

Big4Bio

B O S T O N

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 Boston area dropped by half year-over-year slightly outpacing 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 companies in the Boston market more than doubled in 2022 with a commensurate increase in employment. Boston now easily outpaces all of the markets we track in terms of those two metrics.
- However, the average salary at Boston life sciences companies dropped 20% year-over-year.
- Despite vacancy rates increasing 72%, rent for lab space increased 12%.



6,670
COMPANIES



264,116
EMPLOYEES



\$146K
AVERAGE SALARY



30.8%
5-YEAR
ENTERPRISE GROWTH



37.4%
5-YEAR
EMPLOYMENT GROWTH



\$3.28B
NIH FUNDING



8.1%
LAB VACANCY RATE



\$96.81
ANNUAL RENT
PER SQ FT

AS OF Q3

Top NIH Recipients

VALUE

\$560M

MASS GENERAL
HOSPITAL

\$382M

BRIGHAM & WOMEN'S
HOSPITAL

\$216M

BOSTON
CHILDREN'S HOSPITAL

NUMBER OF GRANTS

1025

MASS GENERAL
HOSPITAL

662

BRIGHAM & WOMEN'S
HOSPITAL

432

BOSTON
CHILDREN'S HOSPITAL

Top Stories of 2022

Our readers' most clicked stories included job cuts, reorganizations and the appointment of Margo Georgiadis as CEO-Partner of Flagship Pioneering.

Kaleido confirms layoffs, halts planned phase 2 and appears to have ended COVID-19 program, Jan 28, 2022

Kaleido Biosciences confirmed it has shrunk its workforce. The Flagship Pioneering-incubated biotech also halted work on a planned phase 2 trial in chronic...

Adagio Therapeutics Announces CEO Succession Plan, Feb 18, 2022

Adagio Therapeutics, Inc. (Nasdaq: ADGI), a clinical-stage biopharmaceutical company focused on the discovery, development and commercialization of ...

Flagship Pioneering Announces Appointment of Margo Georgiadis as CEO-Partner, April 7, 2022

Flagship Pioneering, the bioplatfrom innovation company, announced today that former Ancestry.com CEO Margo Georgiadis is joining Flagship as n...

Mass. Biotechs have cut thousands of jobs so far in 2022. Here's a list. April 21, 2022

A slew of Massachusetts-based biopharmaceutical companies have been caught in the crosshairs of an uncertain market....

Genocea Announces Wind Down of Operations and Delisting From NASDAQ, May 24, 2022

Genocea Biosciences, Inc. (Nasdaq: GNCA), a biopharmaceutical company developing next-generation neoantigen immunotherapies, announced that its,...

Evelo Biosciences Announces Succession Plan, Aug 11, 2022

Evelo Biosciences, Inc. (Nasdaq: EVLO), a clinical stage biotechnology company developing a novel platform of orally delivered medicines acting on the small...

Alnylam Announces New Management Appointments, Sept 21, 2022

Alnylam Pharmaceuticals, Inc. (Nasdaq: ALNY), the leading RNAi therapeutics company, today announced the appointment of two new members to the...

Johnson & Johnson to Acquire Abiomed, Nov 1, 2022

Johnson & Johnson (NYSE: JNJ), the world's largest, most diversified healthcare products company, and Abiomed (NASDAQ: ABMD), a world leader...

Jnana Therapeutics Raises \$107 Million to Advance Lead PKU Program and Progress Therapeutics Pipeline Discovered by the RAPID Platform, Nov 15, 2022

Jnana Therapeutics ("Jnana"), a biotechnology company leveraging its next-generation chemoproteomics platform to discover medicines for challenging-to-drug...

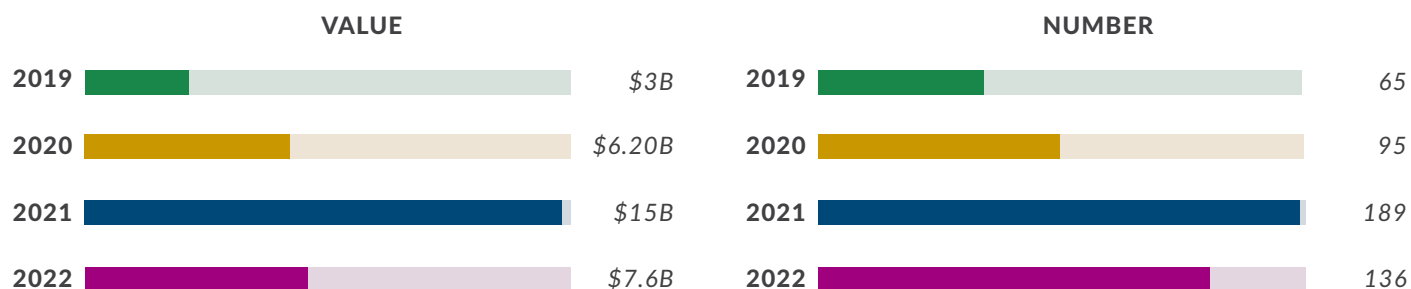
Another biotech cuts staff as Atlas startup lays off 25%, Dec 1, 2022

A Cambridge biotech based on synthetic biology is cutting its staff by one-quarter in order to "optimize"....

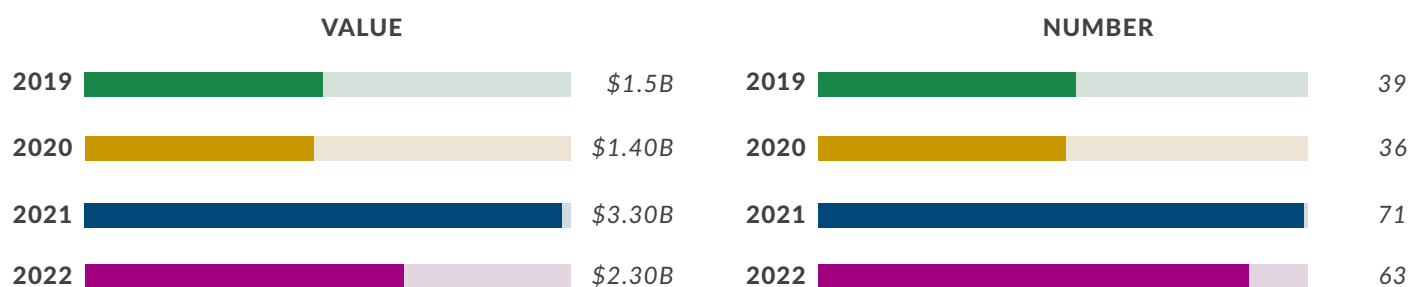
Financings

Venture investment in Boston life sciences companies dropped almost 50% in 2023, although early-stage investment fared a bit better dropping only 28%. But when compared to 2020, venture investment was up by just over 25%.

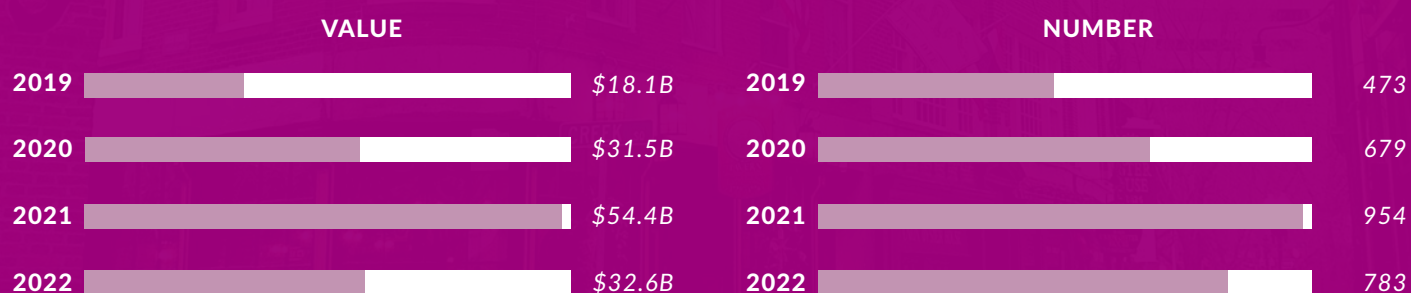
Boston Area Venture Rounds (Biopharma, Medtech, Diagnostics)



Boston Seed and Series A Rounds (Biopharma, Medtech, Diagnostics)



All US Healthcare & Life Sciences Venture Investments



Financings

Top Three Deals

- The largest investment in a Boston Area life sciences firm was a \$300M Series C round that went to Tessera Therapeutics based in Somerville, MA. The gene therapy company was founded by Flagship Pioneering, which participated in the round along with SoftBank Vision Fund 2, Altitude Life Science Ventures, T. Rowe Price and others.
- The second largest deal of the year went to Boston-based Reify Health which received a \$220M Series D round. The company provides cloud-based software solutions to the life sciences industry. Altimeter Capital Management led the round.
- Finally, FogPharma took in \$178M in a Series D round. The Cambridge company is focused on developing protein-based therapeutics for the treatment of cancer. ARCH Venture Partners, Milky Way Investment and Fidelity Management and Research Company, among others, participated in the round.

M&A

There were 26 mergers and acquisitions involving life sciences companies in the Boston market announced in 2022. The largest, where a value was disclosed, was Johnson & Johnson's purchase of Danvers, MA-based Abiomed. JNJ paid \$380 per share for the medical device company for an enterprise value of \$16.6B. Stakeholders may receive an additional \$35 per share upon the achievement of certain milestones which would bring the total value of the deal to \$17.3B.

The second largest deal pales in comparison in terms of value. GSK acquired Affinivax for \$3.3B. The Lexington-based company develops vaccines for cancers and infectious diseases. The deal includes \$2.1B upfront money and an additional \$1.2B if the company meets certain clinical milestones.

Novo Nordisk announced its acquisition of Watertown-based Forma Therapeutics in September 2022 for \$1.1B. The company is developing small molecules for the treatment of sickle cell disease, AML, solid tumors and prostate cancer. The \$20 per share sales price represented a 49.3% one-day premium.

IPOs

The IPO window didn't shut entirely for Boston area life sciences companies in 2022. After posting 21 IPOs in 2021, five managed to squeak through in 2022. The San Francisco Bay Area, where there were two IPOs in 2022, was the only other Big4Bio market to post any company debuts during the year.

Acrivon Therapeutics took in \$94.38M in its November debut. The Watertown-based company develops targeted therapies to treat cancers. Cambridge-based PepGen went public in May and raised \$108M in its IPO. The company develops therapies for the treatment of severe neuromuscular and neurologic diseases. Also based in Cambridge, Vigil Neuroscience's November 2022 IPO garnered the company \$98M. The company aims to find treatments for neurodegenerative diseases by restoring the vigilance of microglia.

Amylyx Pharmaceuticals raised \$190M in its January IPO. The Cambridge company markets a treatment for amyotrophic lateral sclerosis in the US. CinCor Pharma, based in Waltham, also went public in January 2022. It raised \$193.6M and is developing treatments for cardio-renal diseases.

Source: Goodwin

Life Science Cares Boston 2022 Recap

Scaling our impact:

Life Science Cares Boston grows by all measures in 2022

As we adjust to the “new normal” post-pandemic, with continued inflation and high cost of living, too many of our neighbors are struggling to meet basic needs, obtain an education, and earn a living wage. The opportunity: Life science companies and their employees are motivated to make a positive impact through volunteering, investing, and raising awareness of the issues of poverty and inequity.

Life Science Cares provides a platform for companies and their employees to make a difference. We make impactful grants to community nonprofits that are implementing solutions in the areas of survival, education, and economic sustainability and supercharge these grants with volunteer hours, donated goods, strategic support, and advocacy.

Recapping our year

Winter

Life Science Cares kicked off 2022 by announcing our new [Nonprofit Partners](#), a portfolio of 25 community-based organizations with programs and initiatives moving the needle on poverty and inequity in Greater Boston. We dove in to build successful partnerships—moving time, talent and additional fiscal resources—to those nonprofit partners, while helping them establish relationships with each other, as well as life science companies and volunteers. Interested in volunteering? [Check out our robust calendar of upcoming opportunities.](#)

Spring

We celebrated our seventh anniversary on April 27, 2023! In May, we brought back the popular [Impact Breakfast](#), as both a celebration of our collective efforts and a call to action. Our special guest speakers— Jo Viney, Founder,

OUR 2022 IMPACT BY THE NUMBERS

\$1.6M

INVESTED IN 25
NONPROFIT PARTNERS

118

LIFE SCIENCE
COMPANIES ENGAGED

3,300

VOLUNTEERS

6,100+

TOTAL HOURS
VOLUNTEERED

189

MEMBERS ON OUR
BOARD OF ADVISORS

96

CORPORATE PARTNERS

\$404,000+

WORTH OF GOODS DONATED TO
NONPROFIT PARTNER ORGANIZATIONS



President and CEO of Seismic Therapeutic; Sandra M. McCroom, President and Chief Executive Officer of Children's Services of Roxbury; Bonnie Bertolaet, Ph.D., Executive Director with Science Club for Girls; and Jaykyri Simpson, MBA, Ed.D. of Young Man with a Plan—shared their thoughts on what it will actually take to end poverty in our community. It's a call to action that has been a guiding star as we plan for the future.

In partnership with our good friends at MassBioEd, we launched Compass Collaborative, an effort to recruit, train, and place volunteers to actively support community organizations working in STEM education, career exploration or workforce development. By creating connections between industry professionals and clients served by our partners, the program engages individuals through mentorship, networking, and skills-based volunteering towards pursuing careers in the life sciences field. [Learn more about Compass Collaborative.](#)



Summer

Summer means summer internships and [Project Onramp](#) students spread throughout industry roles for work experience critical to help them explore and succeed in the life sciences. In June, 172 college students performed in entry-level positions at 77 life science companies, some in-person, some remote and some hybrid. As it has been since inception, about half of our students worked in labs, while the other half worked in a variety of departments, like marketing, manufacturing, communications, finance, business strategy, patient advocacy, HR and clinical

operations. They networked online, met with mentors on Zoom and finished the summer at our first in-person Internship Showcase since the pandemic. Stay tuned in the coming weeks as we announce some exciting plans for Project Onramp in 2023.

We continue to build partnerships to understand other ways LSC might support education, opportunity and workforce development. This year, [we joined BioConnects](#), a New England-wide effort that aims to promote the growth and sustainability of the life sciences industry in New England through academic excellence and strategic programming.



Fall

He did it again! Biotech journalist and LSC champion Luke Timmerman lead 20 life science leaders 23 miles through the White Mountains, ultimately raising nearly \$1 million to benefit our mission via the [Timmerman Traverse](#). Later in September, we hosted our Mini Golf for Good tournament, welcoming hundreds of our friends and champions back to Tech Square, in-person, for a friendly round of mini golf. We continue to grow our team to help support the growing network and impact. This year we welcomed Emily Stanford, Director of Advancement, Mathias Vialva, Development Manager and Beth Gomes, Director of Operations (supporting all LSC sites.) As we scale Project Onramp, Lila Neel was named the program Director and we brought Ruby Kim on to run operations here in Boston.

We kicked off a Health Equity Exploration, a participatory grantmaking effort to invest at least \$500,000 in programs or initiatives aimed at providing more equitable access to healthcare. Working closely with a Steering Committee of

Looking Ahead: Get Involved!

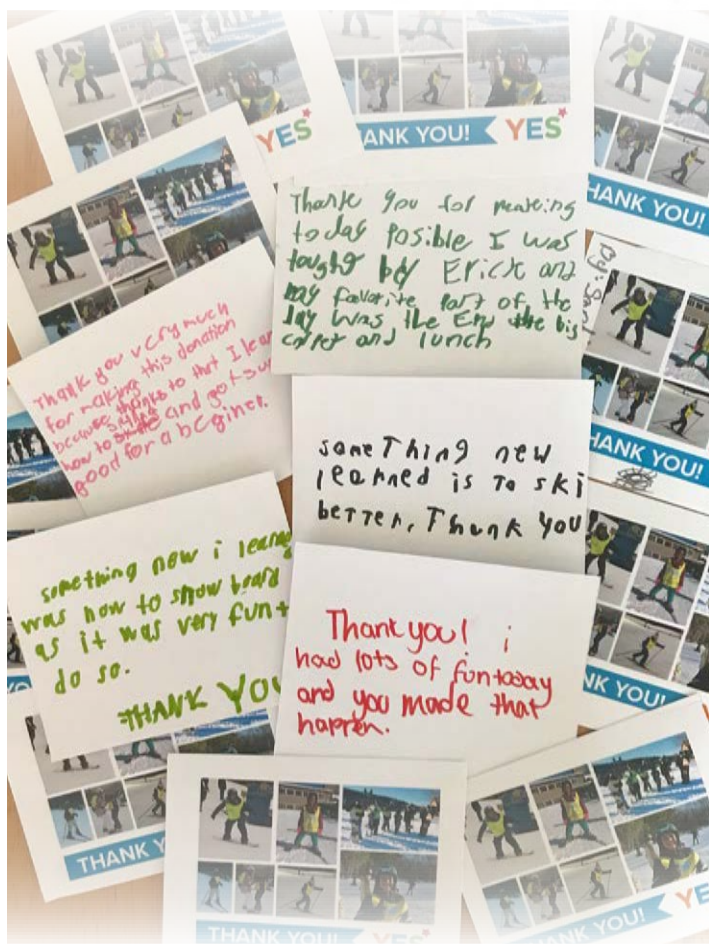
In this new year we are gearing up for even more community impact, including with a new grant round we anticipate will top \$2 million. We'll welcome new partner organizations and begin to build new connections to the organizations and people in our industry that are ready to dig in to help. We'll shake things up this spring, as our Impact Breakfast evolves into a new Impact Reception & Awards event. And we're dreaming up ways to add even more fun & friendly competition to the popular Mini Golf for Good tournament. There are a number of ways to get involved.

Industry Leaders: [LSC Board of Advisors](#) champion our efforts within their organizations, connectors who leverage their network to help us grow, and contributors who ensure our operations and programs have the resources necessary to make an impact.

Companies & Employees: Life Science Cares is a powerful partner in your company's commitment to positive social change. As a [Corporate Partner](#), you can better understand community needs and forge relationships with a variety of local nonprofit organizations. As an [Event Sponsor](#), you can have a presence at fun industry gatherings while also know your contribution supports our collective cause.

Start 2023 off on the right foot—reach out soon and let us brainstorm how you can get involved in our fast-growing Network of Good!

Sarah, Kelly, Emily, Bailey, Mathias, Beth, Lila, Ruby & Michelle



LSC Advisors, we have built out a process of Community Listening & Learning sessions to help shape a new tranche of LSC grants. We have invited key stakeholders to participate and hope to see them co-invest in the investment that results.

We wrapped up the year with hundreds of our #HolidayHelpers, collecting food, clothes, care kits, toys and other critical items for our neighbors in need. Check out our [LinkedIn feed](#) for scenes from the festivities (and some killer ugly sweaters!)



2023 Outlook

By Kendalle Burlin O'Connell, CEO and President of MassBio

After posting the second highest venture capital total funding to Massachusetts-headquartered companies ever in 2022, Massachusetts remains in a position of strength to receive continued, meaningful investment in the year ahead due to our high density of ambitious startups. The \$8.7B in VC funding that flowed into local biopharma in 2022 is proof that investors want to be a part of the early-stage research and development happening in the Commonwealth.

MassBio's recent industry funding report points to signs that biopharma investors are acting cautiously by seeking more data on a longer time horizon amid economic uncertainty, a market reset, and a closed IPO window. Beyond the reset, the implementation of the Inflation Reduction Act (and an uncertain regulatory environment) will give investors new reasons for pause and have an outsized adverse impact on the Massachusetts ecosystem because of our density of small and emerging companies.

Massachusetts remains on the cutting-edge of science and innovation because the key parts of the formula that launched the ecosystem still exist: collaboration across industry, government, and academia. Even prior to the pandemic, the industry has proven its value to the state economy and its residents. MassBio and our partners will continue to tell patient-centered stories of hope and breakthroughs, as well as those about economic development and high-paying life sciences careers.

With a new legislative session and a new governor, the year promises to be an active one on Beacon Hill. The Senate President has indicated a desire to address the cost of prescription drugs, while the House Speaker has cited healthcare reform as a top priority. We will

be actively advocating to the Legislature and new Administration to protect innovation and ensure patient access and affordability. For the industry, the priority must be the renewal of the Life Sciences Initiative, the foundational legislation that created and sustained the cluster for 15 years.

By year's end, MassBio will be opening its own life sciences workforce training center in Dorchester, a nearly 4,000-square-foot facility offering short-term training programs for entry-level lab and biomanufacturing positions. Over a matter of weeks, learners will receive the training they need to access these positions at no cost and with financial support and wraparound services. The center is expected to strengthen a stressed talent pipeline, while bringing diversity to the workforce.

Though there appears to be a slowing of life sciences construction, a continued demand for purpose-built lab space will remain. The incredible pace of development in 2021 and into 2022 has translated into opportunities for some companies to right size their leasing, while also giving growing companies options outside of the traditional hubs of Cambridge and Boston. Though suburban municipalities may see the impacts of a cooling market more acutely, any pause in the march of regionalization across the state will likely be only temporary.

There's much uncertainty ahead in 2023, especially in the financial markets, but we know that good science will continue to attract funding and good people will continue to advance research. MassBio looks forward to advocating, partnering, and delivering for our members, our ecosystem, and patients in the new year.



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. 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 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?

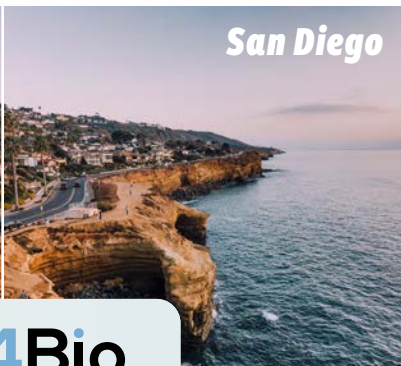
Boston



Philadelphia



San Diego



San Francisco



Big4Bio

BIG NEWS! Big4Bio is expanding to Big8Bio!

— These 4 new regions —

NEW YORK CITY, LOS ANGELES, SEATTLE, AND WASHINGTON DC
will be joining us SOON!

To get more information about being a sponsor

New York



Los Angeles



Seattle



Washington DC



Boston Sponsors

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to **Big4Bio** 2022 Sponsors!
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ACCOUNTING, TAX,
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CHARLES RIVER CFO



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Year-In-Review Data & Information Partners

