;
- our anticipated growth strategies and our ability to manage the expansion of our business operations effectively;
- our expectations related to future expenses and expenditures;
- our ability to keep up with rapidly changing technologies and evolving industry standards, including our ability to achieve technological advances;
- the potential impact that the continuance or resurgence of the COVID-19 pandemic (or another epidemic or infectious disease outbreak) or its impact on the overall economy may have on our business plans;
- our ability to source our needs for skilled labor in the fields of artificial intelligence, genomics, biology, oncology and drug development; and
- the impact of government laws and regulations on the development and commercialization of our drug candidates.

We may not actually achieve the plans, intentions, or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions, and expectations disclosed in the forward-looking statements we make. We have included important factors in the cautionary statements included in this Quarterly Report on Form 10-Q and in the Risk Factors section of our Annual Report on Form 10-K ("2022 Form 10-K"), for the year ended December 31, 2022 filed with the Securities and Exchange Commission, or the SEC, on March 20, 2023, and have identified other factors such as the impact of the COVID-19 pandemic, the results of our clinical trials, and the impact of competition, that we believe could cause actual results or events to differ materially from the forward-statements that we make. Furthermore, we operate in a competitive and rapidly changing environment. New risks and uncertainties emerge from time to time, and it is not possible for us to predict all risks and uncertainties that could have an impact on the forward-looking statements contained in this Quarterly Report on Form 10-Q.

You should read this Quarterly Report on Form 10-Q and the documents that we file with the SEC with the understanding that our actual future results may be materially different from what we expect. These forward-looking statements are based on management's current expectations. These statements are neither promises nor guarantees, but involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Factors that may cause actual results to differ materially from current expectations include, among other things, those listed elsewhere in this Quarterly Report on Form 10-Q and those listed under the Risk Factors section of our 2022 Form 10-K. You may access our 2022 Form 10-K 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 uncertainties, you should not rely on these forward-looking statements as predictions of future events. The forward-looking statements contained in this Quarterly Report on Form 10-Q are made as of the date of this Quarterly Report, and we do not assume any obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by applicable law.

In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this Quarterly Report on Form 10-Q, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete. Our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

Unless the context requires otherwise, references to the "Company," "Lantern," "we," "us," and "our" in this Quarterly Report on Form 10-Q refer to Lantern Pharma Inc., a Delaware corporation, and, where appropriate, its wholly-owned subsidiaries.

PART I – FINANCIAL INFORMATION

Item 1. Financial Statements.

Lantern Pharma Inc. and Subsidiaries
Condensed Consolidated Balance Sheets

	March 31, 2023 (Unaudited)	December 31, 2022
CURRENT ASSETS		
Cash and cash equivalents	$ 32,478,770	$ 37,201,786
Restricted cash	541,180	541,180
Marketable securities	19,061,281	17,994,299
Prepaid expenses & other current assets	3,086,331	2,985,472
Total current assets	55,167,562	58,722,737
Property and equipment, net	53,466	48,008
Operating lease right-of-use assets	255,320	47,687
Other assets	32,969	17,889
TOTAL ASSETS	$ 55,509,317	$ 58,836,321
CURRENT LIABILITIES		
Accounts payable and accrued expenses	$ 2,673,603	$ 2,745,407
Operating lease liabilities, current	119,584	52,890
Total current liabilities	2,793,187	2,798,297
Operating lease liabilities, net of current portion	140,632	-
TOTAL LIABILITIES	2,933,819	2,798,297
COMMITMENTS AND CONTINGENCIES (NOTE 4)		
STOCKHOLDERS' EQUITY		
Preferred Stock (1,000,000 authorized at March 31, 2023 and December 31, 2022; $.0001 par value) (Zero shares issued and outstanding at March 31, 2023 and December 31, 2022)	-	-
Common Stock (25,000,000 authorized at March 31, 2023 and December 31, 2022; $.0001 par value) (10,857,040 shares issued and outstanding at March 31, 2023 and December 31, 2022)	1,086	1,086
Additional paid-in capital	96,024,724	95,691,194
Accumulated other comprehensive loss	(299,677)	(371,386)
Accumulated deficit	(43,150,635)	(39,282,870)
Total stockholders' equity	52,575,498	56,038,024
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$ 55,509,317	$ 58,836,321

See accompanying Notes to Condensed Consolidated Financial Statements

Lantern Pharma Inc. and Subsidiaries
Condensed Consolidated Statements of Operations (Unaudited)

	Three Months Ended March 31,	
	2023	**2022**
Operating expenses:		
General and administrative	1,733,321	1,406,160
Research and development	2,552,947	2,660,237
Total operating expenses	4,286,268	4,066,397
Loss from operations	(4,286,268)	(4,066,397)
Interest income	133,782	22,421
Other income (expense), net	284,721	(77,798)
NET LOSS	$ (3,867,765)	$ (4,121,774)
Net loss per share of common shares, basic and diluted	$ (0.36)	$ (0.38)
Weighted-average number of common shares outstanding, basic and diluted	10,857,040	10,875,777

See accompanying Notes to Condensed Consolidated Financial Statements

Lantern Pharma Inc. and Subsidiaries
Condensed Consolidated Statements of Comprehensive Loss (Unaudited)

	Three Months Ended March 31,	
	2023	**2022**
NET LOSS	$ (3,867,765)	$ (4,121,774)
Other comprehensive loss		
Unrealized gain (loss) on available-for-sale securities	50,773	(212,488)
Unrealized gain (loss) on foreign currency translation	20,936	(6,292)
Other comprehensive gain (loss)	71,709	(218,780)
Comprehensive loss	$ (3,796,056)	$ (4,340,554)

See accompanying Notes to Condensed Consolidated Financial Statements

Lantern Pharma Inc. and Subsidiaries
Condensed Consolidated Statements of Stockholders' Equity (Unaudited)

	Preferred Stock Number of Shares	Preferred Stock Amount	Common Stock Number of Shares	Common Stock Amount	Additional Paid-in-Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total Stockholders' Equity
Balance, December 31, 2021	-	$ -	11,088,835	$ 1,109	$96,685,924	$ (92,689)	$ (25,022,924)	$ 71,571,420
Common stock issued from warrant and option exercises	-	-	95,779	10	299,778	-	-	299,788
Stock-based compensation	-	-	-	-	267,004	-	-	267,004
Share repurchases	-	-	(353,667)	(36)	(2,482,250)	-	-	(2,482,286)
Net loss	-	-	-	-	-	-	(4,121,774)	(4,121,774)
Other comprehensive loss	-	-	-	-	-	(218,780)	-	(218,780)
Balance, March 31, 2022	-	$ -	10,830,947	$ 1,083	$94,770,456	$ (311,469)	$ (29,144,698)	$ 65,315,372
Balance, December 31, 2022	-	$ -	10,857,040	$ 1,086	$95,691,194	$ (371,386)	$ (39,282,870)	$ 56,038,024
Stock-based compensation	-	-	-	-	333,530	-		333,530
Net loss		-	-		-	-	(3,867,765)	(3,867,765)
Other comprehensive gain	-	-	-	-	-	71,709	-	71,709
Balance, March 31, 2023	-	$ -	10,857,040	$ 1,086	$96,024,724	$ (299,677)	$ (43,150,635)	$ 52,575,498

See accompanying Notes to Condensed Consolidated Financial Statements

Lantern Pharma Inc. and Subsidiaries
Condensed Consolidated Statements of Cash Flows (Unaudited)

	Three Months Ended March 31,	
	2023	**2022**
CASH FLOWS FROM OPERATING ACTIVITIES		
Net loss	$ (3,867,765)	$ (4,121,774)
Adjustments to reconcile net loss to cash used in operating activities:		
Depreciation and amortization	3,418	1,989
Non-cash lease adjustments	40,025	36,151
Stock-based compensation	333,530	267,004
Amortization (accretion) of investment premiums (discount)	(60,018)	51,400
Foreign currency remeasurement loss (gain)	38,194	(22,110)
Realized loss on redemptions of marketable securities	37,960	-
Unrealized (gain) loss on equity securities	(42,150)	195,950
Changes in assets and liabilities:		
Prepaid expenses and other current assets	(117,638)	(440,165)
Accounts payable and accrued expenses	(67,300)	742,523
Operating lease liabilities	(40,332)	(38,698)
Other assets	(15,080)	-
Net cash flows used in operating activities	(3,757,156)	(3,327,730)
INVESTING ACTIVITIES		
Purchase of fixed assets	(8,876)	-
Purchases of marketable securities	(3,102,001)	-
Redemptions of marketable securities	2,150,000	176,519
Net cash flows (used in) / provided by investing activities	(960,877)	176,519
FINANCING ACTIVITIES		
Repurchase of shares including commissions	-	(2,482,286)
Proceeds from stock option and warrant exercises	-	299,788
Net cash flows used in financing activities	-	(2,182,498)
Effect of foreign exchange rates on cash	(4,983)	2,278
CHANGE IN CASH, CASH EQUIVALENTS, AND RESTRICTED CASH FOR THE PERIOD	(4,723,016)	(5,331,431)
CASH, CASH EQUIVALENTS AND RESTRICTED CASH, BEGINNING OF PERIOD	37,742,966	52,524,295
CASH, CASH EQUIVALENTS AND RESTRICTED CASH, END OF PERIOD	$ 33,019,950	$ 47,192,864
RECONCILIATION OF CASH, CASH EQUIVALENTS AND RESTRICTED CASH TO THE CONSOLIDATED BALANCE SHEETS:		
Cash and cash equivalents	$ 32,478,770	$ 46,651,684
Restricted cash	541,180	541,180
CASH, CASH EQUIVALENTS AND RESTRICTED CASH	$ 33,019,950	$ 47,192,864
Non-cash investing and financing activities		
Operating lease right-of-use asset acquired through operating lease liability	$ 48,811	$ -
Remeasurement of operating lease right-of-use asset and operating lease liability	198,847	-
Unrealized gain (loss) on debt securities	50,773	(212,488)

See accompanying Notes to Condensed Consolidated Financial Statements

NOTES TO FINANCIAL STATEMENTS

Note 1. Organization, Principal Activities, and Basis of Presentation

Lantern Pharma Inc., and Subsidiaries (the "Company") is a clinical stage biopharmaceutical company, focused on leveraging artificial intelligence ("A.I."), machine learning and genomic data to streamline the drug development process and to identify the patients that will benefit from its targeted oncology therapies. The Company's portfolio of therapies consists of small molecule drug candidates that others have tried, but failed, to develop into an approved commercialized drug, as well as new compounds that it is developing with the assistance of its A.I. platform and its biomarker driven approach. The Company's A.I. platform, known as RADR®, uses big data analytics (combining molecular data, drug efficacy data, data from historical studies, data from scientific literature, phenotypic data from trials and publications, and mechanistic pathway data) and machine learning. The Company's data-driven, genomically-targeted and biomarker-driven approach allows it to pursue a transformational drug development strategy that identifies, rescues or develops, and advances potential small molecule drug candidates.

Lantern Pharma Inc. was incorporated under the laws of the state of Texas on November 7, 2013, and thereafter reincorporated in the state of Delaware on January 15, 2020. The Company's principal operations are located in Texas. The Company formed a wholly owned subsidiary, Lantern Pharma Limited, in the United Kingdom in July 2017 and a wholly owned subsidiary, Lantern Pharma Australia Pty Ltd, in Australia in September 2021. In January 2023, the Company formed a wholly owned subsidiary, Starlight Therapeutics Inc. ("Starlight"), to continue with advancing the development of drug candidate LP-184's central nervous system (CNS) and brain cancer indications.

Since inception, the Company has devoted substantially all its activity to advancing research and development, including efforts in connection with preclinical studies, clinical trials and development of its RADR® platform. This now includes four drug candidates and an Antibody Drug Conjugate (ADC) program directed towards eleven disclosed therapeutic targets:

- LP-300 (Tavocept), which we are currently advancing in a Phase II clinical trial, the Harmonic™ trial, focused on never smokers with advanced non-small cell lung cancer;
- LP-100 (irofulven) is in clinical development with a focus on treatment in combination with PARP inhibitors;
- LP-184 is advancing towards launch of a phase I clinical trial, and has potential for treatment of solid tumors including pancreatic, prostate, and bladder cancers, and glioblastoma and other CNS cancers. Following the formation of Starlight, the Company now refers to the molecule LP-184, as it is developed in CNS indications, as "STAR-001";
- LP-284, the stereoisomer (enantiomer) of LP-184, is advancing towards launch of a phase I clinical trial, and has shown promising *in-vitro* and *in vivo* anticancer activity in multiple hematological cancers, which are distinct from the indications targeted by LP-184; and
- Our ADC program is aimed at identifying targeted or therapeutic antibodies to conjugate with selected compounds.

The Company's fiscal year ends on December 31 of each calendar year. The accompanying interim condensed consolidated financial statements are unaudited and have been prepared on substantially the same basis as the Company's annual consolidated financial statements for the fiscal year ended December 31, 2022. In the opinion of the Company's management, these interim condensed consolidated financial statements reflect all adjustments (consisting only of normal recurring adjustments) considered necessary for a fair statement of the Company's financial position, results of operations and cash flows for the periods presented. The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America ("GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the condensed consolidated financial statements and the reported amounts of expenses during the reporting periods. Actual results could differ from these estimates.

The December 31, 2022 year-end condensed consolidated balance sheet data in the accompanying interim condensed consolidated financial statements was derived from audited consolidated financial statements. These condensed consolidated financial statements and notes do not include all disclosures required by U.S. generally accepted accounting principles and should be read in conjunction with the Company's audited consolidated financial statements as of and for the year ended December 31, 2022 and the notes thereto included in the Company's Annual Report on Form 10-K, dated March 20, 2023, on file with the Securities and Exchange Commission.

The results of operations and cash flows for the interim periods included in these condensed consolidated financial statements are not necessarily indicative of the results to be expected for any future period or the entire fiscal year.

Any reference in these notes to applicable guidance refers to Accounting Standards Codification ("ASC") and Accounting Standards Update ("ASU") of the Financial Accounting Standards Board ("FASB"). To date, the Company has operated its business as one segment. The Company's condensed consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries, Lantern Pharma Limited, Lantern Pharma Australia Pty Ltd. and Starlight Therapeutics Inc. All intercompany balances and transactions have been eliminated in consolidation.

Note 2. Liquidity

The Company incurred a net loss of approximately $3,868,000 and $4,122,000 during the three months ended March 31, 2023 and 2022, respectively. As of March 31, 2023, the Company had working capital of approximately $52,374,000. The Company has received funding in the form of periodic capital raises and also plans to apply for grant funding in the future to assist in supporting its capital needs. We may also explore the possibility of entering into commercial credit facilities as an additional source of liquidity. We believe that our existing cash and cash equivalents as of March 31, 2023, and our anticipated expenditures and capital commitments, will enable us to fund our operating expenses and capital expenditure requirements for at least 12 months from the date of this quarterly report.

Note 3. Summary of Significant Accounting Policies

Use of Estimates and Assumptions

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. The significant areas of estimation include determining research and development accruals, the inputs in determining the fair value of equity-based awards and warrants issued, the inputs in determining present value of lease payments, and determining the fair value of marketable securities. Actual results could differ from those estimates.

Risks and Uncertainties

The Company operates in an industry that is subject to intense competition, government regulation and rapid technological change. Operations are subject to significant risk and uncertainties including financial, operational, technological, regulatory, and other risks, including the potential risk of business failure.

A continuance or resurgence of the COVID-19 pandemic (or the occurrence of another epidemic or infectious disease outbreak) or its impact on the overall economy could in the future have a material impact on our business.

Our marketable securities have had and may in the future have their market value fluctuate due to rises or falls in interest rates. While we believe our cash, cash equivalents and marketable securities do not contain excessive risk, we cannot provide absolute assurance that in the future our investments will not be subject to adverse changes in market value. In addition, we maintain significant amounts of cash and cash equivalents at one or more financial institutions that are federally insured. Interest bearing and non-interest bearing accounts we hold at these banking institutions are guaranteed by the Federal Deposit Insurance Corporation ("FDIC") up to $250,000 per depositor, per FDIC-insured bank, per ownership category. Substantially all of our cash balances held at banking institutions at March 31, 2023 are in excess of FDIC coverage.

Research and Development

Research and development costs are expensed as incurred. These expenses primarily consist of payroll, contractor expenses, research study expenses, costs for manufacturing and supplies, clinical site costs and other costs for the conduct of clinical trials, and technical infrastructure on the cloud for the purposes of developing the Company's RADR® platform and identifying, developing, and testing drug candidates. Development costs incurred by third parties are expensed as the work is performed. Costs to acquire technologies, including licenses, that are utilized in research and development and that have no alternative future use are expensed when incurred.

Cash and Cash Equivalents

The Company considers money market funds and other highly liquid instruments with a short-term maturity of 3 months or less to be cash equivalents. Cash equivalents at March 31, 2023 and December 31, 2022 were approximately $17,237,000 and $1,271,000, respectively, and are included along with cash under the caption cash and cash equivalents on the Company's consolidated balance sheets.

Restricted Cash

The Company considers cash held in escrow for the purposes of contractual contingencies to be restricted cash. All of the restricted cash at March 31, 2023 and December 31, 2022 relates to escrow amounts paid in connection with the Asset Purchase Agreement entered into by the Company and Allarity Therapeutics in July 2021 (See Note 4) and is considered a current asset at March 31, 2023, as the milestones that could require payments to be made to Allarity Therapeutics must be satisfied within the next 12 months.

Leases

The Company determines whether an arrangement contains a lease at inception. Operating leases are included in operating lease right-of-use ("ROU") assets, current portion of operating lease liabilities, and net of current portion of operating lease liabilities on our consolidated balance sheets. ROU assets represent the Company's right to use an underlying asset for the lease term and lease liabilities represent an obligation to make lease payments arising from the lease. Lease ROU assets and lease liabilities are recognized based on the present value of the future minimum lease payments over the lease term at the commencement date. As the Company's leases do not provide an implicit rate, an incremental borrowing rate is used based on the information available at the commencement date in determining the present value of lease payments. The Company does not include options to extend or terminate the lease term unless it is reasonably certain that the Company will exercise any such options. Rent expense is recognized under the operating leases on a straight-line basis. The Company does not recognize right-of-use assets or lease liabilities for short-term leases, which have a lease term of twelve months or less, and instead will recognize lease payments as expense on a straight-line basis over the lease term.

Marketable Securities

The Company's marketable securities consist of government and agency securities, corporate bonds, and mutual funds. We classify our marketable securities as available-for-sale at the time of purchase and reevaluate such classification as of each balance sheet date. We may sell these securities at any time for use in current operations even if they have not yet reached maturity. As a result, we classify our investments, including securities with maturities beyond twelve months, as current assets in the accompanying condensed consolidated balance sheets. Available-for-sale debt securities are recorded at fair value each reporting period. Unrealized gains and losses are excluded from earnings and recorded as a separate component within "Accumulated other comprehensive income" or "Accumulated other comprehensive loss" on the condensed consolidated balance sheets until realized. Interest is reported within "Interest income" and dividend income is reported within "Other income (expense), net" on the condensed consolidated statements of operations. We evaluate our investments to assess whether the amortized cost basis is in excess of estimated fair value and determine what amount of that difference, if any, is caused by expected credit losses. Allowance for credit losses are recognized as a charge in "Other income (expense), net" on the condensed consolidated statements of operations, and any remaining unrealized losses are included in "Accumulated other comprehensive loss" on the condensed consolidated balance sheets. There were no credit losses recorded for the three months ended March 31, 2023 and 2022. There was no impairment charge for any unrealized losses for the three months ended March 31, 2023 and 2022. We determine realized gains and losses on the sale of marketable securities based on the specific identification method and record such gains and losses in "Other income (expense), net" on the condensed consolidated statements of operations.

Recently Adopted Accounting Standard

Current Expected Credit Loss

In June 2016 the FASB issued Accounting Standard Update (ASU) 2016-13, Measurement of Credit Losses on Financial Instruments (Topic 326). This introduces new methodology for recognition of credit losses - the current expected credit loss ("CECL") method. The CECL method requires the recognition of all losses expected over the life of a financial instrument upon origination or purchase of the instrument, unless the company elects to recognize such instruments at fair value with changes in profit and loss. CECL was adopted on January 1, 2023 and had no impact on the Company's condensed consolidated financial statements.

Note 4. Commitments and Contingencies

General

The Company has entered into, and expects to enter into from time to time in the future, license agreements, strategic alliance agreements, assignment agreements, research service agreements, and similar agreements related to the advancement of its product candidates and research and development efforts. Significant agreements (collectively, the "License, Strategic Alliance, and Research Agreements") are described in detail in the Company's 2022 Form 10-K. While specific amounts will fluctuate from quarter to quarter based on clinical trials progress, advancement and completion of research studies and manufacturing projects, and other factors, the Company believes its overall activities regarding License, Strategic Alliance, and Research Agreements are materially consistent with those described in the 2022 Form 10-K. In addition to the specific agreements described in the 2022 Form 10-K, the Company has entered into, and will in the future enter into, other research and service provider agreements for the advancement of its product candidates and research and development efforts. The Company expects to pay additional amounts in future periods in connection with existing and future research and service provider agreements.

Set forth below are the approximate amounts expensed for License, Strategic Alliance, and Research Agreements during the three months ended March 31, 2023 and 2022, respectively. These expensed amounts are included under research and development expenses in the accompanying condensed consolidated statements of operations.

	Three Months Ended March 31,	
	2023	2022
Amount Expensed for License, Strategic Alliance, and Research Agreements	$ 1,248,000	$ 1,858,000

Set forth below at March 31, 2023 and December 31, 2022, respectively, are (1) the approximate amounts accrued and payable under License, Strategic Alliance, and Research Agreements, and (2) the approximate amount of prepaid expenses and other current assets under License, Strategic Alliance, and Research Agreements. These amounts are included in the accompanying condensed consolidated balance sheets.

	March 31, 2023	December 31, 2022
Amount accrued and payable under License, Strategic Alliance, and Research Agreements	$ 1,487,000	$ 1,813,000
Prepaid expenses and other current assets under License, Strategic Alliance, and Research Agreements	$ 1,560,000	$ 1,595,000

EU Grant

In September 2018, Lantern Pharma Limited, a wholly owned subsidiary of Lantern Pharma Inc., was awarded a grant by the UK government in the form of state aid under the Commission Regulations (EU) No. 651/2014 of 17 June 2014 (the "General Block Exemption"), Article 25 Aid for research and development projects, state aid notification no. SA.40154. The grant was awarded to conduct research and development activities for the prostate cancer biomarker analysis of the LP-184 drug candidate. Following the Company's research and development activities in Northern Ireland, the grant will reimburse the Company 50% of its research and development expenses not exceeding GBP 24,215 of vouched and approved expenditures within specific categories. The grant contains some reporting and consent requirements. The grant will remain in force for a period of five years. No payments to the Company have been made under the grant as of March 31, 2023 and December 31, 2022. No revenue has been recognized from this grant through March 31, 2023.

Actuate Therapeutics

In May 2021, the Company entered into a Collaboration Agreement with Actuate Therapeutics, Inc. ("Actuate"), a clinical stage private biopharmaceutical company focused on the development of compounds for use in the treatment of cancer, and inflammatory diseases leading to fibrosis. Pursuant to the agreement, the Company and Actuate are collaborating on utilization of the Company's RADR® platform to develop novel biomarker derived signatures for use with one of Actuate's product candidates. As part of the collaboration, the Company received 25,000 restricted shares of Actuate stock, subject to meeting certain conditions of the collaboration, as well as the potential to receive additional Actuate stock if results from the collaboration are utilized in future development efforts. In 2022, the term of the Collaboration Agreement was extended to continue until March 31, 2023. The Company is currently in discussions with Actuate to extend the Collaboration Agreement. Leslie W. Kreis, Jr., a director of the Company until June 8, 2022, is also a director of Actuate. Certain affiliates of Bios Partners beneficially own greater than 10% of the Company's common stock and also hold substantial beneficial ownership interests in Actuate. Through March 31, 2023, no revenues have been recognized under the Collaboration Agreement.

The restricted shares of Actuate stock had a nominal value when acquired and, therefore, were recorded at a cost of $0. These shares do not have a readily determinable fair value, but will be adjusted for observable price changes, if any, in future periods. There were no adjustments to the carrying amount through March 31, 2023.

Note 5. Leases

The operating lease cost recognized in general and administrative expenses in our consolidated statements of operations was approximately $42,000 for the three months ended March 31, 2023, and approximately $39,000 for the three months ended March 31, 2022.

The following provides balance sheet information related to leases as of March 31, 2023 and December 31, 2022:

	March 31, 2023	December 31, 2022
Assets		
Operating lease, right-of-use asset, net	$ 255,320	$ 47,687
Liabilities		
Current portion of operating lease liabilities	$ 119,584	$ 52,890
Operating lease liabilities, net of current portion	140,632	-
Total operating lease liabilities	$ 260,216	$ 52,890

At March 31, 2023, the future estimated minimum lease payments under non-cancelable operating leases are as follows:

2023 (remaining nine months)	$	102,212
2024		134,118
2025		45,431
Total minimum lease payments		281,761
Less amount representing interest		(21,545)
Present value of future minimum lease payments		260,216
Less current portion of operating lease liabilities		(119,584)
Operating lease liabilities, net of current portion	$	140,632

In April 2021, the Company entered into two operating leases for office space that commenced in May 2021. The leases expire in April 2023 and automatically renew month-to-month unless the Company provides three-months written notice to the landlord prior to initial expiration. In January 2023, the Company renewed one of the operating leases for an additional two years and notified the landlord of its intent not to renew the other space. In January 2023, the Company also entered into a new lease that commenced in March 2023 and continues through April 2025. This new lease also renews automatically on a month-to-month basis unless the Company provides three-months written notice to the landlord prior to initial expiration. The exercise of lease renewal options is at our sole discretion and is assessed as to whether to include any renewals in the lease term at inception.

The following table provides a reconciliation for our operating right-of-use assets and operating lease liabilities:

		Operating Right-of-Use Assets		Operating Lease Liabilities
Balance at December 31, 2022	$	47,687	$	52,890
Remeasurement of operating lease right-of-use assets and operating lease liability		198,847		198,847
Operating right-of-use asset acquired through operating lease liability		48,811		48,811
Amortizations and reductions		(40,025)		(40,332)
Balance at March 31, 2023	$	255,320	$	260,216

Other supplemental information related to operating leases is as follows:

	As of March 31,	
	2023	2022
Weighted average remaining term of operating leases (in years)	2.04	1.08
Weighted average discount rate of operating leases	7.44%	4.65%

The Company also leased office space in Dallas, Texas under month-to-month lease arrangements during the three months ended March 31, 2023 and 2022. Under these short-term leases, the Company elected the short-term lease measurement and recognition exemption under ASC 842 and recorded rent expense as incurred.

In January 2023, the Company entered into a new two-year operating lease agreement for office space that commences in May 2023. The lease requires monthly rent payments of $4,095 for the first year, which increase to $4,254 per month in the second year. The Company has not recorded an operating right-of-use asset or operating lease liability for this lease as of March 31, 2023, as the lease has not yet commenced.

Note 6. Stockholders' Equity

Common Stock

In November 2021, the Company's Board of Directors authorized a share repurchase program to acquire up to $7,000,000 of the Company's common stock. During the three months ended March 31, 2022, the Company repurchased 353,667 shares of common stock pursuant to the repurchase program for a total of approximately $2,482,000, including purchase fees. The share repurchase program terminated on July 31, 2022.

During the three months ended March 31, 2022, the Company issued 95,779 shares of common stock relating to the cash exercise of warrants for total proceeds of approximately $300,000. All of such warrants were exercisable at an exercise price of $3.13 per share of common stock.

As of March 31, 2023 and December 31, 2022, the Company had 25,000,000 authorized shares of Common Stock, of which 10,857,040 shares were issued and outstanding.

Warrants

During the three months ended March 31, 2022, the Company issued 95,779 shares of common stock relating to the cash exercise of warrants that were expiring. The Company had warrants to purchase 177,998 shares of common stock outstanding and exercisable as of March 31, 2023 at a weighted average exercise price of $9.27 per share, and with expiration dates ranging from March 7, 2024 to June 10, 2025.

Options

The Company recorded stock-based compensation of approximately $334,000 related to stock options during the three months ended March 31, 2023, and approximately $267,000 related to stock options during the three months ended March 31, 2022, respectively. These amounts are allocated between general and administrative and research and development expenses in the accompanying condensed consolidated statements of operations.

A summary of stock option activity under the Lantern Pharma Inc. 2018 Equity Incentive Plan, as amended and restated (the "Plan"), during the three months ended March 31, 2023 is presented below:

	Options Outstanding	
	Number of Shares	Weighted-Average Exercise Price Per Share
Outstanding December 31, 2022	1,037,591	$ 6.46
Granted	70,000	4.92
Cancelled or expired	(12,545)	13.04
Outstanding March 31, 2023	1,095,046	$ 6.28

Options were exercisable for 790,115 shares of Common Stock at March 31, 2023 at a weighted average exercise price of $6.01.

During the three months ended March 31, 2022, no options were granted, no options were exercised to purchase shares of common stock, and no options expired or were canceled.

Note 7. Marketable Securities

At March 31, 2023, marketable securities consisted of the following:

	Amortized Cost	Unrealized Gains	Unrealized Losses	Aggregate Fair Value
Government & Agency Securities	$ 4,922,640	$ 42	$ (150,408)	$ 4,772,274
Corporate Bonds	8,982,238	-	(188,181)	8,794,057
Marketable Securities – Debt	13,904,878	42	(338,589)	13,566,331
Mutual Funds – Fixed Income	4,002,704	-	(311,504)	3,691,200
Mutual Funds – Alternative Investments	2,023,154	-	(219,404)	1,803,750
Marketable Securities – Mutual Funds	6,025,858	-	(530,908)	5,494,950
	$ 19,930,736	$ 42	$ (869,497)	$ 19,061,281

The contractual maturities of the investments classified as Government & Agency Securities and Corporate Bonds are as follows:

	As of March 31, 2023
Due within one year	$ 8,478,765
Due in one to two years	4,804,510
Due in two to five years	283,056
	$ 13,566,331

The following table presents gross unrealized losses and fair values for those marketable securities that were in an unrealized loss position as of March 31, 2023, aggregated by investment category and the length of time that individual securities have been in a continuous loss position:

	As of March 31, 2023			
	Less than 12 months		More than 12 months	
	Fair Value	Unrealized Loss	Fair Value	Unrealized Loss
Government & Agency Securities	$ 1,196,670	$ (27,503)	$ 2,829,984	$ (122,905)
Corporate Bonds	4,300,603	(42,461)	4,493,454	(145,720)
Mutual Funds – Fixed Income	-	-	3,691,200	(311,504)
Mutual Funds – Alternative Investments	-	-	1,803,750	(219,404)
	$ 5,497,273	$ (69,964)	$ 12,818,388	$ (799,533)

We do not believe the unrealized losses represent credit losses based on our evaluation of available evidence as of March 31, 2023, which includes an assessment of whether it is more likely than not we will be required to sell the investment before recovery of the investment's amortized cost basis.

Note 8. Fair Value Measurements

We determine the fair values of our financial instruments based on the fair value hierarchy, which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value assumes that the transaction to sell the asset or transfer the liability occurs in the principal or most advantageous market for the asset or liability and establishes that the fair value of an asset or liability shall be determined based on the assumptions that market participants would use in pricing the asset or liability. The classification of a financial asset or liability within the hierarchy is based upon the lowest level input that is significant to the fair value measurement. The fair value hierarchy prioritizes the inputs into three levels that may be used to measure fair value:

Level 1 - Inputs are unadjusted quoted prices in active markets for identical assets or liabilities.

Level 2 - Inputs are quoted prices for similar assets and liabilities in active markets or inputs that are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the financial instrument.

Level 3 - Inputs are unobservable inputs based on our assumptions.

Financial Assets

When available, our marketable securities are valued using quoted prices for identical instruments in active markets. If we are unable to value our marketable securities using quoted prices for identical instruments in active markets, we value our investments using broker reports that utilize quoted market prices for comparable instruments. As of March 31, 2023 our available-for-sale debt securities were valued through use of quoted prices for comparable instruments in active markets and are classified as Level 2, and our mutual funds – alternative investments were valued using NAV, net asset value per share, under the practical expedient methodology.

Based on our valuation of our marketable securities, we concluded that they are classified in either Level 2 or NAV, and we have no financial assets measured using Level 1 or 3 inputs. The following table presents information about our assets that are measured at fair value on a recurring basis using the above input categories.

	Fair Value Measurements as of March 31, 2023				
Description	**Total**	**Level 1**	**Level 2**	**Level 3**	**NAV***
Government & Agency Securities	$ 4,772,274	$ -	$ 4,772,274	$ -	$ -
Corporate Bonds	8,794,057	-	8,794,057	-	-
Mutual Funds – Fixed Income	3,691,200	-	3,691,200	-	-
Mutual Funds – Alternative Investments	1,803,750	-	-	-	1,803,750
	$ 19,061,281	$ -	$ 17,257,531	$ -	$ 1,803,750

* Certain marketable securities investments are measured at fair value using net asset value per share under the practical expedient methodology.

Note 9. Loss Per Share of Common Shares

Basic loss per share is derived by dividing net loss applicable to common stockholders by the weighted average number of shares of common stock outstanding during each period. Diluted loss per share includes the effect, if any, from the potential exercise or conversion of securities, such as warrants and stock options, which would result in the issuance of incremental shares of common stock unless such effect is anti-dilutive. In calculating the basic and diluted net loss per share applicable to common stockholders, the weighted average number of shares remained the same for both calculations due to the fact that when a net loss exists, dilutive shares are not included in the calculation. Potentially dilutive securities outstanding that have been excluded from diluted loss per share due to being anti-dilutive include the following:

	Outstanding at March 31,	
	2023	**2022**
Warrants to purchase Common Stock	177,998	177,998
Stock options	1,095,046	890,826
	1,273,044	1,068,824

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations.

You should read the following discussion and analysis of our financial condition and plan of operations together with our condensed consolidated financial statements and the related notes appearing elsewhere in this Quarterly Report. In addition to historical information, this discussion and analysis contains forward-looking statements that involve risks, uncertainties and assumptions. Our actual results may differ materially from the plans, intentions, expectations and other forward-looking statements included in the discussion below. Factors that could cause or contribute to such differences include, but are not limited to, those identified below, and those factors discussed in the Risk Factors section of our 2022 Form 10-K on file with the SEC.

Overview

We are a clinical stage biotechnology company, focused on leveraging artificial intelligence ("A.I."), machine learning and genomic data to streamline the drug development process and to identify the patients that will benefit from our targeted oncology therapies. Our portfolio of therapies consists of small molecules that others have tried, but failed, to develop into an approved commercialized drug, as well as new compounds that we are developing with the assistance of our proprietary A.I. platform and our biomarker driven approach. Our A.I. platform, known as RADR®, currently includes more than 25 billion data points, and uses big data analytics (combining molecular data, drug efficacy data, data from historical studies, data from scientific literature, phenotypic data from trials and publications, and mechanistic pathway data) and machine learning to rapidly uncover biologically relevant genomic signatures correlated to drug response, and then identify the cancer patients that we believe may benefit most from our compounds. This data-driven, genomically-targeted and biomarker-driven approach allows us to pursue a transformational drug development strategy that identifies, rescues or develops, and advances potential small molecule drug candidates at what we believe is a fraction of the time and cost associated with traditional cancer drug development.

Our strategy is to both develop new drug candidates using our RADR® platform, and other machine learning driven methodologies, and to pursue the development of drug candidates that have undergone previous clinical trial testing or that may have been halted in development or deprioritized because of insufficient clinical trial efficacy (i.e., a meaningful treatment benefit relevant for the disease or condition under study as measured against the comparator treatment used in the relevant clinical testing) or for strategic reasons by the owner or development team responsible for the compound. Importantly, these historical drug candidates appear to have been well-tolerated in many instances, and often have considerable data from previous toxicity, tolerability and ADME (absorption, distribution, metabolism, and excretion) studies that have been completed. Additionally, these drug candidates may also have a body of existing data supporting the potential mechanism(s) by which they achieve their intended biologic effect, but often require more targeted trials in a stratified group of patients to demonstrate statistically meaningful results. Our dual approach to both develop de-novo, biomarker-guided drug candidates and "rescue" historical drug-candidates by leveraging A.I., recent advances in genomics, computational biology and cloud computing is emblematic of a new era in drug development that is being driven by data-intensive approaches meant to de-risk development and accelerate the clinical trial process. In this context, we intend to create a diverse portfolio of oncology drug candidates for further development towards regulatory and marketing approval with the objective of establishing a leading A.I.-driven methodology for treating the right patient with the right oncology therapy.

A key component of our strategy is to target specific cancer patient populations and treatment indications identified by leveraging our RADR® platform, a proprietary A.I. enabled engine created and owned by us. We believe the combination of our therapeutic area expertise, our A.I. expertise, and our ability to identify and develop promising drug candidates through our collaborative relationships with research institutions in selected areas of oncology gives us a significant competitive advantage. Our RADR® platform has been developed and refined over the last five years and integrates billions of data points immediately relevant for oncology drug development and patient response prediction using artificial intelligence and proprietary machine learning algorithms. By identifying clinical candidates, together with relevant genomic and phenotypic data, we believe our approach will help us design more efficient pre-clinical studies, and more targeted clinical trials, thereby accelerating our drug candidates' time to approval and eventually to market. Although we have not yet applied for or received regulatory or marketing approval for any of our drug candidates, we believe our RADR® platform has the ability to reduce the cost and time to bring drug candidates to specifically targeted patient groups. We believe we have developed a sustainable and scalable biopharma business model by combining a unique, oncology-focused big-data platform that leverages artificial intelligence along with active clinical and preclinical programs that are being advanced in targeted cancer therapeutic areas to address today's treatment needs.

Our current portfolio consists of four compounds and an Antibody Drug Conjugate (ADC) program: two drug candidates in clinical phases, two in the pre-IND preclinical stage and our ADC program in research optimization. All of these drug candidates and our ADC program are leveraging precision oncology, A.I. and genomic driven approaches to accelerate and direct development efforts.

We currently have two drug candidates in clinical development, LP-100 and LP-300, where we are leveraging data from prior preclinical studies and clinical trials, along with insights generated from our A.I. platform, to target the types of tumors and patient groups we believe will be most responsive to the drug. Both LP-100 and LP-300 showed promise in important patient subgroups, but failed pivotal Phase III trials when the overall results did not meet the predefined clinical endpoints. We believe that this was due to a lack of biomarker-driven patient stratification. LP-300 has been studied in multiple randomized, controlled, multi-center non-small cell lung cancer, or NSCLC, trials that included administration of either paclitaxel and cisplatin and/or docetaxel and cisplatin, and we are currently conducting a targeted phase II trial (the Harmonic™ trial) for LP-300 in never smoking patients with NSCLC in combination with chemotherapy, under an existing investigational new drug application. LP-100 was previously out-licensed by us to Allarity Therapeutics A/S. In July 2021, we entered into an Asset Purchase Agreement to reacquire global development and commercialization rights for LP-100 from Allarity.

Additionally, we have two new drug candidates, LP-184 and LP-284, in pre-IND preclinical development for multiple potentially distinct indications where we are leveraging machine learning and genomic data to streamline the drug development process and to identify the patients and cancer subtypes that will best benefit from these drugs, if approved. Subject to regulatory clearance to move forward under future IND applications, we are planning a Phase I clinical trial for LP-184 to begin in mid 2023 and a Phase I clinical trial for LP-284 to begin later in 2023. Our ADC program is aimed at identifying targeted or therapeutic antibodies to conjugate with selected compounds. In January 2023, we formed a wholly owned subsidiary, Starlight Therapeutics Inc. (“Starlight”), to develop drug candidate LP-184’s central nervous system (CNS) and brain cancer indications – including glioblastoma (GBM), brain metastases (brain mets.), and several rare pediatric CNS cancers. Following the formation of Starlight, we now refer to the molecule LP-184, as it is developed in CNS indications, as “STAR-001”.

Our development strategy is to pursue an increasing number of oncology focused, molecularly targeted therapies where artificial intelligence and genomic data can help us provide biological insights, reduce the risk associated with development efforts and help clarify potential patient response. We plan on strategically evaluating these on a program-by-program basis as they advance into clinical development, either to be done entirely by us, or with licensing partners, to maximize the commercial opportunity and reduce the time it takes to bring the right drug to the right patient.

To date, except for a prior research grant, we have not generated any revenue, we have incurred net losses and our operations have been financed primarily by sales of our equity securities. Our net losses were approximately $3,868,000 and $4,122,000 for the three months ended March 31, 2023 and 2022, respectively.

Our net losses have primarily resulted from costs incurred in licensing and developing the drug candidates in our pipeline, planning, preparing and conducting preclinical studies and clinical testing, and general and administrative activities associated with our operations. We expect to continue to incur significant expenses and corresponding increased operating losses for the foreseeable future as we continue to develop our pipeline. Our costs may further increase as we conduct additional preclinical studies and clinical trials and potentially seek regulatory clearance for and prepare to commercialize our drug candidates. We expect to incur significant expenses to continue to build the infrastructure necessary to support our expanded operations, preclinical studies, clinical trials, and commercialization, including manufacturing, marketing, sales and distribution functions. We have experienced and will continue to experience substantial costs associated with operating as a public company.

As of the date of this report, we believe we have effectively managed the impact of the COVID-19 pandemic on our operations. A continuance or resurgence of the COVID-19 pandemic (or the occurrence of another epidemic or infectious disease outbreak) or its impact on the overall economy could in the future have a material impact on our business.

Components of Our Results of Operations

Revenues

We did not recognize revenues for the three month periods ended March 31, 2023 and March 31, 2022.

Expenses

Our research and development expenses by project category for the three months ended March 31, 2023 and 2022 are as follows:

	Three Months Ended March 31, 2023	Three Months Ended March 31, 2022
LP-300	$ 633,937	$ 1,102,828
LP-184	1,130,023	802,016
LP-100	31,259	518,954
LP-284	383,374	-
ADC Program	22,184	10,971
RADR® Platform	258,162	200,452
Other	94,008	25,016
Total research and development expenses	$ 2,552,947	$ 2,660,237

We expect that our research and development expenses will increase as we progress our clinical trial for LP-300, advance toward commencement of and conduct clinical trials for LP-184 and LP-284, advance clinical development of LP-100, and advance our other programs and drug candidates. We expect this increase to include additional expenses associated with research and service provider agreements for the advancement of our drug candidates and research and development efforts.

Because of the numerous risks and uncertainties associated with product development, we cannot determine with certainty the duration and completion costs of these or other current or future clinical trials of LP-300, LP-184, LP-284, LP-100 or our other drug candidates. We may never succeed in achieving regulatory approval for LP-300, LP-184, LP-284, LP-100 or any of our other drug candidates. The duration, costs and timing of clinical trials and development of our drug candidates will depend on a variety of factors, including the uncertainties of future clinical and preclinical studies, uncertainties in clinical trial enrollment rates and significant and changing government regulation. In addition, the probability of success for each drug candidate will depend on numerous factors, including competition, manufacturing capability and commercial viability.

General and Administrative

General and administrative expenses consist primarily of salaries and related costs for employees in executive, finance and administration, corporate development and administrative support functions, including stock-based compensation expenses and benefits. Other significant general and administrative expenses include accounting and legal services, insurance, the cost of various consultants, occupancy costs, investor relations and information systems costs.

We expect that our general and administrative expenses will increase as we continue to operate as a public company. We expect increased administrative costs resulting from our existing and anticipated clinical trials and the potential commercialization of our drug candidates. We believe that these increases will likely include increased costs for director and officer liability insurance, hiring additional personnel to support future market research and future product commercialization efforts and increased fees for outside consultants, attorneys and accountants. We also expect to continue to incur increased costs to comply with corporate governance, internal controls, investor relations and disclosures and similar requirements applicable to a public company.

Summary Results of Operations for the Three Months Ended March 31, 2023 and March 31, 2022 (unaudited)

	Three Months Ended March 31,	
	2023	2022
Operating expenses:		
General and administrative	$ 1,733,321	$ 1,406,160
Research and development	2,552,947	2,660,237
Total operating expenses	4,286,268	4,066,397
Loss from operations	(4,286,268)	(4,066,397)
Interest income	133,782	22,421
Other income (expense), net	284,721	(77,798)
NET LOSS	$ (3,867,765)	$ (4,121,774)

Comparison of the Three Months Ended March 31, 2023 and March 31, 2022

General and Administrative Expenses

General and administrative expenses increased approximately $327,000, or 23%, from approximately $1,406,000 for the three months ended March 31, 2022 to approximately $1,733,000 for the three months ended March 31, 2023. The increase was primarily attributable to increases in other professional fees of approximately $195,000, increases in payroll and compensation expenses of approximately $192,000, and increases in travel expenses of approximately $44,000. This was partially offset by decreases in corporate insurance expense of approximately $85,000 and decreases in patent and legal expenses of approximately $57,000.

Research and Development Expenses

Research and development expenses decreased approximately $107,000, or 4%, from approximately $2,660,000 for the three months ended March 31, 2022 to approximately $2,553,000 for the three months ended March 31, 2023. The decrease was primarily attributable to decreases in product candidate manufacturing related expenses of approximately $640,000, decreases in consulting expenses of approximately $20,000, and decreases in licensing fees of approximately $459,000, which related to an escrow payment released to Allarity under the Allarity Asset Purchase Agreement during the three months ended March 31, 2022, which payment was a nonrecurring expense. The above decreases were partially offset by increases in research studies of $714,000 and increases in payroll and compensation expenses of approximately $298,000.

Interest and Other Income (Expense) Net

Interest income increased approximately $112,000 from $22,000 for the three months ended March 31, 2022 to approximately $134,000 for the three months ended March 31, 2023. Other income (expense), net increased approximately $363,000 from a loss of approximately $78,000 for the three months ended March 31,2022 to a gain of approximately $285,000 for the three months ended March 31, 2023. This increase was primarily attributable to increases in dividend income of approximately $80,000, increases in unrealized gains on investments of approximately $207,000 and increases of approximately $136,000 in research and development tax incentives related to the Australia subsidiary, which were partially offset by increases in foreign currency losses of approximately $60,000.

Liquidity and Capital Resources

We incurred net losses of approximately $3,868,000 and $4,122,000 for the three months ended March 31, 2023 and March 31, 2022, respectively. As of March 31, 2023, we had working capital of approximately $52,374,000 and as of December 31, 2022 we had working capital of approximately $55,924,000.

On January 20, 2021, we closed a public offering of 4,928,571 shares of common stock at a public offering price of $14.00 per share, which amount included 642,856 shares sold upon full exercise of the underwriter’s over-allotment option. Total gross proceeds from the offering were approximately $69,000,000, and net proceeds from the offering were approximately $64,167,000.

We have not yet generated any revenues from operations, other than revenues from a research grant, and we have not yet achieved profitability. We expect that general and administrative expenses and our research and development expenses will continue to increase and, as a result, we will need to generate significant product revenues to achieve profitability. We may never achieve profitability.

Sources of Liquidity

Since our inception, our operations have been financed primarily through the sale of equity securities, and, to a much lesser extent, funds received by us from a loan pursuant to the Paycheck Protection Program under the Coronavirus Aid, Relief, and Economic Security (CARES) Act and a 2017 grant from the Massachusetts Life Sciences Center. We plan to apply for grant funding in the future to assist in supporting our capital needs. We may also explore the possibility of entering into commercial credit facilities as an additional source of liquidity.

As of March 31, 2023 and December 31, 2022, we had cash and cash equivalents of approximately $32,479,000 and $37,202,000, respectively. Based on our anticipated expenditures and capital commitments as of the date of this report, we believe that our existing cash and cash equivalents as of March 31, 2023 will enable us to fund our operating expenses and capital expenditure requirements for at least 12 months from the date of this Quarterly Report. As of March 31, 2023 and December 31, 2022, we had marketable securities of approximately $19,061,000 and $17,994,000, respectively.

Cash Flows

The following table summarizes our cash flow for the periods indicated:

	For the Three Months ended March 31,	
	2023	2022
	(Unaudited)	
Net cash flows used in operating activities	$ (3,757,156)	$ (3,327,730)
Net cash flows (used in) / provided by investing activities	(960,877)	176,519
Net cash flows used in financing activities	-	(2,182,498)
Effect of foreign exchange rates on cash	(4,983)	2,278
Net decrease in cash, cash equivalents and restricted cash	$ (4,723,016)	$ (5,331,431)

Operating Activities

For the three months ended March 31, 2023, net cash used in operating activities was approximately $3,757,000 compared to approximately $3,328,000 for the three months ended March 31, 2022. The increase in net cash used in operating activities was primarily the result of increases in accounts payable and accrued expenses during the three months ended March 31, 2022, which reduced the cash used in operating activities for the three months ended March 31, 2022.

Investing Activities

For the three months ended March 31, 2023, net cash used in investing activities was approximately $961,000 compared to $177,000 provided by investing activities for the three months ended March 31, 2022. The increase in cash used in investing activities is primarily related to a higher level of purchases of marketable securities during the three months ended March 31, 2023.

Financing Activities

Net cash used in financing activities was approximately $2,183,000 during the three months ended March 31, 2022, attributable primarily to repurchases of shares pursuant to the Company’s share repurchase program. No cash was used in financing activities during the three months ended March 31, 2023.

Operating Capital and Capital Expenditure Requirements

We expect to continue to incur significant and increasing operating losses at least for the next several years as we continue our clinical trial of LP-300, commence our clinical trials of LP-184 and LP-284, advance clinical development of LP-100, pursue development of our other drug candidates, and seek potential future marketing approval for our drug candidates which could be several years in the future, if at all. We do not expect to generate revenue, other than possible license and grant revenue, unless and until we successfully complete development and obtain regulatory approval for our therapeutic candidates. Our net losses may fluctuate significantly from quarter-to-quarter and year-to-year, depending on the timing of our planned clinical trials and our expenditures on other research and development activities.

We have based our projections of operating capital requirements on assumptions that may prove to be incorrect and we may use all of our available capital resources sooner than we expect. Because of the numerous risks and uncertainties associated with research, development and commercialization of pharmaceutical products, we are unable to estimate the exact amount of our operating capital requirements. We anticipate that our expenses will increase substantially as we:

- continue the development, including preclinical studies and clinical trials, of our drug candidates;
- initiate preclinical studies and clinical trials for any additional indications for our current drug candidates and any future drug candidates that we may pursue;
- continue to build our portfolio of drug candidates through the acquisition or in-license of additional drug candidates or technologies;
- continue to develop, maintain, expand and protect our intellectual property portfolio;
- pursue regulatory approvals for those of our current and future drug candidates that successfully complete clinical trials;
- ultimately establish a sales, marketing, distribution and other commercial infrastructure to commercialize any drug candidate for which we may obtain marketing approval;
- hire additional clinical, regulatory, scientific and accounting personnel;
- incur additional legal, accounting and other expenses in operating as a public company; and
- continue to develop, maintain, and expand our RADR® platform.

We expect that we will need to obtain substantial additional funding in order to complete our clinical trials. To the extent that we raise additional capital through the sale of common stock, convertible securities or other equity securities, the ownership interests of our existing stockholders may be materially diluted and the terms of these securities could include liquidation or other preferences that could adversely affect the rights of our existing stockholders. In addition, debt financing, if available, would result in increased fixed payment obligations and may involve agreements that include restrictive covenants that limit our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends, that could adversely impact our ability to conduct our business. If we are unable to raise capital when needed or on attractive terms, we could be forced to significantly delay, scale back or discontinue the development or commercialization of LP-300, LP-184, LP-284, LP-100 and/or other drug candidates and programs, seek collaborators at an earlier stage than otherwise would be desirable or on terms that are less favorable than might otherwise be available, and relinquish or license, potentially on unfavorable terms, our rights to LP-300, LP-184, LP-284, LP-100 and/or other drug candidates and programs that we otherwise would seek to develop or commercialize ourselves.

Critical Accounting Estimates

There have been no changes to our critical accounting estimates during the three months ended March 31, 2023.

Quantitative and Qualitative Disclosure About Market Risk

Our primary exposure to market risk is interest rate sensitivity, which is affected by changes in the general level of U.S. interest rates. Fixed rate securities may have their market value adversely affected due to a rise in interest rates. Accordingly, our future investment income may fluctuate as a result of changes in interest rates, or we may suffer losses in principal if we are forced to sell securities that decline in market value as a result of changes in interest rates.

Historically, we have raised capital through the issuance of equity securities. We had no long-term debt outstanding as of March 31, 2023 and December 31, 2022.

We do not believe that our cash and cash equivalents have significant risk of default or illiquidity. Our cash and cash equivalents consist primarily of cash and money market funds. Our exposure to market risk relating to cash and cash equivalents due to changes in interest rates is limited because our cash and cash equivalents have a short-term maturity and are used primarily for working capital purposes. Our marketable securities have had and may in the future have their market value adversely affected due to rises in interest rates. While we believe our cash, cash equivalents and marketable securities do not contain excessive risk, we cannot provide absolute assurance that in the future our investments will not be subject to adverse changes in market value. In addition, we maintain significant amounts of cash and cash equivalents at one or more financial institutions that are in excess of federally insured limits. Interest bearing and non-interest bearing accounts we hold at banking institutions are guaranteed by the Federal Deposit Insurance Corporation ("FDIC") up to $250,000. Substantially all of our cash balances held at banking institutions are in excess of FDIC coverage. We consider this to be a normal business risk.

We formed a wholly owned subsidiary, Lantern Pharma Australia Pty Ltd, in Australia in September 2021 and experienced foreign currency losses of approximately $38,000 and $6,000 for the three months ended March 31, 2023 and 2022, respectively, in connection with this subsidiary. We will remain subject to the risk of foreign currency losses in future periods, although we do not expect the impact of any foreign currency losses to be material. We do not participate in any foreign currency hedging activities, and we do not have any other derivative financial instruments.

Inflation generally affects us by increasing our cost of labor and clinical trial costs. We do not believe that inflation has had a material effect on our results of operations during the periods presented. Inflation has increased substantially in recent periods and could have a greater impact on our future results of operations if it remains at current levels or continues to increase.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

As a Smaller Reporting Company we are exempt from the requirements of Item 3.

Item 4. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures.

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer (our principal executive officer and principal financial officer, respectively), evaluated the effectiveness of our disclosure controls and procedures as of March 31, 2023. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, or the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Based on the evaluation of our disclosure controls and procedures as of March 31, 2023, our Chief Executive Officer and Chief Financial Officer have concluded that, as of such date, our disclosure controls and procedures, as defined above, are effective.

Changes in Internal Control Over Financial Reporting.

There were no changes in our internal control over financial reporting that occurred during the three-month period ended March 31, 2023 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations on Effectiveness of Controls.

Our management, including our principal executive officer and principal financial officer, do not expect that our disclosure controls or our internal control over financial reporting will prevent all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of a simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by management override of the controls. The design of any system of controls is also based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

PART II – OTHER INFORMATION

Item 1A. Risk Factors.

As a Smaller Reporting Company we are exempted from the requirements of Item 1A.

Item 6. Exhibits.

Exhibit No.	Exhibit Description	Method of Filing
3.1	Amended and Restated Certificate of Incorporation	Incorporated by reference from the Registrant's Current Report on Form 8-K filed June 17, 2020
3.2	By-Laws	Incorporated by reference from the Registrant's Registration Statement on Form S-1 filed April 16, 2020
10.1	Fourth Amendment, dated January 1, 2023, to Employment Agreement with Kishor Bhatia dated May 18, 2020	Filed electronically herewith
31.1	Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.	Filed electronically herewith
31.2	Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.	Filed electronically herewith
32.1	Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.	Furnished electronically herewith
32.2	Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.	Furnished electronically herewith
101.INS	Inline XBRL Instance Document.	Filed electronically herewith
101.SCH	Inline XBRL Taxonomy Extension Schema Document.	Filed electronically herewith
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document.	Filed electronically herewith
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document.	Filed electronically herewith
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document.	Filed electronically herewith
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document.	Filed electronically herewith
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).	Filed electronically herewith

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 thereunto duly authorized.

Lantern Pharma Inc.,

A Delaware Corporation

Dated: May 9, 2023

By: */s/ Panna Sharma*
Panna Sharma, Chief Executive Officer

Dated: May 9, 2023

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

Exhibit 10.1

FOURTH AMENDMENT TO
EMPLOYMENT AGREEMENT

This FOURTH AMENDMENT TO EMPLOYMENT AGREEMENT (this "Amendment"), is entered into as of January 1, 2023 and amends the Employment Agreement (defined below), between Lantern Pharma Inc. (the "***Company***") and Kishor G. Bhatia ("***Executive***"). The Company and Executive may be referred to herein individually as a "***Party***" or collectively as the "***Parties***."

RECITALS

WHEREAS, the Company and Executive have entered into the Employment Agreement, dated as of June 16, 2020 and previously amended as of March 4, 2021, January 1, 2022, and May 1, 2022 (collectively, the "***Employment Agreement***"), wherein the Company is employing Executive as the Company's Chief Scientific Officer; and

WHEREAS, the Company and Executive wish to amend the Employment Agreement to reflect (i) the increase of the annual pre-tax base salary level for Executive under the Employment Agreement to $235,000 commencing as of January 1, 2023; and (ii) the increase of the target eligible bonus level under the Employment Agreement to 25%.

NOW THEREFORE, in consideration of the mutual covenants set forth herein and other legal and valuable consideration, the Parties agree as follows:

1. Section I of Exhibit A to the Employment Agreement is hereby amended to read in its entirety as follows:

"Base Salary. The Company shall pay Executive an initial pre-tax base salary ("***Initial Base Salary***") of $100,000 (One Hundred Thousand U.S. Dollars) per annum, less all applicable withholdings, with such Initial Base Salary to be paid in accordance with the Company's standard payroll practices. Commencing March 4, 2021, the Initial Base Salary shall be increased to $133,333 (One Hundred Thirty Three Thousand Three Hundred Thirty Three U.S. Dollars) per annum, less all applicable withholdings, with such increased Initial Base Salary to be paid in accordance with the Company's standard payroll practices with respect to pay periods (or applicable portions thereof) during the Term of this Agreement that occur on or after March 4, 2021 and prior to January 1, 2022. Commencing January 1, 2022, the Initial Base Salary shall be increased to $138,666.32 (One Hundred Thirty Eight Thousand Six Hundred Sixty Six U.S. Dollars and Thirty Two Cents) per annum, less all applicable withholdings, with such increased Initial Base Salary ("***Adjusted Base Salary***") to be paid in accordance with the Company's standard payroll practices with respect to pay periods (or applicable portions thereof) during the Term of this Agreement that occur on or after January 1, 2022 and prior to May 1, 2022. Commencing May 1, 2022, the Adjusted Base Salary shall be increased to $175,000.00 (One Hundred Seventy Five Thousand U.S. Dollars) per annum, less all applicable withholdings, with such increased Adjusted Base Salary to be paid in accordance with the Company's standard payroll practices with respect to pay periods (or applicable portions thereof) during the Term of this Agreement that occur on or after May 1, 2022 and prior to January 1, 2023. Commencing January 1, 2023, the Adjusted Base Salary shall be increased to $235,000.00 (Two Hundred Thirty Five Thousand U.S. Dollars) per annum, less all applicable withholdings, with such increased Adjusted Base Salary to be paid in accordance with the Company's standard payroll practices with respect to pay periods (or applicable portions thereof) during the Term of this Agreement that occur on or after January 1, 2023."

2. The first sentence of Section II(a) of Exhibit A to the Employment Agreement is hereby amended to read in its entirety as follows:

"Executive will be eligible for an annual performance-based cash bonus of 25% (Twenty-Five Percent) of Executive's applicable base salary during the annual period with respect to which such bonus is being paid."

3. All other terms of and conditions to the Employment Agreement shall continue in full force and effect.

IN WITNESS WHEREOF, the Parties have executed this Amendment to be effective as of January 1, 2023.

COMPANY:

Lantern Pharma Inc.

By: */s/ Panna Sharma* Panna Sharma
Chief Executive Officer

EXECUTIVE:

/s/ Kishor G. Bhatia
Kishor G. Bhatia

Exhibit 31.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES
EXCHANGE ACT OF 1934, AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Panna Sharma, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Lantern Pharma Inc.

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 9, 2023

/s/ Panna Sharma
Chief Executive Officer *(Principal Executive Officer)*

Exhibit 31.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES
EXCHANGE ACT OF 1934, AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, David R. Margrave, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Lantern Pharma Inc.

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 9, 2023

/s/ David R. Margrave
Chief Financial Officer *(Principal Financial Officer)*

Exhibit 32.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned officer of Lantern Pharma Inc. (the "Company") hereby certifies, to his knowledge, that:

(1) the accompanying Quarterly Report on Form 10-Q of the Company for the fiscal quarter ended March 31, 2023 (the "Report") fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: May 9, 2023

/s/ Panna Sharma

Chief Executive Officer *(Principal Executive Officer)*

Exhibit 32.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned officer of Lantern Pharma Inc. (the "Company") hereby certifies, to his knowledge, that:

(1) the accompanying Quarterly Report on Form 10-Q of the Company for the fiscal quarter ended March 31, 2023 (the "Report") fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: May 9, 2023

/s/ David R. Margrave
Chief Financial Officer *(Principal Financial Officer)*