

2022/2023

Annual Report

INCLUDE. INSPIRE. INNOVATE.

Building and sustaining a talented
and diverse life sciences workforce.


MassBioEd



A Message from Our CEO Sunny Schwartz

Over the past two years, MassBioEd has achieved significant milestones in our work with students, adult career changers, and industry. I am proud to share with you our growth and many accomplishments.

MassBioEd continues to provide opportunities to underserved and historically underrepresented youth and adults for science education, entry into, and persistence in life sciences careers. We bridge gaps for diverse communities to connect with life sciences companies through intentional and thoughtful partnerships.

We have expanded our programming in the past two years, adding two new BioTalent programs - College to Career and the Life Sciences Career Hub – as well as the new BioTeach Student Summer Intensive Program and the ACCESS Scholars program.

Our first-in-the-nation Life Sciences Apprenticeship program has grown since its inception to supply diverse and well-trained talent to 24 employers. We expanded the program into central Massachusetts and added a new track, Lab Support Specialist. This program is a win-win for employers and job seekers. 95% of apprentices have been hired as permanent employees and 84% persist in the life sciences after one year of employment, improving upon standard industry retention rates.

To the exciting benefit of job seekers, individuals' wages increased by 159% compared to prior to the program!

In 2022 we introduced College to Career to connect public college students to industry through career expos and workshops. We launched the Life Sciences Career Hub in 2023 to bring greater life sciences career awareness, access, and coaching to underserved communities.

BioTeach's intensive ACCESS Program continues to provide quality life science labs and career experiences for middle and high school students in high-need public school districts. ACCESS has expanded into Malden and Stoughton, joining Chelsea, Revere, Frontier Regional, and our pilot schools in Boston and Tyngsborough.

Our work was noticed by multiple media outlets, including a front-page Boston Globe story on MassBioEd's Life Sciences Apprenticeship Program in December of 2023. If you missed the news coverage, you can still read it at www.massbioed.org/news.

Looking ahead, we remain committed to our mission of expanding opportunities for individuals to join the life sciences and creating a strong and diverse workforce for our growing industry. We recognize that there is still much work to be done, and we are eager to tackle the challenges ahead with the same passion and determination that has defined us for over 20 years.

These accomplishments would not have been possible without the generosity of our partners, the dedication of our volunteers, and the hard work of our staff. We look forward to continuing our work together to meet the employment and training needs of the life sciences industry and provide life sciences education to underserved communities, bringing in new and diverse skilled workers.

With gratitude,

Sunny Schwartz



As Board Chair, I am continually inspired by MassBioEd's commitment to driving meaningful change in our community. Over the past two years, we've expanded our reach to empower, educate, and elevate students and adults as we work to create a strong and diverse workforce for the life sciences industry. Together, we've achieved remarkable milestones, guided by our unwavering dedication to expanding opportunities for Massachusetts residents.

MassBioEd's impact is a testament to the passion and dedication of its staff and volunteers. I look forward to continuing to work with our partners and supporters to transform lives and create enduring impact.

LAUREN CELANO • MassBioEd Board Chair



Our Purpose

MassBioEd's programs help individuals find their way into strong, financially secure careers by fostering science literacy in students, mentoring teachers, and helping adults gain access into the life sciences, focusing on diverse and underserved populations.

Developing a strong life sciences workforce is central to our mission, focusing on engaging educators, inspiring students in grades 6-12, illuminating careers for college students and adults, and building the skills of the current workforce.

We are committed to addressing the following issues:

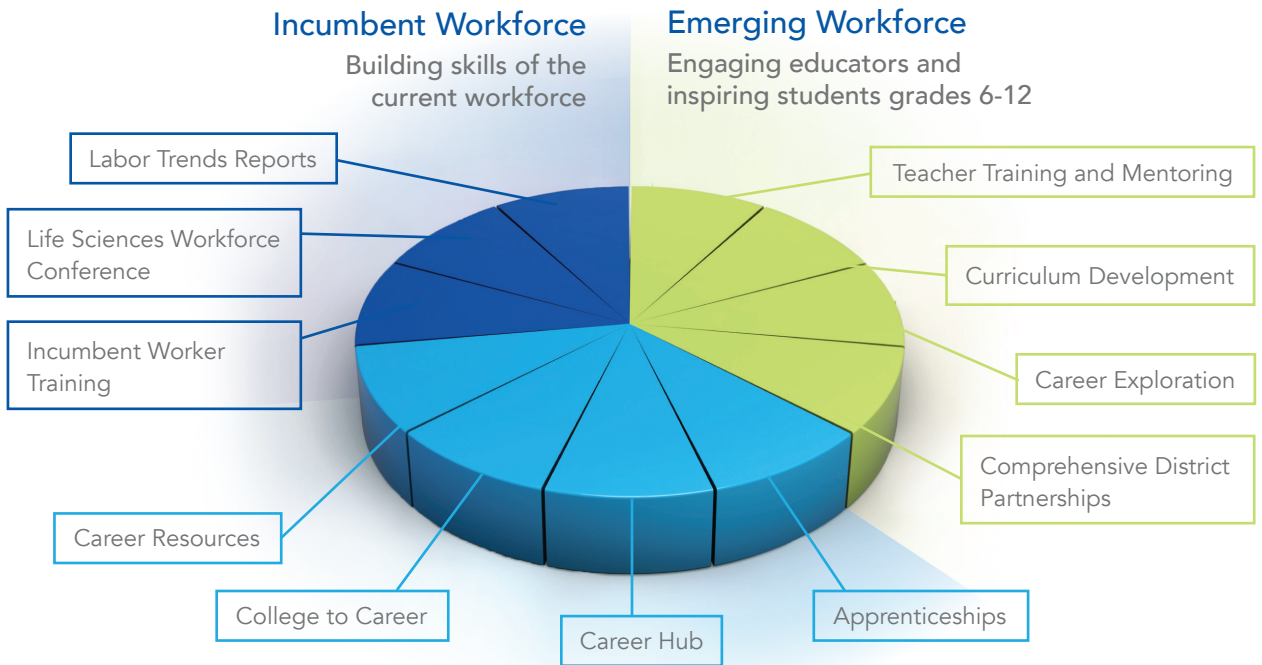
- Students are underprepared in science and unaware of career opportunities in the industry.
- Teachers are underprepared or under-supported to provide lab-based lessons to students.
- Demand for skilled workers continues to outpace supply.
- Individuals from underserved and diverse communities have historically been left out of the life sciences industry's growth.



Our Approach

MassBioEd strengthens the life sciences workforce through thoughtful programs and partnerships with diverse individuals, groups, and organizations.

Our work supports the emerging, imminent, and incumbent workforce through two primary programs, BioTeach and BioTalent.



Imminent Workforce

Illuminating careers for college students and adults



- Biotech curriculum with career content and virtual activities freely accessible online
- Professional development training for teachers to support implementation of hands-on lab activities
- District-wide, multi-year program for grades 6-12 focused on high-need schools
- College and career programming for students
- Equipment grants and loans for schools with mentoring support



- Apprenticeships for career-seeking adults
- Career awareness and engagement events for college students and adults
- Annual Life Sciences Workforce Conference
- Labor market information for educators and industry
- Life sciences and leadership development for industry professionals
- Career coaching for adults

Middle School Through High School

School Year 2021-2022

- Our **Biotechnology I Scope & Sequence** was published and made available for free download.
- **10,000 students** were engaged in authentic science learning through BioTeach programming.
- Launched **Student Summer Internship Program in collaboration with the LEAH Project and LabCentral**, providing high school students from Boston, Cambridge, Chelsea, and Everett with hands-on laboratory and career exploration activities.
- BioTeach held a week-long, intensive **Summer Institute for Teachers** for the first time since 2019.

School Year 2022-2023

- BioTeach presented at both the Massachusetts Association of Science Teachers conference and the National Science Teachers Association Conference, **showcasing BioScann, the middle school career awareness curricula** delivered through a uniquely designed web-based platform.
- **115 teachers** attended 11 professional development workshops, representing over 50 schools.
- Summer 2023: Expanded 5 week **Student Summer Internship Program in collaboration with the LEAH Project and LabCentral** provided 15 high school students from Revere, Quincy, Everett, and Boston with five weeks of hands-on laboratory and career exploration activities.

12 professional development workshops implemented

Total Attendance

- 154 teachers from 74 schools;
- 37 teachers attended multiple workshops

The Results

- 39 teachers earned professional development points needed to maintain their professional status
- 90% of teachers said the workshops increased their lab skills and knowledge and 90% said the workshops increased their confidence in executing the lab.

10,000

students participating in hands-on activities and labs

100+

schools engaged in BioTeach programming

600

middle school students used BioScann in the classroom

“ I would have never been able to teach biotechnology as effectively as I am doing without the help of MassBioEd.

These workshops truly empower teachers to feel as though they can bring real science into the classroom and the impact is immediate when kids get the chance to engage with the content in this hands-on way without spending hours and hours prepping and reinventing the wheel. Thank you!”

JULIA, TEACHER, NORTH QUINCY HIGH SCHOOL, 2022-2023

Aligned Curricular and Career Experiences for Secondary Science (ACCESS)

ACCESS brings teachers, administrators and scientists together from an entire school district, to provide partner districts with vertically aligned, hands-on life science lab lessons and career experiences for students in grades 6-10.

During the intensive program, teachers participate in workshops that provide training and practice with ACCESS lessons and equipment. They also receive in-school coaching and mentoring to incorporate ACCESS lessons and career awareness into existing curriculum. The embedded career awareness programming is delivered in conjunction with industry companies and volunteers, and includes the innovative web-based career curriculum, BioScann. Over the course of 3-4 years, students will have multiple life sciences experiences that build upon past lessons and science teachers build the robust community necessary for the program to continue with decreased support from BioTeach staff.

2021-2022

- Served **39 teachers and 4,250 students** in our ACCESS schools in Chelsea, Randolph, Frontier Regional School, and our pilot schools.

Students Served

- 78% of students are high-need
- 68% are economically disadvantaged
- 58% speak a first language other than English

2022-2023

- Added Revere as an ACCESS district and served **60 teachers and 4,500 students** in our ACCESS schools in Revere and Chelsea, plus onboarded 15 Malden middle school teachers in preparation to add Malden middle schools in the 2023-2024 school year.

Students Served

- 77% of students are high-need
- 66% are economically disadvantaged
- 61% speak a first language other than English
- 75% are People of Color



◆ ACCESS schools as of 2022-2023
◆ ACCESS schools beginning 2023-2024

PILOT SCHOOLS

- Match Charter School
Boston
- Innovation Academy Charter
Tyngsborough
- Boston Prep

DEERFIELD

- Frontier Regional School
Deerfield

CHELSEA

- Kelly Elementary
- Clark Avenue Middle
- Browne Middle
- Wright Science and Technology Academy
- Chelsea High

REVERE

- Revere High
- CityLab High
- Susan B. Anthony Middle
- Garfield Middle
- Rumney Marsh Academy

BEGINNING 2023-2024

- Malden middle schools
- Stoughton middle and high school

College and Adult

Apprenticeships

The Life Sciences Apprenticeship Program provides accelerated, paid training for individuals to gain foundational knowledge and acquire industry-recognized skills, facilitating their entry into the industry.

2022

- 66 apprentices enrolled in the program
- 96% transitioned to on-the-job training.
- 59 Biomanufacturing Technicians, 7 Clinical Trial Associates.
- 48% were female.
- 65% were People of Color.
- 86% moved into permanent jobs
- 187% increase in wages.

2023

- 39 apprentices enrolled in the program
- 95% transitioned to on-the-job training.
- 31 Biomanufacturing Technicians, 8 Lab Support Specialists.
- 51% were female.
- 73% were People of Color.
- 97% moved into permanent jobs
- 103% increase in wages.
- 32 apprentices in on-the-job training at year end.

Workforce Development



College to Career

2022

- Launched **College to Career** to connect public college students to industry through partnerships, career expos, company visits, advisor trainings, resume and networking workshops.
- 130 students participated, 25 volunteers, 17 academic advisors trained.

2023

- 668 students participated, 221 volunteers, 121 academic advisors trained.



Career Hub

2023

- Launched **Life Sciences Career Hub** to provide life sciences awareness, access, and career services to community residents by providing a library of up-to-date career information and hosting events and open houses for the community.
- Served 785 individuals through virtual career fairs and ongoing workshops: **You Belong in Biotech** and **What the Heck is Biotech?**

“ This program not only provided me with the necessary skills and knowledge but also instilled in me a strong sense of dedication to the field of biotechnology. The doors it has opened for me are immeasurable, and I am excited about the possibilities that lie ahead in my career.”

ALICIA R., APPRENTICE, 2023

Life Science Professionals

Professional Training Courses

Our continued learning program offers a wide range of professional development courses that allow professionals to deepen their expertise and skills through intensive workshops and trainings. Offerings focus on project management, presentation and leadership skills, the business and science of biotech, and more.

2022

622 enrollments across 37 courses, 5 new courses added.

2023

502 enrollments across 32 courses, piloted 4 single company offerings.

Life Sciences Workforce Conference

The Conference focuses on meeting hiring needs and exploring how industry, government, and academia can work together to build a strong, diverse life sciences workforce.

2022

331 attendees

2023

391 attendees

Massachusetts Life Sciences Employment Outlook

MassBioEd analyzes employment statistics and hiring demand in the life sciences for the purpose of forecasting job trends, identifying skills required for in-demand jobs, highlighting best practices in education and training programs, and serving as an effective guide on the talent and workforce needs for the industry.

2022

307 downloads

2023

537 downloads

“ The instructor was really great. She covered more than I even thought I would learn about and had an exceptional way of explaining scientific terms and ideas to people that might not have a biological background. I feel way more connected to the work that we do at my company because of this course and the way that [she] taught it.”

INTRO TO SCIENCE COURSE ATTENDEE, DECEMBER 2023

2022-2023 Partners

Program Partners

Action for Boston Community Development (ABCD)

Alnylam

Association of Clinical Research Professionals

Biogen

Bridgewater State University

Dearborn Next

Fitchburg State University

Ginkgo BioWorks

International Institute of New England

LabCentral

LabExchange

The LEAH Project

Life Science Cares Boston

Massasoit Community College

MassBio

miniOne

MiniPCR

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Takeda

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UMass Boston

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Corning

Ginkgo

Halloran Consulting Group

Jounce Therapeutics

MassBiologics

Pfizer

Rentschler

Replimune

Takeda

Thermo Fisher

Vertex



MassBioEd Champions for Biotechnology Education



2022 Champion for Biotechnology Education Awards

HENRI A. TERMEER EDUCATOR AWARD

Debora O'Reilly

Essex North Shore Agricultural and Technical High School

CHAMPION FOR BIOTECHNOLOGY EDUCATION PUBLIC ADVOCATE AWARD

Senator John J. Cronin

JOSHUA BOGER INNOVATIVE SCHOOL OF THE YEAR AWARD

Tyngsborough High School

HENRI A. TERMEER STUDENT SCHOLARSHIP AWARD

Wahaaj Farah

Roxbury Prep High School & Boston University

CHAMPION FOR BIOTECHNOLOGY EDUCATION ORGANIZATION AWARD

Corning Life Sciences



2023 Champion for Biotechnology Education Awards

HENRI A. TERMEER EDUCATOR AWARD

Julia Buben

North Quincy High School

CHAMPION FOR BIOTECHNOLOGY EDUCATION PUBLIC ADVOCATE AWARD

Mayor Michelle Wu

HENRI A. TERMEER STUDENT SCHOLARSHIP AWARD

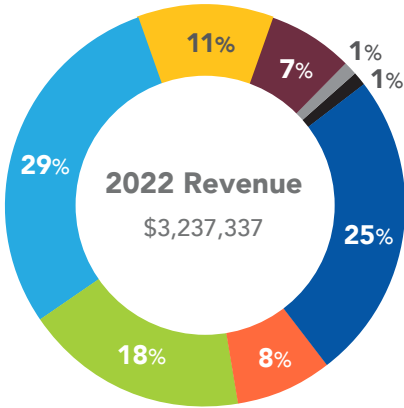
Genesis Gonzalez

Cambridge Rindge and Latin High School

CHAMPION FOR BIOTECHNOLOGY EDUCATION ORGANIZATION AWARD

Cummings Foundation

2022 & 2023 Financials



\$798,300
25%: Private Grants

\$360,863
11%: MassBio Membership Dues Allocation

\$259,952
8%: Public Grants

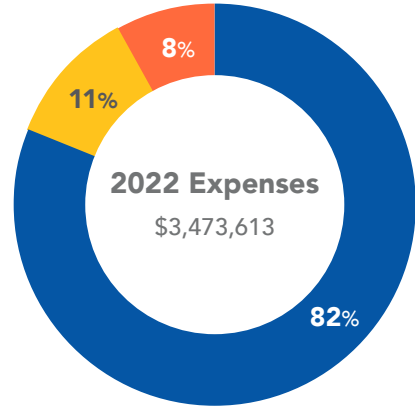
\$237,611
7%: Events Revenue

\$567,966
18%: Professional Training Course Fees

\$44,136
1%: Donations

\$949,350
29%: Partnering Revenue

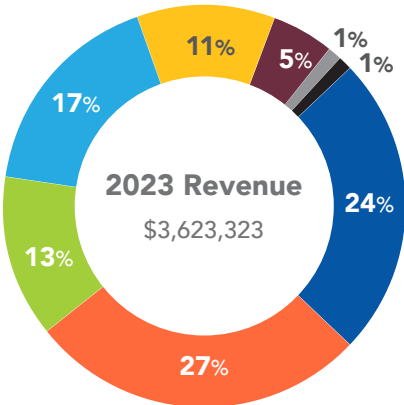
\$19,159
1%: Other Revenue



\$2,822,579
82%: Programs

\$375,488
11%: Outreach & Fundraising

\$275,546
8%: General & Administrative



\$867,208
24%: Private Grants

\$405,493
11%: MassBio Membership Dues Allocation

\$991,692
27%: Public Grants

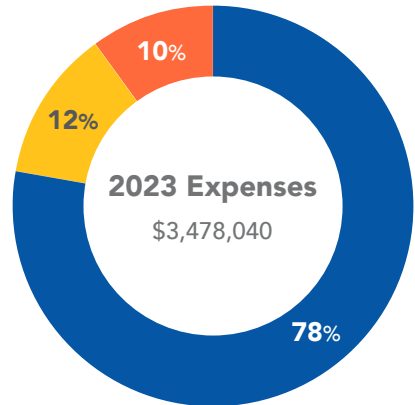
\$196,621
5%: Events Revenue

\$458,758
13%: Professional Training Course Fees

\$34,256
1%: Donations

\$626,939
17%: Partnering Revenue

\$42,356
1%: Other Revenue



\$2,697,997
78%: Programs

\$419,473
12%: Outreach & Fundraising

\$360,570
10%: General & Administrative

Thanks to Our Funders

\$100,000+



\$50,000 – \$99,999



\$20,000 – \$49,999



\$10,000 – \$19,999



\$5,000 – \$9,999

Clark University	The Richmond Group
Foley Hoag	RMG Associates
Halloran Consulting Group	Sarepta Therapeutics
J. Calnan & Associates	Sensata Technologies Foundation
Kiniksa Pharmaceuticals	The Termeer Foundation
Kymera Therapeutics	UCB
MCPHS	
Propel Careers	

\$1,000 – \$4,999

Abbvie	LabCentral Ignite
AstraZeneca	Latinos in Bio
Blueprint Medicines	Life Science Cares
Boston Lab Services	Lora Marden
Cambridge Savings Bank	Mispro Biotech Services
Lauren Celano	Northeastern University
Dana-Farber Cancer Institute	Quincy College
Wynter Duncanson	Rasky Partners
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Career Coach

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ABOUT MASSBIOED

Our mission is to build a sustainable life sciences workforce in the region through educational programs that engage and excite teachers, inspire and propel students, and illuminate the pathway from the classroom to career with a focus on expansion, opportunity and diversity.