Life Sciences Venture Dealmaking in Difficult Market Conditions

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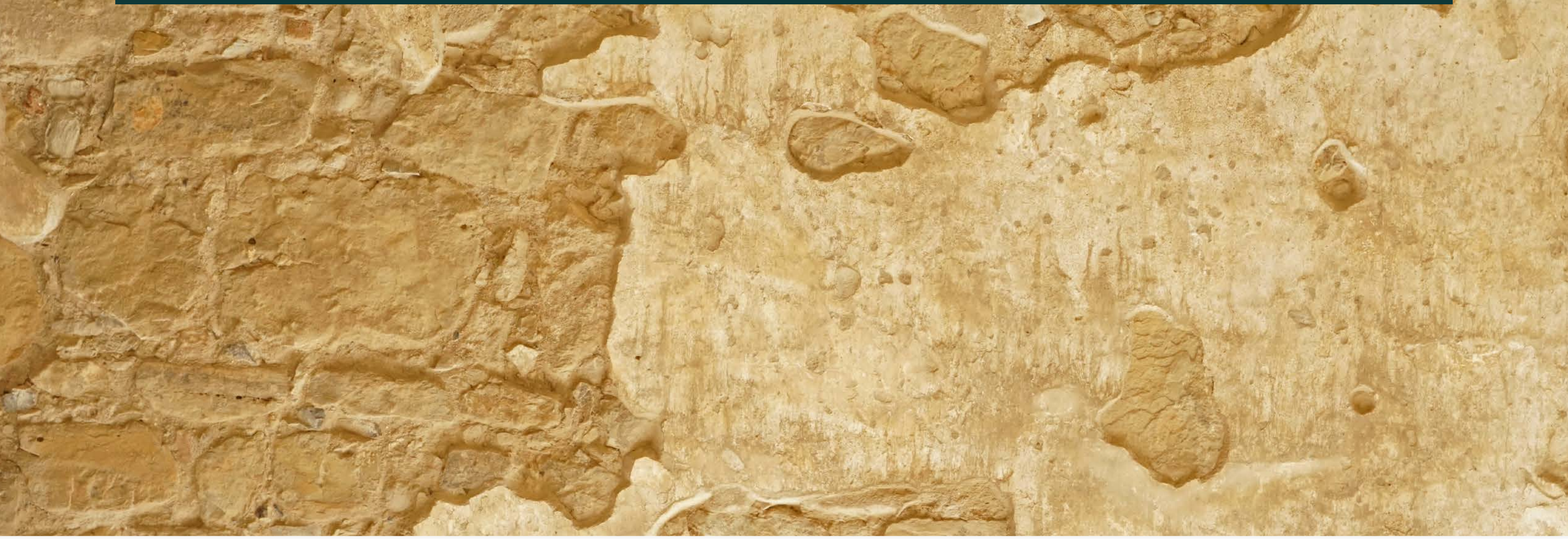


SECTION ONE

Introduction

The COVID-19 pandemic's impact on the life sciences industry persisted into mid-2022 as the exceptional growth that began in 2020 continued.

Although deal value throughout the industry declined in Q2, gene therapy companies showed growth. Drug discovery and biotechnology companies also showed high levels of investment as artificial intelligence (AI) and machine learning (ML) sped the drug discovery process. More businesses in the industry hung in as exit rates fell in 2022.

Explore takeaways of the effects the pandemic and supply chain disruptions have on life sciences innovations in this report to help guide your business forward.

RICH CROGHAN

Life Sciences National Practice Leader

SECTION TWO

Executive Summary

The COVID-19 pandemic and its effects transformed the life sciences industry.

What began as a rapid response to a public health emergency fostered an elevated level of venture dealmaking across the industry. Deal value initially rose 55.9% during 2019–2020 and grew an additional 30% the next year.

Venture investors have large stockpiles of dry powder following a record year for exits in 2021. The first quarter of 2022 represents the strongest quarter for deal value to date with $13.7 billion closed.

> “The amount of funding raised by life sciences companies in the past few years is staggering. Regardless of a company’s size, investors expect companies to be more sophisticated.”
>
> —Michelle Carr, Partner, Assurance Services

Macroeconomic conditions soured in early 2022 with widespread supply chain disruptions, soaring inflation, and rising commodity prices putting pressure on public and private markets alike. Deal value subsequently declined 34.2% to $9 billion in Q2.

Median deal sizes declined for angel and seed deals as well as for late-stage venture capital (VC) deals but rose 26.3% for early-stage VC deals. Pre-money valuations fell flat for late-stage deals, which may be viewed as overvalued as they approach a more difficult initial public offering (IPO) environment. Early-stage pre-money valuations continued to rise.

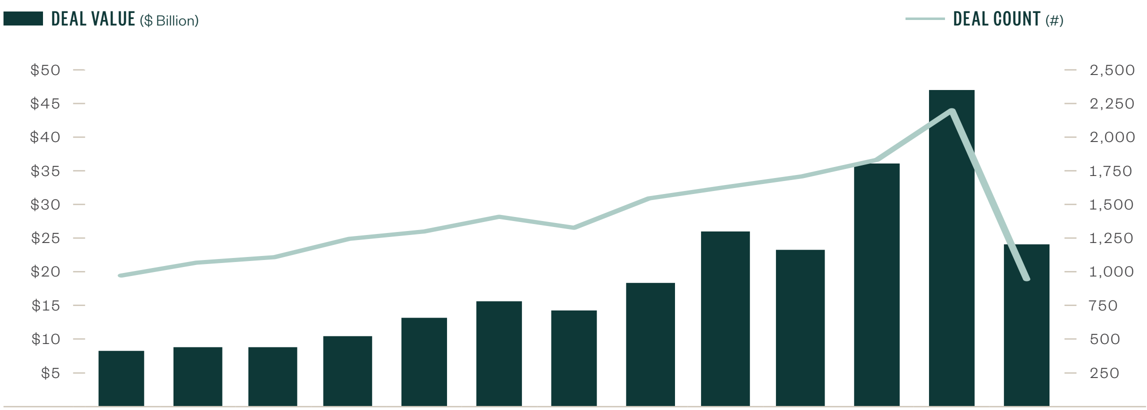
> “The last two quarters had a lot of uncertainty coupled with economic and political changes, but investment inquiry and activity is beginning to come back.”
>
> —Findley Gillespie, Partner, Consulting Services

Gene therapy represents a promising field within life sciences with the potential to address significant medical challenges. Deal value in the space exceeded $1.8 billion demonstrating material quarter-over-quarter growth despite macroeconomic headwinds that caused a decline for broader life sciences activity in the same period.

SECTION THREE

Industry Trends

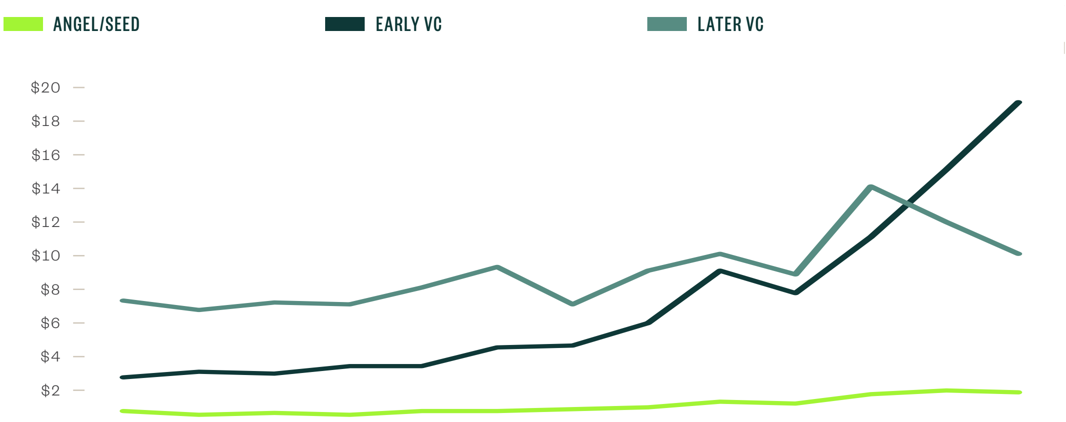
FIGURE 1: VC Deal Activity



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*
VALUE	$8.0	$8.7	$8.7	$10.2	$13.1	$15.4	$14.0	$18.3	$25.8	$23.1	$36.1	$46.9	$24.1
COUNT	968	1,068	1,100	1,234	1,291	1,400	1,320	1,538	1,627	1,710	1,823	2,195	941

*As of July 20, 2022

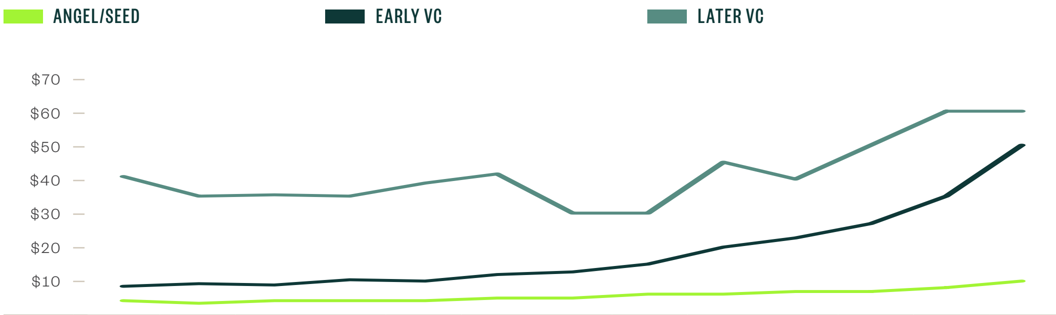
FIGURE 2: Median VC Deal Value ($M) by Type



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*
	$0.8	$0.6	$0.6	$0.6	$0.8	$0.8	$0.9	$1.0	$1.3	$1.2	$1.7	$2.0	$1.8
	$2.8	$3.0	$3.0	$3.4	$3.5	$4.5	$4.6	$6.0	$9.0	$7.7	$11.0	$15.0	$19.0
	$7.2	$6.8	$7.2	$7.0	$8.0	$9.3	$7.1	$9.0	$10.0	$8.8	$14.0	$11.9	$10.1

*As of July 20, 2022

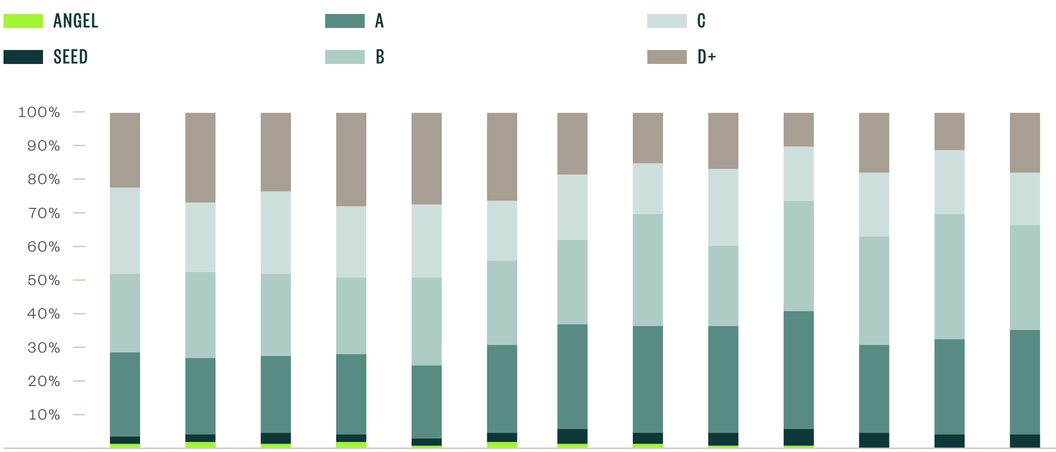
FIGURE 3: Median VC Pre-Money Valuation ($M) by Type



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*
ANGEL/SEED	$4.0	$3.5	$4.2	$4.0	$4.2	$4.8	$5.0	$6.0	$6.0	$7.0	$7.0	$8.0	$10.0
EARLY VC	$8.3	$9.2	$8.7	$10.3	$10.0	$12.0	$12.5	$15.0	$20.0	$22.5	$27.0	$35.0	$50.0
LATER VC	$40.8	$35.0	$35.2	$35.1	$38.7	$41.5	$30.0	$30.0	$45.0	$40.0	$50.0	$60.0	$60.0

*As of July 20, 2022

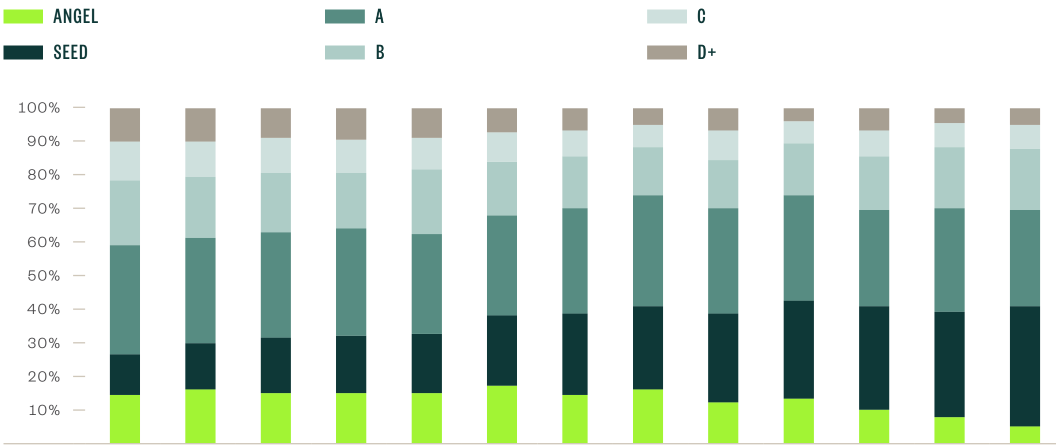
FIGURE 4: Share of VC Deal Value by Series



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*
ANGEL	$0.10	$0.13	$0.11	$0.15	$0.11	$0.26	$0.17	$0.19	$0.14	$0.16	$0.12	$0.10	$0.02
SEED	$0.14	$0.18	$0.23	$0.20	$0.26	$0.38	$0.50	$0.60	$0.86	$1.07	$1.43	$1.74	$0.75
A	$1.77	$1.68	$1.70	$1.94	$2.39	$3.46	$3.83	$5.07	$7.12	$7.27	$8.55	$12.01	$5.81
B	$1.65	$1.86	$1.79	$1.90	$2.93	$3.32	$2.99	$5.32	$5.37	$6.84	$10.62	$15.79	$5.89
C	$1.79	$1.53	$1.81	$1.72	$2.41	$2.31	$2.42	$2.37	$5.22	$3.30	$6.21	$8.12	$2.94
D+	$1.57	$1.96	$1.73	$2.31	$3.04	$3.47	$2.20	$2.44	$3.72	$2.10	$5.84	$4.70	$3.29

*As of July 20, 2022

FIGURE 5: Share of VC Deal Count by Series

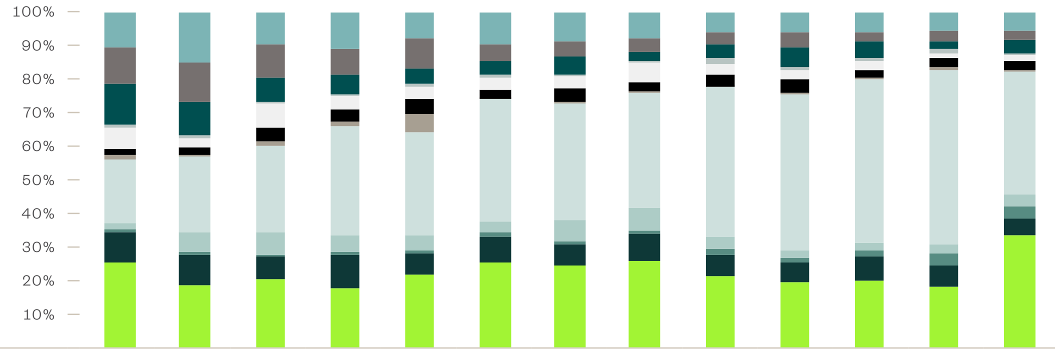


	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*
Angel	104	128	125	138	152	196	156	192	152	171	143	123	30
Seed	84	110	136	158	171	232	254	304	332	377	429	495	216
A	230	246	254	297	298	337	337	397	397	405	400	489	174
B	136	146	144	155	191	178	164	171	184	201	222	295	110
C	83	82	88	89	94	102	77	82	111	87	108	106	42
D+	71	79	73	90	90	82	74	62	81	49	90	75	31

*As of July 20, 2022

FIGURE 6: Share of VC Deal Value by Industry

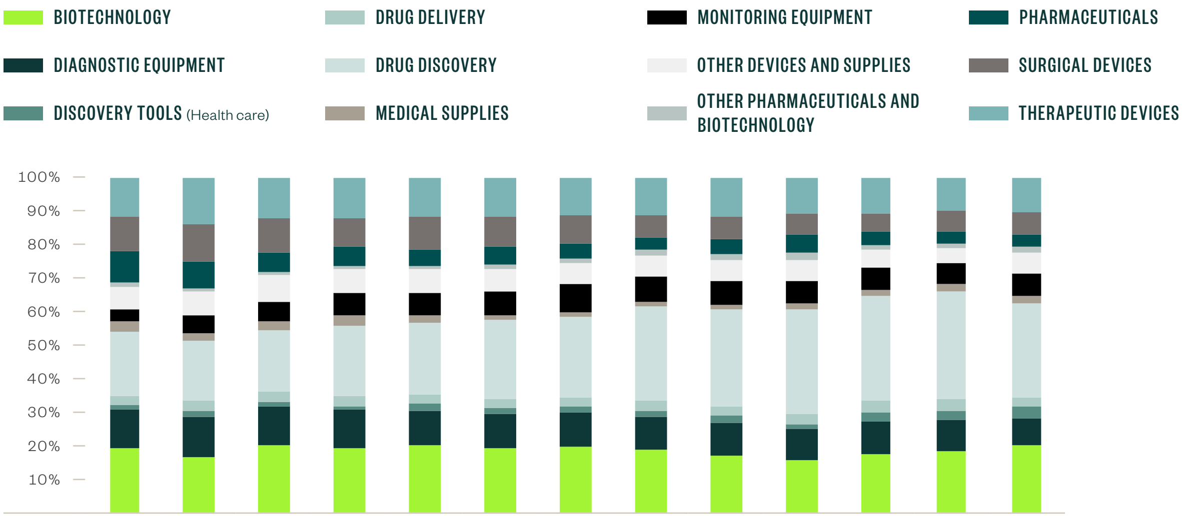
BIOTECHNOLOGY
DRUG DELIVERY
MONITORING EQUIPMENT
PHARMACEUTICALS
DIAGNOSTIC EQUIPMENT
DRUG DISCOVERY
OTHER DEVICES AND SUPPLIES
SURGICAL DEVICES
DISCOVERY TOOLS (Health care)
MEDICAL SUPPLIES
OTHER PHARMACEUTICALS AND BIOTECHNOLOGY
THERAPEUTIC DEVICES



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*
	$2.0	$1.6	$1.8	$1.8	$2.8	$3.9	$3.5	$4.8	$5.6	$4.5	$7.3	$8.6	$8.1
	$0.7	$0.8	$0.6	$1.0	$0.9	$1.2	$0.9	$1.5	$1.5	$1.4	$2.5	$3.0	$1.2
	$0.0	$0.1	$0.0	$0.1	$0.1	$0.2	$0.1	$0.2	$0.5	$0.3	$0.7	$1.6	$0.9
	$0.2	$0.5	$0.6	$0.5	$0.6	$0.5	$0.9	$1.2	$0.9	$0.5	$0.9	$1.2	$0.9
	$1.5	$2.0	$2.2	$3.3	$4.0	$5.6	$4.9	$6.3	$11.6	$10.8	$17.7	$24.6	$8.8
	$0.1	$0.1	$0.1	$0.2	$0.7	$0.0	$0.1	$0.1	$0.1	$0.1	$0.1	$0.3	$0.1
	$0.2	$0.2	$0.4	$0.4	$0.6	$0.4	$0.6	$0.5	$0.9	$0.9	$0.8	$1.2	$0.7
	$0.5	$0.2	$0.6	$0.4	$0.5	$0.6	$0.5	$1.0	$0.9	$0.6	$1.1	$0.8	$0.3
	$0.1	$0.1	$0.0	$0.0	$0.1	$0.1	$0.1	$0.1	$0.4	$0.2	$0.3	$0.5	$0.2
	$1.0	$0.9	$0.6	$0.6	$0.6	$0.7	$0.7	$0.5	$1.1	$1.4	$1.8	$1.2	$1.0
	$0.9	$1.0	$0.9	$0.8	$1.2	$0.8	$0.7	$0.7	$0.9	$1.1	$1.0	$1.4	$0.6
	$0.8	$1.3	$0.8	$1.1	$1.0	$1.4	$1.2	$1.4	$1.5	$1.3	$2.0	$2.4	$1.2

*As of July 20, 2022

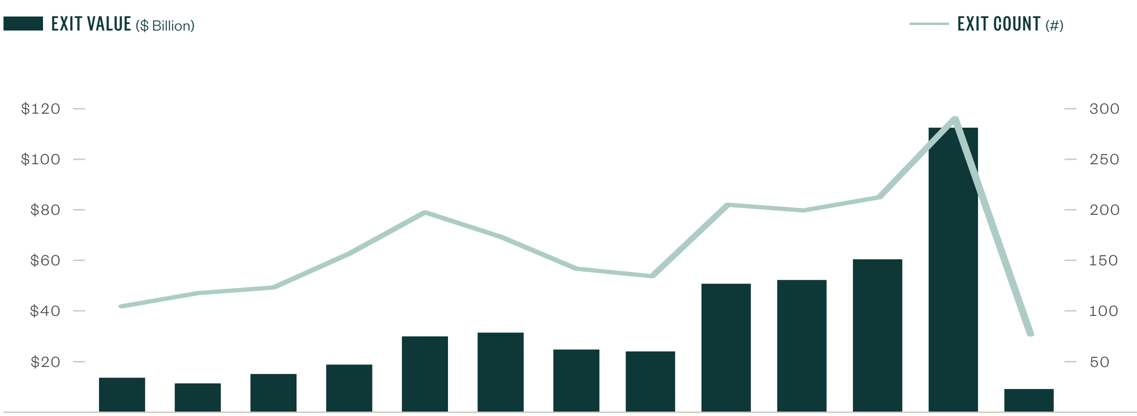
FIGURE 7: Share of VC Deal Count by Industry



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*
	184	178	220	237	260	269	258	288	273	265	317	402	188
	116	127	129	141	131	145	139	152	161	159	180	200	78
	11	17	14	15	28	25	23	27	37	29	49	62	30
	24	36	34	38	37	37	33	51	45	51	60	78	29
	190	192	203	259	276	331	318	429	470	534	577	714	263
	27	23	27	37	27	21	20	24	24	28	34	44	22
	38	55	66	83	87	99	111	118	120	120	122	141	64
	65	76	86	89	93	93	81	95	99	107	94	91	57
	11	13	12	11	15	17	19	23	31	36	27	33	16
	90	85	65	71	63	78	60	55	69	92	69	80	34
	100	121	112	104	126	126	109	104	109	109	101	136	63
	112	145	132	149	148	159	149	172	189	180	193	214	97

*As of July 20, 2022

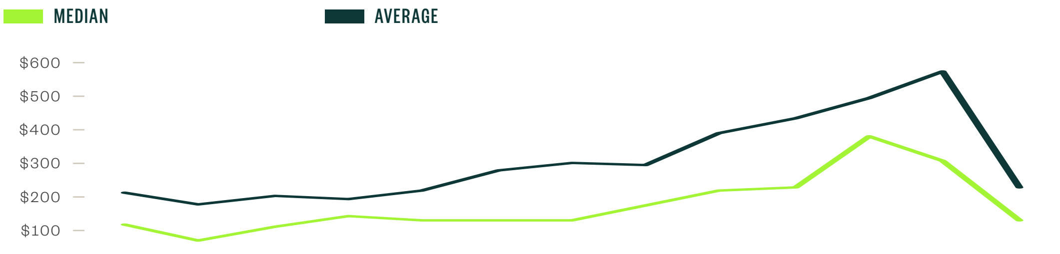
FIGURE 8: VC Exit Activity



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*
VALUE	$12.2	$10.2	$13.6	$16.8	$26.9	$28.0	$22.2	$21.2	$45.5	$46.9	$54.4	$100.6	$8.1
COUNT	94	105	110	140	177	155	127	121	184	178	190	260	69

*As of July 20, 2022

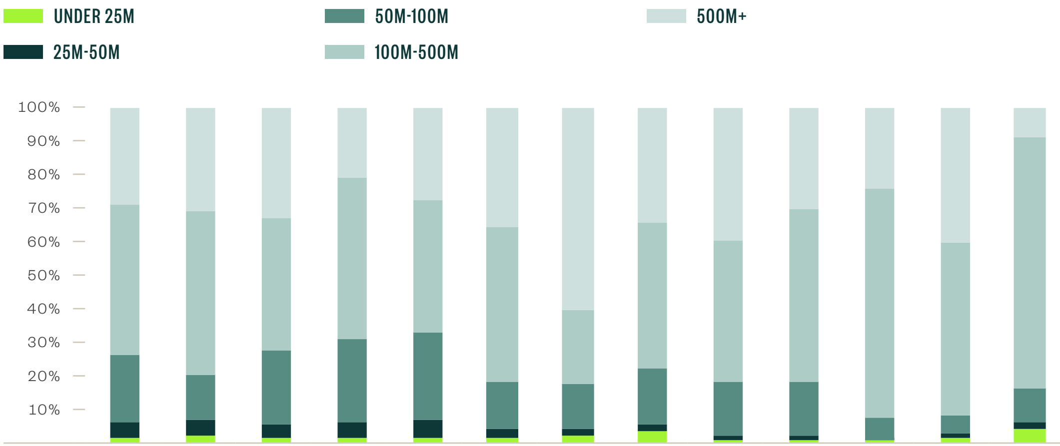
FIGURE 9: Median and Average VC Exit Size ($M)



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*
	$116.3	$68.3	$108.4	$140.3	$130.2	$127.8	$127.3	$172.5	$216.7	$226.2	$377.8	$305.9	$128.4
	$209.9	$176.4	$203.1	$193.1	$216.9	$276.8	$300.4	$295.0	$389.2	$434.0	$494.1	$571.3	$225.5

*As of July 20, 2022

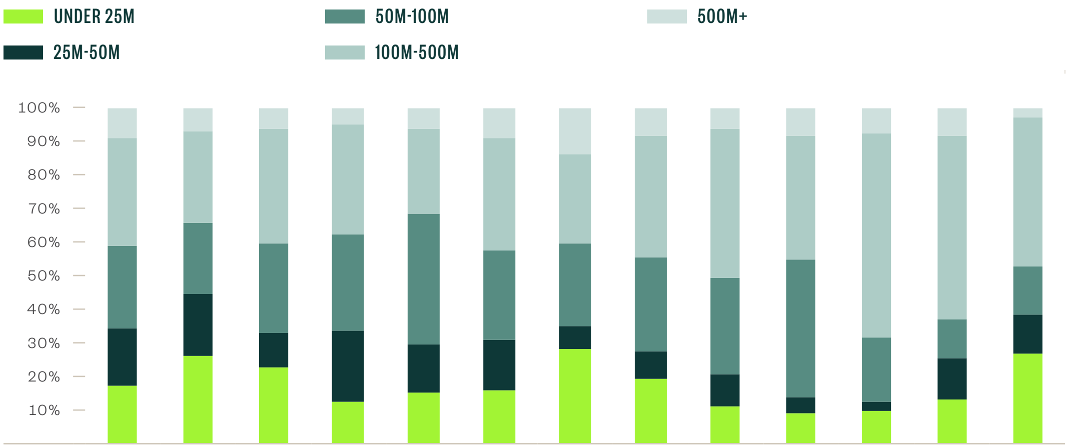
FIGURE 10: Share of VC Exit Value by Size ($B)



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*
	$0.2	$0.2	$0.1	$0.2	$0.3	$0.3	$0.3	$0.7	$0.4	$0.3	$0.2	$1.0	$0.3
	$0.5	$0.5	$0.6	$0.9	$1.4	$0.8	$0.4	$0.4	$0.5	$0.5	$0.2	$1.5	$0.2
	$2.5	$1.4	$3.0	$4.1	$7.0	$3.9	$3.1	$3.6	$7.2	$7.8	$3.6	$5.7	$0.7
	$5.5	$5.0	$5.5	$8.2	$10.8	$12.9	$5.0	$9.4	$19.6	$24.3	$37.5	$52.2	$5.3
	$3.5	$3.2	$4.4	$3.4	$7.3	$9.9	$13.3	$7.2	$17.9	$14.1	$12.9	$40.2	$0.6

*As of July 20, 2022

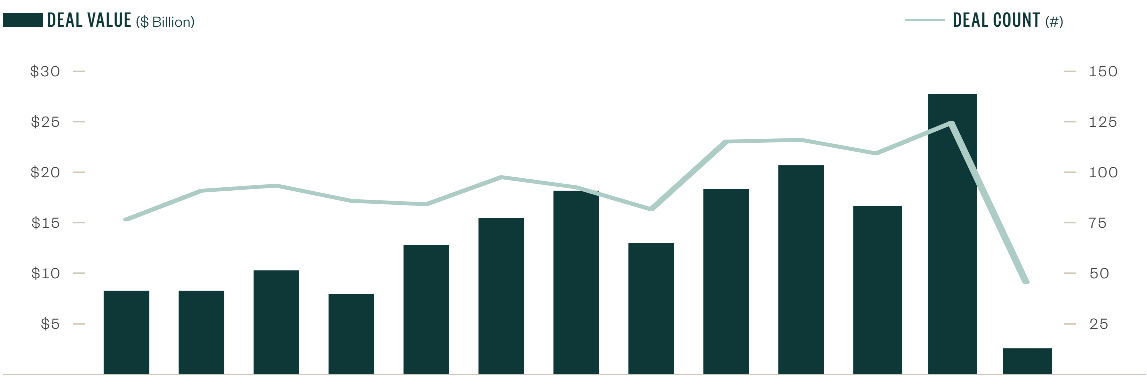
FIGURE 11: Share of VC Exit Count by Size



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*
Under 25M	10	15	15	11	19	16	21	14	13	10	11	23	9
25M-50M	10	11	7	18	18	15	5	6	11	5	3	21	4
50M-100M	14	12	18	25	48	27	18	20	34	44	21	21	5
100M-500M	19	16	23	29	31	34	20	26	52	40	67	95	15
500M+	5	4	4	4	8	9	10	6	7	9	8	14	1

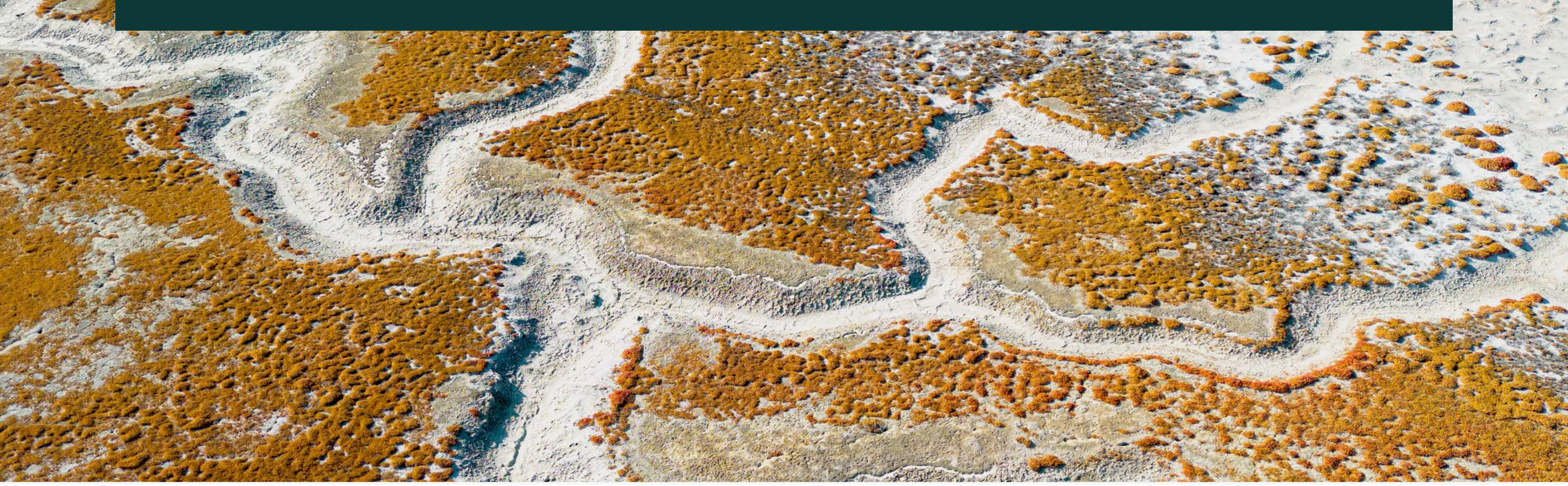
*As of July 20, 2022

FIGURE 12: M&A Activity



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*
VALUE	$8.2	$8.1	$10.2	$7.9	$12.8	$15.4	$18.1	$12.9	$18.2	$20.6	$16.6	$27.6	$2.4
COUNT	76	90	93	85	84	97	92	81	115	116	109	124	45

*As of July 20, 2022



Data collected through July 20, 2022, shows life sciences companies generated over $24 billion in VC deal value, exceeding the annual total for 2019.

A NEW NORMAL

Following two exceptional years after the onset of the COVID-19 pandemic, a new normal appears to be set for life sciences venture activity instead of reverting back to pre-pandemic levels.

Swift regulatory changes and expanded collaborative efforts were made in response to COVID-19 that will have profound effects on future innovations. Following a lucrative year for exits in 2021, venture firms hold significant stockpiles of dry powder.

Dealmakers are committing to the industry by sustaining elevated levels of investment, but the industry isn't immune to the macroeconomic pressures that weighed upon markets at the start of this year. Deal value hit record highs in Q1 2022 with $13.7 billion closed, but subsequently dipped to $9 billion in Q2.

FLATTENING IN THE MIDDLE

Median deal sizes declined slightly for both angel and seed and late-stage VCs as investors became more cautious in the face of market turbulence and record-high valuations.

Early-stage VCs, on the other hand, experienced a 26.3% rise in the median deal size during the same period. Similarly, the median pre-money valuation for early-stage VCs grew 42.9% while late-stage VCs remained flat, ending a two-year period of rapid growth for that population.

> "Institutional investors still have a considerable amount of dry powder available and ready to invest, but valuations may drop to pre-COVID levels with increased scrutiny of companies."
>
> —Findley Gillespie

DRUG DISCOVERY AND BIOTECHNOLOGY

Within life sciences, drug discovery and biotechnology companies typically command the highest levels of investment. 2022 is no exception, with each closing over $8 billion in the first half of the year.

Drug discovery historically pulls in a significantly higher level of investment than biotechnology given its particularly capital-intensive nature, but this remains to be seen with the top two segments keeping pace with each other in 2022.

GENERIC COMPETITION APPROACHING

This could change in the second half of the year, however, with late-stage valuation growth tapering off and the 2025 patent cliff approaching.

The entrance of generic competition in the market will likely drive pharmaceutical giants to stock their pipelines, which could result in greater deal volume and increased M&A activity.

Scarce M&A activity so far in 2022 means just $2.4 billion in deal value generated, representing the slowest first half of a year in over a decade. Macrofactors like supply chain disruptions and recession fears coupled with record high valuations led many firms to take a wait-and-see approach to acquisitions.

> "Companies should expect more reserved investors and fewer IPOs in the near future. That said, it appears that mid-size companies still have cash on hand to structure collaborations and acquisitions, which may be more common."
>
> —Brian Wong, Senior Manager, Tax Services

TECHNOLOGY IMPROVES SPEED

Regional trends carried on in 2022 with the West Coast accounting for the highest total deal value and deal count, followed by New England. California-based Eikon Therapeutics completed the largest deal so far this year with its $517.8 million Series B at a $2.5 billion pre-money valuation.

The company uses advanced engineering and automation to aid in new drug discovery, a trend proliferating across the industry. Automation, artificial intelligence (AI), and machine learning (ML) have the potential to improve speed and safety across a variety of functions, maximizing efficiency for drug discovery players.

EXIT SIZES FALL

Drug discovery companies also closed the highest exit value within life sciences with 22 exits generating $4.2 billion, accounting for more than half of all life sciences' exit value year-to-date (YTD).

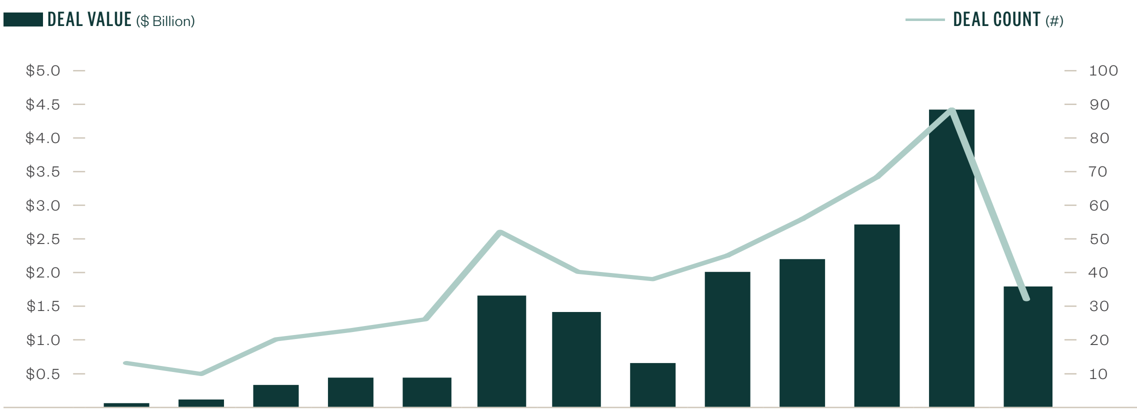
Exit activity remains deflated in stark comparison to 2021 when 260 deals created over $100 billion. Activity initially halted in Q1 and declined further in Q2 as investors' market woes dragged on.

Unsurprisingly, the median exit size took a nosedive in 2022, declining 58% from 2021. Most exits fell within the $100–$500 million range and just one exit thus far in 2022 exceeded $500 million, compared to 14 such exits in 2021 and eight in 2020.

SECTION FOUR

Spotlight: Gene Therapy Shows Promise

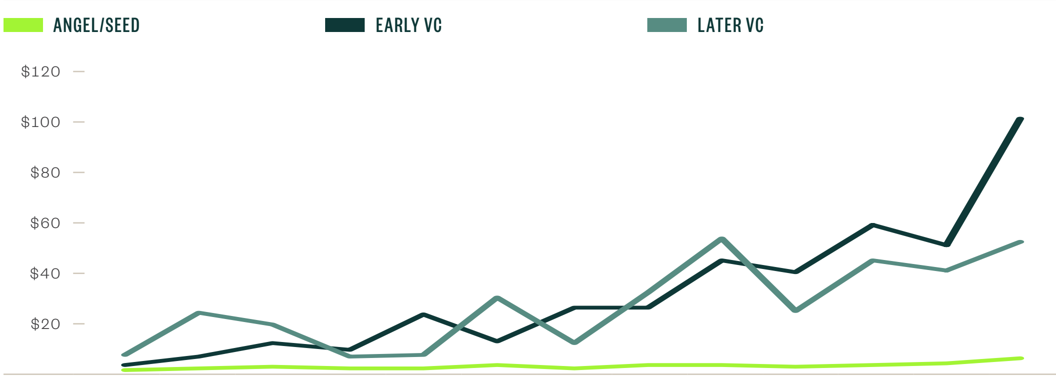
FIGURE 13: Gene Therapy VC Deal Activity



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*
VALUE	$0.1	$0.1	$0.3	$0.5	$0.4	$1.7	$1.4	$0.6	$2.0	$2.2	$2.7	$4.4	$1.8
COUNT	13	10	20	23	26	52	40	38	45	56	68	88	32

*As of July 20, 2022

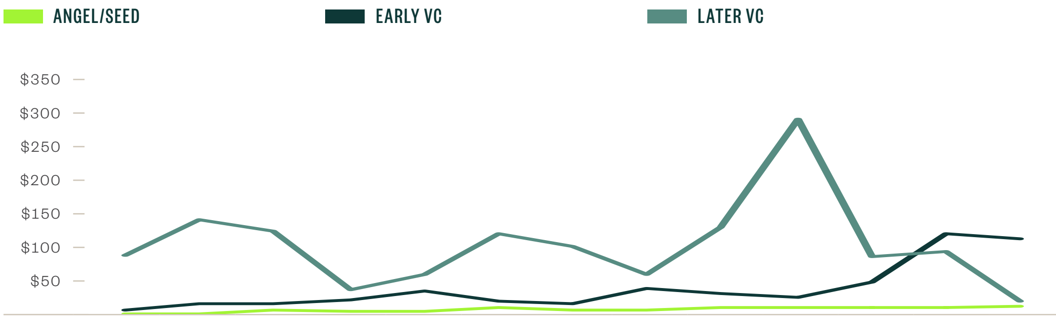
FIGURE 14: Median Gene Therapy VC Deal Value ($M) by Type



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*
Angel/Seed	$0.1	$0.8	$1.4	$1.0	$0.5	$1.9	$1.1	$2.3	$2.0	$1.8	$2.4	$3.0	$4.7
Early VC	$2.4	$5.6	$10.9	$7.9	$22.1	$11.5	$25.0	$25.0	$44.0	$38.7	$57.5	$50.0	$100.0
Later VC	$6.5	$22.7	$18.3	$5.3	$6.0	$29.0	$10.7	$31.0	$52.3	$23.7	$43.7	$40.0	$50.8

*As of July 20, 2022

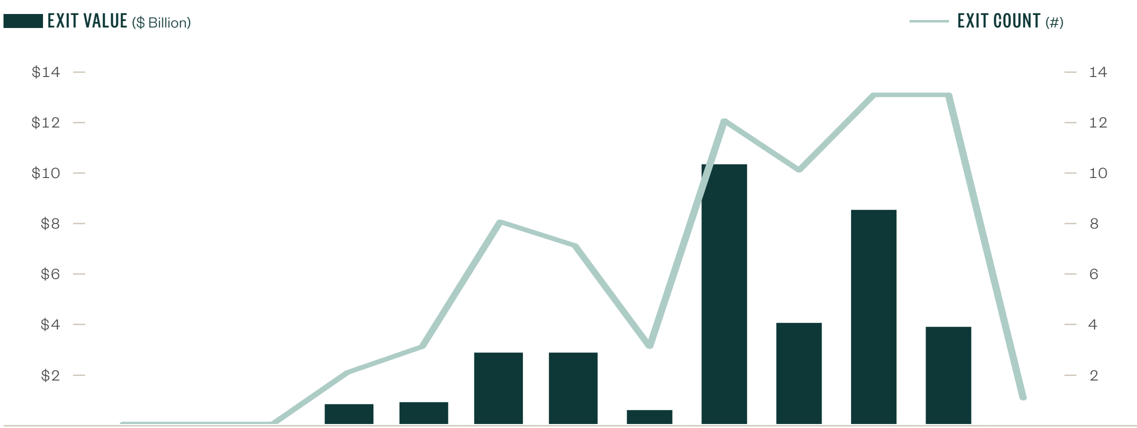
FIGURE 15: Median Gene Therapy VC Pre-Money Valuation ($M) by Type



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*
ANGEL/SEED	$0.0	$0.0	$4.7	$3.0	$3.5	$10.1	$5.0	$6.0	$10.0	$10.0	$9.0	$9.0	$11.5
EARLY VC	$5.2	$15.8	$14.5	$21.6	$34.3	$18.9	$15.9	$37.5	$30.0	$25.0	$47.5	$120.0	$112.5
LATER VC	$88.0	$141.1	$123.6	$36.2	$58.2	$120.1	$100.0	$59.0	$130.0	$290.0	$85.0	$93.5	$18.2

*As of July 20, 2022

FIGURE 16: Gene Therapy VC Exit Activity



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*
VALUE	$0.0	$0.0	$0.0	$0.8	$0.9	$2.8	$2.8	$0.5	$10.2	$4.0	$8.5	$3.8	$0.0
COUNT	0	0	0	2	3	8	7	3	12	10	13	13	1

*As of July 20, 2022

Gene therapy companies—which tackle gene-based diseases using genetic material—attracted elevated levels of VC investment over the past several years, with significant growth in 2021 alongside an overall rise in VC activity.

These companies generated $1.8 billion in deal value so far this year. Deal value in Q2 2022 represents the second-strongest quarter on record, growing 194.8% from Q1. Broader life sciences VC activity declined 34.2% over the same period.

> “With additional funding pushed to life sciences from the surge in health care needs in the pandemic, watch for new solutions, products, and data to drive forward further knowledge.”
>
> —Michelle Carr

GENE THERAPY EXIT VALUES DECLINE

Messenger RNA (mRNA) is used in a form of gene therapy and made headlines during the pandemic for its successful application to COVID-19 vaccines. Since the introduction of CRISPR/Cas9 genome editing over a decade ago, gene therapy experienced a resurgence with **over 400 global active trials** working to advance treatment of several conditions including hemophilia and Alzheimer's disease.

Kriya Therapeutics closed the largest gene therapy deal YTD with its $270.5 million Series C round, which it plans to use to develop a comprehensive gene therapy platform to address several therapeutic areas ranging from ophthalmology to rare diseases.

While many gene therapy treatments are in their infancies, they have the potential to advance scientific understanding of debilitating conditions and transform patient care.

Exit activity among gene therapy companies is historically low with some outlier years. 2018 set the record for exit value at $10.2 billion, which included Moderna Therapeutics' $604.3 million IPO.

In contrast to broader life sciences exit activity, gene therapy exit value declined 54.9% between 2020 and 2021 and was dormant in the first half of 2022 as IPO conditions remained unfavorable.

SECTION FIVE

Looking Forward: Innovation Drives Continued Investment

Life sciences venture dealmaking fared better than other industries during the difficult conditions that emerged in 2022. Activity slowed in Q2 following a peak in Q1 as macroeconomic factors impeded investors and portfolio companies, but long-term prospects remain enticing for checkwriters.

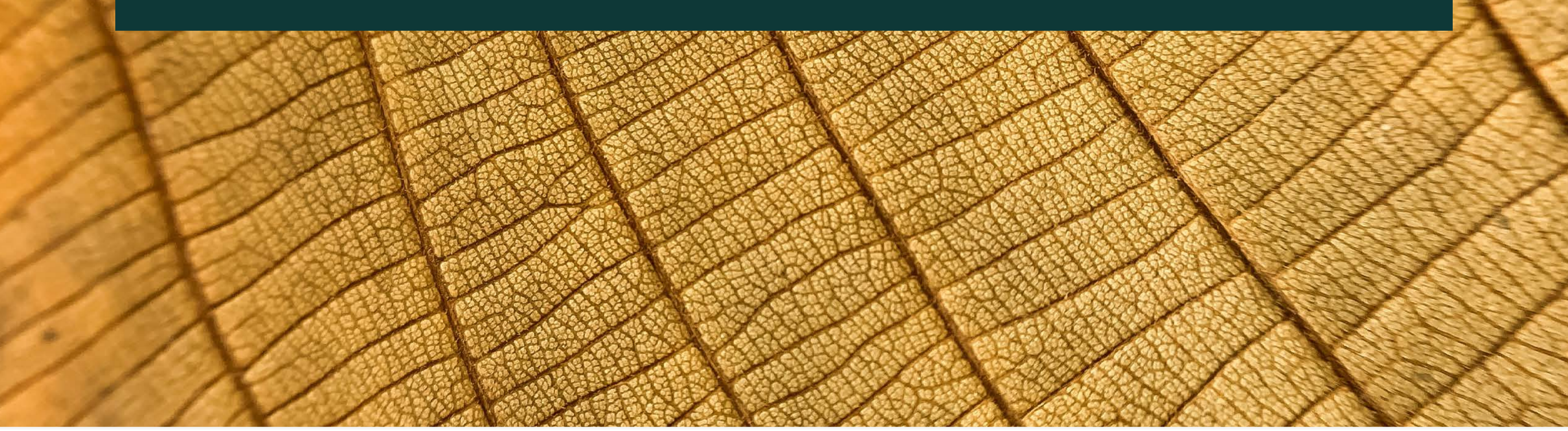
> "[VC and PE investors] realigned their expectations of investments in this sector. They view these investments with normal holding periods instead of an IPO or special purpose acquisition company (SPAC) exit in one to two years with a client barely into the clinic."
>
> —Findley Gillespie

The impact of COVID-19 reverberates through dealmaking as well. Digital health capabilities developed rapidly as providers sought to deliver care from a distance.

The pandemic fostered public and private sector collaboration that will shape future responses to public health initiatives. The application of AI and ML technologies to advance drug discovery and improve clinical processes will continue with the potential to transform business models and patient outcomes.

> "I'm excited to see how AI/ML can accelerate and transform the life sciences industry. With an abundance of technology and life sciences companies, the Bay Area appears primed to lead the way for the integration of technology and life sciences."
>
> —Brian Wong

Expanded gene therapies are likely to advance with increased focus on mRNA applications. Despite momentum slowing in Q2, venture investors demonstrate interest in each of these areas through continued capital deployment, and macroeconomic hurdles are unlikely to dramatically obstruct dealmaking long-term.



SECTION SIX

Methodology

The scope of life sciences was defined using PitchBook’s primary industry codes for Pharmaceuticals & Biotechnology and Healthcare Devices & Supplies. The scope of gene therapy was defined using this life sciences definition along with relevant keyword tags. M&A values don’t reflect extrapolation.

Otherwise, PitchBook’s standard methodologies for report datasets were used. **View full details**.

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