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

FORM 10-Q

(Mark One)

X **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the quarterly period ended **June 30, 2023**

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from _____ to _____

Commission File Number: **000-55264**

DYADIC INTERNATIONAL, INC.

(Exact Name of Registrant as Specified in its Charter)

Delaware	**45-0486747**
State or Other Jurisdiction of Incorporation or Organization	I.R.S. Employer Identification No.
140 Intracoastal Pointe Drive, Suite 404 Jupiter, Florida	**33477**
Address of Principal Executive Offices	Zip Code

(561) 743-8333
Registrant's Telephone Number, Including Area Code
N/A
Former Name, Former Address and Former Fiscal Year, if Changed Since Last Report

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 X 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 X 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 X Smaller reporting company X

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 Act). Yes ☐ No X

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.001 per share	DYAI	The NASDAQ Stock Market LLC

The number of shares outstanding of the registrant's Common Stock as of August 8, 2023 was 28,811,061.

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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Quarterly Report contains forward-looking statements within the meaning of the Federal securities laws, particularly under Item 2 "Management's Discussion and Analysis". All statements other than statements of historical fact are forward-looking. Examples of forward-looking statements include, but are not limited to, statements regarding industry prospects, future business, future results of operations or financial condition, future liquidity and capital resources, our ability to implement our agreements with third parties, management strategies, our competitive position. Forward-looking statements generally can be identified by use of the words "expect," "should," "intend," "anticipate," "will," "project," "may," "might," "potential," or "continue" and other similar terms or variations of them or similar terminology. Dyadic International, Inc., and its subsidiaries cautions readers that any forward-looking information is not a guarantee of future performance and that actual results could differ materially from those contained in the forward-looking information. Such statements reflect the current views of our management with respect to our operations, results of operations and future financial performance.

Forward-looking statements involve many risks, uncertainties or other factors beyond Dyadic's control. These factors include, but are not limited to, (1) general economic, political and market conditions; (2) our ability to generate the required productivity, stability, purity, performance, cost, safety and other data necessary to carry out and implement our biopharmaceutical research and business plans and strategic initiatives; (3) our ability to retain and attract employees, consultants, directors and advisors; (4) our ability to implement and successfully carry out Dyadic's and third parties' research and development efforts; (5) our ability to obtain new license and research agreements; (6) our ability to maintain our existing access to, and/or expand access to third party contract research organizations and other service providers in order to carry out our research projects for ourselves and third parties; (7) competitive pressures and reliance on our key customers and collaborators; (8) our ability, and the ability of the contract research organizations and other third-party service providers with whom we are currently working with, to advance product candidates into, and successfully complete, preclinical studies and clinical trials; (9) the commercialization of our product candidates, if approved; (10) the pharmaceutical and biotech industry, governmental regulatory and other agencies' willingness to adopt, utilize and approve the use of our fungal based microbial protein production platforms and our other technologies; (11) the risk of theft, misappropriation or expiration of owned or licensed proprietary and intellectual property, genetic and biological materials owned by us and/or Danisco US, Inc. and VTT Technical Research Centre of Finland Ltd, and contract research organizations that we engage with; (12) the speculative nature and illiquidity of equity securities received as consideration from sub-licenses; and (13) other factors discussed in Dyadic's publicly available filings, including information set forth under the caption "Risk Factors" in this Quarterly Report and in our Form 10-K filed with the Securities and Exchange Commission ("SEC") on March 29, 2023. We caution you that the foregoing list of important factors is not exclusive. Any forward-looking statements are based on our beliefs, assumptions and expectations of future performance, considering the information currently available to us. Before investing in our common stock, investors should carefully read the information set forth under the caption "Risk Factors" and elsewhere in this Quarterly Report, in our Form 10-K filed with the SEC on March 29, 2023 and in our other SEC filings, which could have a material effect on our business, results of operations and financial condition. The forward-looking statements contained in this Form 10-Q are made only as of the date hereof, and except as required by law, we undertake no obligation to publicly update any forward-looking statements for any reason after the date of this Quarterly Report to conform these statements to actual results or to changes in our expectations.

PART I

Item 1. Financial Statements

DYADIC INTERNATIONAL, INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

	June 30, 2023 (Unaudited)	December 31, 2022 (Audited)
Assets		
Current assets:		
Cash and cash equivalents	$ 5,841,591	$ 5,794,272
Short-term investment securities	4,287,325	6,847,270
Interest receivable	36,053	58,285
Accounts receivable	767,597	330,001
Prepaid expenses and other current assets	136,152	392,236
Total current assets	11,068,718	13,422,064
Non-current assets:		
Investment in Alphazyme	—	284,709
Other assets	5,822	6,045
Total assets	$ 11,074,540	$ 13,712,818
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 905,876	$ 1,276,313
Accrued expenses	909,482	955,081
Deferred research and development obligations	9,000	40,743
Deferred license revenue, current portion	176,471	176,471
Total current liabilities	2,000,829	2,448,608
Deferred license revenue, net of current portion	88,235	176,471
Total liabilities	2,089,064	2,625,079
Commitments and contingencies (Note 4)		
Stockholders' equity:		
Preferred stock, $.0001 par value:		
Authorized shares - 5,000,000; none issued and outstanding	—	—
Common stock, $.001 par value:		
Authorized shares - 100,000,000; issued shares - 41,064,563 and 40,816,602, outstanding shares - 28,811,061 and 28,563,100 as of June 30, 2023, and December 31, 2022, respectively	41,065	40,817
Additional paid-in capital	104,465,590	103,458,697
Treasury stock, shares held at cost - 12,253,502	(18,929,915)	(18,929,915)
Accumulated deficit	(76,591,264)	(73,481,860)
Total stockholders' equity	8,985,476	11,087,739
Total liabilities and stockholders' equity	$ 11,074,540	$ 13,712,818

The accompanying notes are an integral part of these unaudited consolidated financial statements.

DYADIC INTERNATIONAL, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF OPERATIONS

(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	**2022**	**2023**	**2022**
Revenues:				
Research and development revenue	$ 793,042	$ 614,435	$ 1,726,976	$ 1,148,156
License revenue	44,117	44,118	88,235	158,824
Total revenue	837,159	658,553	1,815,211	1,306,980
Costs and expenses:				
Costs of research and development revenue	792,944	411,109	1,519,862	815,855
Research and development	917,552	1,830,798	1,728,118	3,173,660
General and administrative	1,402,569	1,714,029	2,882,609	3,369,729
Foreign currency exchange loss	14,521	20,621	25,543	10,373
Total costs and expenses	3,127,586	3,976,557	6,156,132	7,369,617
Loss from operations	(2,290,427)	(3,318,004)	(4,340,921)	(6,062,637)
Other income:				
Interest income	109,194	30,009	213,925	32,977
Other income	28,273	—	1,017,592	250,000
Total other income	137,467	30,009	1,231,517	282,977
Net loss	$ (2,152,960)	$ (3,287,995)	$ (3,109,404)	$ (5,779,660)
Basic and diluted net loss per common share	$ (0.07)	$ (0.12)	$ (0.11)	$ (0.20)
Basic and diluted weighted-average common shares outstanding	28,811,061	28,264,157	28,786,402	28,257,776

The accompanying notes are an integral part of these unaudited consolidated financial statements.

DYADIC INTERNATIONAL, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

(Unaudited)

	Six Months Ended June 30, 2023						
	Common Stock		Treasury Stock		Additional Paid-In	Accumulated	
	Shares	Amount	Shares	Amount	Capital	Deficit	Total
January 1, 2023	40,816,602	$ 40,817	(12,253,502)	$ (18,929,915)	$ 103,458,697	$ (73,481,860)	$ 11,087,739
Stock-based compensation expense	—	—	—	—	330,639	—	330,639
Issuance of common stock upon vesting of restricted stock units	247,961	248	—	—	341,938	—	342,186
Net loss	—	—	—	—	—	(956,444)	(956,444)
March 31, 2023	41,064,563	$ 41,065	(12,253,502)	$ (18,929,915)	$ 104,131,274	$ (74,438,304)	$ 10,804,120
Stock-based compensation expense	—	—	—	—	334,316	—	334,316
Net loss	—	—	—	—	—	(2,152,960)	(2,152,960)
June 30, 2023	41,064,563	$ 41,065	(12,253,502)	$ (18,929,915)	$ 104,465,590	$ (76,591,264)	$ 8,985,476

	Six Months Ended June 30, 2022						
	Common Stock		Treasury Stock		Additional Paid-In	Accumulated	
	Shares	Amount	Shares	Amount	Capital	Deficit	Total
January 1, 2022	40,482,659	$ 40,483	(12,253,502)	$ (18,929,915)	$ 101,026,496	$ (63,746,602)	$ 18,390,462
Stock-based compensation expense	—	—	—	—	453,791	—	453,791
Issuance of common stock upon exercise of stock options	35,000	35	—	—	42,315	—	42,350
Net loss	—	—	—	—	—	(2,491,665)	(2,491,665)
March 31, 2022	40,517,659	$ 40,518	(12,253,502)	$ (18,929,915)	$ 101,522,602	$ (66,238,267)	$ 16,394,938
Stock-based compensation expense	—	—	—	—	454,500	—	454,500
Net loss	—	—	—	—	—	(3,287,995)	(3,287,995)
June 30, 2022	40,517,659	$ 40,518	(12,253,502)	$ (18,929,915)	$ 101,977,102	$ (69,526,262)	$ 13,561,443

The accompanying notes are an integral part of these unaudited consolidated financial statements.

DYADIC INTERNATIONAL, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS

(Unaudited)

	Six Months Ended June 30,	
	2023	**2022**
Cash flows from operating activities		
Net loss	$ (3,109,404)	$ (5,779,660)
Adjustments to reconcile net loss to net cash used in operating activities:		
Stock-based compensation expense	664,955	908,291
Amortization of held-to-maturity securities, net	(25,889)	25,217
Gain from the sale of investment in Alphazyme	(1,017,592)	—
Foreign currency exchange loss (gain), net	25,543	10,372
Changes in operating assets and liabilities:		
Interest receivable	22,232	52,138
Accounts receivable	(429,790)	(890,686)
Prepaid expenses and other current assets	256,484	273,288
Accounts payable	(404,801)	(430,899)
Accrued expenses	296,587	514,778
Deferred research and development obligation	(31,743)	750,184
Deferred license revenue	(88,236)	(58,823)
Net cash used in operating activities	**(3,841,654)**	**(4,625,800)**
Cash flows from investing activities		
Purchases of held-to-maturity investment securities	(1,977,166)	(6,177,270)
Proceeds from maturities of investment securities	4,563,000	4,500,000
Proceeds from the sale of investment in Alphazyme	1,302,524	—
Net cash provided by (used in) investing activities	**3,888,358**	**(1,677,270)**
Cash flows from financing activities		
Proceeds from exercise of options	—	42,350
Net cash provided by financing activities	**—**	**42,350**
Effect of exchange rate changes on cash	615	(11,348)
Net increase (decrease) in cash and cash equivalents	**47,319**	**(6,272,068)**
Cash and cash equivalents at beginning of period	5,794,272	15,748,480
Cash and cash equivalents at end of period	$ **5,841,591**	$ **9,476,412**
Non-cash item		
Vesting of restricted stock units	$ 342,186	$ —

The accompanying notes are an integral part of these unaudited consolidated financial statements.

Note 1: Organization and Summary of Significant Accounting Policies

Description of Business

Dyadic International, Inc. ("Dyadic", "we", "us", "our", or the "Company") is a global biotechnology company based in Jupiter, Florida with operations in the United States and a satellite office in the Netherlands, and it utilizes several third-party consultants and research organizations to carry out the Company's activities. Over the past two plus decades, the Company has developed a gene expression platform for producing commercial quantities of industrial enzymes and other proteins, and has previously licensed this technology to third parties, such as Abengoa Bioenergy, BASF, Codexis and others, for use in industrial (non-pharmaceutical) applications. This technology is based on the *Thermothelomyces heterothallica* (formerly known as *Myceliophthora thermophila*) fungus, which the Company named C1.

Subsequent to the Company selling its industrial technology business to Danisco USA ("Danisco"), the industrial biosciences business of DuPont (NYSE: DD) (the "DuPont Transaction") on December 31, 2015, the Company has been focused on building the C1-cell protein production platform for the development and production of biologic products including enzymes and other proteins for human and animal health. Some examples of human and animal vaccines and drugs which have the potential to be produced from C1-cells are protein antigens, ferritin nanoparticles, virus-like particles ("VLPs"), monoclonal antibodies ("mAbs"), Bi/Tri-specific antibodies, Fab antibody fragments, Fc-fusion proteins, as well as other therapeutic enzymes and proteins. The Company is involved in multiple funded research collaborations with animal and human pharmaceutical companies which are designed to leverage its C1-cell protein production platform to develop innovative vaccines and drugs, biosimilars and/or biobetters.

The Company also developed the Dapibus™ thermophilic filamentous fungal based microbial protein production platform to enable the rapid development and large-scale manufacture of low-cost proteins, metabolites, and other biologic products for use in non-pharmaceutical applications, such as food, nutrition, and wellness.

Liquidity and Capital Resources

The Company expects to incur losses and have negative net cash flows from operating activities as it continues developing its microbial platforms and related products, and as it expands its pipelines and engages in further research and development activities. The success of the Company depends on its ability to develop its technologies and products to the point of regulatory approval and subsequent revenue generation or through the sublicensing of the Company's technologies and, accordingly, to raise enough capital to finance these developmental efforts.

The Company expects its existing cash and cash equivalents, investments in debt securities, and operating cash flows will be sufficient to meet its operational, business, and other liquidity requirements for at least the next twelve (12) months from the date of issuance of the financial statements contained in this Form 10-Q. However, the Company has based this estimate on assumptions that may prove to be wrong, and its operating plan may change as a result of many factors currently unknown to it. In the event our financing needs are not able to be met by our existing cash, cash equivalents and investments, we would seek to raise additional capital through strategic financial opportunities that could include, but are not limited to, future public or private equity offerings, collaboration agreements, and/or other means. Any amounts raised may be used for the further development and commercialization of product candidates, and for other working capital purposes. There is no guarantee that any of these strategic or financing opportunities will be executed or realized on favorable terms, if at all, and some could be dilutive to existing shareholders.

The Company has self-funded the development and cGMP manufacturing costs of its proprietary COVID-19 vaccine candidate, DYAI-100. In February 2023, the dosing of the DYAI-100 Phase 1 clinical trial to demonstrate the safety in humans of a protein produced from the C1-cell protein production platform was completed in South Africa. A six-month follow up study is currently ongoing with Phase 1 full study report expected in the second half of 2023. We do not expect a significant amount of additional capital needed to complete Phase 1 clinical trial of DYAI-100 in 2023. In addition, we do not plan to continue Phase 2/3 clinical trials of DYAI-100 unless we obtain funding from our partners and collaborators.

During the six months ended June 30, 2023, the Company received a total cash payment of approximately $1.3 million from the sale of its equity interest in Alphazyme, LLC.

Summary of Significant Accounting Policies

Basis of Presentation

The accompanying unaudited condensed consolidated financial statements, including the accounts of the Company and its wholly owned subsidiaries, have been prepared in accordance with U.S. generally accepted accounting principles ("GAAP") as found in the Accounting Standards Codification ("ASC"), Accounting Standards Update ("ASU") of the Financial Accounting Standards Board ("FASB") and applicable rules and regulations of the Securities and Exchange Commission ("SEC") regarding interim financial reporting. Certain information and footnote disclosures normally included in consolidated financial statements have been condensed or omitted pursuant to such rules and regulations. All significant intra-entity transactions and balances have been eliminated in consolidation. The information included in this Quarterly Report on Form 10-Q should be read in conjunction with the audited consolidated financial statements and footnotes as of and for the year ended December 31, 2022, included in our Form 10-K which was filed with the SEC on March 29, 2023.

In the opinion of management, the accompanying unaudited interim consolidated financial statements reflect all adjustments, which are of a normal recurring nature, considered necessary for a fair presentation of all periods presented. The results of the Company's operations for any interim periods are not necessarily indicative of the results of operations for any other interim period or for a full fiscal year.

The Company conducts business in one operating segment, which is identified by the Company based on how resources are allocated, and operating decisions are made. Management evaluates performance and allocates resources based on the Company as a whole.

Use of Estimates

The preparation of these consolidated financial statements in accordance with GAAP requires management to make estimates and judgments that affect the reported amount of assets and liabilities and related disclosure of contingent assets and liabilities at the date of our consolidated financial statements and the reported amounts of revenues and expenses during the applicable period. Estimates inherent in the preparation of these consolidated financial statements include, but are not limited to, estimates related to revenue recognition, accrued expenses, stock-based compensation expense, and income taxes. The Company bases its estimates on historical experience and other market specific or other relevant assumptions it believes to be reasonable under the circumstances. On an ongoing basis, management evaluates its estimates as there are changes in circumstances, facts and experience. Actual results may differ from these estimates under different assumptions or conditions. Such differences could be material to the consolidated financial statements.

Concentrations and Credit Risk

The Company's financial instruments that are potentially subject to concentrations of credit risk consist primarily of cash and cash equivalents, investment securities, and accounts receivable. At times, the Company has cash, cash equivalents, and investment securities at financial institutions exceeding the Federal Depository Insurance Company ("FDIC") and the Securities Investor Protection Corporation ("SIPC") insured limit on domestic currency and the Netherlands' FDIC counterpart for foreign currency. The Company currently deals with four reputable financial institutions and has not experienced any losses in those accounts.

For the three months ended June 30, 2023 and 2022, the Company's revenue was generated from eight and seven customers, respectively. For the six months ended June 30, 2023 and 2022, the Company's revenue was generated from eight and eleven customers, respectively. Significant customers are those that account for greater than 10% of the Company's revenues. For the three months ended June 30, 2023 and 2022, three and four significant customers accounted for approximately $525,000 or 66.2% and $513,000 or 83.5% of total revenue, respectively. For the six months ended June 30, 2023 and 2022, three significant customers accounted for approximately $1,152,000 or 66.7% and $592,000 or 51.6% of total revenue, respectively.

As of June 30, 2023 and December 31, 2022, the Company's accounts receivable was from eight and six customers, of which, three and two customers accounted for approximately $623,000 or 81.2% and $291,000 or 88.2% of total accounts receivable, respectively. The loss of business from one or a combination of the Company's customers could adversely affect its operations.

The Company conducts operations in the Netherlands through its foreign subsidiary and generates a portion of its revenues from customers that are located outside of the United States. For the three months ended June 30, 2023 and 2022, the Company had two and four customers outside of the United States (i.e., European and Asian customers) that accounted for approximately $98,000 or 12.4% and $239,000 or 38.9% of total revenue, respectively. For the six months ended June 30, 2023 and 2022, the Company had two and five customers outside of the United States (i.e., European and Asian customers) that accounted for approximately $187,000 or 10.8% and $375,000 or 32.7% of total revenue, respectively.

As of June 30, 2023 and December 31, 2022, the Company had three and four customers outside of the United States (i.e., European and Asian customers) that accounted for approximately $60,000 or 8.1% and $91,000 or 27.4% of accounts receivable, respectively.

The Company uses several contract research organizations ("CROs") to conduct its research projects. For the three months ended June 30, 2023 and 2022, three and two CROs accounted for approximately $1,586,000 or 99.4% and $1,299,000 or 96.2% of total research services we purchased, respectively. For the six months ended June 30, 2023 and 2022, three and two CROs accounted for approximately $2,662,000 or 97.6% and $2,794,000 or 96.5% of total research services we purchased, respectively. As of June 30, 2023 and December 31, 2022, three CROs accounted for approximately $816,000 or 86.5% and $1,018,000 or 79.7% of accounts payable, respectively. The loss of one CRO or a combination of the Company's CROs could adversely affect its operations.

Cash and Cash Equivalents

We treat highly liquid investments with original maturities of three months or less when purchased as cash equivalents, including money market funds, which are unrestricted for withdrawal or use.

Investment Securities

The Company's investment policy requires investment securities to be investment grade and held to maturity with the primary objective to maintain a high degree of liquidity while maximizing yield. The Company invests excess cash balances in short-term and long-term investment grade securities. Short-term investment securities mature within twelve (12) months or less, and long-term investment securities mature over twelve (12) months from the applicable reporting date. Management determines the appropriate classification of each investment at the time of purchase and reevaluates the classifications at each balance sheet date.

The Company classifies its investments in debt securities as held-to-maturity. Held-to-maturity securities are those securities that the Company has the ability and intent to hold until maturity. Held-to-maturity securities are recorded at amortized cost, net of allowance for credit losses if applicable, and adjusted for the amortization or accretion of premiums or discounts. Premiums and discounts are amortized over the life of the related held-to-maturity security. When a debt security is purchased at a premium, both the face value of the debt and premium amount are reflected as investing outflow.

When evaluating an investment for other-than-temporary impairment, the Company reviews factors such as the length of time and extent to which fair value has been below its cost basis, the financial condition of the issuer and any changes thereto, changes in market interest rates, and whether it is more likely than not the Company will be required to sell the investment before recovery of the investment's cost basis. The Company measures expected credit losses on held to maturity debt securities on an individual security basis. The estimate of expected credit losses considers historical credit information from external sources. The impairment of the investment that is related to the credit loss, if any, is expensed in the period in which the event or change occurred.

The Company classifies its investments in money market funds as available-for-sale securities and presented as cash equivalents on the consolidated balance sheets. As of June 30, 2023 and December 31, 2022, all of our money market funds were invested in U.S. Government money market funds, for which the risk of loss is minimal.

As of June 30, 2023, or December 31, 2022, the Company did not have any investment securities classified as trading.

Accounts Receivable

Accounts receivable consist of billed receivables currently due from customers and unbilled receivables. Unbilled receivables represent the excess of contract revenue (or amounts reimbursable under contracts) over billings to date. Such amounts become billable in accordance with the contract terms, which usually consider the passage of time, achievement of certain milestones or completion of the project.

Accounts receivable are stated net of an allowance for credit losses, if deemed necessary based on the Company's evaluation of collectability and potential credit losses. Management assesses the collectability of its accounts receivable using the specific identification of account balances and considers the credit quality and financial condition of its significant customers, historical information regarding credit losses and the Company's evaluation of current and expected future economic conditions and changes in our customer collection trends. If necessary, an allowance for credit losses is recorded against accounts receivable such that the carrying value of accounts receivable reflects the net amount expected to be collected. Accounts receivable balances are written off against the allowance for credit losses when the potential for collectability is considered remote. Substantially all of our accounts receivable were current and include unbilled amounts that will be billed and collected over the next twelve (12) months. There was no allowance for credit losses as of June 30, 2023, and December 31, 2022.

Accounts receivable consist of the following:

	June 30, 2023	December 31, 2022
	(Unaudited)	(Audited)
Billed receivable	$ 507,525	$ 115,469
Unbilled receivable	260,072	214,532
	$ 767,597	$ 330,001

Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets consist of the following:

	June 30, 2023	December 31, 2022
	(Unaudited)	(Audited)
Prepaid expenses - various	$ 93,865	$ 124,273
Prepaid insurance	41,962	265,429
Prepaid taxes	325	2,534
	$ 136,152	$ 392,236

Accounts Payable

Accounts payable consist of the following:

	June 30, 2023	December 31, 2022
	(Unaudited)	(Audited)
Research and development expenses	$ 830,059	$ 1,067,958
Legal expenses	30,564	56,514
Other	45,253	151,841
	$ 905,876	$ 1,276,313

Accrued Expenses

Accrued expenses consist of the following:

	June 30, 2023	December 31, 2022
	(Unaudited)	(Audited)
Research and development expenses	$ 496,355	$ 343,457
Employee wages and benefits	322,444	580,264
Other	90,683	31,360
	$ 909,482	$ 955,081

Research and Development Costs

Research and development ("R&D") costs are expensed as incurred. R&D costs are for the Company's internally funded pharmaceutical programs and other governmental and commercial projects.

Research and development costs consist of personnel-related costs, facilities, research-related overhead, services from independent contract research organizations, and other external costs. Research and development costs, including related party, during the three and six months ended June 30, 2023 and 2022 were as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)
Outside contracted services	$ 748,139	$ 1,616,605	$ 1,391,186	$ 2,752,161
Personnel related costs	147,414	199,475	299,608	406,265
Facilities, overhead and other	21,999	14,718	37,324	15,234
	$ 917,552	$ 1,830,798	$ 1,728,118	$ 3,173,660

Foreign Currency Transaction Gain or Loss

The Company and its foreign subsidiary use the U.S. dollar as its functional currency, and initially measure the foreign currency denominated assets and liabilities at the transaction date. Monetary assets and liabilities are then re-measured at exchange rates in effect at the end of each period, and property and non-monetary assets and liabilities are carried at historical rates.

Fair Value Measurements

The Company applies fair value accounting for certain financial instruments that are recognized or disclosed at fair value in the financial statements. The Company defines fair value as the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value is estimated by applying the following hierarchy, which prioritizes the inputs used to measure fair value into three levels and bases the categorization within the hierarchy upon the lowest level of input that is available and significant to the fair value measurement:

- *Level 1* – Quoted prices in active markets for identical assets or liabilities.
- *Level 2* – Observable inputs other than quoted prices in active markets for identical assets and liabilities, quoted prices for identical or similar assets or liabilities in inactive markets, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.
- *Level 3* – Inputs that are generally unobservable and typically reflect management's estimate of assumptions that market participants would use in pricing the asset or liability.

The Company's financial instruments included cash and cash equivalents, investment in debt securities, accounts receivable, accounts payable and accrued expenses, accrued payroll and related liabilities, deferred research and development obligations and deposits. The carrying amount of these financial instruments, except for investment in debt securities, approximates fair value due to the short-term maturities of these instruments. The Company's short-term and long-term investments in debt securities are recorded at amortized cost, and their estimated fair value amounts are provided by the third-party broker service for disclosure purposes.

Income Taxes

For the six months ended June 30, 2023, there was no provision for income taxes or unrecognized tax benefits recorded. As of June 30, 2023 and December 31, 2022, deferred tax assets were approximately $17.1 million and $15.5 million, respectively. Due to the Company's history of operating losses and the uncertainty regarding our ability to generate taxable income in the future, the Company has established a 100% valuation allowance against deferred tax assets as of June 30, 2023 and December 31, 2022.

Other Income

For the six months ended June 30, 2023, other income of approximately $1,018,000 was related to the sale of the equity interest in Alphazyme, LLC. For the six months ended June 30, 2022, other income of $250,000 was related to a settlement payment we received from the termination of term sheet of a proposed license and collaboration.

Stock-Based Compensation

We recognize all share-based payments to employees, consultants, and our Board of Directors (the "Board"), as non-cash compensation expense, in research and development expenses or general and administrative expenses in the consolidated statement of operations based on the grant date fair values of such payments. Stock-based compensation expense recognized each period is based on the value of the portion of share-based payment awards that is ultimately expected to vest during the period. Forfeitures are recorded as they occur.

For performance-based awards, the Company recognizes related stock-based compensation expenses based upon its determination of the potential likelihood of achievement of the specified performance conditions at each reporting date.

Net Loss Per Share

Basic net loss per share is computed by dividing net loss available to common shareholders by the weighted average number of common stock shares outstanding during the reporting period. Diluted net loss per share adjusts the weighted average number of common stock shares outstanding for the potential dilution that could occur if common stock equivalents, such as stock options were exercised and converted into common stock, calculated by applying the treasury stock method.

For the three and six months ended June 30, 2023, a total of 5,619,491 shares of potentially dilutive securities, including 163,044 shares of unvested restrict stock units and options to purchase 5,456,447 shares of common stock, were excluded from the computation of diluted net loss per share as their effect would have been anti-dilutive. For the three and six months ended June 30, 2022, the effect of potential exercise of options to purchase 5,031,097 shares of common stock was excluded from the computation of diluted net loss per share as their effect would have been anti-dilutive.

Recently Adopted Accounting Pronouncements

In June 2016, the Financial Accounting Standards Board (the "FASB") issued Accounting Standards Update (the "ASU") 2016-13, *Financial Instruments—Credit Losses (Topic 326)*: *Measurement of Credit Losses on Financial Instruments*. which replaces the incurred loss model with a forward-looking expected credit loss ("CECL") model and requires consideration of a broader range of reasonable and supportable information to estimate expected credit losses. ASU 2016-13 applies to financial assets, measured at amortized cost, including held-to-maturity debt securities and accounts receivable. ASU 2016-13 must be adopted using a modified retrospective transition method through a cumulative-effect adjustment to members' equity in the period of adoption. The Company adopted ASU 2016-13 and related amendments as of January 1, 2023, and the adoption of the new standard did not have a material impact on the Company's consolidated financial statements.

Other pronouncements issued by the FASB or other authoritative accounting standards group with future effective dates are either not applicable or not significant to our consolidated financial statements.

Note 2: Cash, Cash Equivalents, and Investments

The Company's investments in debt securities are classified as held-to-maturity and are recorded at amortized cost, net of allowance for credit losses, and its investments in money market funds are classified as available-for-sale securities and presented as cash equivalents on the consolidated balance sheets. The following table shows the Company's cash, available-for-sale securities, and investment securities by major security type as of June 30, 2023, and December 31, 2022:

	June 30, 2023 (Unaudited)					
	Level (1)	Fair Value	Allowance for Credit Losses	Gross Unrealized Holding Gains	Gross Unrealized Holding Losses	Adjusted Cost
Cash and Cash Equivalents						
Cash		$ 333,717	$ —	$ —	$ —	$ 333,717
Money Market Funds (2)	1	5,507,874	—	—	—	5,507,874
Subtotal		5,841,591	—	—	—	5,841,591
Short-Term Investment Securities (3)						
Corporate Bonds (4)(5)	2	4,282,998	—	—	(4,327)	4,287,325
Total		$ 10,124,589	$ —	$ —	$ (4,327)	$ 10,128,916

	December 31, 2022 (Audited)					
	Level (1)	Fair Value	Allowance for Credit Losses	Gross Unrealized Holding Gains	Gross Unrealized Holding Losses	Adjusted Cost
Cash and Cash Equivalents						
Cash		$ 26,782	$ —	$ —	$ —	$ 26,782
Money Market Funds (2)	1	5,767,490	—	—	—	5,767,490
Subtotal		5,794,272	—	—	—	5,794,272
Short-Term Investment Securities (3)						
Corporate Bonds (4)(5)	2	6,800,062	—	—	(47,208)	6,847,270
Total		$ 12,594,334	$ —	$ —	$ (47,208)	$ 12,641,542

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Notes:

(1) Definition of the three-level fair value hierarchy:

- Level 1 - Quoted prices (unadjusted) in active markets for identical assets or liabilities
- Level 2 - Other inputs that are directly or indirectly observable in the markets
- Level 3 - Inputs that are generally unobservable

(2) All our money market funds were invested in U.S. Government money market funds.

(3) Short-term investment securities will mature within 12 months or less, from the applicable reporting date.

(4) For the three months ended June 30, 2023 and 2022, the Company received discounts of $17,601 and paid premiums of $8,420 to purchase held-to-maturity investment securities, respectively. For the six months ended June 30, 2023 and 2022, the Company received discounts of $32,834 and paid premiums of $29,270 to purchase held-to-maturity investment securities, respectively. For the year ended December 31, 2022, the Company received discounts of $6,280 to purchase held-to-maturity investment securities.

(5) The Company considers the declines in market value of its investment portfolio to be temporary in nature. As of June 30, 2023 and December 31, 2022, the Company did not consider any of its investments to be other-than-temporarily impaired and no allowance for credit losses was recorded.

Note 3: Research and Collaboration Agreements, Sublicense Agreements, and Investments in Privately Held Companies

A Global Food Ingredient Company

On May 10, 2022, the Company entered into a Joint Development Agreement (the "JDA") with a Global Food Ingredient Company ("GFIC") to develop and manufacture several animal free ingredient products using the Company's biotechnologies.

Under the terms of the JDA, Dyadic is to develop its proprietary production cell lines for the manufacture of animal free ingredient product candidates. The research collaboration will be fully funded by the GFIC in an amount approximating $4.1 million over two years. Dyadic will receive certain defined "success fees" (the "Success Fees"), upon researching certain productivity and activity levels and milestones at different stages of the collaboration. Dyadic will also receive a "Commercialization Fee" (the "Commercialization Fee") of low eight figures upon commercialization, and a royalty payment of low single digits based on commercial sales.

The JDA can be terminated in its entirety along with any sublicense granted, with or without cause by either party, within 90 business days after receipt of written termination notice.

For the three and six months ended June 30, 2023, the Company recorded research and development revenues of approximately $226,000 and $565,000, as well as Success Fees of approximately $65,500 in connection with the JDA, respectively. For each of the three and six months ended June 30, 2022, the Company recorded research and development revenues of approximately $113,000 in connection with the JDA.

Phibro/Abic

On February 10, 2022, the Company entered into an exclusive sub-license agreement with Abic Biological Laboratories Ltd. ("Abic"), an affiliate of Phibro Animal Health Corporation ("Phibro") to provide services for a targeted disease (the "Phibro/Abic Agreement"). The Phibro/Abic Agreement was an addendum to the initially non-exclusive sub-license agreement the Company signed with Phibro on July 1, 2020. According to the Phibro/Abic Agreement, the Company received an exclusivity payment in April 2022. In July 2022, the Company expanded the license agreement to include an additional research project to develop another animal vaccine for livestock.

Phibro/Abic may terminate the Phibro/Abic Agreement in its entirety, or any sublicense granted, in each case with or without cause at any time upon 90 days' prior written notice to Dyadic.

Under the Phibro/Abic Agreement, the Company has received an exclusivity payment in April 2022 and is eligible to receive certain milestone payment upon regulatory approval, and future sales-based royalty payments. The milestone payment is considered constrained variable consideration and excluded from the transaction price at inception. The Company will re-evaluate the transaction price in each reporting period and as uncertain events are resolved or other changes in circumstances occur. The Company will not recognize revenue related to sales-based royalty until the associated event occurs. As of June 30, 2023, there were no events or circumstances that would change the transaction price and no milestone or royalty payments have been recognized.

Janssen

On December 16, 2021, the Company entered a Research, License, and Collaboration Agreement (the "Janssen Agreement") for the manufacture of therapeutic protein candidates using its C1-cell protein production platform with Janssen Biotech, Inc., one of the Janssen Pharmaceutical Companies of Johnson & Johnson ("Janssen"). Pursuant to the terms of the Janssen Agreement: (i) Janssen will pay Dyadic an upfront payment of $500,000 for a non-exclusive license to utilize the C1-cell protein production platform to develop C1 production cell lines for the manufacturing of Janssen's therapeutic protein candidates against several biologic targets, (ii) Janssen will provide R&D funding up to €1.6 million to develop and assess C1 production cell lines for its product candidates, (iii) Janssen will have an option to pay a mid-seven figure payment for an exclusive license from Dyadic to use the C1-cell protein production platform for the manufacturing of therapeutic proteins directed to one specific target, and upon exercise, Janssen would have the right to add additional non-exclusive targets to the collaboration and Dyadic would complete the technology transfer of the C1-cell protein production platform, fully enabling Janssen to internally develop C1 cell lines against licensed targets, and upon successful completion of the technology transfer, Dyadic is eligible to receive a milestone payment in the low seven figures, (iv) for each product candidate, Dyadic could receive development and regulatory milestones in the mid-seven figures, and (v) Dyadic could receive aggregate commercial milestone payments in the low nine figures per product, subject to a limit on the number of such products, with the amount depending on the cumulative amount of active pharmaceutical ingredient produced by Janssen for each product manufactured with Dyadic's C1-cell protein production platform.

Janssen may terminate the Janssen Agreement in its entirety, or on a country-by-country or other jurisdiction-by-other jurisdiction basis, for any or no reason, upon 90 days' prior written notice to Dyadic.

As of June 30, 2023, the upfront payment was recorded in deferred license revenue, current and non-current portion in the amount of approximately $176,000 and $88,000, respectively. For the three and six months ended June 30, 2023, the Company recognized approximately $44,000 and $88,000 of the upfront payment as license revenue, respectively. For the three and six months ended June 30, 2023, the Company recorded research and development revenues of approximately $191,000 and $380,000, respectively, in connection with the Janssen Agreement.

IDBiologics, Inc.

On July 8, 2020, the Company entered into a Common Stock Purchase Agreement (the "IDBiologics Agreement") with IDBiologics, Inc ("IDBiologics"). IDBiologics is a private biotechnology company focused on the development of human monoclonal antibodies for the treatment and prevention of serious infectious diseases. The Company was founded in 2017 and seeded by Vanderbilt University Medical Center in response to the repeated threats of epidemics around the world including Ebola in West Africa and Zika in the Americas. IDBiologics is developing a portfolio of monoclonal antibodies against SARS-CoV-2, influenza and Zika viruses.

Pursuant to the terms of the IDBiologics Agreement, on July 8, 2021, Dyadic received 129,661 shares of IDBiologics' common stock, which approximates 0.3% of IDBiologics' outstanding equity as of June 30, 2023, in exchange for a feasibility study performed by Dyadic. The Company provided services including the use of Dyadic's C1-cell technology to express a SARS-CoV-2 monoclonal antibody which IDBiologics licensed from the Vanderbilt Vaccine Center. The Company chose not to record its equity interest in IDBiologics because the fair value amount of the service provided was immaterial.

The Company evaluated the nature of its equity interest in IDBiologics and determined that IDBiologics is a Variable Interest Entity ("VIE") due to the capital structure of the entity. However, the Company is not the primary beneficiary of IDBiologics as Dyadic does not have the power to control or direct the activities of IDBiologics that most significantly impact the VIE. As a result, the Company does not consolidate its investment in IDBiologics.

On April 25, 2021, the Company entered into a project agreement (the "Project Agreement") to provide additional research services to IDBiologics. For each of the three and six months ended June 30, 2023, there were no research and development revenues recognized related to IDBiologics.

Alphazyme

On May 5, 2019, the Company entered into a sub-license agreement (the "Alphazyme Sub-License Agreement") with Alphazyme, LLC ("Alphazyme"). Under the terms of the Alphazyme Sub-License Agreement, the Company has granted to Alphazyme, subject to the terms of the license agreement entered into between the Company and Danisco US, Inc. on December 31, 2015, a sub-license to certain patent rights and know-how related to Dyadic's proprietary C1-cell protein production platform for the purpose of commercializing certain pharmaceutical products that are used as reagents to catalyze a chemical reaction to detect, measure, or be used as a process intermediate to produce a nucleic acid as a therapeutic or diagnostic agent.

On June 24, 2020, the Company entered into an Amended and Restated Non-Exclusive Sub-License Agreement (the "Amended Sub-License Agreement") with Alphazyme to amend and restate the Alphazyme Sub-License Agreement. Pursuant to the Amended Sub-License Agreement and in consideration of Dyadic's transfer of its C1-cell protein production platform, Alphazyme issued 2.5% of the Class A shares of Alphazyme to Dyadic, and Dyadic became a party to the Alphazyme Limited Liability Company Agreement pursuant to which the Company will agree to certain customary rights, covenants and obligations. In addition, and subject to achieving certain milestones, Alphazyme is obligated to pay a potential milestone payment and royalties on net sales, if any, which incorporate Dyadic's proprietary C1-cell protein production platform.

On December 1, 2020, an Amended and Restated Limited Liability Company Agreement with Alphazyme (the "Amended Alphazyme LLC Agreement") was entered. Under the Amended Alphazyme LLC Agreement, Alphazyme obtained additional capital contribution and Dyadic's ownership was diluted to 1.99%.

The Company evaluated the nature of its equity interest investment in Alphazyme and determined that Alphazyme is a VIE due to the capital structure of the entity. However, the Company is not the primary beneficiary of Alphazyme as Dyadic does not have the power to control or direct the activities of Alphazyme that most significantly impact the VIE. As a result, the Company does not consolidate its investment in Alphazyme. The Company reports its investment in Alphazyme under the cost method of accounting, given that it does not have the ability to exercise significant influence or control over Alphazyme.

On January 18, 2023, the Company entered into a Securities Purchase Agreement, under which the Company agreed to sell its equity interest in Alphazyme, LLC (the "Alphazyme Sale Agreement"). The Company continues to have the potential to receive additional payments based on the future sales of Alphazyme's existing products, pursuant to the Alphazyme Sale Agreement. The Amended Sublicense Agreement between Dyadic and Alphazyme, which was previously entered on June 24, 2020, remains in effect. Under the Amended Alphazyme Sub-License Agreement, Dyadic is entitled to potential milestone and royalty payments upon the commercialization of Alphazyme products using Dyadic's proprietary C1-cell protein production platform. As of June 30, 2023, no milestones or royalty payments have been recognized.

During the six months ended June 30, 2023, the Company received a total cash payment of approximately $1.3 million from the sale of its equity interest in Alphazyme, LLC.

Note 4: Commitments and Contingencies

Legal Proceedings

We are not currently involved in any litigation that we believe could have a materially adverse effect in our financial condition or results of operations. From time to time, the Company is subject to legal proceedings, asserted claims and investigations in the ordinary course of business, including commercial claims, employment and other matters, which management considers immaterial, individually and in the aggregate. The Company makes a provision for a liability when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. The requirement for these provisions is reviewed at least quarterly and adjusted to reflect the impact of negotiations, settlements, rulings, advice of legal counsel and other information and events pertaining to a particular case. Litigation is inherently unpredictable and costly. Protracted litigation and/or an unfavorable resolution of one or more of proceedings, claims or investigations against the Company could have a material adverse effect on the Company's consolidated financial position, cash flows or results of operations.

Note 5: Share-Based Compensation

Description of Equity Plans

The 2021 Equity Incentive Award Plan (the "2021 Plan") was adopted by the Company's Board of Directors on April 9, 2021 and approved by the Company's Annual Meeting of Shareholders (the "Annual Meeting") on June 11, 2021. The 2021 Plan serves as a successor to the Company's 2011 Equity Incentive Plan (the "2011 Plan"). Since the adoption of the 2021 Plan, all equity awards were made from the 2021 Plan and no additional awards will be granted under the 2011 Plan. The 2021 Plan provides for the issuance of a variety of share-based compensation awards, including stock options, restricted stock awards, restricted stock unit awards, performance awards, dividend equivalents awards, deferred stock awards, stock payment awards and stock appreciation rights. As of April 16, 2021, the 2021 Plan increased the number of shares available for grant by 3,000,000 in addition to the number of shares remaining available for the grant of new awards under the 2011.

As of June 30, 2023, the Company had 5,456,447 stock options outstanding and 163,044 unvested restricted stock units in addition to 2,836,206 shares of common stock available for grant under the 2021 Plan. As of December 31, 2022, there were 5,031,097 stock options outstanding in addition to 3,672,561 shares of common stock available for grant under the 2021 Plan.

Stock Options

Options are granted to purchase common stock at prices that are equal to the fair value of the common stock on the date the option is granted. Vesting is determined by the Board of Directors at the time of grant. The term of any stock option awards under the Company's 2011 Plan and 2021 Plan is ten years, except for certain options granted to the contractors which are either one or three years.

The grant-date fair value of each option grant is estimated using the Black-Scholes option pricing model and amortized on a straight-line basis over the requisite service period, which is generally the vesting period, for each separately vesting portion of the award as if the award was, in substance, multiple awards. Use of a valuation model requires management to make certain assumptions with respect to selected model inputs, including the following.

Risk-free interest rate. The risk-free interest rate is based on U.S. Treasury rates with securities approximating the expected lives of options at the date of grant.

Expected dividend yield. The expected dividend yield is zero, as the Company has never paid dividends to common shareholders and does not currently anticipate paying any in the foreseeable future.

Expected stock price volatility. The expected stock price volatility was calculated based on the Company's own volatility since the DuPont Transaction. The Company reviews its volatility assumption on an annual basis and has used the Company's historical volatilities since 2016, as the DuPont Transaction resulted in significant changes in the Company's business and capital structure.

Expected life of option. The expected life of option was based on the contractual term of the option and expected employee exercise and post-vesting employment termination behavior. The Company uses the weighted average vesting period and contractual term of the option as the best estimate of the expected life of a new option, except for the options granted to the CEO (i.e., 5 or 10 years) and certain contractors (i.e., 1 or 3 years).

The assumptions used in the Black-Scholes option pricing model for stock options granted during the six months ended June 30, 2023 are as follows:

Risk-Free interest rate	3.90% - 5.12%
Expected dividend yield	—%
Expected stock price volatility	62.22%-64.27%
Expected life of options (in years)	1.13- 6.25

The following table summarizes the stock option activities during the six months ended June 30, 2023:

	Shares	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value
Outstanding at December 31, 2022	5,031,097	$ 3.25	5.75	$ 13,000
Granted (1)	745,350	1.43		
Exercised	—	—		
Expired (2)	(320,000)	1.62		
Canceled	—	—		
Outstanding at June 30, 2023	5,456,447	$ 3.10	6.12	$ 1,011,183
Exercisable at June 30, 2023	4,179,293	$ 3.15	5.32	$ 621,865

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Notes:

(1) Options granted:

- Annual share-based compensation awards on January 3, 2023, including: (a) 406,250 stock options with an exercise price of $1.38 per share granted to executives and key personnel, upon one year anniversary, or vesting annually in equal installments over four years, (b) 262,500 stock options with an exercise price of $1.38 per share granted to members of the Board of Directors, vesting upon one year anniversary, (c) 24,100 stock options with an exercise price of $1.38 per share granted to employees, vesting annually in equal installments over four years, (d) 15,000 stock options with an exercise price of $1.38 per share granted to a consultant, vesting upon one year anniversary, and (e) 37,500 stock options with an exercise price of $2.23 per share granted to a consultant, vesting over two months from the grant date.

(2) Options expired:

- (a) 270,000 stock options with an exercise price of $1.39 per share granted to an executive, (b) 25,000 stock options with an exercise price of $1.75 per share granted to a member of the Board of Directors, and (c) 25,000 stock options with an exercise price of $3.99 per share granted to a consultant.

Restricted Stock Units

Restricted stock units (the "RSUs") are granted subject to certain restrictions. Vesting conditions are determined at the discretion of the Board of Directors. The fair market value of RSUs is generally determined based on the closing market price of the stock on the grant date.

The following table summarizes the restricted stock award activity during the six months ended June 30, 2023:

	Shares	Weighted-Average Grant Date Fair Value
Outstanding at December 31, 2022	—	$ —
Granted (1)	411,005	1.38
Vested (1)	(247,961)	1.38
Outstanding at June 30, 2023	163,044	$ 1.38

Notes:

(1) Restricted stock units granted:

- On January 3, 2023, the Company granted 247,961 RSUs with immediate vesting, to executives and key personnel in lieu of cash bonuses earned for the year ended 2022. The Company also granted 163,044 RSUs, vesting upon one year anniversary of the grant, to the Board of Directors as a result of the Board agreeing to a reduction in director cash compensation for 2023. The grant of RSUs was approved by the Compensation Committee of the Board of Directors in November 2022. The fair value of the common stock is the Company's closing stock price on January 3, 2023 as reported on the Nasdaq Stock Exchange.

Compensation Expenses

We recognize all share-based payments to employees and our Board of Directors, as non-cash compensation expense, in research and development expenses or general and administrative expenses in the consolidated statement of operations, and these charges had no impact on the Company's reported cash flows. Stock-based compensation expense is calculated on the grant date fair values of such awards, and recognized each period based on the value of the portion of share-based payment awards that is ultimately expected to vest during the period. Forfeitures are recorded as they occur.

For performance-based awards, the Company recognizes related stock-based compensation expenses based upon its determination of the potential likelihood of achievement of the specified performance conditions at each reporting date.

Total non-cash share-based compensation expense was allocated among the following expense categories:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
General and administrative	$ 323,796	$ 389,885	$ 643,132	$ 778,548
Research and development	10,520	64,615	21,823	129,743
Total	$ 334,316	$ 454,500	$ 664,955	$ 908,291

The following table summarizes the Company's non-cash share-based compensation expenses:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Share based compensation expense- stock options	$ 278,373	$ 454,500	$ 554,914	$ 908,291
Share based compensation expense- restricted stock units	55,943	—	110,041	—
Total	$ 334,316	$ 454,500	$ 664,955	$ 908,291

Note 6: Shareholders' Equity

Issuances of Common Stock

For the six months ended June 30, 2023, there were 247,961 shares of the Company's common stock issued resulting from the vesting of restricted stock units with a weighted average issue price of $1.38 per share. For the six months ended June 30, 2022, there were 35,000 shares of the Company's common stock issued resulting from the exercise of stock options with a weighted average issue price of $1.21 per share.

Note 7: Subsequent Events

For purpose of disclosure in the consolidated financial statements, the Company has evaluated subsequent events through August 9, 2023, the date the consolidated financial statements were available to be issued. Except as discussed below, management is not aware of any material events that have occurred after the balance sheet date that would require adjustment to, or disclosure in the accompanying financial statements.

On August 8, 2023, the Company notified Jefferies LLC, or Jefferies, that the Open Market Sale Agreement℠ entered on August 13, 2020 with respect to an at the market offering program will terminate effective August 25, 2023. There have been no sales made under the Open Market Sale Agreement℠.

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

The following discussion and analysis of financial condition and results of operations should be read in conjunction with the financial statements and the notes to those statements appearing in this Quarterly Report. Some of the information contained in this discussion and analysis or set forth elsewhere in this Quarterly Report, including information with respect to our plans and strategy for our business, includes forward-looking statements that involve risks, assumptions and uncertainties. Important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis include, but are not limited to, those set forth in "Item 1A. Risk Factors" in this Quarterly Report. All forward-looking statements included in this Quarterly Report are based on information available to us as of the time we file this Quarterly Report and, except as required by law, we undertake no obligation to update publicly or revise any forward-looking statements.

Overview

Description of Business

Dyadic International, Inc. ("Dyadic", "we", "us", "our", or the "Company") is a global biotechnology company based in Jupiter, Florida with operations in the United States and a satellite office in the Netherlands, and it utilizes several third-party consultants and research organizations to carry out the Company's activities. Over the past two plus decades, the Company has developed a gene expression platform for producing commercial quantities of industrial enzymes and other proteins, and has previously licensed this technology to third parties, such as Abengoa Bioenergy, BASF, Codexis and others, for use in industrial (non-pharmaceutical) applications. This technology is based on the *Thermothelomyces heterothallica* (formerly known as *Myceliophthora thermophila*) fungus, which the Company named C1.

On December 31, 2015, the Company sold its industrial technology business to Danisco USA ("Danisco"), the industrial biosciences business of DuPont (NYSE: DD) (the "DuPont Transaction"). As part of the DuPont Transaction, Dyadic retained co-exclusive rights to the C1-cell protein production platform for use in all human and animal pharmaceutical applications, and currently the Company has the exclusive ability to enter into sub-license agreements (subject to the terms of the license and to certain exceptions) for use in all human and animal pharmaceutical applications. Danisco retained certain rights to utilize the C1-cell protein production platform in pharmaceutical applications, including the development and production of pharmaceutical products, for which it will be required to make royalty payments to Dyadic upon commercialization. In certain circumstances, Dyadic may owe a royalty to either Danisco or certain licensors of Danisco, depending upon whether Dyadic elects to utilize certain patents either owned by Danisco or licensed in by Danisco.

After the DuPont Transaction, the Company has been building innovative microbial platforms to address the growing demand for global protein bioproduction and unmet clinical needs for effective, affordable, and accessible biopharmaceutical products for human and animal health and for other biologic products for use in non-pharmaceutical applications.

The C1-cell protein production platform is a robust and versatile thermophilic filamentous fungal expression system for the development and production of biologic products including enzymes and other proteins for human and animal health. Some examples of human and animal vaccines and drugs which have the potential to be produced from C1-cells are protein antigens, ferritin nanoparticles, virus-like particles ("VLPs"), monoclonal antibodies ("mAbs"), Bi/Tri-specific antibodies, Fab antibody fragments, Fc-fusion proteins, as well as other therapeutic enzymes and proteins. The Company is involved in multiple funded research collaborations with animal and human pharmaceutical companies which are designed to leverage its C1-cell protein production platform to develop innovative vaccines and drugs, biosimilars and/or biobetters.

The Company also developed the Dapibus™ thermophilic filamentous fungal based microbial protein production platform to enable the rapid development and large-scale manufacture of low-cost proteins, metabolites, and other biologic products for use in non-pharmaceutical applications, such as food, nutrition, and wellness.

Recent Developments

DYAI-100 SARS-CoV-2 RBD (Receptor Binding Domain) Booster Vaccine Candidate

- No major vaccine-related safety concerns based on the interim analysis of the Day 29 data for both low and high dose groups reviewed by the Data Safety Monitoring Board (DSMB).
- To date, no serious adverse events or local and systemic side effects have been observed.
- Booster vaccine produced immune response at both dose levels.
- The Last Patient Last Visit (LPLV) is scheduled for August 25, 2023, and the full clinical study report (CSR) is expected in Q4 2023.

Vaccine Collaborations

- **Essential Drugs Company Limited (EDCL) in Bangladesh** – On June 21, 2023, the Company announced that it entered a Memorandum of Understanding with EDCL, the state-owned pharmaceutical company under the Ministry of Health and Family Welfare of Bangladesh, to facilitate biopharmaceutical research, pre-clinical development, cGMP production, and clinical development for the prevention and control of diseases and improvement of public health programs in Bangladesh.
- **Top 5 Pharma** – In April 2023, the Company entered a new fully funded research collaboration, with a top 5 pharmaceutical company, to express a vaccine antigen from C1 for human health in a large infectious disease segment. The agreement also grants an option for a future commercialization license in the designated field.
- **Rubic One Health ("Rubic")** – On April 12, 2023, the Company expanded its initial 2021 license agreement with Rubic to include vaccines and therapeutic proteins beyond COVID-19 vaccines, for both human animal health markets. The expanded license agreement will help Rubic prepare for the development and manufacture of affordable vaccines and drugs for the African continent.
- **Virovax Bio ("Virovax")** – Currently, four new animal studies are ongoing with C1 produced ferritin nanoparticle antigens combined with Virovax's adjuvants for influenza (H5N1/Bird Flu), West Nile and Powassan, to protect against encephalitis and meningitis.
- **Uvax Bio ("Uvax")** – In June 2023, the Company has renewed and expanded its research collaboration with Uvax, a spin-off vaccine company from Scripps Research. Uvax is developing prophylactic vaccines for the most challenging infectious diseases, and our research collaboration is expected to help Uvax overcome gene expression challenges using the Company's C1-cell protein production platform.

Antibody Collaborations

- **NIIMBL** – During the NIIMBL annual meeting in June 2023, the Company presented data and research results generated from the NIIMBL Grant received by the Company under the previously announced White House's American Rescue Plan, which ended successfully.
- **EU 87G7 COVID-19 Antibody Collaboration** – In June 2023, a manuscript was submitted to a peer-reviewed scientific journal titled "*Filamentous Fungus-Produced Human Monoclonal Antibody Provides SARS-CoV-2 Protection in Hamster and Non-Human Primate Models*" in collaboration with Dr. Albert Osterhaus and several other authors. The manuscript describes the safety and efficacy results with a C1-cell produced monoclonal antibody obtained from studies in hamsters and non-human primates.
- **Fondazione Biotecnopolo di Siena ("FBS")** – On May 24, 2023, the Company entered a Memorandum of Understanding with the FBS, which performs the functions of an anti-pandemic hub with a particular focus on the development and production of vaccines and monoclonal antibodies for the treatment of emerging epidemic-pandemic pathologies. We expect FBS to conduct research and development, clinical study, regulatory approval, manufacture and commercialization of vaccines and therapeutic proteins using the Company's C1 protein production platform.

Animal Health

- **New Animal Health Partner** – In June 2023, the Company entered a fully funded collaboration with a new animal health company to develop an antigen for livestock animals.
- **Rubic One Health ("Rubic")** – On April 12, 2023, the Company expanded its initial 2021 license agreement with Rubic to include vaccines and therapeutic proteins beyond COVID-19 vaccines for both human animal health markets. The expanded license agreement is expected to help Rubic prepare for the development and manufacture of affordable vaccines and drugs for the African continent.
- **Phibro Animal Health/Abic Biological Laboratories** – In the first quarter of 2023, the Company extended its research collaboration with Abic Biological Laboratories Ltd. ("Abic"), an affiliate of Phibro Animal Health Corporation ("Phibro") to apply newly developed techniques and methods to further increase the expression level of a recombinant livestock antigen using C1. The Company and Abic have expanded the collaboration to include the development of additional antigens for use in livestock animal health applications.

Alternative Proteins and Dapibus™ Platform

- **Commercial Product Portfolio Pipeline** – On August 7, 2023, the Company announced that it has successfully developed stable cell lines to produce recombinant serum albumin products. The Company initiated animal-free recombinant serum albumin projects in late 2022 for use in potential therapeutic, product development, research, and/or diagnostic human and animal pharmaceutical applications. We have started sampling potential customers who have expressed interest in Dyadic's C1 serum albumin products. Initial independent analytical assessment of the Company's recombinant bovine serum albumin demonstrated that it is structurally equivalent to the commercially available animal derived product. In non-pharmaceutical applications, the Company initiated the development of non-animal derived recombinant dairy proteins and enzymes for use in food and nutrition to support its Dapibus™ platform.
- **Fermbox Bio ("Fermbox")** – On May 7, 2023, the Company entered a fully funded co-development and marketing agreement with Fermbox to help accelerate our ability to exploit the Dapibus™ platform and expand Dyadic's product offerings for non-pharmaceutical alternative proteins applications, such as food, nutrition, wellness and other bioproducts.

Other Events

- **BARDA and FDA Workshop** – On April 27, 2023, the Company presented at Recombinant Protein-Based COVID-19 Vaccines Workshop, a virtual event hosted by the Biomedical Advanced Research and Development Authority (BARDA) and FDA. The goals of the workshop were to provide: 1) a forum for product sponsors to discuss progress and technical challenges in the manufacturing when changing strain composition to currently circulating variants of SARS-CoV-2; and 2) an open forum for collaborative discussions to facilitate advancement of recombinant protein-based COVID-19 vaccines.
- **Patent Update** – On April 18, 2023, the Company announced the receipt of a notice of allowance from the U.S. Patent and Trademark Office for patent application 16/640,483, titled "Production of Flu Vaccine in *Myceliophthora thermophila*", which will cover claims for the development and manufacture of seasonal and pandemic influenza vaccines from the Company's C1 protein production platform. The Company has developed several influenza antigens and in collaboration with scientists in the EU and USA various animal studies have been completed, with both hemagglutinin (HA) and neuraminidase (NA) antigens expressed from the Company's C1 protein production platform. Additional pandemic influenza (H5N1/bird flu) animal trials are currently in process.

Climate Change

We believe that neither climate change, nor governmental regulations related to climate change, have had, or are expected to have, a material effect on our operations.

***Open Market Sale Agreement*SM**

On August 8, 2023, the Company notified Jefferies LLC, or Jefferies, that the Open Market Sale Agreement℠ entered on August 13, 2020 with respect to an at the market offering program will terminate effective August 25, 2023. There have been no sales made under the Open Market Sale Agreement℠.

Critical Accounting Policies, Estimates, and Judgments

The preparation of these consolidated financial statements in accordance with GAAP requires management to make estimates and judgments that affect the reported amount of assets and liabilities and related disclosure of contingent assets and liabilities at the date of our consolidated financial statements and the reported amounts of revenues and expenses during the applicable period. Actual results may differ from these estimates under different assumptions or conditions. Such differences could be material to the consolidated financial statements.

We define critical accounting policies as those that are reflective of significant judgments and uncertainties, and which may potentially result in materially different results under different assumptions and conditions. In applying these critical accounting policies, our management uses its judgment to determine the appropriate assumptions to be used in making certain estimates. These estimates are subject to an inherent degree of uncertainty. Our critical accounting policies include the following:

Revenue Recognition

The Company has no products approved for sale at this point. All our revenue to date has been research revenue from third-party collaborations and government grants, as well as revenue from sublicensing agreements and collaborative arrangements, which may include upfront payments, options to obtain a license, payment for research and development services, milestone payments and royalties, in the form of cash or non-cash considerations (e.g., minority equity interest).

Revenue related to research collaborations and agreements: The Company typically performs research and development services as specified in each respective agreement on a best efforts basis, and recognizes revenue from research funding under collaboration agreements in accordance with the 5-step process outlined in ASC Topic 606 ("Topic 606"): (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation. We recognize revenue when we satisfy a performance obligation by transferring control of the service to a customer in an amount that reflects the consideration that we expect to receive. Depending on how the performance obligation under our license and collaboration agreements is satisfied, we recognize the revenue either at a point in time or over time by using the input method under Topic 606 to measure the progress toward complete satisfaction of a performance obligation.

Under the input method, revenue will be recognized based on the entity's efforts or inputs to the satisfaction of a performance obligation (e.g., resources consumed, labor hours expended, costs incurred, or time elapsed) relative to the total expected inputs to the satisfaction of that performance obligation. The Company believes that the cost-based input method is the best measure of progress to reflect how the Company transfers its performance obligation to a customer. In applying the cost-based input method of revenue recognition, the Company uses actual costs incurred relative to budgeted costs to fulfill the performance obligation. These costs consist primarily of full-time equivalent effort and third-party contract costs. Revenue will be recognized based on actual costs incurred as a percentage of total budgeted costs as the Company completes its performance obligations.

A cost-based input method of revenue recognition requires management to make estimates of costs to complete the Company's performance obligations. In making such estimates, significant judgment is required to evaluate assumptions related to cost estimates. The cumulative effect of revisions to estimated costs to complete the Company's performance obligations will be recorded in the period in which changes are identified and amounts can be reasonably estimated. A significant change in these assumptions and estimates could have a material impact on the timing and amount of revenue recognized in future periods.

Revenue related to grants: The Company may receive grants from governments, agencies, and other private and not-for-profit organizations. These grants are intended to be used to fund the Company's research collaborations partially or fully, including opportunities arising in connection with COVID-19 that the Company is pursuing with certain collaborators. However, most, if not all, of such potential grant revenues, if received, is expected to be earmarked for third parties to advance the research required, including preclinical and clinical trials for SARS-CoV-2 vaccines and/or antibodies candidates.

Revenue related to sublicensing agreements: If the sublicense to the Company's intellectual property is determined to be distinct from the other performance obligations identified in the arrangement, the Company recognizes revenue allocated to the license when technology is transferred to the customer and the customer can use and benefit from the license.

Customer options: If the sublicensing agreement includes customer options to purchase additional goods or services, the Company will evaluate if such options are considered material rights to be deemed as separate performance obligations at the inception of each arrangement.

Milestone payments: At the inception of each arrangement that includes development, commercialization, and regulatory milestone payments, the Company evaluates whether the achievement of the milestones is considered probable and estimates the amount to be included in the transaction price. If the milestone payment is in exchange for a sublicense and is based on the sublicensee's subsequent sale of product, the Company recognizes milestone payment by applying the accounting guidance for royalties. To date, the Company has not recognized any milestone payment revenue resulting from any of its sublicensing arrangements.

Royalties: With respect to licenses deemed to be the predominant item to which the sales-based royalties relate, including milestone payments based on the level of sales, the Company recognizes revenue at the later of (i) when the related sales occur or (ii) when the performance obligation to which some or all the royalty has been allocated has been satisfied (or partially satisfied). To date, the Company has not recognized any royalty revenue resulting from any of its sublicensing arrangements.

We invoice customers based on our contractual arrangements with each customer, which may not be consistent with the period that revenues are recognized. When there is a timing difference between when we invoice customers and when revenues are recognized, we record either a contract asset (unbilled accounts receivable) or a contract liability (deferred research and development obligations), as appropriate. If upfront fees or considerations related to sublicensing agreement are received prior to the technology transfer, the Company will record the amount received as deferred revenue from licensing agreement.

We are not required to disclose the value of unsatisfied performance obligations for (i) contracts with an original expected length of one year or less and (ii) contracts for which we recognize revenue at the amount to which we have the right to invoice for services performed.

The Company adopted a practical expedient to expense sales commissions when incurred because the amortization period would be one year or less.

Accrued Research and Development Expenses

To properly record services that have been rendered but not yet billed to the Company, we review open contracts and purchase orders, communicate with our personnel and we estimate the level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of the actual cost. The majority of our service providers invoice us monthly or quarterly in arrears for services performed or when contractual milestones are met. We make estimates of our accrued expenses as of each balance sheet date in our consolidated financial statements based on facts and circumstances known to us at that time. We periodically confirm the accuracy of our estimates with the service providers and adjust if necessary. Examples of accrued research and development expenses include amounts owed to contract research organizations, to service providers in connection with research and development activities.

Stock-Based Compensation

We have granted stock options to employees, directors and consultants. The fair value of each option award is estimated on the date of grant using the Black-Scholes option-pricing model. The Black-Scholes model considers volatility in the price of our stock, the risk-free interest rate, the estimated life of the option, the closing market price of our stock and the exercise price. For purposes of the calculation, we assumed that no dividends would be paid during the life of the options. We also used the weighted-average vesting period and contractual term of the option as the best estimate of the expected life of a new option, except for the options granted to the CEO (i.e., 5 or 10 years) and certain contractors (i.e., 1 or 3 years). The expected stock price volatility was calculated based on the Company's own volatility since the DuPont Transaction. The Company reviews its volatility assumption on an annual basis and has used the Company's historical volatilities since 2016, as the DuPont Transaction resulted in significant changes in the Company's business and capital structure.

The estimates utilized in the Black-Scholes calculation involve inherent uncertainties and the application of management judgment. These estimates are neither predictive nor indicative of the future performance of our stock. As a result, if other assumptions had been used, our recorded share-based compensation expense could have been materially different from that reported. In addition, because some of the performance-based options issued to employees, consultants and other third-parties vest upon the achievement of certain milestones, the total ultimate expense of share-based compensation is uncertain.

Accounting for Income Taxes

The Company accounts for income taxes under the asset and liability method in accordance with ASC Topic 740, "Income Taxes". Under this method, income tax expense /(benefit) is recognized for: (i) taxes payable or refundable for the current year and (ii) deferred tax consequences of temporary differences resulting from matters that have been recognized in an entity's financial statements or tax returns. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in the results of operations in the period that includes the enactment date. A valuation allowance is provided to reduce the deferred tax assets reported if based on the weight of the available positive and negative evidence, it is more likely than not some portion or all the deferred tax assets will not be realized.

In determining taxable income for the Company's consolidated financial statements, we are required to estimate income taxes in each of the jurisdictions in which we operate. This process requires the Company to make certain estimates of our actual current tax exposure and assessment of temporary differences between the tax and financial statement recognition of revenue and expense. In evaluating the Company's ability to recover its deferred tax assets, the Company must consider all available positive and negative evidence including its past operating results, the existence of cumulative losses in the most recent years and its forecast of future taxable income. Significant management judgment is required in determining our provision for income taxes, deferred tax assets and liabilities and any valuation allowance recorded against our net deferred tax assets.

The Company is required to evaluate the provisions of ASC 740 related to the accounting for uncertainty in income taxes recognized in a company's financial statements. ASC 740 prescribes a comprehensive model for how a company should recognize, present, and disclose uncertain positions that the company has taken or expects to take in its tax return. For those benefits to be recognized, a tax position must be more-likely-than-not to be sustained upon examination by taxing authorities. Differences between tax positions taken or expected to be taken in a tax return and the net benefit recognized and measured pursuant to the interpretation are referred to as "unrecognized benefits." A liability should be recognized (or amount of net operating loss carry forward or amount of tax refundable is reduced) for unrecognized tax benefits, because it represents a company's potential future obligation to the taxing authority for a tax position that was not recognized because of applying the provision of ASC 740.

The Company classifies accrued interest and penalties related to its tax positions as a component of income tax expense. The Company currently is not subject to U.S. federal, state and local tax examinations by tax authorities for the years before 2017.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements.

Recent Accounting Pronouncements

See Note 1 to the Consolidated Financial Statements for information about recent accounting pronouncements.

Results of Operations

Three and Six Months Ended June 30, 2023 Compared to the Same Periods in 2022

Revenue and Cost of Research and Development Revenue

The following table summarizes the Company's revenue and cost of research and development revenue for the three and six months ended June 30, 2023 and 2022:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2023	2022	2023	2022
Research and development revenue	$ 793,042	$ 614,435	$ 1,726,976	$ 1,148,156
License revenue	44,117	44,118	88,235	158,824
Cost of research and development revenue	792,944	411,109	1,519,862	815,855

The increase in research and development revenue and cost of research and development revenue for the three and six months ended June 30, 2023, was due to higher revenue and cost of revenue amounts on several individual on-going research collaborations compared to the same period a year ago. The license revenue for the three and six months ended June 30, 2023, was in connection with the Janssen license agreement. The license revenue for the three and six months ended June 30, 2022 was in connection with Phibro/Abic and Janssen license agreements.

Research and Development Expenses

Research and development costs are expensed as incurred and primarily include salary and benefits of research personnel, third-party contract research organization services and supply costs.

Research and development expenses for the three months ended June 30, 2023, decreased to approximately $918,000 compared to $1,831,000 for the same period a year ago. Research and development expenses for the six months ended June 30, 2023, decreased to approximately $1,728,000 compared to $3,174,000 for the same period a year ago. The decrease primarily reflected the winding down of activities of contract research organization and consultants to manage and support the pre-clinical and clinical development as well as a decrease in cGMP manufacturing costs as the Company has completed the dosing of its Phase 1 clinical trial of DYAI-100 COVID-19 vaccine candidate in February 2023.

General and Administrative Expenses

General and administrative expenses for the three months ended June 30, 2023, decreased by 18.1% to approximately $1,403,000 compared to $1,714,000 for the same period a year ago. The decrease principally reflected decreases in legal expenses of $103,000, incentives of approximately $81,000, business development and investor relations expenses of $75,000, insurance expenses of $37,000, and other decreases of $15,000.

General and administrative expenses for the six months ended June 30, 2023, decreased by 14.5% to approximately $2,883,000 compared to $3,370,000 for the same period a year ago. The decrease principally reflected decreases in incentives of approximately $215,000, business development and investor relations expenses of $137,000, insurance expenses of $72,000, legal expenses of $48,000 and other decreases of $15,000.

Interest Income

Interest income for the three months ended June 30, 2023, was approximately $109,000 compared to $30,000 for the same period a year ago. The increase was primarily due higher yields on the Company's investment grade securities, which are classified as held-to-maturity.

Interest income for the six months ended June 30, 2023, was approximately $214,000 compared to $33,000 for the same period a year ago. The increase was primarily due to higher yield on the Company's investment grade securities, which are classified as held-to-maturity.

Other Income

Other income for the three months ended June 30, 2023, was approximately $28,000 compared to zero for the same period a year ago.

Other income for the six months ended June 30, 2023, was approximately $1,018,000 compared to $250,000 for the same period a year ago. Other income in 2023 was from the sale of the equity interest in Alphazyme, LLC. Other income in 2022 was related to a settlement payment we received from the termination of term sheet of a proposed license and collaboration.

Net Loss

Net loss for the three months ended June 30, 2023, was approximately $2,153,000 compared to $3,288,000 for the same period a year ago.

Net loss for the six months ended June 30, 2023, was approximately $3,109,000 compared to $5,780,000 for the same period a year ago.

Liquidity and Capital Resources

Our primary source of cash has been the cash received from the DuPont Transaction in December 2015, interest income received from investment grade securities, revenues from our research collaboration agreements and license agreements, and funds from the exercise of employee stock options. In addition, in August 2021, the Company received approximately $1.6 million from the BDI Sale, In December 2021, the Company received an upfront payment of $0.5 million for a non-exclusive license from Janssen. During the six months ended June 30, 2023, the Company received a total cash payment of approximately $1.3 million from the sale of its equity interest in Alphazyme, LLC.

Our ability to achieve profitability depends on many factors, including our scientific results and our ability to continue to obtain funded research and development collaborations from industry and government programs, as well as sub-license agreements. We may continue to incur substantial operating losses even if we begin to generate revenues from research and development and licensing. Our primary future cash needs are expected to be for general operating activities, including our business development and research expenses, as well as legal and administrative costs as an SEC reporting and NASDAQ listed company.

As of June 30, 2023, we had an accumulated deficit of approximately $76.6 million. We expect to incur losses and have negative net cash flows from operating activities as we continue developing our microbial platforms and related products, and as we expand our pipelines and engage in further research and development activities. The success of the Company depends on its ability to develop its technologies and products to the point of regulatory approval and subsequent revenue generation or through sublicensing of the Company's technologies and, accordingly, to raise enough capital to finance these developmental efforts.

We expect our existing cash and cash equivalents, investments in debt securities, and operating cash flows will be sufficient to meet our operational, business, and other liquidity requirements for at least the next twelve (12) months from the date of issuance of the financial statements contained in this Form 10-Q. However, we have based this estimate on assumptions that may prove to be wrong, and our operating plan may change because of many factors currently unknown. In the event our financing needs are not able to be met by our existing cash, cash equivalents and investments, we would seek to raise additional capital through strategic financial opportunities that could include, but are not limited to, future public or private equity offerings, collaboration agreements, and/or other means. Any amounts raised may be used for the further development and commercialization of product candidates, and for other working capital purposes. There is no guarantee that any of these strategic or financing opportunities will be executed or realized on favorable terms, if at all, and some could be dilutive to existing shareholders.

The Company has self-funded the development and cGMP manufacturing costs of its proprietary COVID-19 vaccine candidate, DYAI-100. In February 2023, the dosing of the DYAI-100 Phase 1 clinical trial to demonstrate the safety in humans of a protein produced from the C1-cell protein production platform was completed in South Africa. A six-month follow up study is currently ongoing with Phase 1 full study report expected in the second half of 2023. We do not expect a significant amount of additional capital needed to complete Phase 1 clinical trial of DYAI-100 in 2023. In addition, we do not plan to continue Phase 2/3 clinical trials of DYAI-100 unless we obtain funding from our partners and collaborators.

As of June 30, 2023, cash and cash equivalents were approximately $5.8 million compared to $5.8 million as of December 31, 2022. The carrying value of investment grade securities, including accrued interest as of June 30, 2023, was approximately $4.3 million compared to $6.9 million as of December 31, 2022.

Net cash used in operating activities for the six months ended June 30, 2023, of approximately $3.8 million was principally attributable to a net loss of approximately $3.1 million, gain from the sale of investment in Alphazyme, LLC of approximately $1.0 million, and changes in operating assets and liabilities of approximately $0.4 million, partially offset by share-based compensation expenses of approximately $0.7 million.

Net cash used in operating activities for the six months ended June 30, 2022, of approximately $4.6 million was principally attributable to a net loss of approximately $5.8 million, partially offset by share-based compensation expenses of approximately $0.9 million, and changes in operating assets and liabilities of approximately $0.3 million.

Net cash provided by investing activities for the six months ended June 30, 2023, was approximately $3.9 million compared to a net cash used in investing activities of $1.7 million for the six months ended June 30, 2022. The increase in cash flows from investing activities for the six months ended June 30, 2023 was primarily related to proceeds from the sale of our equity interest in Alphazyme, LLC.

There were no cash flows from financing activities for the six months ended June 30, 2023. Net cash provided by financing activities for the six months ended June 30, 2022 was approximately $42,000, which was related to proceeds from exercise of stock options.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

We are a smaller reporting company as defined by Rule 12b-2 of the Exchange Act and are not required to provide the information required under this item.

Item 4. Controls and procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and our Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of the end of the period covered by this report. 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 rules and forms. Based on the evaluation of our disclosure controls and procedures as of the end of the period covered by this report, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective.

Changes in Internal Controls Over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during the six months ended June 30, 2023, that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. We have not experienced any material impact to our internal controls over financial reporting due to the COVID-19 pandemic. We are continually monitoring and assessing the COVID-19 situation on our internal controls to minimize the impact on their design and operating effectiveness.

Inherent Limitation on Effectiveness of Controls

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, within our Company 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

Item 1. Legal Proceedings

We are not currently involved in any litigation that we believe could have a materially adverse effect in our financial condition or results of operations. From time to time, we may become involved in various lawsuits and legal proceedings which arise in the ordinary course of business. Litigation is subject to inherent uncertainties, and an adverse result in these or other matters may arise from time to time that may harm our business.

Item 1A. Risk Factors

There have been no changes to our risk factors from those disclosed in our Form 10-K for the 2022 fiscal year filed on March 29, 2023.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

None.

Item 3. Defaults Upon Senior Securities

Not applicable.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

Insider Trading Arrangements

During the quarter ended June 30, 2023, none of our directors or officers (as defined in Section 16 of the Securities Exchange Act of 1934, as amended) adopted or terminated a "Rule 10b5-1 trading arrangement" or a "non-Rule 10b5-1 trading arrangement" (each as defined in Item 408(a) and (c), respectively, of Regulation S-K).

Item 6. Exhibits

The following Exhibits are filed as part of this report pursuant to Item 601 of Regulation S-K:

		Incorporated by Reference			
Exhibit No.	Description of Exhibit	Form	Original No.	Date Filed	Filed Herewith
10.1	RUBIC License Agreement dated April 6, 2023	8-K	10.1	April 6, 2023	
31.1	Certification of Principal Executive Officer of Dyadic Pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				x
31.2	Certification of Principal Financial Officer of Dyadic Pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				x
32.1	Certification of Principal Executive Officer of Dyadic Pursuant to 18 U.S.C Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002				x
32.2	Certification of Principal Financial Officer of Dyadic Pursuant to18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002				x

Exhibit No.	Description
101.INS	Inline XBRL Instance Document
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	Inline XBRL Taxonomy Extension Labels Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (embedded within the Inline XBRL and contained in Exhibit 101)

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.

DYADIC INTERNATIONAL, INC.

August 9, 2023 By: /s/ Mark A. Emalfarb
Mark A. Emalfarb
President and Chief Executive Officer
(Principal Executive Officer)

August 9, 2023 By: /s/ Ping W. Rawson
Ping W. Rawson
Chief Financial Officer
(Principal Financial Officer and Principal Accounting Officer)

Exhibit 31.1

Certification of Principal Executive Officer
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
and Securities and Exchange Commission Release 34-46427

I, Mark A. Emalfarb, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Dyadic International, 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 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 we 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 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: August 9, 2023
By: /s/ Mark A. Emalfarb

Name: Mark A. Emalfarb
Title: Chief Executive Officer

Exhibit 31.2

Certification of Principal Executive Officer
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
and Securities and Exchange Commission Release 34-46427

I, Ping W. Rawson, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Dyadic International, 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 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 we 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 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: August 9, 2023
By: /s/ Ping W. Rawson

Name: Ping W. Rawson
Title: Chief Financial Officer

Exhibit 32.1

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

In connection with the Quarterly Report of Dyadic International, Inc. (the "Company") on Form 10-Q for the quarter ended June 30, 2023 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Mark A. Emalfarb, certify, pursuant to 18 U.S.C. ss. 1350, as adopted pursuant to ss. 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; 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: August 9, 2023
By: /s/ Mark A. Emalfarb

Name: Mark A. Emalfarb
Title: Chief Executive Officer

Exhibit 32.2

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

In connection with the Quarterly Report of Dyadic International, Inc. (the "Company") on Form 10-Q for the quarter ended June 30, 2023 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Ping W. Rawson, certify, pursuant to 18 U.S.C. ss. 1350, as adopted pursuant to ss. 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; 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: August 9, 2023
By: /s/ Ping W. Rawson

Name: Ping W. Rawson
Title: Chief Financial Officer