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

Form 10-Q

(Mark One)

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

For the quarterly period ended June 30, 2020

OR

☐ **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: 000-51173

Catalyst Biosciences, Inc.

(Exact Name of Registrant as Specified in its Charter)

Delaware	**56-2020050**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification No.)**
611 Gateway Blvd., Suite 710 South San Francisco, California	**94080**
(Address of Principal Executive Offices)	**(Zip Code)**

(650) 871-0761
(Registrant's Telephone Number, Including Area Code)

Securities registered or to be 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	CBIO	NASDAQ

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

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

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

Large accelerated filer	☐	Accelerated filer	☒
Non-accelerated filer	☐	Smaller reporting company	☒
Emerging growth company	☐		

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

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

As of July 30, 2020, the number of outstanding shares of the registrant's common stock, par value $0.001 per share, was 22,063,040.

CATALYST BIOSCIENCES, INC.
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PART I. FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

Catalyst Biosciences, Inc.
Condensed Consolidated Balance Sheets
(In thousands, except share and per share amounts)

	June 30, 2020 (Unaudited)	December 31, 2019
Assets		
Current assets:		
Cash and cash equivalents	$ 59,273	$ 15,369
Short-term investments	58,091	61,496
Accounts receivable	1,988	15,000
Prepaid and other current assets	1,993	4,201
Total current assets	121,345	96,066
Other assets, noncurrent	198	257
Right-of-use assets	1,660	1,927
Property and equipment, net	481	304
Total assets	$ 123,684	$ 98,554
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 1,499	$ 4,279
Accrued compensation	1,778	2,106
Deferred revenue	330	15,000
Other accrued liabilities	9,550	7,031
Operating lease liability	507	483
Total current liabilities	13,664	28,899
Operating lease liability, noncurrent	1,059	1,319
Total liabilities	14,723	30,218
Stockholders' equity:		
Preferred stock, $0.001 par value, 5,000,000 shares authorized; zero shares issued and outstanding	—	—
Common stock, $0.001 par value, 100,000,000 shares authorized; 22,050,745 and 12,040,835 shares issued and outstanding at June 30, 2020 and December 31, 2019, respectively	22	12
Additional paid-in capital	388,719	326,810
Accumulated other comprehensive income	41	34
Accumulated deficit	(279,821)	(258,520)
Total stockholders' equity	108,961	68,336
Total liabilities and stockholders' equity	$ 123,684	$ 98,554

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

Catalyst Biosciences, Inc.
Condensed Consolidated Statements of Operations
(In thousands, except share and per share amounts)
(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
License	$ 23	$ —	$ 15,068	$ —
Collaboration	1,635	—	2,956	—
License and collaboration revenue	1,658	—	18,024	—
Operating expenses:				
Cost of license	23	—	3,070	—
Cost of collaboration	1,719	—	3,151	—
Research and development	12,906	11,111	26,170	23,138
General and administrative	4,371	3,270	8,062	6,956
Total operating expenses	19,019	14,381	40,453	30,094
Loss from operations	(17,361)	(14,381)	(22,429)	(30,094)
Interest and other income, net	113	601	1,128	1,232
Net loss	$ (17,248)	$ (13,780)	$ (21,301)	$ (28,862)
Net loss per share attributable to common stockholders, basic and diluted	$ (0.96)	$ (1.15)	$ (1.31)	$ (2.41)
Shares used to compute net loss per share attributable to common stockholders, basic and diluted	17,891,475	11,989,866	16,241,963	11,976,799

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

Catalyst Biosciences, Inc.
Condensed Consolidated Statements of Comprehensive Loss
(In thousands)
(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Net loss	$ (17,248)	$ (13,780)	$ (21,301)	$ (28,862)
Other comprehensive (loss) income:				
Unrealized (loss) gain on available-for-sale debt securities	(99)	44	7	61
Total comprehensive loss	$ (17,347)	$ (13,736)	$ (21,294)	$ (28,801)

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

Catalyst Biosciences, Inc.
Condensed Consolidated Statements of Stockholders' Equity
(In thousands, except share amounts)
(Unaudited)

	Convertible Preferred Stock		Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount	Shares	Amount				
Balance at December 31, 2019	—	$ —	12,040,835	$ 12	$ 326,810	$ 34	$ (258,520)	$ 68,336
Stock-based compensation expense	—	—	7,817	—	805	—	—	805
Issuance of common stock from stock grants and option exercises	—	—	62,969	—	339	—	—	339
Issuance of common stock for public offering, net of issuance costs of $2,514	—	—	5,307,692	5	31,981	—	—	31,986
Unrealized gain on available-for-sale debt securities	—	—	—	—	—	106		106
Net loss	—	—	—	—	—	—	(4,053)	(4,053)
Balance at March 31, 2020	—	—	17,419,313	17	359,935	140	(262,573)	97,519
Stock-based compensation expense	—	—	16,048	—	834	—	—	834
Issuance of common stock for public offering, net of issuance costs of $2,045	—	—	4,615,384	5	27,950	—	—	27,955
Unrealized loss on available-for-sale debt securities	—	—	—	—	—	(99)	—	(99)
Net loss	—	—	—	—	—	—	(17,248)	(17,248)
Balance at June 30, 2020	—	$ —	22,050,745	$ 22	$ 388,719	$ 41	$ (279,821)	$ 108,961

	Convertible Preferred Stock		Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount	Shares	Amount				
Balance at December 31, 2018	—	$ —	11,954,528	$ 12	$ 323,279	$ (4)	$ (203,342)	$ 119,945
Stock-based compensation expense	—	—	—	—	829	—	—	829
Issuance of common stock from stock grants and option exercises	—	—	19,576	—	106	—	—	106
Unrealized gain on available-for-sale debt securities	—	—	—	—	—	17	—	17
Net loss	—	—	—	—	—	—	(15,082)	(15,082)
Balance at March 31, 2019	—	—	11,974,104	12	324,214	13	(218,424)	105,815
Stock-based compensation expense	—	—	5,999	—	903	—	—	903
Issuance of common stock from option exercises	—	—	28,425	—	129	—	—	129
Unrealized gain on available-for-sale debt securities	—	—	—	—	—	44	—	44
Net loss	—	—	—	—	—	—	(13,780)	(13,780)
Balance at June 30, 2019	—	$ —	12,008,528	$ 12	$ 325,246	$ 57	$ (232,204)	$ 93,111

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

Catalyst Biosciences, Inc.
Condensed Consolidated Statements of Cash Flows
(In thousands)
(Unaudited)

	Six Months Ended June 30,	
	2020	2019
Operating Activities		
Net loss	$ (21,301)	$ (28,862)
Adjustments to reconcile net loss to net cash used in operating activities:		
Stock-based compensation expense	1,639	1,732
Depreciation and amortization	51	79
Changes in operating assets and liabilities:		
Accounts receivable	13,012	—
Prepaid and other assets	2,267	(361)
Accounts payable	(2,780)	(855)
Accrued compensation and other accrued liabilities	1,825	1,803
Operating lease liability and right-of-use asset	31	40
Deferred revenue	(14,670)	—
Net cash flows used in operating activities	(19,926)	(26,424)
Investing Activities		
Proceeds from maturities of short-term investments	50,493	89,005
Purchase of short-term investments	(47,081)	(76,617)
Purchases of property and equipment	(33)	(64)
Net cash flows provided by investing activities	3,379	12,324
Financing Activities		
Issuance of common stock for public offering, net of issuance costs	60,112	—
Issuance of common stock from stock grants and option exercises	339	235
Net cash flow provided by financing activities	60,451	235
Net increase (decrease) in cash, cash equivalents and restricted cash	43,904	(13,865)
Cash, cash equivalents and restricted cash at beginning of the period	15,369	31,263
Cash, cash equivalents and restricted cash at end of the period[a]	$ 59,273	$ 17,398
Supplemental Disclosure of Non-Cash Investing and Financing Activities:		
Right-of-use asset and operating lease liability recorded upon the adoption of ASC 842, net	$ —	$ 2,052

(a) The following table provides a reconciliation of cash, cash equivalents and restricted cash to amounts reported within the condensed consolidated balance sheets:

Cash and cash equivalents	$ 59,273	$ 17,348
Restricted cash	—	50
Total cash, cash equivalents and restricted cash	$ 59,273	$ 17,398

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

1. Nature of Operations and Liquidity

Catalyst Biosciences, Inc. and its subsidiary (the "Company" or "Catalyst") is a fully integrated research and clinical development biopharmaceutical company with expertise in protease engineering, discovery, translational research, clinical development, and manufacturing. The Company is focused on advancing its protease product candidates in the fields of hemostasis and complement regulation. The Company is located in South San Francisco, California and operates in one segment.

The Company had a net loss of $21.3 million for the six months ended June 30, 2020 and an accumulated deficit of $279.8 million as of June 30, 2020. The Company expects to continue to incur losses for the next several years. As of June 30, 2020, the Company had $117.4 million of cash, cash equivalents and short-term investments. Its primary uses of cash are to fund operating expenses, including research and development expenditures and general and administrative expenditures. Based on the current status of its research and development plans, the Company believes that its existing cash, cash equivalents and short-term investments as of June 30, 2020 will be sufficient to fund its cash requirements for at least the next 12 months from the date of the filing of this quarterly report. If, at any time, the Company's prospects for financing its research and development programs decline, the Company may decide to reduce research and development expenses by delaying, discontinuing or reducing its funding of one or more of its research or development programs. Alternatively, the Company might raise funds through strategic collaborations, public or private financings or other arrangements. Such funding, if needed, may not be available on favorable terms, or at all.

2. Summary of Significant Accounting Policies

Basis of Presentation

The Company's condensed consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles ("GAAP") and following the requirements of the Securities and Exchange Commission (the "SEC") for interim reporting. As permitted under those rules, certain footnotes or other financial information that are normally required by GAAP can be condensed or omitted. These financial statements have been prepared on the same basis as the Company's annual financial statements and, in the opinion of management, reflect all adjustments, consisting only of normal recurring adjustments, which are necessary for a fair presentation of the Company's financial information. These interim results and cash flows for any interim period are not necessarily indicative of the results to be expected for the full year.

The accompanying condensed consolidated financial statements and related financial information should be read in conjunction with the consolidated financial statements filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2019 ("Annual Report").

Accounting Pronouncements Recently Adopted

The Company's significant accounting policies are included in "Part II - Item 8 - Financial Statements and Supplementary Data - Note 3 – Summary of Significant Accounting Policies" in the Company's Annual Report. In November 2018, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2018-18, Collaborative Arrangements (Topic 808): Clarifying the Interaction Between Topic 808 and Topic 606 ("ASU 2018-18"). The amended guidance precludes presenting consideration from a transaction in a collaborative arrangement as revenue from contracts with customers if the counterparty is not a customer for that transaction. The new guidance is effective for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. Early adoption is permitted. The Company adopted ASU 2018-18 as of January 1, 2020. The adoption of ASU 2018-18 did not have a material impact on the Company's condensed consolidated financial statements.

New Accounting Pronouncements Recently Issued But Not Yet Adopted

In June 2016, the FASB issued ASU 2016-13, Measurement of Credit Losses on Financial Instruments ("ASU 2016-13"). The main objective of ASU 2016-13 is to provide financial statement users with more decision-useful information about an entity's expected credit losses on financial instruments and other commitments to extend credit at each reporting date. To achieve this objective, the amendments in this update replace the incurred loss impairment methodology currently used today with a methodology that reflects expected credit losses and requires consideration of a broader range of reasonable and supportable information to develop credit loss estimates. Subsequent to issuing ASU 2016-13, the FASB issued ASU 2018-19, Codification Improvements to Topic 326, Financial Instruments – Credit Losses, for the purpose of clarifying certain aspects of ASU 2016-

13. In May 2019, the FASB issued ASU 2019-05, Financial Instruments – Credit Losses (Topic 326): Targeted Transition Relief, to provide entities with more flexibility in applying the fair value option on adoption of the credit impairment standard. ASU 2018-19 and ASU 2019-05 have the same effective date and transition requirements as ASU 2016-13. ASU 2016-13 will be effective for the Company for fiscal years beginning after December 15, 2022, including interim periods within those fiscal years, using a modified retrospective approach. Early adoption is permitted. The Company plans to adopt ASU 2016-13 and related updates as of January 1, 2023. The Company will assess the impact of adoption of this standard on its consolidated financial statements.

In December 2019, the FASB issued ASU 2019-12, Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes. The amendments in ASU 2019-12 are intended to simplify various aspects related to accounting for income taxes. ASU 2019-12 removes certain exceptions to the general principles in Topic 740 and also clarifies and amends existing guidance to improve consistent application. ASU 2019-12 is effective for the Company beginning January 1, 2021 with early adoption permitted. The Company is evaluating the impact of adopting this new accounting guidance on its consolidated financial statements.

Cost of License and Collaboration Revenue

Cost of license revenue includes sublicense fees paid or payable to Mosaic Biosciences, Inc. (“Mosaic”), incurred in the period, under the terms of the Mosaic collaboration agreement, and fees for patent development and protection paid or payable to other third-party vendors corresponding to the recognition of license revenue from the Biogen Agreement. See Notes 7 and 11. Cost of license revenue does not include any allocated overhead costs.

Cost of collaboration revenue includes fees for research and development services paid or payable to Mosaic and other third-party vendors and personnel cost, incurred in the period pertaining to the Biogen Agreement. See Notes 7 and 11. Cost of collaboration revenue does not include any allocated overhead costs.

3. Fair Value Measurements

For a description of the fair value hierarchy and the Company’s fair value methodology, see “Part II - Item 8 - Financial Statements and Supplementary Data - Note 2 – Summary of Significant Accounting Policies” in the Company’s Annual Report. There were no significant changes in these methodologies during the six months ended June 30, 2020.

There were no transfers in or out of Level 1 or 2 during the periods presented. The following tables present the fair value hierarchy for assets and liabilities measured at fair value on a recurring basis as of June 30, 2020 and December 31, 2019 (*in thousands*):

	June 30, 2020			
	Level 1	Level 2	Level 3	Total
Financial assets:				
Money market funds(1)	$ 56,273	$ —	$ —	$ 56,273
U.S. government agency securities(2)	44,292	—	—	44,292
Federal agency securities(2)	—	16,799	—	16,799
Total financial assets	$ 100,565	$ 16,799	$ —	$ 117,364

(1) Included in cash and cash equivalents on the accompanying condensed consolidated balance sheets.
(2) Included in short-term investments on the accompanying condensed consolidated balance sheets and classified as available-for-sale debt securities. $3.0 million of U.S. government agency securities are included in cash and cash equivalents on the accompanying condensed consolidated balance sheets due to the maturity being less than 90 days.

	December 31, 2019			
	Level 1	Level 2	Level 3	Total
Financial assets:				
Money market funds(1)	$ 15,369	$ —	$ —	$ 15,369
U.S. government agency securities(2)	51,490	—	—	51,490
Federal agency securities(2)	—	10,006	—	10,006
Total financial assets	$ 66,859	$ 10,006	$ —	$ 76,865

(1) Included in cash and cash equivalents on the accompanying condensed consolidated balance sheets.

(2) Included in short-term investments on the accompanying condensed consolidated balance sheets and classified as available-for-sale debt securities.

4. Financial Instruments

Cash equivalents, and short-term investments (debt securities) which are classified as available-for-sale debt securities, consisted of the following (*in thousands*):

June 30, 2020	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Money market funds (cash equivalents)	$ 56,273	$ —	$ —	$ 56,273
U.S. government agency securities	44,253	39	—	44,292
Federal agency securities	16,797	2	—	16,799
Total financial assets	$ 117,323	$ 41	$ —	$ 117,364
Classified as:				
Cash and cash equivalents				$ 59,273
Short-term investments				58,091
				$ 117,364

December 31, 2019	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Money market funds (cash equivalents)	$ 15,369	$ —	$ —	$ 15,369
U.S. government agency securities	51,467	23	—	51,490
Federal agency securities	9,995	11	—	10,006
Total financial assets	$ 76,831	$ 34	$ —	$ 76,865
Classified as:				
Cash and cash equivalents				$ 15,369
Short-term investments				61,496
				$ 76,865

There have been no material realized gains or losses on available-for-sale debt securities for the periods presented. As of June 30, 2020, the remaining contractual maturities of available-for-sale debt securities was less than one year.

The carrying amounts of cash, accounts receivable, accounts payable, and accrued liabilities approximate their fair values due to the short-term maturity of these instruments.

5. Lease

The Company leases office space for its corporate headquarters, located in South San Francisco, CA. The lease term is through April 30, 2023 and there are no stated renewal options. Operating lease liabilities are recognized based on the present value of the future minimum lease payments over the lease term. In calculating the present value of the lease payments, the Company has elected to utilize its incremental borrowing rate based on the original lease term and not the remaining lease term. The lease includes non-lease components (*e.g.*, common area maintenance) that are paid separately from rent based on actual costs incurred and therefore were not included in the right-of-use asset and lease liability but are reflected as an expense in the period incurred.

For the three and six months ended June 30, 2020, the Company's operating lease expense was $0.2 million and $0.4 million, respectively. For the three and six months ended June 30, 2019, the Company's operating lease expense was $0.1 million and $0.3 million, respectively. The present value assumptions used in calculating the present value of the lease payments were as follows:

	June 30, 2020	December 31, 2019
Weighted-average remaining lease term	2.83 years	3.33 years
Weighted-average discount rate	6.0%	6.0%

The maturity of the Company's operating lease liabilities as of June 30, 2020 were as follows *(in thousands)*:

Year	Undiscounted lease payments
Remaining in 2020	$ 290
2021	596
2022	614
2023	209
Total undiscounted lease payments	$ 1,709
Less imputed interest	(143)
Total operating lease liability	$ 1,566

Supplemental cash flow information related to operating leases was as follows *(in thousands)*:

	Six Months Ended June 30,	
	2020	2019
Cash paid for leases that were included in operating cash outflows	$ 288	$ 279

6. Stock Based Compensation

2018 Omnibus Incentive Plan

In June 2018, stockholders of the Company approved the Company's 2018 Omnibus Incentive Plan (the "2018 Plan"). The 2018 Plan had previously been approved by the Company's Board of Directors (the "Board") and the Compensation Committee of the Board, subject to stockholder approval. The 2018 Plan became effective on June 13, 2018. On June 11, 2020, the stockholders of the Company approved an amendment previously approved by the Board to increase the number of shares of common stock reserved for issuance under the 2018 Plan by 1,300,000 to a total of 2,800,000 shares. The amendment became effective immediately upon stockholder approval.

The following table summarizes stock option activity under the Company's equity incentive plans and related information:

	Number of Shares Underlying Outstanding Options	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Term (Years)
Outstanding — December 31, 2019	1,577,541	$ 10.85	8.15
Options granted	617,750	$ 6.73	
Options exercised	(44,605)	$ 5.04	
Options forfeited	(135,620)	$ 10.62	
Options expired	(4,751)	$ 138.19	
Outstanding — June 30, 2020	2,010,315	$ 9.43	8.00
Exercisable — June 30, 2020	925,609	$ 11.48	

Valuation Assumptions

The Company estimated the fair value of stock options granted using the Black-Scholes option-pricing formula and a single option award approach. Due to its limited history as a public company and limited number of sales of its common stock, the Company estimated its volatility considering a number of factors including the use of the volatility of comparable public companies. The expected term of options granted under the Plan, all of which qualify as "plain vanilla" per SEC Staff Accounting Bulletin 107, is determined based on the simplified method due to the Company's limited operating history. The risk-free rate is based on the yield of a U.S. Treasury security with a term consistent with the option. This fair value is being amortized ratably over the requisite service periods of the awards, which is generally the vesting period.

The fair value of employee stock options was estimated using the following weighted-average assumptions:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Employee Stock Options:				
Risk-free interest rate	0.40%	2.02%	1.29%	2.44%
Expected term (in years)	5.90	5.82	5.62	5.98
Dividend yield	—	—	—	—
Volatility	115.20%	107.25%	111.27%	88.21%
Weighted-average fair value of stock options granted	$ 5.25	$ 6.54	$ 5.50	$ 5.96

Total stock-based compensation recognized was as follows (*in thousands*):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Research and development	$ 314	$ 284	$ 658	$ 522
General and administrative[1]	520	619	981	1,210
Total stock-based compensation	$ 834	$ 903	$ 1,639	$ 1,732

(1) Included in general and administrative stock-based compensation for the three and six months ended June 30, 2020 is expense related to 16,048 shares and 23,865 shares, respectively, of common stock issued to certain board members in lieu of their cash compensation.

As of June 30, 2020, 1,521,499 shares of common stock were available for future grant and 2,010,315 options to purchase shares of common stock were outstanding. As of June 30, 2020, the Company had unrecognized employee stock-based compensation expense of $6.4 million, related to unvested stock awards, which is expected to be recognized over an estimated weighted-average period of 2.50 years.

7. Collaborations

Pfizer

Pursuant to the termination agreement entered into on December 8, 2016, in connection with the termination of a prior license and development agreement, Pfizer granted the Company an exclusive license to Pfizer's proprietary rights for manufacturing materials and processes that apply to Factor VIIa variants, CB 813a and marzeptacog alfa (activated) - MarzAA. Pfizer also transferred to the Company the IND application and documentation related to the development, manufacturing and testing of the Factor VIIa products as well as the orphan drug designation. The Company agreed to make contingent cash payments to Pfizer in an aggregate amount up to $17.5 million, payable upon the achievement of certain clinical, regulatory and commercial milestones. Following commercialization of any covered product, Pfizer will also receive a single-digit royalty on net product sales on a country-by-country basis for a predefined royalty term. In February 2018, the Company paid Pfizer a $1.0 million milestone payment based on the dosing of the first patient in its Phase 2 study; the amount was recorded as a research and development expense. No payments were made to Pfizer in the six months ended June 30, 2020.

ISU Abxis

In December 2018, the Company entered into an amended and restated license agreement with ISU Abxis (the "A&R ISU Abxis Agreement"), which amended and restated its previous license and collaboration agreement with ISU Abxis previously entered

into in September 2013, as subsequently amended in October 2014 and December 2016 (the "Original ISU Abxis Agreement"). Under the A&R ISU Abxis Agreement, ISU Abxis will receive commercialization rights in South Korea to the Company's engineered Factor IX dalcinonacog alfa - DalcA and the Company will receive clinical development and commercialization rights in the rest of world (excluding South Korea) and manufacturing development and manufacturing rights worldwide (including South Korea). The A&R ISU Abxis Agreement eliminates the profit-sharing arrangement in the Original ISU Abxis Agreement and provides for a low single-digit royalty payment to ISU Abxis, on a country-by-country basis, for net product sales of DalcA by the Company or its affiliates in each country other than South Korea. Pursuant to the A&R ISU Abxis Agreement, the Company will also pay up to an aggregate of $19.5 million in milestone payments to ISU Abxis, including $2.5 million in regulatory and development milestone payments and up to $17.0 million in commercial milestone payments, if the applicable milestones are met. As of June 30, 2020, no milestones have been met.

Biogen

On December 18, 2019, the Company and Biogen International GmbH ("Biogen") entered into a License and Collaboration Agreement (the "Biogen Agreement"), under which the Company granted Biogen a worldwide, royalty-bearing, exclusive, with the right to sublicense, license ("Exclusive License") to develop and commercialize CB 2782-PEG and other anti-C3 proteases for potential treatment of dry age-related macular degeneration ("AMD") and other disorders. Pursuant to the Biogen Agreement, the Company will perform certain pre-clinical and manufacturing activities ("Research Services"), and Biogen will be solely responsible for funding the pre-clinical and manufacturing activities and performing IND-enabling activities, worldwide clinical development, and commercialization. The Company will provide the Research Services over a term of thirty months with Biogen having the option to extend the term for two additional twelve-month periods.

Under the terms of the Biogen Agreement, the Company received an up-front payment for the transfer of the Exclusive License (inclusive of certain know-how) of $15.0 million in January 2020. The Company is eligible to receive development milestones and sales milestones of up to $340.0 million. In addition, the Company is eligible to receive royalties in the range of single-digit to low double-digit percentage rates of annual net sales on a product-by-product and country-by-country basis. The Company will also receive reimbursements for costs associated with the performance of the Research Services.

The Company determined that the performance obligations under the Biogen Agreement were the Exclusive License and the Research Services. For the Exclusive License, the Company used the residual approach in determining the standalone selling price, or SSP, which includes the upfront payments, milestones and royalties. For the Research Services, the Company used the historical pricing approach for determining the SSP, which includes the reimbursement of personnel and out-of-pocket costs.

The Biogen Agreement will continue on a product-by-product and country-by-country basis until the tenth anniversary of the first commercial sale of the first product in a country, unless terminated earlier by either party as specified under the agreement.

For the six months ended June 30, 2020, the Company recognized the $15.0 million in license revenue upon the transfer of the Exclusive License and the related know-how, and $0.1 million in license revenue for reimbursable out-of-pocket costs incurred.

For the three and six months ended June 30, 2020, the Company recognized $1.6 million and $2.9 million, respectively, in collaboration revenue for reimbursable out-of-pocket and personnel costs incurred related to research services.

8. Net Loss per Share Attributable to Common Stockholders

The following table sets forth the computation of the basic and diluted net loss per common share as follows (*in thousands, except share and per share data*):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Net loss attributable to common stockholders	$ (17,248)	$ (13,780)	$ (21,301)	$ (28,862)
Weighted-average number of shares used in computing net loss per share, basic and diluted	17,891,475	11,989,866	16,241,963	11,976,799
Net loss available for common stockholders per share, basic and diluted	$ (0.96)	$ (1.15)	$ (1.31)	$ (2.41)

Since the Company was in a loss position for all periods presented, diluted net loss per share is the same as basic net loss per share for all periods as the inclusion of all potential common shares outstanding would have been anti-dilutive. Potentially dilutive securities on an as-if converted basis that were not included in the diluted per share calculations because they would be anti-dilutive were as follows:

	June 30,	
	2020	2019
Options to purchase common stock	2,010,315	1,648,294
Common stock warrants	722	7,857
Total	2,011,037	1,656,151

9. Stockholders' Equity

In February 2020, the Company completed an underwritten public offering of 5,307,692 shares of its common stock (including 692,307 shares sold pursuant to the exercise of the underwriters' overallotment option) at a price of $6.50 per share. The net proceeds to the Company, after deducting $2.5 million in underwriting discounts and commissions and offering expenses payable by the Company, were approximately $32.0 million.

In June 2020, the Company completed an underwritten public offering of 4,615,384 shares of its common stock at a price of $6.50 per share. The net proceeds to the Company, after deducting $2.0 million in underwriting discounts and commissions and offering expenses payable by the Company, were approximately $28.0 million.

10. Commitments and Contingencies

Manufacturing Agreements

On May 20, 2016, the Company signed a development and manufacturing services agreement with AGC Biologics, Inc. ("AGC"), formerly known as CMC ICOS Biologics, Inc., pursuant to which AGC will conduct manufacturing development of agreed upon product candidates. The Company currently has firm work orders with AGC to manufacture MarzAA and DalcA to support its clinical trials totaling $11.3 million and the payment obligations remaining as of June 30, 2020 were $3.2 million.

On October 9, 2019, the Company and Catalent Indiana, LLC ("Catalent") signed a clinical supply services agreement, effective October 4, 2019, pursuant to which Catalent will conduct drug product development of agreed upon product candidates. The Company currently has firm work orders with Catalent to manufacture DalcA to support its clinical trial totaling $0.5 million and all outstanding amounts were paid during the six months ended June 30, 2020.

The COVID-19 pandemic may disrupt the operations of the Company's manufacturers or disrupt supply logistics, which could impact the timing of deliveries and potentially increase expenses under our agreements.

11. Related Parties

On October 24, 2017, the Company announced a strategic research collaboration with Mosaic to develop intravitreal anti-complement factor C3 products for the treatment of dry AMD and other retinal diseases. Dr. Usman, the Company's Chief Executive Officer and a member of the Company's board of directors, and Mr. Lawlor, a member of the Company's board of directors, were also members of the board of directors of Mosaic. On December 21, 2018, the Company amended its collaboration agreement with Mosaic to, among other things, include certain additional products. Pursuant to the Mosaic collaboration agreement, as amended, the Company and Mosaic co-funded certain research. Expenses related to the collaboration were $1.3 million and $0.7 million for the six months ended June 30, 2020 and 2019, respectively. Expenses related to the collaboration were $0.6 million and $0.3 million for the three months ended June 30, 2020 and 2019, respectively. The amount incurred in 2020 is fully reimbursable under the Biogen Agreement, see Note 7.

On December 18, 2019, the Company entered into the second amendment to the Mosaic collaboration agreement following completion of the co-funded research. Pursuant to the second amendment, any future services provided by Mosaic will be performed on a fee-for-service basis. In connection with the Biogen Agreement, the Company received a $15.0 million upfront license fee on January 10, 2020, see Note 7. The Company paid Mosaic a $3.0 million sublicense fee and recorded such payment as cost of license revenue for the six months ended June 30, 2020.

On May 8, 2020, the Company entered into a subsequent amendment to the Mosaic collaboration agreement. As part of this amendment, the Company paid a one-time $0.8 million cash payment, and Mosaic is eligible to receive up to $4.0 million in potential future milestone payments related to regulatory and clinical development events for CB 2782-PEG and an additional anti-complement product candidate in lieu of the Company's obligations to pay Mosaic a double-digit percentage of funds the Company receives from Biogen or any other amounts the Company receives related to sublicense fees, research and development payments, or any other research, regulatory, clinical or commercial milestones and royalties on any other development candidates. The Company now owns one hundred percent of all future payment streams related to these product candidates.

The one-time $0.8 million cash payment was recorded to research and development expenses for the three months ended June 30, 2020.

12. Interest and Other Income, Net

The following table shows the detail of interest and other income, net as follows (*in thousands*):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Interest income	$ 128	$ 601	$ 462	$ 1,262
Miscellaneous income	—	—	679	—
Other	(15)	—	(13)	(30)
Total interest and other income, net	$ 113	$ 601	$ 1,128	$ 1,232

13. Subsequent Event

On July 16, 2020, the Company and PSI CRO AG ("PSI") entered into a work order under the master services agreement dated March 14, 2019, between the Company and PSI. Under the new work order, the Company engaged PSI to provide services with respect to the Company's phase 1/2 study of MarzAA in Factor VII Deficiency, Glanzmann Thrombasthenia, and patients with Hemophilia A with inhibitors treated with Hemlibra for treatment of bleeding. The Company has agreed to pay up to a total of approximately $7.2 million pursuant to the new work order.

On July 23, 2020, the Company and Medpace, Inc. ("Medpace") entered into a task order under the master services agreement dated March 2, 2020 between the Company and Medpace. Under the new task order, the Company has engaged Medpace to provide services with respect to the Company's phase 3 study to evaluate the efficacy and safety of SQ MarzAA for on-demand treatment of bleeding episodes in subjects with Hemophilia A or Hemophilia B, with or without inhibitors. The Company has agreed to pay Medpace up to approximately $14.0 million pursuant to the new task order.

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

Unless otherwise indicated, in this Quarterly Report on Form 10-Q, references to "Catalyst," "we," "us," "our" or the "Company" mean Catalyst Biosciences, Inc. and our subsidiary. The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the unaudited consolidated financial statements and related notes that appear in this Quarterly Report on Form 10-Q (this "Report") and with the audited consolidated financial statements and related notes that are included as part of our Annual Report on Form 10-K for the year ended December 31, 2019 ("Annual Report").

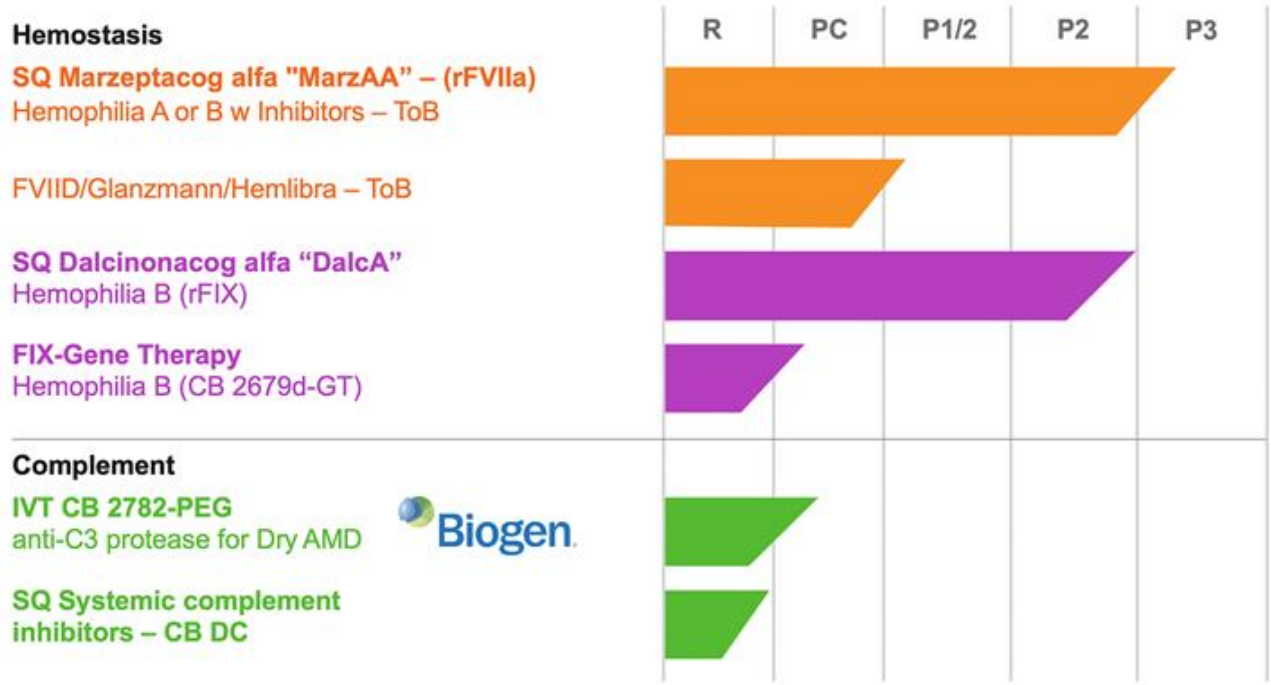
In addition to historical information, this Report contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended ("the Exchange Act"). Forward-looking statements are identified by words such as "believe," "will," "may," "estimate," "continue," "anticipate," "intend," "should," "plan," "expect," "predict," "could," "potentially" or the negative of these terms or similar expressions. You should read these statements carefully because they discuss future expectations, contain projections of future results of operations or financial condition, or state other "forward-looking" information. These statements relate to our future plans, objectives, expectations, intentions and financial performance and the assumptions that underlie these statements. For example, forward-looking statements include any statements regarding the strategies, prospects, plans, expectations or objectives of management for future operations, the progress, scope or duration of the development of product candidates or programs, clinical trial plans, timelines and potential results, the benefits that may be derived from product candidates or the commercial or market opportunity in any target indication, our ability to protect intellectual property rights, our anticipated operations, financial position, revenues, costs or expenses, statements regarding future economic conditions or performance, statements of belief and any statement of assumptions underlying any of the foregoing. These forward-looking statements are subject to certain risks and uncertainties that could cause actual results to differ materially from those anticipated in the forward-looking statements. Factors that might cause such a difference include, but are not limited to, those discussed in this report in Part II, Item 1A — "Risk Factors," elsewhere in this Report and in Part I - Item 1A – "Risk Factors" in the Annual Report. Forward-looking statements are based on our management's beliefs and assumptions and on information currently available to our management. These statements, like all statements in this Report, speak only as of their date, and we undertake no obligation to update or revise these statements in light of future developments. We caution investors that our business and financial performance are subject to substantial risks and uncertainties.

Overview

We are a research and clinical development biopharmaceutical company focused on addressing unmet needs in rare hematologic and complement-mediated disorders. Our protease engineering platform includes two late-stage clinical programs in hemophilia; a research program on engineering of subcutaneous ("SQ") complement inhibitors; and a partnered preclinical development program with Biogen for dry age-related macular degeneration ("AMD"). The product candidates generated by our protease engineering platform have improved functionality and potency that allow for: SQ administration of recombinant coagulation factors and complement inhibitors; low-dose, high activity gene therapy constructs; and less frequently dosed intravitreal therapeutics.

Our most advanced product candidate is marzeptacog alfa (activated) ("MarzAA"), a next-generation SQ FVIIa entering a Phase 3 registration study in late 2020. Our next most advanced product candidate is dalcinonacog alfa ("DalcA"), a next-generation SQ FIX, which has demonstrated efficacy and safety in a Phase 2b clinical trial in individuals with Hemophilia B. We have a discovery stage Factor IX gene therapy construct - CB 2679d-GT - for Hemophilia B, that has demonstrated superiority compared with the Padua variant in preclinical models. Finally, we have a global license and collaboration agreement with Biogen for the development and commercialization of anti-complement Factor 3 ("C3") pegylated CB 2782.

The following table summarizes our current development programs.



We are experiencing operational and other challenges as a result of the COVID-19 global pandemic, which could delay or halt our development programs. See Recent Other Developments and *Item 1A - Risk Factors* for further discussion of the current and expected impact on our business and development programs.

Recent Development Program Updates

MarzAA

Our most advanced product candidate is MarzAA, a potent, SQ administered, next-generation recombinant Factor VIIa variant. We are entering into a Phase 3 clinical trial to evaluate the safety and efficacy of MarzAA for on-demand treatment and control of episodic bleeding in subjects with Hemophilia A or Hemophilia B with inhibitors. We expect to enroll the first patient in late 2020. The Phase 3 study will be an open-label cross-over trial, evaluating the safety and efficacy of SQ MarzAA in the treatment of bleeding episodes in approximately 60 patients, compared with standard of care. The study will assess the effectiveness of SQ MarzAA, using up to three doses to treat a bleeding episode. The primary endpoint will be hemostatic efficacy using a standard 4-point assessment scale.

We completed a Phase 2 open-label SQ prophylaxis trial in 2019 that met all primary and secondary end points. The Phase 2 trial was designed to evaluate the efficacy of MarzAA in preventing bleeding episodes. The primary endpoint was to assess the effect of MarzAA on the annualized bleed rate ("ABR") at a subject's final dose level, with each patient's prior 6-month ABR serving as his own control. The secondary endpoints included safety, tolerability and lack of anti-drug-antibody or neutralizing antibody formation.

We also plan to initiate a Phase 1/2 trial of MarzAA in Factor VII Deficiency, Glanzmann Thrombasthenia, and patients with Hemophilia A with inhibitors treated with Hemlibra for treatment of bleeding in late 2020. Our preclinical data suggest that MarzAA has the potential to be used for treatment of episodic bleeding and supports further clinical testing in individuals with hemophilia with inhibitors or for other conditions.

We completed a Phase 1/2 PK/PD study, MAA-102, to evaluate the pharmacokinetics and pharmacodynamics of ascending single dose levels of MarzAA and twice and thrice dosing of 60 µg/kg at 3-hourly intervals in individuals with Hemophilia A or B with or without inhibitors. The purpose of the trial was to determine if the timing and peak levels achieved were sufficient to treat episodic or breakthrough bleeding with SQ dosing and determine if increasing dose levels resulted in dose proportional pharmacokinetics. This trial, together with population pharmacokinetic simulations, confirms that we have optimized dosing for the MarzAA Phase 3 study. We reported final data from the MAA-102 trial at the International Society on Thrombosis and Haemostatis on July 12, 2020, which demonstrated that MarzAA reaches target levels we believe are required to effectively treat episodic and breakthrough bleeds.

Intravenous NovoSeven is the primary therapy used to stop breakthrough bleeding in Hemophilia A inhibitor patients being treated with Hemlibra. Our preclinical data indicates that MarzAA can potentially have a safety profile comparable to that of NovoSeven when used in combination with Hemlibra. Specifically, *in vitro* testing using a thrombin-generation assay with Hemophilia A plasma, both MarzAA and NovoSeven were equally effective at triggering blood coagulation when combined with Hemlibra at their respective clinically relevant concentrations without generation of excessive thrombin levels. The concurrent administration of FEIBA with Hemlibra has been associated with thrombotic events (when a blood clot forms inside a blood vessel), requiring a boxed warning in the package insert. While NovoSeven is safe in patients on Hemlibra prophylaxis, it must be administered through an IV infusion to treat a bleed. Ideally, an add-on therapy for patients on SQ Hemlibra would also be given subcutaneously. We believe MarzAA provides a potential solution as a SQ rescue therapy for Hemophilia A patients with inhibitors who experience breakthrough bleeds while being treated prophylactically with Hemlibra.

DalcA

We completed a Phase 2b study for our next most advanced product candidate, DalcA, a next-generation SQ Factor IX ("FIX") drug for the prophylactic treatment of individuals with Hemophilia B. The trial was designed to evaluate daily SQ dosing and the ability to maintain protective steady state FIX levels above 12% in six individuals with severe Hemophilia B. Each subject received a single intravenous dose, followed by daily SQ doses of DalcA for 28 days during which FIX activity levels, clotting parameters, half-life, safety, tolerability and anti-drug antibody formation were monitored.

We reported at the World Federation of Hemophilia Virtual Summit on June 15, 2020 that 28 days of daily SQ dosing of DalcA at 100 IU/kg achieved protective target FIX levels of >12% in all participants, with FIX levels of up to 27% and a half-life of 2.5 to 5.1 days. No bleeds were reported during the 28 days of dosing and the 5 day wash-out, demonstrating effective prophylaxis and the potential for lower or less frequent dosing. Injection volumes were less than 1 mL. One subject withdrew on day 7 after reporting injection site reactions ("ISR") from the first 3 SQ doses. No neutralizing anti-drug antibodies were detected, and no serious adverse events were reported. A single non-neutralizing anti-drug antibody to DalcA was observed at the end of study time point and had no clinical effect. Some subjects reported mild ISR of pain and/or redness, primarily with the initial injections. No thrombotic events occurred and blood coagulation markers did not show any prothrombotic signals.

Factor IX Gene Therapy

Our Factor IX gene therapy construct CB 2679d-GT has demonstrated 2-fold to 3-fold higher activity compared with the Padua variant of Factor IX resulting in significantly improved clotting time and reduced blood loss in a preclinical Hemophilia B mouse model. Fidanacogene elaparvovec ("Pfizer/Spark"), AMT-061 ("uniQure/CSL") and FLT180A ("Freeline") use the Padua variant as the transgene in their AAV-based gene therapy clinical programs. Fidanacogene elaparvovec, AMT-061 and FLT180A have demonstrated encouraging Factor IX levels in their respective Phase 1/2 and Phase 2/3 studies with median Factor IX activity levels of approximately 30-45%. We have licensed AAV technology from The Board of Trustees of The Leland Stanford Junior University ("Stanford") and are currently optimizing the vector under a sponsored research agreement with Stanford. The Company presented preclinical data at the 13th Annual Congress of the European Association of Haemophilia and Allied Disorders in February 2020 demonstrating that a proprietary chimeric AAV capsid licensed from Stanford expressing our CB 2679d-GT FIX variant may significantly reduce the vector dose required of a gene therapy treatment while maintaining high factor activity levels.

We reported at the World Federation of Hemophilia Virtual Summit on June 19, 2020 that studies of CB 2679d-GT in Hemophilia B mice have demonstrated a 4-fold reduction in blood loss and an 8-fold reduction in bleeding time when compared with the same dose of the Padua variant of FIX. Furthermore, when packaged in a proprietary chimeric AAV capsid, CB 2679d-GT demonstrated a clear dose response of high stable FIX levels across the three dose levels in Hemophilia B mice.

A pilot non-human primate study compared the expression and tolerability of CB 2679d-GT in the novel chimeric capsid KP1 with the LK03 chimeric capsid. The study demonstrated that CB 2679d-GT was well tolerated with high FIX expression that stabilized to approximately 25% to 50% FIX above baseline levels at the 6-week interim data cutoff. The novel chimeric capsid had differentiated and superior response to anti-capsid neutralizing antibodies compared to that observed for the LK03 comparator during the screening of non-human primates for the study.

SQ Systemic Complement Inhibitors

We have initiated discovery research to identify novel complement pathway regulating proteases and expect to nominate our first development candidate in late 2020.

Recent Collaborations

On December 18, 2019, we entered into a license and collaboration agreement with Biogen to develop and commercialize CB 2782-PEG and our other anti-C3 proteases for the potential treatment of dry AMD and other disorders. Under the collaboration agreement,

we will perform pre-clinical and manufacturing activities, and Biogen is solely responsible for funding the pre-clinical and manufacturing activities and performing IND-enabling activities, worldwide clinical development, and commercialization. We received a $15.0 million upfront payment from Biogen in January 2020 for the grant of an exclusive license and the related know-how, and we are eligible to receive up to $340.0 million in milestone payments, along with tiered royalties for worldwide net sales of this product candidate up to low double-digits. For the three and six months ended June 30, 2020, we recorded $1.6 million and $2.9 million in collaboration revenue. Unless earlier terminated, the agreement will remain in effect until the expiry of all royalty obligations. Biogen has the right to terminate the agreement at will, on a product-by-product basis or in its entirety at any time upon 60 days prior written notice. In addition, either party has the right to terminate the agreement following a material breach that remains uncured for 90 days, or in connection with an insolvency event involving the other party.

We also collaborated with Mosaic Biosciences ("Mosaic") in the development of our Complement product candidates including CB 2782-PEG. Under the collaboration agreement, as amended in December 2019, Mosaic will perform all future services for a fee, and pursuant to a subsequent amendment in May 2020, Mosaic received a one-time cash payment of $0.8 million and is eligible to receive up to $4.0 million in potential future milestone payments related to regulatory and clinical development events for CB 2782-PEG and an additional anti-complement product candidate in cash, or in common stock if the Company elects, in lieu of our obligations to pay Mosaic a double-digit percentage of funds we receive from Biogen or any other amounts we receive related to sublicense fees, research and development payments, or any other research, regulatory, clinical or commercial milestones and royalties on any other development candidates. We now own one hundred percent of all future payment streams related to these product candidates.

Dr. Usman, our Chief Executive Officer and a member of our board of directors, and Mr. Lawlor, a member of our board of directors, were members of the board of directors of Mosaic. Transactions with related parties, including the transaction referred above, are reviewed and approved by independent members of our Board of Directors in accordance with our Code of Business Conduct and Ethics.

Recent Manufacturing Updates

We have a long-term development and manufacturing services agreement with AGC Biologics, Inc. ("AGC"). AGC has global manufacturing sites and we use their facilities in the U.S. and Europe for drug substance manufacturing of MarzAA and DalcA. We also have long-term clinical supply services agreements with Symbiosis Pharmaceutical Services ("Symbiosis") and Catalent Indiana, LLC ("Catalent"). Symbiosis has facilities in Europe and conducts drug product manufacturing for MarzAA. Catalent has facilities in the U.S. and Europe and conducts drug product development, manufacturing and packaging for MarzAA and DalcA.

MarzAA

We have successfully manufactured MarzAA to support our global Phase 3 clinical trial to evaluate the safety and efficacy of MarzAA for on-demand treatment and control of bleeding episodes in subjects with Hemophilia A or Hemophilia B with inhibitors. At the end of 2019, we successfully completed development work for a variety of vial sizes which will support flexible dosing. As of June 30, 2020, we have successfully completed two large-scale GMP batches of MarzAA that will be sufficient to support the Phase 3 clinical trial through its completion.

In January 2020, we completed a successful CMC Scientific Advice meeting with the Paul Ehrlich Institute in the EU which endorsed our current CMC activities and plans required for registration filing.

DalcA

We have completed the transfer of manufacturing technology of the drug substance for DalcA from ISU Abxis, with whom we had collaborated on the Phase 1 development of DalcA, to AGC, including the associated development activities and our first large-scale GMP batch of DalcA that will support the initiation of further clinical trials. At the end of 2019, we successfully completed development work for a variety of vial sizes which will support flexible dosing in future clinical trials. As of June 30, 2020, we have successfully manufactured a large-scale drug product engineering batch of DalcA.

Recent Other Developments

COVID-19 business impact

The current COVID-19 pandemic has presented a substantial public health and economic challenge around the world and is affecting our employees, potential trial participants and business operations. The full extent to which the COVID-19 pandemic will directly or indirectly impact our business, results of operations and financial condition will depend on future developments that are highly uncertain and cannot be accurately predicted, including new information that may emerge concerning COVID-19, the actions taken to contain it or treat its impact and the economic impact on local, regional, national and international markets.

To date, we have instructed our employees to stay at home except as needed to ensure continuity of our operations. As we continue to actively advance our clinical programs, we are in close contact with our principal investigators, clinical sites and contractors, including manufacturers, and are assessing the impact of COVID-19 on planned trials, expected timelines and costs on an ongoing basis. We are continuing study start-up activities where possible to allow rapid site activation and enrollment of our Phase 3 MarzAA trial at the appropriate time.

Given the focus of healthcare providers and hospitals on treating patients with the virus, and the reluctance of potential trial participants to visit hospitals or other clinical trial sites, we may experience delays in the enrollment of patients in our upcoming clinical trials as well as delays in the analysis of data from our trials that have completed. We will continue to evaluate the impact of the COVID-19 pandemic on our business and will reevaluate the timing of our anticipated clinical milestones as we learn more and the impact of COVID-19 on our industry becomes clearer.

Financing

In June 2020, we completed an underwritten public offering of 4,615,384 shares of our common stock at a price of $6.50 per share. The net proceeds to us, after deducting $2.0 million in underwriting discounts and commissions and offering expenses payable by us, were approximately $28.0 million.

In February 2020, we completed an underwritten public offering of 5,307,692 shares of our common stock (including 692,307 shares sold pursuant to the exercise of the underwriters' overallotment option) at a price of $6.50 per share. The net proceeds to us, after deducting $2.5 million in underwriting discounts and commissions and offering expenses payable by us, were $32.0 million.

We have no products approved for commercial sale and have not generated any revenue from product sales. From inception to June 30, 2020, we have raised net proceeds of approximately $449.6 million, primarily from private placements of convertible preferred stock, proceeds from our merger with Targacept, issuances of shares of common stock and warrants, including $73.1 million in total revenue from our license and collaboration agreements.

We have never been profitable and have incurred significant operating losses in each year since inception. Our net losses were $17.2 million and $13.8 million for the three months ended June 30, 2020 and 2019, respectively, and $21.3 million and $28.9 million for the six months ended June 30, 2020 and 2019, respectively. As of June 30, 2020, we had an accumulated deficit of $279.8 million. As of June 30, 2020, our cash, cash equivalents and short-term investments balance were $117.4 million. Substantially all our operating losses were incurred in our research and development programs and in our general and administrative operations.

We expect to incur significant expenses and increasing operating losses for at least the next several years as we continue the preclinical, manufacturing and clinical development, and seek regulatory approval for our drug candidates. Our operating losses may fluctuate significantly from quarter to quarter and year to year due to timing of preclinical, manufacturing, clinical development programs and regulatory guidance spending.

New Leadership Appointments

On June 15, 2020, we appointed Clinton Musil as our new Chief Financial Officer, effective July 1, 2020. Clinton Musil was previously Chief Business Officer at Personalis, where he helped build a pipeline and rapidly scale revenue as well as complete the Company's $150.0 million initial public offering. Prior to Personalis, Mr. Musil was a member of the executive management team at ARMO Biosciences, where he oversaw the Company's initial public offering and $1.6 billion sale to Eli Lilly. In addition to his operational experience, Clinton brings an extensive background in healthcare investment banking. Earlier in his career, Mr. Musil served in various positions at Gilead Sciences and Sanofi. Mr. Musil received a B.S. in Molecular and Cellular Biology from the University of Arizona and an M.B.A. from Harvard Business School.

Financial Operations Overview

License and Collaboration Revenue

License and collaboration revenue consist of revenue earned for performance obligations satisfied pursuant to our Biogen Agreement. In December 2019, we entered into a license and collaboration agreement with Biogen. In consideration for the grant of an Exclusive License and related know-how, we received an up-front payment of $15.0 million in January 2020, which was recorded in license revenue during the six months ended June 30, 2020. We also incurred reimbursable out-of-pocket and personnel costs pertaining to the Biogen Agreement of $1.7 million and $3.1 million during the three and six months ended June 30, 2020, respectively. There can be no assurance when any future milestone or royalty payments under the Biogen agreement may occur, if at all.

We have not generated any revenue from the sale of any drugs, and we do not expect to generate any revenue until we obtain regulatory approval of and commercialize our product candidates.

Cost of License and Collaboration

Cost of license and collaboration revenue consists of sublicense fees and fees for research and development services payable to Mosaic, fees for research and development services payable to third-party vendors, and personnel costs, corresponding to the recognition of license and collaboration revenue from Biogen. Cost of license and collaboration revenue does not include any allocated overhead costs. In connection with the license revenue recognized from Biogen as discussed above, we paid Mosaic a $3.0 million sublicense fee and recorded such payment as cost of license revenue. We also incurred reimbursable out-of-pocket and personnel costs pertaining to the Biogen Agreement of $1.7 million and $3.1 million and recorded such costs as cost of collaboration revenue during the three and six months ended June 30, 2020, respectively.

Research and Development Expenses

Research and development expenses represent costs incurred to conduct research, such as the discovery and development of our product candidates. We recognize all research and development costs as they are incurred.

Research and development expenses consist primarily of the following:

- employee-related expenses, which include salaries, benefits and stock-based compensation;
- laboratory and vendor expenses, including payments to consultants, related to the execution of preclinical, non-clinical, and clinical studies;
- the cost of acquiring and manufacturing preclinical and clinical materials and developing manufacturing processes;
- clinical trial expenses, including costs of third-party clinical research organizations;
- performing toxicity studies; and
- facilities and other allocated expenses, which include direct and allocated expenses for rent and maintenance of facilities, depreciation and amortization expense and other supplies.

The following table summarizes our research and development expenses for the periods presented (*in thousands*):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Personnel costs	$ 2,376	$ 1,791	$ 4,640	$ 3,836
Preclinical research(1)	4,553	1,809	6,839	3,237
Clinical and manufacturing(1)	5,695	7,288	14,173	15,624
Facility and overhead(1)	282	223	518	441
Total research and development expenses	$ 12,906	$ 11,111	$ 26,170	$ 23,138

(1) Prior year numbers have been reclassified to conform with the current year presentation.

The largest component of our total operating expenses has historically been our investment in research and development activities, including the clinical and manufacturing development of our product candidates. We are currently focusing substantially all our resources and development efforts on MarzAA, DalcA and our anti-complement program. Our internal resources, employees and infrastructure are not directly tied to individual product candidates or development programs. As such, we do not maintain information regarding these costs incurred for these research and development programs on a project-specific basis.

We expect our aggregate research and development expenses will increase during the next year as we advance the clinical and manufacturing development of our programs. The global coronavirus pandemic may also delay and increase costs of our current development plans.

On May 20, 2016, we signed a development and manufacturing services agreement with AGC, formerly known as CMC ICOS Biologics, Inc., pursuant to which AGC will conduct manufacturing development of agreed upon product candidates. We will own all intellectual property developed in such manufacturing development activities that are specifically related to our product candidates and will have a royalty-free and perpetual license to use AGC's intellectual property to the extent reasonably necessary to make these

product candidates, including commercial manufacturing. In 2016 we commenced manufacturing activities for MarzAA, and successfully manufactured MarzAA for the Phase 2 portion of a planned Phase 2/3 clinical trial.

The initial term of the agreement is ten years or, if later, until all stages under outstanding statements of work have been completed. Either party may terminate the agreement in its entirety upon written notice of a material uncured breach or upon the other party's bankruptcy, and we may terminate the agreement upon prior notice for any reason. In addition, each party may terminate the agreement in the event that the manufacturing development activities cannot be completed for technical or scientific reasons. We have committed to a total of $11.3 million in payments to AGC pursuant to the statements of work for MarzAA and DalcA and $3.2 million of those payments are outstanding as of June 30, 2020.

On October 9, 2019, we signed a clinical supply services agreement with Catalent, effective Oct 4, 2019, pursuant to which Catalent will conduct drug product development of agreed upon product candidates. We will own, and Catalent assigns to us, the intellectual property that is specifically related to our products including the products' composition and use, and Catalent will own, and we assign to Catalent, the intellectual property that result from Catalent's performance of its services under the clinical supply agreement.

The initial term of the clinical supply agreement is three years, although the term may be extended for successive twelve-month periods, unless either party gives the other party written notice of its intent not to extend the term at least ninety (90) days prior to the expiration of the initial term or the then-current extension. Either party may terminate the clinical supply agreement in its entirety upon written notice of a material uncured breach or upon the other party's bankruptcy, and we may terminate the clinical supply agreement for its convenience upon thirty (30) days prior written notice. In addition, each party may terminate the clinical supply agreement in the event that the other party fails to perform its obligations under the agreement for reasons beyond the reasonable control of such party, such as technical or scientific reasons. If we cancel or reschedule a project plan or purchase order outside the parameters set in the clinical supply agreement, we would be obligated to pay for a portion of Catalent's costs less certain fees that Catalent is able to mitigate. We have committed to a total of $0.5 million in payments to Catalent pursuant to the statements of work for DalcA and zero of those payments are outstanding as of June 30, 2020.

The process of conducting clinical trials necessary to obtain regulatory approval is costly and time consuming. We may never succeed in achieving marketing approval for our product candidates. The probability of success of each product candidate may be affected by numerous factors, including clinical data, competition, manufacturing capability and commercial viability. As a result, we are unable to determine the duration of and costs to complete our research and development projects or when and to what extent we will generate revenue from the commercialization and sale of any of our product candidates.

Successful development of current and future product candidates is highly uncertain. Completion dates and costs for our research programs can vary significantly for each current and future product candidate and are difficult to predict. Thus, we cannot estimate with any degree of certainty the costs we will incur in the development of our product candidates. We anticipate we will make determinations as to which programs and product candidates to pursue and how much funding to direct to each program and product candidate on an ongoing basis in response to the scientific success of early research programs, results of ongoing and future clinical trials, our ability to enter into collaborative agreements with respect to programs or potential product candidates, as well as ongoing assessments as to each current or future product candidate's commercial potential.

General and Administrative Expenses

General and administrative expenses consist of personnel costs, allocated expenses and other expenses for outside professional services, including legal, human resources, audit and accounting services. Personnel costs consist of salaries, bonus, benefits and stock-based compensation. We incur expenses associated with operating as a public company, including expenses related to compliance with the rules and regulations of the SEC and Nasdaq Stock Market LLC ("Nasdaq"), insurance expenses, audit expenses, investor relations activities, Sarbanes-Oxley compliance expenses and other administrative expenses and professional services. We expect such expenses to increase as we advance our programs.

Interest and Other Income, Net

Interest and other income consists primarily of interest income on our investment portfolio and a payment received in the first quarter of 2020 under an agreement associated with neuronal nicotinic receptor assets sold in 2016.

Results of Operations

The following table set forth our results of operations data for the periods presented (*in thousands*):

	Three Months Ended June 30,			
	2020	2019	Change ($)	Change (%)
License	$ 23	$ —	$ 23	100%
Collaboration	1,635	—	1,635	100%
License and collaboration revenue	1,658	—	1,658	100%
Operating expenses:				
Cost of license	23	—	23	100%
Cost of collaboration	1,719	—	1,719	100%
Research and development	12,906	11,111	1,795	16%
General and administrative	4,371	3,270	1,101	34%
Total operating expenses	19,019	14,381	4,638	32%
Loss from operations	(17,361)	(14,381)	(2,980)	21%
Interest and other income, net	113	601	(488)	(81)%
Net loss	$ (17,248)	$ (13,780)	$ (3,468)	25%

	Six Months Ended June 30,			
	2020	2019	Change ($)	Change (%)
License	$ 15,068	$ —	$ 15,068	100%
Collaboration	2,956	—	2,956	100%
License and collaboration revenue	18,024	—	18,024	100%
Operating expenses:				
Cost of license	3,070	—	3,070	100%
Cost of collaboration	3,151	—	3,151	100%
Research and development	26,170	23,138	3,032	13%
General and administrative	8,062	6,956	1,106	16%
Total operating expenses	40,453	30,094	10,359	34%
Loss from operations	(22,429)	(30,094)	7,665	(25)%
Interest and other income, net	1,128	1,232	(104)	(8)%
Net loss	$ (21,301)	$ (28,862)	$ 7,561	(26)%

License and Collaboration Revenue

License and collaboration revenue of $1.7 million and $18.0 million generated in the three and six months ended June 30, 2020, respectively, was from our Biogen Agreement, which was entered into on December 18, 2019.

Cost of License and Collaboration

Cost of license in the six months ended June 30, 2020 was primarily the $3.0 million sublicense fee we paid to Mosaic in connection with the recognition of the license revenue from Biogen. Cost of collaboration in the three and six months ended June 30, 2020 was reimbursable third-party vendor and personnel costs we incurred pertaining to the Biogen Agreement.

Research and Development Expenses

Research and development expenses were $12.9 million and $11.1 million during the three months ended June 30, 2020 and 2019, respectively, an increase of $1.8 million, or 16%. The increase was due primarily to an increase of $2.7 million in preclinical spending and an increase of $0.6 million in personnel and facilities costs, partially offset by a decrease of $1.6 million in clinical and manufacturing costs.

Research and development expenses were $26.2 million and $23.1 million during the six months ended June 30, 2020 and 2019, respectively, an increase of $3.0 million, or 13%. The increase was due primarily to an increase of $3.6 million in preclinical spend and an increase of $0.8 million in personnel costs, partially offset by a decrease of $1.5 million in clinical manufacturing costs.

General and Administrative Expenses

General and administrative expenses were $4.4 million and $3.3 million during the three months ended June 30, 2020 and 2019, respectively, an increase of $1.1 million, or 34%. This increase was due primarily to an increase in professional services.

General and administrative expenses were $8.1 million and $7.0 million during the six months ended June 30, 2020 and 2019, respectively, an increase of $1.1 million, or 16%. The increase was due primarily to an increase of $1.4 million in professional services, partially offset by a $0.2 million decrease in personnel-related costs.

Interest and Other Income, Net

Interest and other income, net was $0.1 million and $0.6 million during the three months ended June 30, 2020 and 2019, respectively, a decrease of $0.5 million. The decrease was primarily due to a decrease in interest income on investments.

Interest and other income, net was $1.1 million and $1.2 million during the six months ended June 30, 2020 and 2019, respectively, a decrease of $0.1 million. The decrease was primarily due to a decrease in interest income of $0.8 million, partially offset by a $0.7 million final contingent payment from a prior asset sale.

Recent Accounting Pronouncements

Refer to “Recently Adopted Accounting Pronouncements” included in Note 2, *Summary of Significant Accounting Policies*, in the “Notes to the Condensed Consolidated Financial Statements” in this Form 10-Q.

Liquidity and Capital Resources

As of June 30, 2020, we had $117.4 million of cash, cash equivalents and short-term investments. For the six months ended June 30, 2020, we had a $21.3 million net loss and $19.9 million cash used in operating activities. We have an accumulated deficit of $279.8 million as of June 30, 2020. Our primary uses of cash are to fund operating expenses, including research and development expenditures and general and administrative expenditures. Cash used to fund operating expenses is impacted by the timing of when we pay these expenses, as reflected in the change in our outstanding accounts payable and accrued expenses.

We believe that our existing capital resources, including cash, cash equivalents and short-term investments will be sufficient to meet our projected operating requirements for at least the next 12 months from the date of this filing. We have based this estimate on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we currently expect. We plan to continue to fund losses from operations and capital funding needs through future equity and/or debt financings, as well as potential additional asset sales, licensing transactions, collaborations or strategic partnerships with other companies. We have effective registration statements on Form S-3 that enable us to sell up to $170.0 million in securities. The sale of additional equity or convertible debt could result in additional dilution to our stockholders. The incurrence of indebtedness would result in debt service obligations and could result in operating and financing covenants that would restrict our operations. Licensing transactions, collaborations or strategic partnerships may result in us relinquishing valuable rights. We can provide no assurance that financing will be available in the amounts we need or on terms acceptable to us, if at all. If we are not able to secure adequate additional funding we may be forced to delay, make reductions in spending, extend payment terms with suppliers, liquidate assets where possible, and/or suspend or curtail planned programs. Any of these actions could materially harm our business.

The following table summarizes our cash flows for the periods presented (*in thousands*):

	Six Months Ended June 30,	
	2020	2019
Cash used in operating activities	$ (19,926)	$ (26,424)
Cash provided by investing activities	3,379	12,324
Cash provided by financing activities	60,451	235
Net increase (decrease) in cash, cash equivalents and restricted cash	$ 43,904	$ (13,865)

Cash Flows from Operating Activities

Cash used in operating activities for the six months ended June 30, 2020 was $19.9 million, due primarily to a net loss of $21.3 million, and the change in our net operating assets and liabilities of $0.3 million, due primarily to a $13.0 million decrease in accounts receivable, offset by a $14.7 million decrease in deferred revenue related to the Biogen Agreement. Non-cash charges of $1.6 million were recorded for stock-based compensation.

Cash used in operating activities for the six months ended June 30, 2019 was $26.4 million, due primarily to a net loss of $28.9 million, and the change in our net operating assets and liabilities of $0.6 million, due primarily to a $1.8 million increase in accrued compensation and vendor payments, offset by a $1.2 million decrease in accounts payable and increase in prepaid and other current assets. Non-cash charges of $1.7 million were recorded for stock-based compensation.

Cash Flows from Investing Activities

Cash provided by investing activities for the six months ended June 30, 2020 was $3.4 million, due primarily to $50.5 million in proceeds from maturities of investments, partially offset by $47.1 million used in purchases of investments.

Cash provided by investing activities for the six months ended June 30, 2019 was $12.3 million, due primarily to $89.0 million in proceeds from maturities of investments, offset by $76.7 million in purchases of investments.

Cash Flows from Financing Activities

Cash provided by financing activities for the six months ended June 30, 2020 was $60.5 million, due to $32.0 million in net proceeds from the issuance of common stock related to our public offering in February 2020, $28.0 million in net proceeds from the issuance of common stock related to our public offering in June 2020, and $0.3 million in stock grants and option exercises.

Cash provided by financing activities for the six months ended June 30, 2019 was $0.2 million, due primarily to proceeds from issuance of common stock related to stock option exercises.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements.

Critical Accounting Polices and Estimates

There have been no significant changes to our critical accounting policies since December 31, 2019. For a description of critical accounting policies that affect our significant judgments and estimates used in the preparation of our unaudited condensed consolidated financial statements, refer to Item 7 “Management’s Discussion and Analysis of Financial Condition and Results of Operations” contained in our Annual Report on Form 10-K.

ITEM 3. Quantitative and Qualitative Disclosures About Market Risk

Market risk represents the risk of loss that may impact our financial position due to adverse changes in financial market prices and interest rates. We are exposed to market risks in the ordinary course of our business. Our primary exposure to market risk is interest income sensitivity in our investment portfolio. Fixed rate securities and borrowings may have their fair market value adversely impacted due to fluctuations in interest rates, while floating rate securities may produce less income than expected if interest rates fall and floating rate borrowings may lead to additional interest expense if interest rates increase. Due in part to these factors, our future

investment income may fall short of expectations due to changes in interest rates or we may suffer losses in principal if forced to sell securities which have declined in market value due to changes in interest rates.

However, because of the short-term nature of the instruments in our portfolio, a sudden change in market interest rates would not be expected to have a material impact on the fair market value of our investment portfolio. As of June 30, 2020, we had cash and cash equivalents and short-term investments of $117.4 million, which included bank deposits and money market funds and short-term investments of $58.1 million. Accordingly, we do not expect our operating results or cash flows to be affected to any significant degree by the effect of a sudden change in market interest rates on our investment portfolio.

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of June 30, 2020. The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to our management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure.

Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of June 30, 2020, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Changes in Internal Control Over Financial Reporting

There has been no change in our internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act) identified during the quarter ended June 30, 2020 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

We are not a party to any material legal proceedings.

ITEM 1A. RISK FACTORS

Our business is subject to risks and events that, if they occur, could adversely affect our financial condition and results of operations and the trading price of our securities. The disclosure below modifies the risk factors previously disclosed in *"Part I - Item 1A - Risk Factors"* of our Annual Report on Form 10-K for the fiscal year ended December 31, 2019, filed with the Securities and Exchange Commission on February 20, 2020.

You should carefully consider the risks and uncertainties disclosed as "Risk Factors" in our Annual Report, together with all of the other information in this Report, including the section titled *"Part I - Financial Information - Item 2 - Management's Discussion and Analysis of Financial Condition and Results of Operations"* and the condensed consolidated financial statements and related notes.

The risk factors included in our Annual Report on Form 10-K for the year ended December 31, 2019 have expanded to include the following additional risk factor:

The outbreak of the novel coronavirus disease, COVID-19, could adversely impact our business, including our preclinical studies and clinical trials.

The global coronavirus pandemic has resulted in widespread requirements for individuals to stay in their homes and strained medical facilities worldwide. It is too early to assess the full impact of the coronavirus outbreak on our business, including our trials for MarzAA and DalcA and our development activities in our anti-complement program but coronavirus may affect our ability to complete recruitment and data analysis for our clinical trials and our ability to conduct research and development of our complement programs in our planned timeframe. The extent to which the coronavirus impacts our operations will depend on future developments, which are highly uncertain and cannot be predicted with confidence, including the duration and severity of the outbreak, and the actions that may be required to contain the coronavirus or treat its impact. In particular, as a result of the COVID-19 pandemic, we may experience disruptions that could severely impact our business, preclinical studies, drug manufacturing and clinical trials including:

- delays or difficulties in enrolling potential trial participants in our clinical trials;
- delays or difficulties in clinical site initiation, including difficulties in recruiting clinical site investigators and clinical site staff;
- diversion of healthcare resources away from the conduct of clinical trials, including the diversion of hospitals serving as our clinical trial sites and hospital staff supporting the conduct of our clinical trials;
- interruption of key clinical trial activities, such as clinical trial site data monitoring, due to limitations on travel imposed or recommended by federal or state governments, employers and others or interruption of clinical trial subject visits and study procedures, which may impact the integrity of subject data and clinical study endpoints;
- interruption or delays in the operations of the Food and Drug Administration, European Medicines Agency or other regulatory authorities, which may impact review and approval timelines;
- interruption of, or delays in receiving, supplies of our product candidates from our contract manufacturing organizations due to staffing shortages, production slowdowns or stoppages and disruptions in delivery systems;
- interruptions in preclinical studies due to restricted or limited operations at laboratory facilities;
- suspension or termination of our clinical trials for various reasons, such as a finding that the participants are being exposed to infectious diseases like COVID-19 or the participants involved in our clinical trials have become infected with COVID-19;
- limitations on employee resources that would otherwise be focused on the conduct of our preclinical studies and clinical trials, including because of sickness of employees or their families or the desire of employees to avoid contact with large groups of people; and
- material delays and complications with respect to our research and development programs.

In addition, the trading prices for our common stock and other biopharmaceutical companies have been highly volatile as a result of the COVID-19 pandemic. Furthermore, a recession or market correction resulting from the spread of COVID-19 could materially affect our operations and the value of our common stock.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

None.

ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. OTHER INFORMATION

None.

ITEM 6. EXHIBITS

See Index to Exhibits at the end of this Report, which is incorporated by reference here. The Exhibits listed in the accompanying Index to Exhibits are filed as part of this Report.

EXHIBIT INDEX

Exhibit Number	Description
10.1++	Amended and Restated Collaboration Agreement, dated May 8, 2020, by and between Mosaic Biosciences, Inc. and Catalyst Biosciences, Inc.
31.1	Certification of the Chief Executive Officer pursuant to Rule 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of the Chief Financial Officer pursuant to Rule 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification of the Chief Executive Officer pursuant to Rule 13a-14(b) of the Exchange Act and 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification of the Chief Financial Officer pursuant to Rule 13a-14(b) of the Exchange Act and 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101	The following materials from the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2020, formatted in Inline XBRL (eXtensible Business Reporting Language): (i) the Condensed Consolidated Balance Sheets as of June 30, 2020 (unaudited) and December 31, 2019; (ii) the Condensed Consolidated Statements of Operations for the three and six months ended June 30, 2020 and 2019 (unaudited); (iii) the Condensed Consolidated Statements of Comprehensive Income for the three and six months ended June 30, 2020 and 2019 (unaudited); (iv) the Condensed Consolidated Statement of Stockholders' Equity as of June 30, 2020 and June 30, 2019 (unaudited); (v) the Condensed Consolidated Statements of Cash Flows for the six months ended June 30, 2020 and 2019 (unaudited); and (vi) the Notes to Unaudited Interim Condensed Consolidated Financial Statements.
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

++ Pursuant to Item 601(b)(10) of Regulation S-K, certain confidential portions of this exhibit were omitted by means of marking such portions with an asterisk because the identified confidential portions (i) are not material and (ii) would be competitively harmful if publicly disclosed.

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.

CATALYST BIOSCIENCES, INC.

Date: August 6, 2020

/s/ Nassim Usman, Ph.D.

Nassim Usman, Ph.D.
President and Chief Executive Officer
(*Principal Executive Officer*)

Date: August 6, 2020

/s/ Clinton Musil

Clinton Musil
Chief Financial Officer
(*Principal Financial Officer*)

Exhibit 10.1

Certain information identified by bracketed asterisks ([***]) has been omitted from this exhibit because it is both not material and would be competitively harmful if publicly disclosed.

MOSAIC BIOSCIENCES, INC.

SECOND AMENDED AND RESTATED COLLABORATION AGREEMENT

This Second Amended and Restated Collaboration Agreement ("**Agreement**") is entered into as of this 08 day of May 2020 ("**Amendment No. 3 Effective Date**"), by and between Mosaic Biosciences, Inc., a Delaware corporation, with its principal place of business located at 3415 Colorado Ave., Boulder, CO 80303 ("**Mosaic**"), and Catalyst Biosciences, Inc., a Delaware corporation, with its principal place of business located at 611 Gateway Blvd. Suite 710, South San Francisco, CA 94080 USA ("**Catalyst**"). Mosaic and Catalyst may be referred to individually herein as a "**Party**" and collectively as the "**Parties**".

Whereas, the Parties entered into that certain Collaboration Agreement, dated as of October 10, 2017 (the "**Effective Date**"), to identify novel products as set forth in that Collaboration Agreement (the "**Original Agreement**");

Whereas, the Parties entered into that certain Amendment to the Collaboration Agreement, dated as of December 21, 2018 (the "**First Amendment**");

Whereas, the Parties entered into that certain Amended and Restated Collaboration Agreement, dated as of December 18, 2019 (the "**Amendment No. 2 Effective Date**" and such agreement, the "**First Amended and Restated Agreement**");

Whereas, the Parties desire to revise their business arrangement such that (a) Catalyst will make certain payments described herein in consideration of Mosaic relinquishing its right to receive any other royalty, milestone or sublicensing payments or product reversion rights and (b) Mosaic will still perform Services pursuant to any work plan attached as an exhibit to this Agreement and agreed to by both Parties;

Whereas, the Parties desire to amend and restate the First Amended and Restated Agreement in its entirety to reflect the revised business arrangement set forth herein and to make other conforming changes; and

NOW THEREFORE, for and in consideration of the covenants, conditions, and undertakings hereinafter set forth, it is agreed by and between the Parties as follows:

1. DEFINITIONS

1.1 "**Affiliate**" means, in the case of Catalyst or Mosaic (as the case may be), any entity which controls, is controlled by or is under common control with Mosaic or Catalyst. For purposes of this definition only, "control" shall mean beneficial ownership (direct or indirect) of at least fifty percent (50%) of the shares of the subject entity entitled to vote in the election of directors (or, in the case of an entity that is not a corporation, in the election of the corresponding managing authority).

1.2 "**C3 Payment**" is defined in Section 10.2 hereof.

1.3 "[*******]" means [*****]**.

1.4 "[*******]" is defined in Section 10.2 hereof.

1.5 "**Change of Control**" means, with respect to either Party, any of the following: (a) the sale or disposition of all or substantially all of the assets of such Party or its direct or indirect parent corporation to a third party, (b) the acquisition by a third party which constitutes one person, as such term is used in Section 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the "**Exchange Act**"), together with any such person's "affiliates" or "associates," as such terms are defined in the Exchange Act, other than an employee benefit plan (or related trust) sponsored or maintained by such party or any of its Affiliates, of more than fifty percent (50%) of the outstanding shares of voting capital stock of such party or its direct or indirect parent corporation, or (c) the merger or consolidation of such party or its direct or indirect parent corporation with or into another corporation, other than, in the case of this clause (c), an acquisition or a merger or consolidation of such party or its direct or indirect parent corporation in which holders of shares of the voting capital stock of such party or its direct or indirect parent corporation, as the case may be, immediately prior to the acquisition, merger or consolidation will have at least fifty percent (50%) of the ownership of voting capital stock of the acquiring third party or the surviving corporation in such merger or consolidation, as the case may be, immediately after the merger or consolidation.

1.6 "**Deliverables**" is defined in Section 7.1 hereof.

1.7 "**IND**" means an Investigational New Drug application required pursuant to 21 C.F.R. Part 312 or any comparable filings outside of the United States required to commence human clinical trials in such country or region, and all supplements or amendments that may be filed with respect to the foregoing.

1.8 "**Initial Payment**" is defined in Section 10.1 hereof.

1.9 "**Initiation**" means the time at which the first patient receives first dose of the applicable Product.

1.10 "**Intellectual Property**" is defined in Section 8.1 hereof.

1.11 "**Materials**" is defined in Section 6.4 hereof.

1.12 "**Mosaic Intellectual Property**" means: (i) all patents and all reissues, renewals, re-examinations, and extensions thereof, and patent applications therefor, and any divisions or continuations, in whole or in part, thereof, which claim or otherwise cover the composition, formulation, manufacture, sale or use of a Product(s), that are owned or acquired by Mosaic or its Affiliates, or that cover inventions made by or under authority of Mosaic or its Affiliates, prior to or during the term of this Agreement; and all material confidential information and tangible materials related to the development, formulation, manufacture, sale or use of a Product, including, but not limited to: pharmaceutical, chemical, biological and biochemical compositions; and technical data and information; available descriptions, if any, of assays, methods and processes; the results of tests, including without limitation screening results, SAR data, optimization data, in vitro and in vivo data; preclinical, clinical and research, manufacturing processes and procedures;

analytical and quality control data; and plans, specifications and/or other documents containing said information and data; in each case which are owned or acquired by Mosaic prior to the Effective Date or discovered, developed or acquired by or under authority of Mosaic or its Affiliates during the term of this Agreement.

1.13 "**Phase 1 Clinical Trial**" means human clinical trials, the principal purpose of which is preliminary determination of safety in healthy individuals or patients (for example, as described in 21 C.F.R. §312.21, or similar clinical study in a country other than the United States).

1.14 "**Product**" means any product targeting compliment factor C3 that incorporates CB2782 or CB2963 (or both) and molecules in the same family, as well as any derivatives, formulations, conjugates, progeny, or improvements therefrom for use in ophthalmologic indications (a "**C3 Product**") and any product incorporating a [***] (a "[***]").

1.15 "**Research**" is defined in Section 2.6 hereof.

1.16 "**Research Plan**" means the plan for the Research to be conducted by the Parties as described in Article 2 of this Agreement.

1.17 "**Subsequent Payment**" is defined in Section 10.2 hereof.

1.18 "**Territory**" means any country or territory in the world in which Catalyst or its Affiliates are commercializing a Product.

2. Performance of Research

2.1 **General**. Mosaic agrees to provide to Catalyst the services requested by Catalyst, at Catalyst's discretion from time to time, and agreed to by Mosaic, in its sole and absolute discretion (the "**Services**"). The specific services shall be detailed from time to time in one or more work plans to be signed by the Parties and attached hereto as consecutively numbered Exhibits (e.g., 2.1.1, 2.1.2 etc.). Each work plan shall include a description of the specific Services to be provided, the budget for such services, and the anticipated timeline. For the avoidance of doubt, Mosaic shall not be obligated to agree to any work plan.

2.2 **Performance of the Services**. Mosaic shall use all commercially reasonable efforts to render the Services in a timely and professional manner consistent with industry standards. Subject to the foregoing, the manner and means by which Mosaic chooses to complete the Services are in Mosaic's sole discretion and control. In performing the Services, Mosaic agrees to provide its own personnel, equipment, tools and other materials at its own expense, except for External Costs as described in an applicable work plan and except for any Catalyst Materials. Mosaic may not subcontract or otherwise delegate its obligations under this Agreement without Catalyst's prior written consent. References to "Research" or the "Research Plan" in the Agreement shall refer to the Services and applicable work plans, respectively, following the Amendment No. 2 Effective Date.

2.3 **No Conflict of Interest**. Mosaic agrees, during the term of this Agreement, not to accept work or enter into any agreement or accept any obligation that conflict(s) with Mosaic's obligations under this Agreement or

the scope of Services rendered for Catalyst under a then-existing work plan. Mosaic represents and warrants that, to the best of its knowledge, there is no other existing agreement or duty on Mosaic's part inconsistent with this Agreement.

3. Intentionally Omitted

4. Compensation. In consideration of the Services, Mosaic shall be paid on a fee-for-service basis for all Services performed under this Agreement as set forth in each applicable work plan. All reasonable out-of-pocket expenses will be reimbursed to Mosaic by Catalyst. Out-of-pocket expenses will be invoiced on a pass-through basis. Documentation for out-of-pocket expenses will be provided via expense reports. All undisputed invoices shall be payable within [***] of receipt by Catalyst. Should Catalyst disagree with the accuracy of an invoice, Catalyst shall notify Mosaic of such inaccuracy within [***] of receipt of the applicable invoice. Catalyst agrees to pay for any invoice items not in dispute. Catalyst reserves the right to withhold payment of the invoice items in dispute until the dispute is resolved by the Parties.

5. Records; Inspection

5.1 General. Each Party and its Affiliates shall keep complete, true and accurate books of accounts and records for the purpose of determining payments due pursuant to this Agreement. Such books and records shall be kept for at least [***] years following the end of the calendar quarter to which they pertain. Such records will be open, for such [***] year period, for inspection at the principal place of business of such Party or its Affiliates, as the case may be, ("**Audited Party**") during such [***] year period by an independent auditor chosen by the other Party ("**Auditing Party**") and reasonably acceptable to the Audited Party for the purpose of verifying the amounts payable by Audited Party hereunder. All such inspections may be made no more than once each calendar year, at reasonable times and on reasonable notice. The independent auditor shall be obligated to execute a reasonable confidentiality agreement prior to commencing any such inspection.

6. Proprietary Information; Materials

6.1 Proprietary Information. Each of Catalyst and Mosaic understands that the Research may involve access by the other Party to confidential, proprietary or trade secret information or materials of Catalyst or Mosaic, as applicable (each a "**Disclosing Party**") (or their respective affiliates, licensors, suppliers, vendors, clients, customers or any other third party to whom the Disclosing Party owes a duty of confidentiality), in whatever form, tangible or intangible, whether disclosed or provided to the other Party before or after the execution of this Agreement (collectively, "**Proprietary Information**"). Proprietary Information further includes, without limitation, any trade secrets and know-how, and any: information, ideas or materials of a technical or creative nature, such as inventions, improvements, discoveries, developments, techniques, processes, research and development plans and results, reports, drawings, designs, specifications, works of authorship, data, formulas, files, patent applications, and other materials and concepts relating to Catalyst's or Mosaic's respective business, services, processes or technology.

6.2 Restrictions on Use and Disclosure. Each of Catalyst and Mosaic agrees that, during the term of this Agreement and thereafter, it shall (a) hold Proprietary Information of the other Party in trust and confidence;

(b) not use Proprietary Information of the other Party in any manner or for any purpose not expressly set forth in this Agreement; (c) not reproduce such Proprietary Information of the other Party except to the extent reasonably required to fulfill its obligations hereunder; and (d) not disclose, deliver, provide, disseminate or otherwise make available to any third party, directly or indirectly, any Proprietary Information of the other Party without first obtaining such Party's express written consent. Each Party may disclose Proprietary Information of the other Party only to employees and agents who have a need to know such Proprietary Information, and who are each obligated by a written agreement to comply with confidentiality provisions no less restrictive than those set forth in this Agreement. Each Party shall take at least the same degree of care that it uses to protect its own confidential and proprietary information of similar nature and importance (but in no event less than reasonable care) to protect the confidentiality and avoid the unauthorized use, disclosure, publication or dissemination of Proprietary Information of the other Party.

6.3 **Exclusions**. The foregoing obligations in Section 6.2 shall not apply to any Proprietary Information (a) is or has become generally known or available other than by any act or omission of the non-Disclosing Party; (b) was rightfully known by the non-Disclosing Party prior to the time of first disclosure to the Disclosing Party; (c) is independently developed by the non-Disclosing Party without the use of Proprietary Information of the Disclosing Party; or (d) is rightfully obtained without restriction from a third party who has the right to make such disclosure and without breach of any duty of confidentiality to the Disclosing Party. In addition, either Party may use or disclose Proprietary Information of the other Party to the extent (i) approved in advance in writing by the Disclosing Party or (ii) if legally compelled to disclose such Proprietary Information, provided that non-Disclosing Party shall use reasonable efforts to give advance notice of such compelled disclosure to the Disclosing Party, and shall cooperate with the Disclosing Party in connection with any efforts to prevent or limit the scope of such disclosure and/or use of the Proprietary Information.

6.4 **Materials**.

(a) Catalyst is willing to transfer to Mosaic, and Mosaic is willing to receive, the materials specified in a work plan pursuant to Section 2.1 ("**Materials**"), for the sole purpose of conducting the Research at the facilities of Mosaic. Materials shall also include CB2782 and CB2963 which had been provided to Mosaic pursuant to the Original Agreement, and shall include the original biological and/or other materials transferred to Mosaic, as well as any derivatives, formulations, conjugates, progeny, or improvements developed by Mosaic therefrom, and any combination of the foregoing with other substances. All Materials shall be deemed the Proprietary Information of Catalyst.

(b) **Limitation of Use**. The Materials will be used only for the performance of the Research, solely by Mosaic in Mosaic's laboratory or other locations set forth in the Research Plan or applicable work plan under suitable containment conditions. The Materials shall not be used for any other purposes. Mosaic shall not use, or authorize use of, the Materials on or in humans for any purpose under any circumstances.

(c) **Control of Materials**. Mosaic agrees to retain control over the Materials and not to transfer the Materials to any person or entity other than Catalyst without the prior written approval of Catalyst. Catalyst reserves the right to distribute similar Materials to others and to use such Materials for its own purposes.

Mosaic agrees to return all Materials and products or materials derived from such Material to Catalyst on completion of the Research Plan or at any earlier time that Catalyst may request.

(d) **Warranty**. Catalyst represents and warrants to Mosaic that, to the best of its knowledge, the use of the Materials by Mosaic, as contemplated in the Research Plan, will not infringe the Intellectual Property rights of any third party The Materials are being made available in order to further research concerning it. EXCEPT AS OTHERWISE SET FORTH IN THIS SECTION 6.4(d), (a) THE MATERIALS ARE BEING SUPPLIED TO MOSAIC "AS IS", WITH NO WARRANTIES, EXPRESS OR IMPLIED, AND CATALYST EXPRESSLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NONINFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHTS OF ANY THIRD PARTY, and (b) Catalyst disclaims all representations that use of the Materials by Mosaic will not infringe any patent or other proprietary right of any third party.

7. LICENSE

7.1 Mosaic represents that no Mosaic Platform Improvements or Mosaic Intellectual Property have been incorporated into any Product as of the Amendment No. 3 Effective Date other than has been or will be assigned to Catalyst with respect to [***]. Subject to Catalyst's obligations to make the Initial Payment under Article 10, Mosaic hereby unconditionally and irrevocably covenants and agrees that it will not sue or otherwise bring a claim (at law, in equity, in any regulatory proceeding or otherwise) against Catalyst under Mosaic Platform Improvements or Mosaic Intellectual Property existing as of the Amendment No. 3 Effective Date with respect to any Product, provided that such covenant shall terminate if Catalyst fails to make any Subsequent Payment under Article 10 when due. Mosaic shall not incorporate any Mosaic Platform Improvements or Mosaic Intellectual Property into any work product produced through the performance of the Services ("**Deliverables**") without Catalyst's prior written consent. To the extent Mosaic incorporates any Mosaic Platform Improvements or Mosaic Intellectual Property into any Deliverables, unless such Mosaic Platform Improvements or Mosaic Intellectual Property is subject to a separate license agreement between Mosaic and any third-party collaborator of Catalyst with respect to a specific Product to which such Mosaic Platform Improvement or Mosaic Intellectual Property relates, Mosaic hereby grants to Catalyst an exclusive, perpetual, worldwide, sublicensable, irrevocable license under such Mosaic Platform Improvements or Mosaic Intellectual Property to the extent necessary to make, have made, use, offer for sale, sell, import, export, research, develop, market, promote, or otherwise exploit any Products.

7.2 During the term of the Research Plan, Catalyst hereby grants to Mosaic a non-exclusive, worldwide, non-sublicensable, license under any Catalyst Intellectual Property to the extent necessary to conduct the Research contemplated hereunder.

8. INTELLECTUAL PROPERTY. Ownership and prosecution of all Intellectual Property that was first conceived prior to the Amendment No. 2 Effective Date shall be governed by Section 8.1 through Section 8.4 of the Original Agreement, which is hereby incorporated by reference. Ownership, prosecution and enforcement of any Intellectual Property that is first conceived on or after the Amendment No. 2 Effective Date shall be governed by the provisions below. Notwithstanding anything set forth above or elsewhere in this Agreement, effective upon Catalyst's payment

of the Initial Payment under Article 10, Mosaic agrees to assign and hereby assigns to Catalyst all Mosaic Intellectual Property in and to [***] that exists on or before the Amendment No. 3 Effective Date, provided that such assignment shall be void if Catalyst fails to make any Subsequent Payment under Article 10 when due.

8.1 **Independent IP**. Each Party shall retain and own all right, title and interest in and to all data, results, information, patent rights, know-how, or other intellectual property rights ("**Intellectual Property**") controlled by such Party or its Affiliates as of the Amendment No. 2 Effective Date or acquired, in-licensed or generated, invented or discovered by such Party or its Affiliates outside the performance of the Services and without use of the other Party's Proprietary Information.

8.2 **IP Developed under the Research**. All Intellectual Property generated, invented or discovered in the performance of the Services by or on behalf of Mosaic or the Parties jointly shall be owned as follows:

(a) Any Intellectual Property acquired, in-licensed or generated, invented or discovered by Mosaic or its Affiliates in the performance of the Services that is related to Mosaic's platform technology consisting of Mosaic's proprietary thiol-ene click chemistry and modular polymer technology, excluding any materials which incorporate, modify, or improve Collaboration IP or Catalyst Materials ("**Mosaic Platform Improvements**") shall be owned by Mosaic. Mosaic will not use any Mosaic Platform Improvements in connection with the Services without Catalyst's prior written consent.

(b) Any Intellectual Property acquired, in-licensed or generated, invented or discovered by a Party or its Affiliates in the performance of the Services other than Mosaic Platform Improvements ("**Catalyst IP**") shall be owned by Catalyst.

(c) During the term of the Agreement, Mosaic agrees not to conduct research or development activities specifically directed toward [***] or any derivatives thereof either alone or with third parties, other than the Research conducted under this Agreement, provided, however, that such restriction will only apply to or be binding to Mosaic prior to a Mosaic Change of Control.

8.3 **Assignments**. Each Party hereby assigns and transfers to the other Party all of its right, title and interest in and to such Intellectual Property as is necessary to give effect to Section 8.2 and agrees to take, and to cause its employees, agents, investigators, consultants, advisors, collaborators and independent contractors to take, all further acts reasonably required to evidence such assignment and transfer.

8.4 **Patent Prosecution**.

(a) Each Party shall have the sole right and discretion, at its expense, to prepare, file, prosecute, and maintain ("**Prosecution**") any patent applications and patents constituting, in the case of Mosaic, Mosaic Platform Improvements, and, in the case of Catalyst, Catalyst IP.

(b) In the event Mosaic does not desire to undertake or continue the Prosecution of any item of Mosaic Platform Improvements that is incorporated into any Deliverable, Mosaic shall notify Catalyst at least [***]

prior to any required action (or such shorter period as is reasonably practicable for non-extendable deadlines). In such event, Catalyst shall have the right, but not the obligation, to control the Prosecution of such item of Mosaic Platform Improvements, and Mosaic shall cooperate with Catalyst with respect thereto. Catalyst shall keep Mosaic reasonably informed of such Prosecution as requested by Mosaic. It is understood that, in the event Catalyst takes over Prosecution of any Mosaic Platform Improvements in accordance with this Section 8.4(b), Catalyst shall have complete discretion with respect to any decisions regarding such Prosecution, and shall not owe any duties, express or implied, to Mosaic with respect to such decisions.

8.5 **Enforcement**. If Catalyst or Mosaic reasonably believes that any Mosaic Platform Improvements or Catalyst IP is infringed or misappropriated in the Territory by a third party with respect to a product that competes with a Product, or is subject to a declaratory judgment action arising from such infringement in the Territory (collectively, "**Infringements**"), Mosaic or Catalyst (respectively) shall promptly notify the other Party. Catalyst shall have the sole right (but not the obligation) to enforce the Catalyst IP in the Territory with respect to any Infringement, or defend any declaratory judgment action with respect thereto (for purposes of this Section 8.5, an "**Enforcement Action**"). Mosaic shall reasonably cooperate with Catalyst initiating the Enforcement Action (including joining as a party plaintiff to the extent necessary and requested by Catalyst).

9. Representations and Warranties

9.1 **Mosaic Representations and Warranties**. Mosaic represents, warrants and covenants that: (a) Mosaic has the full power and authority to enter into this Agreement and to perform its obligations hereunder, without the need for any consents, approvals or immunities not yet obtained; (b) Mosaic's execution of and performance under this Agreement shall not breach any oral or written agreement with any third party or any obligation owed by Mosaic to any third party to keep any information or materials in confidence or in trust; , and (c) any persons involved in the development of Research services have executed (or prior to any such involvement, shall execute) a written agreement with Mosaic in which such persons (i) assign to Mosaic all right, title and interest in and to the Collaboration IP in order that Mosaic may fully grant the rights to Catalyst as provided herein and (ii) agree to be bound by confidentiality and non-disclosure obligations no less restrictive than those set forth in this Agreement; (e) Mosaic has the right to grant the rights and assignments granted herein, without the need for any assignments, releases, consents, approvals, immunities or other rights not yet obtained.

9.2 **Catalyst Representations and Warranties**. Catalyst represents, warrants and covenants that: (a) Catalyst has the full power and authority to enter into this Agreement and to perform its obligations hereunder, without the need for any consents, approvals or immunities not yet obtained; and (b) Catalyst's execution of and performance under this Agreement shall not breach any oral or written agreement with any third party or any obligation owed by Catalyst to any third party to keep any information or materials in confidence or in trust.

9.3 **Mutual Disclaimers**. Except as otherwise expressly set forth herein each Party hereby disclaims all warranties of any kind, whether express, implied, statutory or otherwise, with respect to any Proprietary Information or other information or materials supplied by such Party to the other Party hereunder, including, without

limitation, any warranties with respect to any specifications for or infringement of any third party rights by the deliverables required or Intellectual Property licensed hereunder.

10. INITIAL PAYMENT AND SUBSEQUENT PAYMENTS

10.1 Initial Payment. Within [***] days after the Amendment No. 3 Effective Date, Catalyst shall pay Mosaic $[***] (the "**Initial Payment**").

10.2 Subsequent Payments. No later than [***] days after the Initiation of the first Phase 1 Clinical Trial for the first C3 Product, Catalyst shall pay to Mosaic $[***]. No later than [***] days after the first IND approval for the first [***], Catalyst shall pay to Mosaic $[***] (the "[***]" and together with the "[***]"). Catalyst shall notify Mosaic of the achievement of any event which triggers any of the Subsequent Payments promptly after Catalyst becomes aware of the achievement thereof. For the avoidance of doubt, the obligation to make Subsequent Payments shall survive any termination of this Agreement for any reason pursuant to Article 12.

10.3 The Initial Payment and Subsequent Payments, upon payment, [***].

11. PAYMENTS

11.1 Payment Method.

(a) All payments under this Agreement shall be made by bank wire transfer in immediately available funds to an account designated by the payee.

(b) Notwithstanding Section 11.1(a), Catalyst may elect, in its sole and absolute discretion, to make each Subsequent Payment by delivering registered shares of Catalyst Common Stock (the "**Catalyst Shares**"), with the number of shares calculated by dividing the [***] or [***], as applicable, by the average closing price of Catalyst's Common Stock on Nasdaq for the five (5) trading days before, but not including, the date of the applicable Subsequent Payment, provided that the total number of shares issuable hereunder shall not exceed 19.9% of Catalyst's outstanding shares as of the Amendment No. 3 Effective Date (the "**Capped Number of Shares**"). For the avoidance of doubt, Catalyst may pay any portion of a Subsequent Payment by delivering Catalyst Shares up to the Capped Number of Shares, provided that Catalyst shall pay the balance of such Subsequent Payment and any future Subsequent Payment, if any, in immediately available funds pursuant to Section 11.1(a). [***]

(c) All dollar amounts specified in this Agreement, and all payments made hereunder, are and shall be made in U.S. dollars.

11.2 Late Payment. Any payments due under this Agreement which are not paid by the date such payments are due under this Agreement shall bear interest to the extent permitted by applicable law at the prime rate per annum quoted by the Bank of America, or its successor, on the first business day after such payment is due, plus an additional [***], calculated on the number of days such payment is delinquent. This Section 11.2 shall in no way limit any other remedies available to either Party.

11.3 **Taxes**. Each Party shall bear and, except as otherwise expressly provided in this Section 11.3, pay any and all taxes, duties, levies, and other similar charges (and any related interest and penalties), however designated, imposed on that Party as a result of the existence or operation of this Agreement. If laws or regulations require that taxes be withheld, the paying Party will (i) deduct those taxes from the remittable payment, (ii) timely pay the taxes to the proper taxing authority, and (iii) send proof of payment to the other Party within [***] days following that payment. Each Party shall cooperate with the other and furnish the other Party with appropriate documents to secure application of the most favorable rate of withholding tax under Law (or exemption from such withholding tax payments, as applicable).

12. TERMINATION

12.1 **Term**. This Agreement shall commence on the Effective Date and continue until the earlier of (a) expiration of all payment obligations under this Agreement, or (b) termination by either Party in accordance with this Article 12. This Agreement may be renewed by mutual written agreement of the Parties. Upon any expiration or termination of this Agreement, any license granted under Section 7.1 shall continue as a perpetual, paid-up, royalty free, nonexclusive license.

12.2 **Termination for Convenience**. Catalyst may terminate this Agreement at its convenience, with or without cause, upon [***] days prior written notice to Mosaic. Mosaic may terminate this Agreement at its convenience, with or without cause, upon [***] days prior written notice to Mosaic, provided that there is no active work plan then in effect.

12.3 **Termination for Cause**. If either Party materially defaults in any of its obligations under this Agreement, the non-defaulting Party, at its option shall have the right to terminate this Agreement by written notice unless the defaulting Party remedies the default within [***] calendar days after receipt of written notice of such default.

12.4 **Effect of Termination**. Upon the effective date of any termination of this Agreement, Mosaic shall promptly cease performing any Research under this Agreement. Upon any termination of this Agreement for any reason, Catalyst agrees to pay Mosaic (a) compensation due for Research actually rendered and Mosaic External Costs incurred under the Research Plan, in accordance with Article 4 and (b) any Subsequent Payments that become due and payable in accordance with Articles 10 and 11.

12.5 **Survival**. Articles 1, 5, 6, 7.1, 10, 11, 13, and 14 and Sections 8.1, 8.2, 8.3, 8.4, 9.3, 12.4, 12.5 and 12.6 shall survive the expiration or termination of this Agreement. Termination of this Agreement by either Party shall not act as a waiver of any breach of this Agreement and shall not act as a release of either Party from any liability for breach of such Party's obligations under this Agreement. Neither Party shall be liable to the other for damages of any kind solely as a result of terminating this Agreement in accordance with its terms, and termination of this Agreement by a Party shall be without prejudice to any other right or remedy of such Party under this Agreement or applicable law.

12.6 **Delivery of Materials**. Upon any termination of this Agreement or at any time upon Catalyst's request, each Party shall promptly return to the other Party any and all of the other Party's Proprietary Information, including, with respect to Catalyst, any Materials. Upon any termination, Mosaic shall also promptly deliver all results of the Research Plan then in progress.

13. Limitation of Liability

To the extent permitted by applicable law: in no event shall either Party be liable to the other Party under any legal theory for any special, indirect, consequential, exemplary or incidental damages, however caused, arising out of this Agreement, even if such Party has been advised of the possibility of such damages; and (b) in no event shall either Party's aggregate liability arising out of this Agreement (regardless of the form of action giving rise to such liability, whether in contract, tort or otherwise) exceed the fees paid and payable by Catalyst hereunder (including, for the avoidance of doubt, the Initial Payment and all Subsequent Payments).

14. General Provisions

14.1 **Independent Contractor Relationship**. Mosaic's relationship with Catalyst shall be that of an independent contractor and nothing in this Agreement should be construed to create a partnership, joint venture, agency or employer-employee relationship between the Parties. Mosaic is not the agent of Catalyst and is not authorized and shall not have any authority to make any representation, contract or commitment on behalf of Catalyst, or otherwise bind Catalyst in any respect whatsoever.

14.2 **Governing Law; Venue**. This Agreement is to be construed in accordance with and governed by the internal laws of the State of Delaware without giving effect to any choice of law rule that would cause the application of the laws of any jurisdiction other than the internal laws of the State of Delaware to the rights and duties of the Parties. Any legal suit, action or proceeding arising out of or relating to this Agreement shall be commenced in a state or federal court in the State of Delaware, and each Party hereto irrevocably submits to the exclusive jurisdiction and venue of any such court in any such suit, action or proceeding.

14.3 **Severability**. If the application of any provision of this Agreement to any particular facts or circumstances shall for any reason be held to be invalid, illegal or unenforceable by a court, arbitration panel or other tribunal of competent jurisdiction, then (a) the validity, legality and enforceability of such provision as applied to any other particular facts or circumstances, and the other provisions of this Agreement, shall not in any way be affected or impaired thereby and (b) such provision shall be enforced to the maximum extent possible so as to effect the intent of the Parties. If, moreover, any provision contained in this Agreement shall for any reason be held to be excessively broad as to duration, geographical scope, activity or subject, it shall be construed by limiting and reducing it, so as to be enforceable to the extent compatible with applicable law.

14.4 **Assignment**. Neither Party shall be entitled to assign, sell, transfer, delegate or otherwise dispose of, whether voluntarily or involuntarily, this Agreement and any of its rights or obligations of this Agreement, without the prior written consent of the other Party, except that this Agreement may be assigned by either Party (including an assignment by operation of law) without the prior written consent of the other Party in connection with a Change of

Control of such Party, and may be assigned by Catalyst without the prior written consent of Mosaic to: (i) an Affiliate or (ii) to an acquirer of all or substantially all of the business or assets of Catalyst to which this Agreement relates, and rights to the Initial Payment or any Subsequent Payment may be assigned, in whole or part, by Mosaic without the prior written consent of Catalyst to a single Affiliate of Mosaic, which Affiliate shall not have any right to further assign such rights. Except as provided herein, any purported assignment, transfer or delegation by a Party shall be null and void. Subject to the foregoing, this Agreement shall be binding upon and shall inure to the benefit of the Parties and their respective successors and permitted assigns.

14.5 **Notices**. Any notice, request, demand, or other communication required or permitted hereunder shall be in writing, shall reference this Agreement and shall be deemed to be properly given: (a) when delivered personally; (b) when sent by facsimile, with written confirmation of receipt by the sending facsimile machine; (c) five (5) business days after having been sent by registered or certified mail, return receipt requested, postage prepaid; or (d) two (2) business days after deposit with a private industry express courier, with written confirmation of receipt. All notices shall be sent to the address set forth on the preamble to this Agreement and to the notice of the person executing this Agreement (or to such other address or person as may be designated by a Party by giving written notice to the other Party pursuant to this Section 14.5).

14.6 **Legal Fees**. If any legal action, including, without limitation, an action for arbitration or injunctive relief, is brought relating to this Agreement or the breach hereof, the prevailing Party in any final judgment or arbitration award, or the non-dismissing Party in the event of a voluntary dismissal by the Party instituting the action, shall be entitled [***].

14.7 **Equitable Relief**. Each Party recognizes that the covenants contained in Sections 6 and 8 hereof are reasonable and necessary to protect the legitimate interests of the other Party, that each Party would not have entered into this Agreement in the absence of such covenants, and that the other Party's breach or threatened breach of such covenants may cause irreparable harm and significant injury, the amount of which shall be extremely difficult to estimate and ascertain, thus, making any remedy at law or in damages inadequate. Therefore, each Party agrees that the other party shall be entitled, without the necessity of posting of any bond or security, to seek the issuance of injunctive relief by any court of competent jurisdiction enjoining any breach or threatened breach of such covenants and for any other relief such court deems appropriate. This right shall be in addition to any other remedy available at law or in equity.

14.8 **Waiver**. The waiver by either Party of a breach of or a default under any provision of this Agreement shall not be effective unless in writing and shall not be construed as a waiver of any subsequent breach of or default under the same or any other provision of this Agreement, nor shall any delay or omission on the part of either Party to exercise or avail itself of any right or remedy that it has or may have hereunder operate as a waiver of any right or remedy.

14.9 **Construction**. This Agreement has been negotiated by the Parties and shall be interpreted fairly in accordance with its terms and without any construction in favor of or against either Party.

14.10 **Captions and Section Headings**. The captions and section and paragraph headings used in this Agreement are inserted for convenience only and shall not affect the meaning or interpretation of this Agreement.

14.11 **Counterparts**. This Agreement may be executed (including, without limitation, by facsimile signature) in one or more counterparts, with the same effect as if the Parties had signed the same document. Each counterpart so executed shall be deemed to be an original, and all such counterparts shall be construed together and shall constitute one Agreement.

14.12 **Entire Agreement; Amendment**. This Agreement (including the Exhibits attached hereto, which are incorporated herein by reference) is the final, complete and exclusive agreement of the Parties with respect to the subject matter hereof and supersedes and merges all prior or contemporaneous representations, discussions, proposals, negotiations, conditions, communications and agreements, whether written or oral, between the Parties relating to the subject matter hereof and all past courses of dealing or industry custom, including the Original Agreement, which Original Agreement shall be deemed null and void and of no further force or effect whatsoever following the date hereof. No modification of or amendment to this Agreement shall be effective unless in writing and signed by each of the Parties.

[*Signature Page Follows*]

In witness whereof, the Parties have caused this Agreement to be executed by their duly authorized representatives as of the Effective Date.

Catalyst Biosciences, Inc.	**Mosaic Biosciences, Inc.**
By: /s/ Nassim Usman	**By**: /s/ Martin stanton
Name: Nassim Usman, PH.D.	**Name**: Martin Stanton
Title: President and CEO	**Title**: CEO
Date: May 8, 2020	**Date**: May 8, 2020

Exhibit 31.1

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

I, Nassim Usman, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Catalyst Biosciences, Inc. for the period ended June 30, 2020;

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

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

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

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

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

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

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

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

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

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

Date: August 6, 2020

/s/ Nassim Usman, Ph.D.
Nassim Usman, Ph.D.
President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

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

I, Clinton Musil, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Catalyst Biosciences, Inc. for the period ended June 30, 2020;

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

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

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

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

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

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

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

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

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

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

Date: August 6, 2020

/s/ Clinton Musil
Clinton Musil
Chief Financial Officer
(Principal 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 on Form 10-Q of Catalyst Biosciences, Inc. (the "Company") for the period ended June 30, 2020 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Nassim Usman, hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 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, as amended; and

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

Date: August 6, 2020

/s/ Nassim Usman, Ph.D.

Nassim Usman, Ph.D.
President and Chief Executive Officer
(*Principal 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 on Form 10-Q of Catalyst Biosciences, Inc. (the "Company") for the period ended June 30, 2020 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Clinton Musil, hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 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, as amended; and

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

Date: August 6, 2020

/s/ Clinton Musil

Clinton Musil
Chief Financial Officer
(*Principal Financial Officer*)