

# Big4Bio

S A N D I E G O

YEAR IN REVIEW  
2022



# Introduction

What a difference a year makes. 2021 had been a record-breaking year for investment according to virtually every metric. But after a strong start in the first quarter of 2022, the bear market took hold. Life sciences venture investment in the San Diego region dropped by half year-over-year. That is fairly consistent with the 44% drop in US life sciences venture investment. IPOs and M&A activity were down as well.

The bear market is the result of macroeconomic issues rather than the performance of any particular region or sector. When the Federal Reserve Bank started raising interest rates for the first time since 2008, tighter credit and fears of a recession caused public and private investors across the board to pull back.

From mid-January year-over-year the Dow Jones Industrial Average dropped from 35,300 to 33,900, up from its nadir in late September of 28,700. The tech heavy Nasdaq dropped 23% during the same period. In contrast, the Nasdaq Biotech Index was up slightly year-over-year from 4,200 a year ago to 4,400 in mid-January after dropping as low as 3,300 in June.

So, it is in the spirit of “things could be worse” that we take a look back at the year that was.

PRESENTED BY:

**Big4Bio**



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# Life Science Industry Market Facts

## Overview

- The number of life sciences employees and enterprises in San Diego both grew by 8% year-over-year. Oddly, San Diego and Greater Philadelphia both boasted exactly the same number of companies in 2022.
- However, while employment growth was robust, the average salary dropped 17%.
- The lab vacancy rate jumped by almost two percentage points, albeit from a very low number in 2021. Rents increased by almost 6%.



**1,946**

COMPANIES



**81,043**

EMPLOYEES



**\$132K**

AVERAGE SALARY



**32%**

5-YEAR

ENTERPRISE GROWTH



**25.5%**

5-YEAR

EMPLOYMENT GROWTH



**\$1.2B**

NIH FUNDING



**4.5%**

LAB VACANCY RATE



**\$74.34**

ANNUAL RENT

PER SQ FT

AS OF Q3

## Top NIH Recipients

### VALUE

**\$595M**

UNIVERSITY OF CALIFORNIA,  
SAN DIEGO

**\$289M**

SCRIPPS RESEARCH  
INSTITUTE

**\$79M**

SALK INSTITUTE

### NUMBER OF GRANTS

**1093**

UNIVERSITY OF CALIFORNIA,  
SAN DIEGO

**216**

SCRIPPS RESEARCH  
INSTITUTE

**93**

SALK INSTITUTE

# Top Stories of 2022

In a year that will be remembered for grim economic news, our reader's favorite stories were about companies that were growing and raising new capital.

## **GPB Scientific Accelerates Cell Therapy Manufacturing with Key Hires, Jan 7, 2022**

GPB Scientific, Inc., a key enabling technology company for cell therapy manufacturing, announced the hiring of Gaurav Vij and Joan Haab, PhD, as it prepares to make...

## **Endeavor BioMedicines Closes \$101M Series B Financing to Advance Clinical-Stage Precision Medicine Pipeline, Feb 7, 2022**

-Endeavor BioMedicines, a clinical-stage biotechnology company targeting the core drivers of terminal diseases including oncology and fibrosis, today announced the...

## **Ocelot Bio Closes \$36 Million Series A Financing, Appoints Katherine Vega Stultz as President and Chief Executive Officer, Mar 23, 2022**

Ocelot Bio, Inc., a clinical-stage biopharmaceutical company focused on the development of innovative therapeutics to treat complications of end-stage liver...

## **Illumina forced to pay almost \$334M as it loses DNA sequencing patent case, May 9, 2022**

A federal jury in Delaware on Friday ordered Illumina to pay Complete Genomics Inc., a subsidiary of the BGI Group, the world's largest maker of commercial...

## **Replay Launches with \$55 Million Seed to Reprogram Biology by Writing and Delivering Big DNA, July 25, 2022**

Replay, a genome writing company reprogramming biology by writing and delivering big DNA, today announced its launch with \$55 million in seed....

## **Toragen, Inc. Announces the Appointment of Board of Directors and Senior Staff, Aug 15, 2022**

Toragen, Inc., a San Diego-based biotechnology company focused on developing, repurposing and commercializing uniquely selective drugs targeting cancers caused by t...

## **RayzeBio Propels Forward with \$418 Million Raised Since Inception to Advance Targeted Radiopharmaceuticals for Cancer, Sept 13, 2022**

RayzeBio, Inc., a targeted radiopharmaceutical company developing an innovative pipeline against validated solid tumor targets, today announced a \$160 million Series...

## **Ventyx Biosciences Announces \$176.6 Million Private Placement of Common Stock, Sept 19, 2022**

Ventyx Biosciences, Inc. (Nasdaq: VTYX) ("Ventyx"), a clinical-stage biopharmaceutical company focused on advancing novel oral...

## **Palisade Bio Announces Executive Leadership Transition, Oct 11, 2022**

Palisade Bio, Inc. (Nasdaq: PALI), a clinical stage biopharmaceutical company advancing therapies for acute and chronic gastrointestinal...

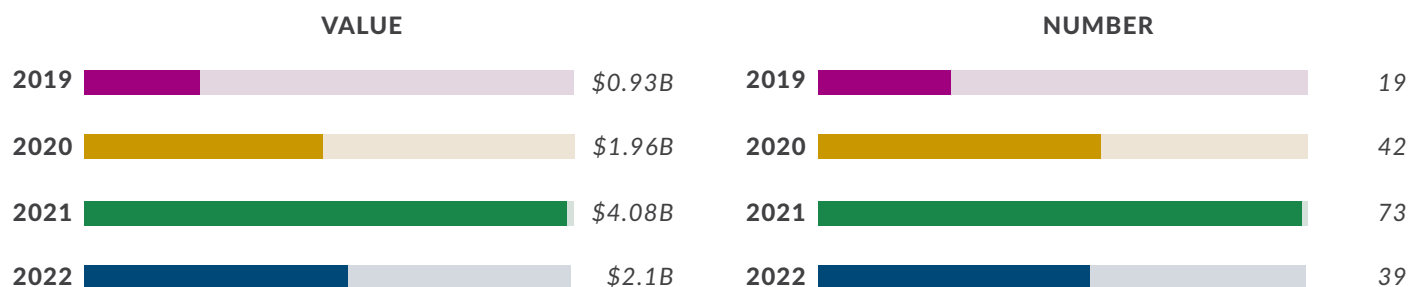
## **Rejuvenate Bio Launches New Office in San Diego, Nov 7, 2022**

Rejuvenate Bio, today announced the launch of its new office in San Diego, which will help foster and accelerate the discovery and development of gene therapies...

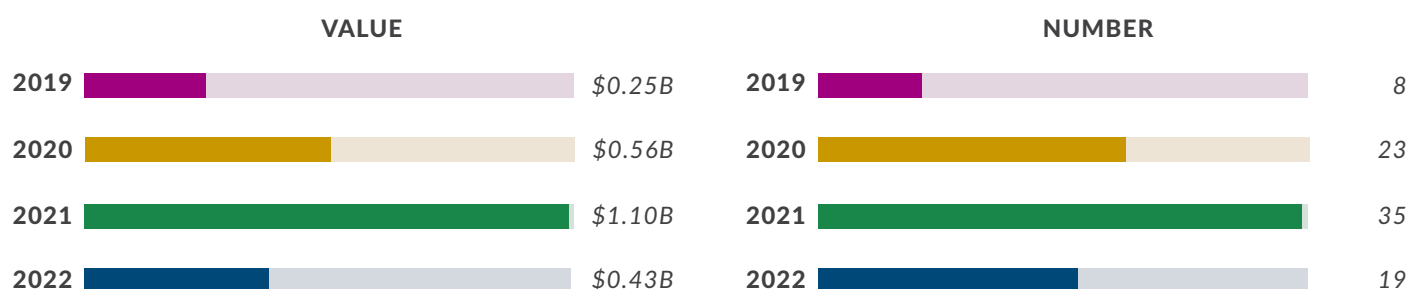
# Financings

After doubling between 2020 and 2021, venture investment returned to 2020 levels in 2022. However, unlike our other Big4Bio markets, early-stage investments were also down by more than half year-over-year. In our other three markets early-stage investment was stable year-per-year.

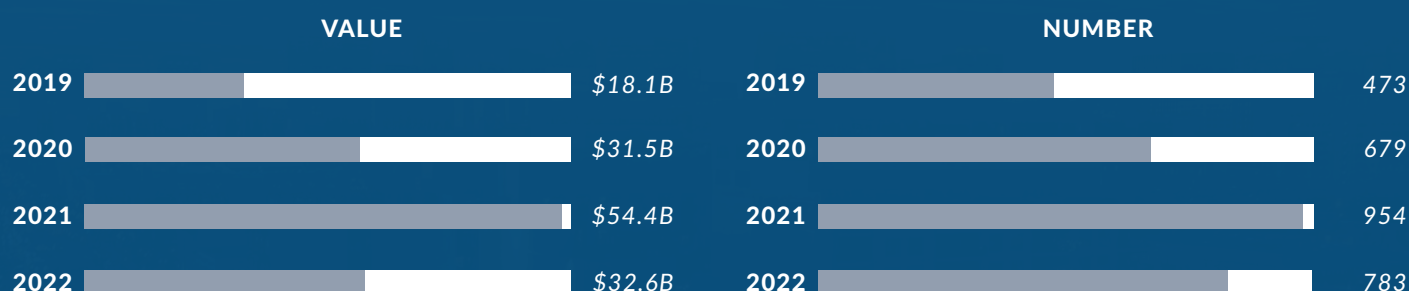
## San Diego Area Venture Rounds (Biopharma, Medtech, Diagnostics)



## San Diego Seed and Series A Rounds (Biopharma, Medtech, Diagnostics)



## All US Healthcare & Life Sciences Venture Investments





# Financings

## Top Three Deals

- The largest venture deal of the year in a San Diego company was a \$625M Series D investment in National Resilience. The manufacturing company provides broad customized manufacturing services to the life sciences industry. The investors in the round were not disclosed.
- RayzeBio received a \$160M Series D investment that was led by Viking Global Investors. The San Diego company is developing radiopharmaceuticals for the treatment of cancer.
- Rounding out the top three investments was a Series B round for \$147.5M in Aspen Neurosciences. GV (Google, Alphabet) led the investment round in the San Diego-based company that is developing stem cell-based therapies for the treatment of Parkinson's disease.

## M&A

In the largest M&A deal of the year, Bristol Myers Squibb acquired Turning Point Therapeutics for \$4.1B in cash at \$76 per share and a 122% one-day premium. Turning Point has Phase III and Phase I assets for the treatment of non-small cell lung cancer and other solid tumors.

The second largest deal came in a \$320M in the form of an all-cash acquisition of ViaCyte by Vertex. ViaCyte's lead programs include a Phase I/II and Phase I asset for the treatment of Type1 diabetes.

Finally, Maraval LifeSciences acquired MyChem for \$240M in cash and undisclosed additional milestone payments. MyChem makes ultra-pure nucleotides including natural nucleotides, modified nucleotides and dye-labeled nucleotides.

## IPOs

The IPO window was slammed shut in 2022 for San Diego life sciences companies. There was a total of only eight life sciences IPOs in the US in 2022, down from over 70 in 2021. The chill on public offerings wasn't limited to the life sciences sector. Only \$18B was raised in IPOs across all industries in the US in 2022, down from a record-setting \$275B raised in 2021.

# Life Science Cares San Diego 2022 Recap

## A Year of Growth and Impact

2022 marked our second full year for Life Science Cares here in San Diego. It has been a tremendous year of growth and momentum. We have had so many companies and leaders in the Life Science community responding in full force to the call to action to give back and help those in our community who are impacted by poverty. The needs in San Diego were many with more of our neighbors facing homelessness, hunger and lack of access to educational resources and economic opportunities. Many of the support programs put in place during the pandemic ended, resulting in thousands of individuals and families facing inflation, higher prices and less money to make ends meet.

Throughout 2022 Life Science Cares San Diego evolved as THE platform for individual employees, companies and life science leaders to unite in giving back through volunteering, donation drives and contributions. In 2022 due to the generosity of the San Diego Life Science sector we were able to hit \$1M in grants to local high performing non-profits, establishing Life Science Cares as a substantial philanthropic force within the local community of need. Life Science Cares continued to focus efforts on helping people with basic needs, access to education, and economic opportunity with support from our Corporate Partners, Board of Advisors and via our outreach and fundraising events.

### Thanks for our Corporate Partners

Life Science Cares is a powerful partner in your company's commitment to positive social change. Companies are recognizing, more than ever, the importance of supporting community-based efforts that align with employee values and motivate volunteerism.

Life Science Cares collaborates with your employees and industry leaders to select nonprofit partners in our local community doing the best work in fighting poverty. 2022

## OUR 2022 IMPACT BY THE NUMBERS

**\$770K**

INVESTED IN **13** HIGH IMPACT  
NONPROFIT PARTNERS

**150**

COMPANIES ENGAGED &  
GROWING THROUGH CORPORATE  
PARTNERSHIP & SPECIAL EVENTS

**2,100**

VOLUNTEERS

**5,534**

TOTAL HOURS  
VOLUNTEERED

**\$112,000+**

WORTH OF GOODS DONATED  
TO NONPROFIT PARTNER  
ORGANIZATIONS

**70**

INFLUENTIAL LEADERS  
ON OUR BOARD OF ADVISORS

welcomed 40 corporate Partners who contributed treasure and talent to help those in need and provide financial support through grants and direct donations.

Our Corporate Partners engage in seasonal campaigns for meaningful volunteer engagement that address pressing needs in our community. This past year volunteers via our Corporate Partners contributed over 5,000 volunteer hours through our non-profit partners and directly impacted over 30,000 neighbors in need.

Some highlights from our Corporate Partnership efforts include providing over 300 backpacks to students in need! A big thank you to Kura Oncology, Illumina, Boundless Bio, Bristol Myers Squibb, Alterome Therapeutics and Mirati Therapeutics for providing backpacks filled with school supplies to under-resourced students. Through our amplified effort we were able to impact 300 families who did not have to worry about how to afford school supplies for their kids this school year.



# Life Science Cares San Diego Impact Metrics

January 2021 - December 2022

**30,260**

Community members  
in need directly  
supported by LSC  
Corporate Partners

**5,534**

Volunteer hours by  
LSC Corporate Partner  
Employees

**33,598**

Meals provided to food  
insecure families and  
senior citizens

**1,445**

Student connections  
with STEM professionals

**4,509**

Low-income individuals  
receiving critical supplies

We were also able to connect nearly 1500 students to Life Science careers through career conversations and onsite tours and visits. IONIS Pharmaceuticals hosted the high school students of Junior Achievement on-site at their office! Students were able to learn about a variety of careers in the life science field, and speak one-on-one with IONIS employees to learn more about their academic and professional life paths.

Life Science Cares is also connecting companies who want to supply food and critical needs to those who need it the most. Our united efforts helped 4000 individuals, children and families with critical supplies to help them get through hard times and provided food for nearly 34,000 meals. Highlights include Vividion Therapeutics who assembled care kits for 800 homebound senior citizens and Alterome Therapeutics who held a food drive and donated enough food to provide 610 meals for food insecure families in San Diego.

Companies are also working with Life Science Cares to give everyone a chance to give back whether they are

virtual, onsite or remote. Mirati Therapeutics held a full Month of Service with give back options for all 500 of their employees. During the month the team packed snack kits for kids undergoing chemotherapy, provided backpacks of school supplies to under-resourced students, shared their love of science with local students, and handmade blankets for low-income senior citizens.

The 2022 holiday season was overflowing with generosity from the Life Science community. Over this past holiday season, as schools closed for winter vacation, many students who rely on meals provided in schools were facing alarming food insecurity. Life Science Cares reached out to corporate partners about the need for food and worked with several partners to coordinate food drives on-site in partners' offices. This resulted in 1,700 meals being provided to food-insecure families over the holiday season.

2022 also included some high energy and inspiring events including the IMPACT Breakfast and the MINI Golf outreach event.



## A Look Ahead to 2023

This outpouring of support and willingness to give back is going to continue into 2023. We will be working toward increasing our grant-making to over \$1M, substantially increasing our volunteer opportunities, and growing Corporate Partnership.

We are also launching Project Onramp - Project Onramp creates paid summer internships for college students who are under-resourced and often from under-represented groups or first-generation — helping to bridge the opportunity gap for these promising young people. Project Onramp host companies commit or create internships for these high-performing students. They set aside an established internship for Onramp candidates, or create new positions for Onramp to fill. Internships are not limited to STEM-related roles.

If you are interested in getting involved as a Corporate Partner, hosting an intern or joining our Board of Advisors or simply making a contribution or volunteering please reach out to [Leane@lifesciencecares.org](mailto:Leane@lifesciencecares.org) or learn more at [lifesciencecares.org/san-diego](https://lifesciencecares.org/san-diego).



### Mini Golf for Good

On September 21, 2022, 300 Life Science industry employees came together to Mini Golf for Good on the lawn at SD Tech by Alexandria. Life Science Cares San Diego brought out 18 holes of miniature golf that highlighted each of our 14 nonprofit partners and teams from the Life Science community to connect the Life Science industry with our Non-Profit partners and learn more about the great work they are doing in our community to disrupt the cycle of poverty. With a sellout crowd and generous sponsors, we raised nearly \$50,000 for our work—creating access to basic needs, education, and opportunity through grant-making and volunteering.



### IMPACT Breakfast

On October 19, 2022, 150 Life Science executives and employees joined us for our first annual IMPACT Breakfast at Farmer & The Seahorse. The event was to celebrate the impact the Life Science industry had on disrupting the cycle of poverty in San Diego in 2022. Among our attendees were the Executive Directors and CEOs of our 14 nonprofit partners that came to share their work with our community.



# 2023 Outlook

## Biocom California

Going into 2023, the life science industry can expect elected officials to focus their attention on healthcare access and affordability, climate change, transportation, and economic development.

The new year marks the beginning of the 118th Congress, which comprises a Democratic-led Senate and a newly Republican-led House, both of which operate with very slim majorities. Internal party divisions, as exemplified by the House's chaotic Speaker election, will add to the already daunting task of legislating in an evenly divided Congress. Congress may consider legislation pertaining to drug pricing, data privacy, taxes, trade, and intellectual property. We can also anticipate the House to conduct oversight hearings of federal agencies and signature programs of the current Administration.

In the California Legislature, some lawmakers may continue to press for harmful price setting initiatives in the health care system and the discussion around "single payer" will likely continue behind the scenes, if not openly, in legislation. Although the legislature will likely be dogged by a significant budget shortfall that limits new programs and coverage decisions. As part of Biocom California's proactive agenda, the life science industry will continue to work to expand access to therapies and reduce patients' costs at the pharmacy counter. Biocom California will also work to protect supply chains from disruptive legislation that could conflict with federal regulations. Finally, the new Office of Health Care Affordability could present new challenges for providers and hospitals by pressing for price setting within the health care system with far reaching consequences for all entities in the system.

In San Diego, an updated version of the city's Climate Action Plan will bring new rules for sustainability, including potential building electrification. Policies to change allowable density in areas around transit thoroughfares and an update to the land-use plan for San Diego's life science hub will bring significant changes to future developments for our industry. We supported the Blue Line trolley extension to San Diego's life science hub and will continue to work with MTS and businesses on last-mile connections. A group of businesses and associations including Biocom California are working with the city on an update to its Economic Development Strategy, and we continue to meet with the city to address permitting delays. We look forward to working with newly elected Councilmember Kent Lee, whose District 6 will now include major parts of the life science industry as a result of redistricting.

Biocom California looks forward to advocating for the growth and success of our incredible life science partners.





# Conclusion

As emergency Covid measures were dialed back, the world economy found itself facing serious headwinds by the second quarter of 2022 fueled by price inflation, tighter credit and, to top it off, a war on the eastern fringe of Europe.

The life sciences sector is not immune from these macroeconomic forces, but there are signs that it is faring a bit better than the economy overall. Early-stage investment remains stable in most markets. On the public investment side, the Nasdaq Biotech Index, which began its decline in September 2021 is back above January 2022 levels.

With the IPO window still firmly shut, venture investors will have to put more capital into the LIPO (“Likely to IPO”) companies in their portfolios and impose harsh new spending priorities on all of their companies. But it appears that there is still an appetite for investment in Seed and Series A companies.

And while M&A activity was also anemic in 2022, buyers are sitting on a lot of dry powder (as are VCs) while they inch nearer and nearer to the patent cliff. It is expected that that money will be put to work before the end of the year as the macroeconomic picture improves towards the end of the year.





# Telling Stories

## with Numbers

I work with companies in the life sciences space to help them tell compelling, persuasive and well-researched stories.

*What story can I help you tell?*

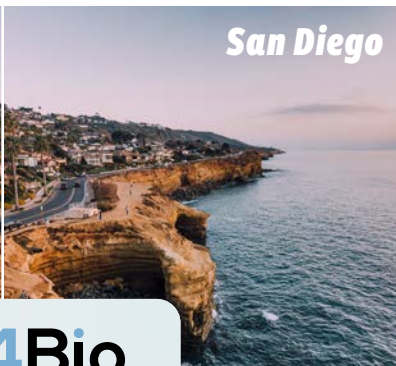
**Boston**



**Philadelphia**



**San Diego**



**San Francisco**



**Big4Bio**

**BIG NEWS!** Big4Bio is expanding to Big8Bio!

— These 4 new regions —

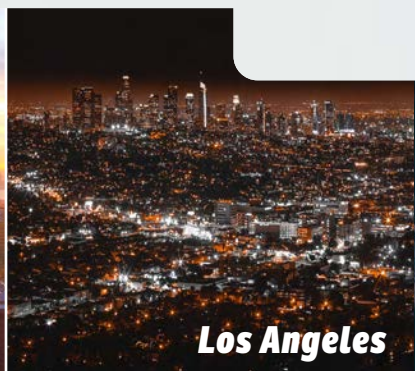
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will be joining us SOON!

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# San Diego Sponsors

A BIG THANK YOU  
to **Big4Bio** 2022 Sponsors!  
SAN DIEGO

## Center Sponsors



## Gold Sponsors



## Title Sponsors



## Year-In-Review Data & Information Partners

