



MASSBIO

CITY of BOSTON



Workforce
Development

Life Sciences Career Alliance

Discovery Report

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Life Sciences Career Alliance Description



Year Up and MassBio have partnered with the City of Boston to develop an intermediary organization named the Life Sciences Career Alliance that is focused on connecting underrepresented talent trained by Greater Boston community colleges, nonprofits, and workforce development organizations to life sciences industry roles.

Life Sciences Career Alliance Objectives



Immediate term

- Ensure that all 400+ underrepresented Boston residents trained under the City of Boston's Life Sciences Workforce Initiative (which is an umbrella program overseeing this intermediary and other related work) have access to quality job opportunities in the life sciences industry by Dec 2025
- Demonstrate employer value proposition and willingness to pay for access to the intermediary

Long term

- Increase the number of life sciences roles that are available to talent without Bachelor's degrees
- Increase the representation of non-Asian people of color in the life sciences industry workforce
- Establish pathways for talent from non-traditional training programs to continue their education and grow their careers in the life sciences industry
- Improve connectivity & streamline partnerships between training, career awareness & industry
- Identify & address other barriers to job access for this talent population (ex. transportation, need for barrier reduction services)
- Establish sustainable operating & revenue model

Discovery Report Objectives



- To describe the successes, challenges, and gaps of the Greater Boston life sciences workforce ecosystem as it relates to recruiting, training, connecting, and supporting underrepresented adults into life sciences careers
- To outline recommendations and priorities for the Life Sciences Career Alliance in 2024-2025 based on these findings



Discovery Report Key Conclusions

- The Life Sciences Career Alliance will launch with a strong foundation built by prior ecosystem efforts, comparable work in adjacent industries, and high-quality, industry-aligned program delivery
- Employer buy-in is the lynchpin of Life Sciences Career Alliance success
- The Alliance will need to open up new opportunities for hiring outside of lab technicians & manufacturing roles at large employers, in order to increase job placements and add value to the current workforce ecosystem
- Employers expressed willingness to pay for access to a vetted list of providers, help managing asks from those providers, and a pool of talent that is accessible when they need them, although budgets are currently tight and most employers expect them to remain tight into 2025
- Underrepresented talent require ongoing support in their roles, especially to help acclimate them to a new culture, understand and evaluate various career paths, and identify continuing education opportunities
- The highest-impact intermediary functions are also heavy lifts, and the Life Sciences Career Alliance will need to select a few core priorities for its first pilots

Recommendations for Life Sciences Career Alliance Priorities

Year 1 Priorities

- Build an employer-friendly hiring process for candidates from identified training providers to fill point-in-time hiring needs
- Build broad visibility into hiring trends and in-demand skills across employers to ensure that training and career awareness programs can quickly adapt to emerging industry needs
- Build and administer tools and training for hiring managers to successfully hire, onboard, and support underrepresented candidates coming in through identified training providers
- Implement a technology system that enables system-wide outcomes tracking & impact reporting
- Build stakeholder community, buy-in, and shared knowledge
- Implement opportunities for convening and best practice sharing
 - Centralize and communicate information about training and career awareness providers

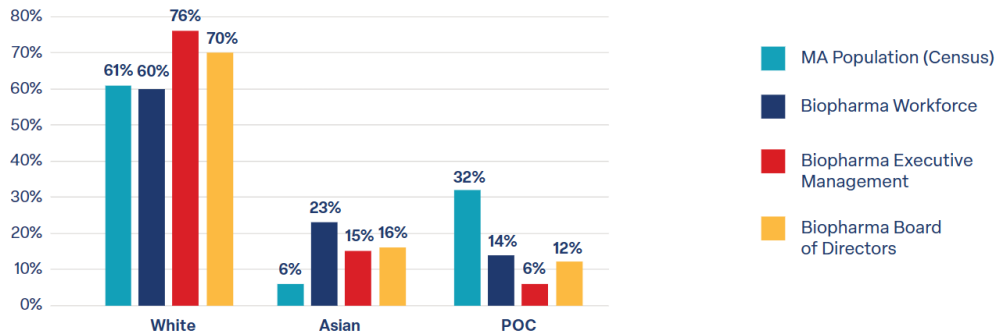
Year 2 Priorities

- Articulate career pathways for advancement that connect different training programs and work-based learning opportunities to help underrepresented candidates with industry experience move into high-potential, non entry-level roles
- Develop an accreditation process for training providers
- Advocate for and identify solutions to help reduce cost of transportation for participants to get to jobs outside of Boston
- Establish consistent and ongoing feedback loops between ecosystem stakeholders



- Life sciences firms in Massachusetts [report challenges in finding enough qualified entry-level workers](#) to fill demand, while the industry continues to grow¹. Most roles in life sciences currently require a bachelor’s degree, and existing degree programs do not produce enough graduates to fill ongoing needs
- According to the [MassBio 2023 DEI Report](#), non-Asian people of color are significantly underrepresented in the life sciences industry workforce, and, in Massachusetts, recruiting candidates from Minority Serving Institutions is a priority to address this disparity

Figure 4 Workforce Race and Ethnicity of Respondent Biopharma Organizations in Massachusetts



- In the Boston area, these institutions are primarily community colleges and nonprofit organizations providing workforce development programming. Most of the adults receiving training through these programs do not have bachelor’s degrees and are otherwise underrepresented in the life sciences
- At the same time, Boston residents generally lack knowledge about the opportunities in the life sciences industry and 46% of those ages 22 and older do not have a bachelor's degree

Definition of “Underrepresented Adults”



The addressable population for the Alliance is comprised of low-income adults of working age who do not have a bachelor’s degree, defined according to the following criteria:

- Live in the Greater Boston MSA
- Are 17-54 years old, also known as prime working age
- Have at least a high school diploma or GED but less than a bachelor’s degree
- Have probable work authorization based on citizenship status and work history
- Fall below an income threshold of 344% of the poverty line (\$47K for a family of 1)

Size of Addressable Population in Greater Boston MSA	442,834
Size of Addressable Population in City of Boston	101,780

The City of Boston is a focus area of this effort due to its greater need:

- 60% of the addressable population above are at or below poverty in the city, compared to 42% in the MSA
- 54% of the city’s addressable population are non-Asian people of color, compared to 44% in the MSA

There is significant opportunity to increase income of our addressable population: 75% and 64% of the population earn less than \$20K in the city and MSA respectively. At the same time, the population has important assets: 85% of the city’s population has recent work experience, most have worked in the past year, and over half have some college experience.

The City of Boston contains 23% of the addressable population. Outside of the city of Boston, key areas of need include the North Shore, Lawrence / Lowell / Haverhill, and the Brockton area.

¹ The Bureau of Labor Statistics estimates a growth rate of 20% in Biopharma and Medical Devices in the next 5 years in Massachusetts



We used the following sources of information in this report:

- Review of prior related publications, particularly the MassBio 2023 Industry Snapshot, the MassBio 2022 Workforce Analysis Report, and the MassBio 2023 DEI report
- Review of best practices of other intermediaries and published research on intermediaries
- Analysis of job posting data from Lightcast and labor market information from the Bureau of Labor Statistics, Census, and the American Community Survey (detailed analysis of this data is also compiled in a separate Labor Market Report developed by the Life Sciences Career Alliance)
- Interviews of the below stakeholders (see Appendix B for stakeholder interview guides)

Stakeholder Group	Organizations Interviewed
Life Sciences Training Providers	Franklin Cummings Institute of Technology (FCIT) Quincy College / Bioprocess Group Bioersity MassBioEd Roxbury Community College (RCC) Just-A-Start (JAS) Bunker Hill Community College (BHCC) Year Up LabCentral Ignite (Career Forge) JVS Arlab GMGI
Life Sciences Career Awareness Providers	MassBioEd LabCentral Ignite The American City Coalition
Underrepresented Adults Currently Working in Life Sciences	Two alumni from Year Up, currently working at Vertex Pharmaceuticals Four alumni from MassBioEd's apprenticeship program, currently or formerly working at: <ul style="list-style-type: none"> • Dana-Farber • Alnylam • Halloran Consulting Group • Rentshler Biopharma
Life Sciences Employers	Biogen Alnylam Pharmaceuticals Takeda Pharmaceuticals Obsidian Therapeutics Alkermes Thermo Fisher Scientific Unity Lab Services



We conducted a detailed analysis of job posting and occupation data to identify target roles for underrepresented adults, opportunities and challenges presented by the labor market, and other insights.

To quantify the available & possible job opportunities for the above target population, we identified “promising roles,” defined in two categories:

Category	Definition	# Role Postings in 2023
Entry-Level	Low skill or mid skill roles that do not require prior industry experience: <ul style="list-style-type: none"> Low skill roles that can be accessed by someone with a high-school degree or GED and are entry points that can lead to a career in the life sciences industry. Some of these roles may also require completion of a short role-specific training program Mid-skill roles that can be accessed by an individual who completed a relevant Associate’s degree, certificate, or training program that provided in-depth role-specific skills 	9,395
Non-Entry-Level	Select high skill roles that can be accessed by an individual without a Bachelor’s degree only after they have gained relevant industry experience and in some cases completed additional role-specific training	11,035
Total		20,430 (43% of total role postings across the life sciences industry)

Of the 2023 job postings for promising roles above:

- 41% were life sciences roles within the Biopharmaceuticals & Medical Labs industries
- 37% were supporting roles (such as IT, business operations, or finance) within the Biopharmaceuticals & Medical Labs industries
- 22% were life sciences roles within adjacent industries (such as Medical Devices, Hospitals, and Colleges / Universities)

Top 10 Promising Roles by 2023 Job Postings

Role	# Roles Posted in 2023	Average Wage
Entry-Level		
Laboratory Technician	1,217	\$51K
Quality Inspector / Technician	1,078	\$81K
Manufacturing Technician	1,038	\$71K
Manufacturing Machine Operator	874	\$64K
Production / Warehouse Worker	860	\$49K
Facilities / Operations Coordinator	620	\$79K
Non-Entry-Level		
Research Associate	3,331 ¹	\$70K
Clinical Research Coordinator	1,115	\$148K
Manufacturing Manager	976	\$111K
Quality Assurance Manager	640	\$149K

¹We were not able to pull out Research Associate roles specific to life sciences vs. other scientific fields at colleges and universities due to Lightcast limitations. Thus, the actual demand is lower than this number. Excluding colleges and universities, there were 2,088 roles posted in 2023 across Biopharma & Medical Labs, Medical Devices, and Hospitals



Key Opportunities for Underrepresented Adults

- **Supporting roles in Biopharma:** There is significant career opportunity in supporting roles like IT, business operations, and finance which are not currently primary focus areas for life sciences training programs seeking to place talent
- **Projected growth:** Manufacturing machine operations, supply chain, phlebotomy, safety, research, process engineering, and lab management are areas that have high projected growth and are promising for our target population (though research, process engineering, and lab management roles are not entry-level positions)
- **Removal of bachelor's degree requirements in certain functions:** Many companies have already removed bachelor's degree requirements in job postings for some functions, particularly manufacturing, quality control, and lab techs. These existing efforts can help other companies rethink their degree requirements for these role types and for the other promising roles we highlight

Key Barriers for Underrepresented Adults

- **Bachelor's degree requirements at entry-level:** At the entry level, 20% of low skill and 45% of mid skill job postings in 2023 still required a bachelor's degree, despite the fact that adults without degrees are entering into similar roles at many companies
- **Bachelor's degree requirements and unclear career pathways at non-entry-level:** For promising non-entry-level roles, 76% of postings require a bachelor's degree, even though someone with equivalent experience and/or additional training could perform well in those roles. Also, there is a lack of clear career paths from entry-level roles into high-growth, high-demand non entry-level roles like Research Associate, Clinical Research Coordinator, Regulatory Affairs Specialist, and Process Engineer
- **Distance & transportation gaps:** 69% of promising 2023 role postings were not located in Suffolk County, and many of these roles were in manufacturing facilities located outside the city of Boston. Lack of car transport and expensive commuter rail transport may prevent Boston residents from accessing those roles
- **Skill gaps:** Industry knowledge (particularly Good Manufacturing Practices and lab skills) is necessary for nearly all roles in the life sciences, including supporting roles. Many roles also require a foundational understanding of scientific research practices, and employers further expect applicants to bring interpersonal skills, professional skills, problem-solving, communication, and detail-orientation. Finally, digital skills and data analysis are increasingly important due to recent trends. Few candidates with only a high school diploma or GED would have an opportunity to build these skills without additional training or education

Additional Labor Market Observations

- Biotech/Biopharma hiring needs are volatile and typically dependent on specific events (such as building a new facility or launching a new product). This is particularly true for manufacturing roles. In many cases, companies are not able to predict these spikes in demand far in advance and may need to quickly post large numbers of roles.
- Demand for life sciences roles has declined by more than 50% since reaching a peak in May 2022, due to reduced funding from private investors and overall challenging market dynamics in 2023-24. However, the Biopharma and Medical Labs industry is still projected to grow by 20% in the next 5 years in Massachusetts (as per the Bureau of Labor Statistics).
- Although large employers topped the list of 2023 job postings, small and mid-sized players are significant and steady sources of hiring
- Outside of Biopharmaceuticals, hospitals and colleges also hired for large numbers of roles in 2023



Common Strengths of Training and Career Awareness Providers

- **Employment and other outcomes:** Interviewed training programs have strong outcomes, particularly in post-program job placement, increasing salaries of trainees, and facilitating credit transfer and/or acceptance into higher education institutions
- **High-quality, industry-relevant, hands-on curriculum:** Instructors and program developers have significant industry knowledge, experience, and connections which have allowed them to develop high-quality curriculum. Programs outlined curriculum based on the needs of employers. All programs have frequent lab-based components, and some programs also incorporate internships or other work-based learning
- **Regular and meaningful connections to employers:** Training programs regularly interface with employers and integrate employers into their programs. In addition to engaging employers to hire trainees, programs have employer representatives sit on advisory boards, speak to students as guests, and host company visits
- **Strong partnerships with each other:** Several interviewed training providers reported partnering with each other to reach their goals. For example, providers share lab space with each other, nonprofits collaborate with colleges to offer credits, and providers share instructors
- **High support tailored to underrepresented trainees:** All interviewed programs are serving majority people of color without bachelor's degrees, with a few programs specifically focused on serving immigrants and/or Boston residents. Alumni of these programs felt supported through all aspects of their program; one specifically mentioned that she felt supported as a woman of color in an industry dominated by men
- **Inclusive career awareness efforts:** Many career awareness efforts are specifically focused on helping underrepresented adults. For example, MassBioEd's awareness effort "What the Heck is Biotech" was offered in trusted community spaces in Roxbury, and LabCentral Ignite has a Life Sciences in Full Color campaign that is geared towards helping community members see themselves in this industry. Career awareness efforts are offered at convenient evening times, in some cases with services like childcare and translation
- **Existing intermediary efforts:** Some stakeholders have already stepped in to fill ecosystem needs. The American City Coalition launched Roxbury Worx in 2022, a place-based workforce development initiative focused on Life Sciences, Healthcare, and Green/Blue Tech. MassBioEd developed a "career hub" webpage with detailed information on life sciences training programs. MassBioEd and Project OnRamp are successfully aggregating employer needs to create work-based learning opportunities for underrepresented talent

Common Strengths of Employers

- **Efforts toward positive & inclusive cultures:** Underrepresented adults in life sciences working at some companies and departments reported that they feel well-respected and trusted by peers and supervisors. These adults noted that they receive significant exposure to other departments and information about Biotech career paths. One adult said that his on-the-job trainers emphasized the message "you belong here" to help different kinds of people integrate into the role
- **Enhanced focus on diversity, equity, and inclusion:** According to MassBio's 2023 DEI Report, the number of organizations recruiting from or working with external affinity organizations has nearly doubled since 2021. Similarly, the number of organizations using a diversity dashboard or scorecard has also doubled since 2021¹. Alnylam reported in interviews that they recently rolled out a skills-based hiring assessment for managers. In 2021, Vertex [announced](#) a systematic review of all job descriptions to remove unnecessary degree requirements, alongside their ongoing commitment to building pathways for underrepresented talent
- **Strong apprenticeship, co-op, and internship efforts:** Employers interviewed discussed the importance of internships and co-ops to their efforts to build qualified staff, even during the current industry downturn. Programs like Project Onramp were referenced as successful efforts to bring in diverse employees
- **Easing of Bachelor's degree requirements in certain functions, led by industry champions:** Most interviewed employers reported reducing bachelor's degree requirements across functions including lab operations, manufacturing, materials management, and safety. These changes were prompted by experiences with non-traditional candidates hired by managers who believe in alternative pathways.

1. To note, a [recent report by BioSpace](#) showed that interest in diversity has declined between 2022 and 2024, especially among white men.



Common Pain Points of Training and Career Awareness Providers

- **Challenges recruiting underrepresented adults:** Nearly all training providers highlighted recruitment as a challenge, due to a lack of young adult awareness or interest. While efforts like “What the Heck is Biotech” were cited as progress, training providers feel that awareness and buy-in into the industry by underrepresented adults is still a significant gap. Training providers put significant resources into awareness and recruiting efforts for their own programs. One program also noted that young adults struggle to understand that an initial investment into education and training is necessary for long-term success in the life sciences
- **Challenges finding candidates who fit the criteria of specific programs:** Most training providers also had trouble finding candidates who were a specific fit for their program. For example, the Franklin Cummings Institute of Technology has a program designed for students at a higher academic level than their typical student population, who are hard to find. On the other hand, Bioversity has plenty of applicants, but has been challenged to consistently identify which candidates are committed to a career in Biotech
- **Difficulty getting in touch with employers regularly:** Most providers find it difficult to regularly get in touch with employers. One provider noted that when challenging events come up for employers, it can be nearly impossible to communicate with them. Nearly all training providers maintain employer communications through their own networks and as a result, most providers have strong relationships with one or two core employers
- **People signing up for but not attending events:** Although career awareness providers receive strong RSVPs for events, many of those who sign up do not show up

Common Pain Points of Employers

- **Difficulty keeping track of all the training providers / lack of awareness of training providers:** When interviewed, large employers didn’t understand the differences between training providers and in some cases confused different training providers who were separately reaching out to them (example: assuming that MassBioEd, MassBio, and Bioversity were the same). Smaller employers, on the other hand, had limited knowledge of any training providers since those providers were not reaching out to them
- **Communication from lots of individual training providers asking for similar information:** Large employers feel inundated by many different training providers reaching out to them for different needs (employment for trainees, funding, guest speakers, etc.). Also, training programs are reaching out to many different departments within one company which makes it difficult to coordinate needs internally. Smaller employers do not have this challenge since they rarely hear from training providers
- **Difficulty filtering through large numbers of candidates who apply:** Both large and small employers have recently struggled to filter through significant increases in candidates applying for positions, making it difficult to prioritize for strategic needs like diversity
- **Managers often not bought in to hiring candidates without bachelor’s degrees:** We interviewed champions of nontraditional candidates and human resources staff who reported challenges in building buy-in with certain departments to hire nontraditional candidates (especially those without a degree), including R&D, pharmacovigilance, and regulatory, even though nontraditional candidates can be successful in these roles. At large employers, candidates without bachelor’s degrees are mostly recruited for manufacturing, quality, lab operations, and administrative positions. At smaller employers, champions find it challenging to convince managers to consider any options outside of traditional college hiring
- **Unpredictable hiring needs:** None of the Biotech employers we interviewed are in growth mode right now. Instead, their hiring is based on attrition and is less predictable. Programs like MassBioEd’s apprenticeship, JVS’ ArLab, and Year Up require employers to commit to hiring well in advance, which conflicts with tight budgets and restricted hiring that employers are currently working with



The below were reported by interviewed adults and/or by training providers looking to place their students into roles:

- Job search is challenging to navigate, especially in industry downturn:** One adult reported feeling lost when she had to apply for jobs after losing her apprenticeship at a startup company who folded. She applied for “any job” rather than conducting a targeted search based on her strengths and interests. Also, she did not realize that using a headhunter was an option for her. As a result, she ended up in a role for which she felt overqualified. A second job seeker had similar feelings and mentioned that although she received feedback on her resume, she had not received any guidance on conducting informational interviews.
- Employer inconsistency in supporting underrepresented candidates effectively:** Some training providers had to push back on low salaries offered by employers to their graduates and had to check in regularly with employers to confirm that they were effectively supporting graduates by providing high likelihoods of jobs, appropriate mentorship, and high-quality training. One adult interviewed noted that her experience was very different at two different employers; at one, she felt lost and received very little guidance on advancement and career pathways, while at the other, she received significant guidance and support. Interviewed adults generally felt that they had to take initiative to gain career path exposure, rather than the employer initiating. Two adults reported that their work-based learning experience was very unstructured and that they had to create their own structure; a third struggled to break down a large amount of information initially provided in training without corresponding hands-on opportunities. Finally, one adult interviewed observed multiple microaggressions aimed at people of color in one company. According to a recent [BioSpace report](#), 83% of African-American / Black and 62% of Latino/Hispanic surveyed respondents feel that discrimination is prevalent in Biopharma.
- Soft skills training gap:** Soft skills like timeliness, proper communication, organization, responsiveness, and interview / resume-building skills were noted as gaps by a couple of training providers in their trainees. One provider struggled to meet these needs due to limited resources and had to stretch existing resources to ensure that every graduate had their resume reviewed and edited by staff. Another provider, MassBioEd, rolled out a pre-apprenticeship program to cater to individuals who needed foundational skill-building before they could qualify for apprenticeships. Underrepresented adults currently working in life sciences stated that soft skills provided by their training providers Year Up and MassBioEd, which included Microsoft knowledge, professional skills training, and/or time management training, were crucial to their success.
- Transportation outside of 495 for graduates / trainees to get to work:** Training providers noted that many jobs are located far away and not easy to access by public transportation. For example, one training provider could only recruit candidates with a car and the ability to travel to a manufacturing facility not accessible by public transit. This challenge was also a conclusion from our labor market analysis. One interviewed adult felt that the long commute was one of the hardest parts of his apprenticeship; he later moved closer to his company when he received an offer.
- Lack of knowledge about training providers:** Some underrepresented adults interviewed who do not yet have their degree had no knowledge of the life sciences training programs in the Boston area beyond the one they attended. They enrolled in a non-life sciences degree program but told us that they would have signed up for a life sciences program had they known about those options.



Requests from Training & Awareness Providers

- **Coordinated & outsourced career awareness work:** Training providers requested an intermediary that oversees career awareness work so that each program wouldn't need to implement these efforts individually. One training provider shared, "Convincing people to jump into an industry they've never heard of is brutal."
- **Coordinated way to work with employers, especially in hiring:** Most training providers welcome the idea of a more streamlined way to match their candidates to jobs, as well as a way to build pathways into new employers
- **Shared resources and/or coordinated events to free up capacity:** Providers would like an intermediary to help them coordinate and share resources and events across organizations. For example, providers suggested shared career coaching and coordinated job fairs
- **Resources for soft skills training:** Some providers suggested that the intermediary provide or help align resources for professional or job-search skill needs like resume-building, interview / job search skills, timeliness, and professional communication, which are common needs across training providers
- **Best practice sharing:** Providers often operate in isolation or in partnership with one or two other providers. They hope to utilize an intermediary to learn about what other providers are doing and to share lessons learned
- **Develop pipelines between training providers:** A few providers expressed a desire for better connections to other programs as pipelines. For example, Franklin Cummings Institute of Technology's program, which caters to a population who is academically advanced, is interested in a pipeline from Bioversity. Several interviewees also noted that these types of connections between programs could lead to more meaningful career pathways for adults, rather than each program focusing on its own immediate outcomes
- **Track participants and participant outcomes:** A couple of programs requested help in tracking participant outcomes across programs. At least two providers noted that it is very difficult to communicate with program alumni in order to be able to keep track of outcomes. Community colleges expressed a high interest in this service

Requests from Employers

- **Centralized point of contact for communications between employers and training providers:** Large employers who are currently inundated with separate requests from each training provider requested that an intermediary help act as a single point of contact to training providers. These employers emphasized that they would actually be more responsive if requests were better coordinated. Conversely, smaller employers have little direct communication with training providers and see an intermediary as a way to access them
- **Centralized information about training providers:** Employers suggested that an intermediary could help them make sense of the training provider landscape and gain a better understanding of each provider's curriculum and completion cycles. One employer indicated that a vetted list of training providers would help their company work with hiring managers to increase buy-in for non-traditional hiring
- **Provide ability to communicate upcoming hiring needs:** Given that hiring needs are often dependent on a new product or facility, employers welcome an opportunity to share those needs through an intermediary to ensure all training providers are aware of them. One smaller employer suggested a job board as a tool to help them advertise needs that are a good fit for underrepresented candidates. Employers see significant value in an opportunity to provide point-in-time demand rather than needing to communicate demand many months in advance
- **Gain access to pre-vetted candidates:** A couple of employers noted that an intermediary could help them pre-vet underrepresented candidates. This is especially appealing for smaller employers who have fewer resources to sift through large number of applications and train new hires
- **Educate / train managers about how to support underrepresented candidates:** A couple of employers requested that the intermediary help managers better support underrepresented adults through training and resources. Also, interviewed representatives see benefit in highlighting success stories of underrepresented adults to help bring additional hiring managers on board, particularly for roles outside of manufacturing, quality, and lab operations



While stakeholder feedback was largely positive about the idea of creating this intermediary, some concerns emerged that are important to take into account in intermediary design.

Common Concerns from Training Providers

- **Competition for trainees:** Some training providers worry that an intermediary could result in trainees favoring certain programs over others, which could leave an enrollment shortage for some. A similar concern raised is that certain providers would use the intermediary purely as a vessel to recruit students into their own program, highlighting the need for integrity and ethical behavior
- **Competition for employer pipelines:** Similarly, some training providers expressed a concern that a more collaborative approach could cannibalize their own employer pipelines and, in some cases, an important source of revenue for the provider. One program suggested a focus on “building upon vs. building over” to emphasize that training providers would welcome new partnerships but would also want to continue with the partnerships they have already developed
- **Potential employer unwillingness to commit due to industry downturn:** Some providers wonder if employers are willing to commit to providing funding and hiring underrepresented talent at this time, given the current industry downturn. Similarly, some raised an overall concern about the willingness of employers to commit to any kind of hiring beyond the short term
- **Ensuring strong follow-through of agreements:** While the intermediary sounds helpful in theory, a couple of providers emphasized the importance of clear and well-constructed agreements with accountability for follow-through. Without that, providers would be inclined to fall back on their own individual agreements with employers or other partners
- **Locations of jobs vs. Boston focus of intermediary:** The overall Life Sciences Workforce Initiative will increase the number of trained Boston residents, while most roles are located outside of Boston. This could lead to a large pool of trained candidates in Boston who are not able to reach available jobs due to lack of transportation, while underrepresented adults outside of Boston may remain unaware of opportunities local to them

Common Concerns from Employers

- **Introducing yet another individual to respond to:** Some employers raised a concern about an intermediary potentially adding to current communication challenges. For example, if existing training providers continue to reach out directly to employers for their needs even after an intermediary is in place, it could lead to more work for employers
- **Need for clarity:** Employers emphasized the importance of clearly communicating what the intermediary is and isn't and ensuring it is easy to use for multiple stakeholders within a company



Jobs for the Future (JFF) and other organizations have published research¹ about intermediary best practices for those seeking to serve underrepresented candidates. These best practices & lessons learned line up well with Year Up & MassBio's vision for the Life Sciences Career Alliance and with the stated needs & interests of interviewed stakeholders.

Typical Functions of an Intermediary Organization

- Setting a vision for the overall ecosystem (in collaboration with ecosystem stakeholders)
- Collecting, using, and communicating good labor market data to identify gaps, develop career ladders for advancement, identify and promote credentials, and develop competencies for training
- Aggregating employer demand to help employers utilize a collective voice
- Facilitating partners to operationalize the work. This involves acting as a convener to help share best practices, organizing information about which organizations are managing different pieces of direct service, and ensuring that ownership of different functions is clearly understood. Tracking outcomes is critical for this function.
- Delivering services to add value to the ecosystem:
 - Providing direct service for gaps identified in the ecosystem (such as wraparound services)
 - Building work-based learning (ex: apprenticeships, internships) delivery systems
 - Providing guidance (for example, standards for curriculum) and/or resources like personnel or funding
- Promoting the work, advocating for change, connecting external stakeholders to the work, and connecting ecosystem stakeholders to each other

Building Trust with Stakeholders

Other intermediaries utilize the following best practices when working with stakeholders:

- Ensuring they have a strong core understanding of the industry and ongoing industry shifts
- Keeping abreast of and helping to solve critical employer needs (for example, skill gaps)
- Demonstrating a commitment to the advancement of underrepresented populations, including ensuring that equitable and antiracist practices are central
- Building deep connections with local community organizations who have a track record of high-quality service

Typical Intermediary Funding Structures

- The biggest sources of funding are public funding (workforce or welfare funds) and foundation funding
- Intermediaries also utilize fee-for-service from employers:
 - Membership fees by employers to gain access to the intermediary services
 - Employers share in costs (such as tuition costs)
 - Fees for each candidate placed in a role
- Common funding challenges:
 - Finding ways to pay for long-term efforts to facilitate career advancement through post-employment services like support services or incumbent worker training; many funders are more focused on placement in a job vs. advancement in a career
 - Covering the costs of organizing and planning

SCILS Initiative – Lessons Learned

Boston has already had experience with a workforce intermediary effort in life sciences: the SCILS initiative from 2012 – 2016, co-led by the Boston Private Industry Council and the City of Boston. The following are best practices from that effort:

- Utilized Career Center network to recruit candidates and educate them on life sciences opportunities
- Career centers, colleges, training programs, and employers met quarterly to discuss staffing & skills needs
- Awarded scholarships and payment to trainees going through programs and internships (funded by Massachusetts Life Sciences Center)

1. Sources: "Workforce Intermediaries and Their Roles in Promoting Advancement" (Jobs for the Future), "Workforce Intermediary Partnerships: Key to Success in High-Performing Labor Markets" (AFL-CIO Working for America Institute), "SCILS program [final report](#)", "Intermediary Functions and Features in Pathway Systems" (Jobs for the Future)



Year Up & MassBio staff engaged in an interview synthesis and prioritization exercise to identify: (1) which potential intermediary functions would have the greatest impact for employers and talent and (2) what resources would be required to implement each function.

Potential Intermediary Focus	Impact	Resource Requirements
Build an employer-friendly hiring process for candidates from identified training providers to fill point-in-time hiring needs	High	High
Build broad visibility into hiring trends and in-demand skills across employers to ensure that training and career awareness programs can quickly adapt to emerging industry needs	High	Medium
Build and administer tools for hiring managers about how to hire, onboard, and support underrepresented candidates coming in through identified training providers	High	Medium
Implement a technology system that enables system-wide outcomes tracking & impact reporting	High	High
Articulate career pathways for advancement that connect different training programs and work-based learning opportunities	High	High
Develop an accreditation process for training providers	High	High
Advocate for and identify solutions to help reduce cost of transportation for graduates / trainees to get to work	High	Medium
Establish consistent and ongoing feedback loops between ecosystem stakeholders	High	Low
Implement opportunities for convening and best practice sharing	Medium	Low
Centralize and communicate information about training and career awareness providers	Medium	Low
Develop a centralized communication system to coordinate non-hiring needs between employers and training providers	Medium	Medium
Build avenues to share resources and/or coordinate events to free up capacity	Medium	Low
Provide directly or add resources to training providers for soft skills training	Medium	Medium
Collect and communicate labor market & career path information	Medium	Low
Provide directly or add resources to training providers for wraparound services (such as negotiated agreements with certain providers)	Medium	High
Provide guidance (for example, a set of standards for curriculum) and/or resources like personnel or funding to support training providers	Low	Medium
Build work-based learning (ex: apprenticeships, internships) delivery systems by identifying, aggregating, and brokering these opportunities at scale	Low	High



- 1. The Life Sciences Career Alliance will launch with a strong foundation built by prior ecosystem efforts, comparable work in adjacent industries, and high-quality, industry-aligned program delivery.** Prior efforts like Just-A-Start, Roxbury Worx, the SCILS initiative, MassBioEd programming, Project Onramp, and others have developed a foundation for this work. These initiatives successfully introduced underrepresented talent to the ecosystem, produced early wins for that talent, and developed a small group of industry advocates. Also, training providers serving underrepresented talent already have developed strong programs and successful outcomes. The ecosystem is well-positioned to move towards a larger-scale effort that can be primarily funded by employers rather than solely by short-term grant funds.
- 2. Employer buy-in is the lynchpin of Alliance success.** Bringing employers to the table is the biggest potential value-add from the Alliance to training providers, and employers will only be able to realize the potential value of the Alliance if they commit to streamlining their communication through the Alliance as well. Employer financial commitments are necessary for Alliance sustainability and are the crucial leverage point that will bring in revenue from other sources.
- 3. The Alliance will need to open up new opportunities for hiring outside of lab technicians & manufacturing roles at large employers** in order to increase job placements and add value to the current workforce ecosystem. These opportunities will likely be found in new departments at large employers, like pharmacovigilance, quality assurance, HR, IT or other business roles and through point-in-time hiring at employers who aren't currently partnering with training providers (such as smaller players). Career advancement of experienced underrepresented talent into technically advanced roles (such as research associates, clinical research coordinators, and regulatory professionals) is another largely untapped opportunity. Accessing these opportunities may require significant persuasion as new business leaders, hiring managers, and HR recruiters are brought into the skills-first movement.
- 4. Employers expressed willingness to pay for access to a vetted list of providers, help managing asks from those providers, and a pool of talent that is accessible when they need them,** although budgets are currently tight and most employers expect them to remain tight into 2025. Employers also value participating in community initiatives. Systems & processes designed with employer needs in mind will ensure that this financial model is sustainable.
- 5. Underrepresented talent require ongoing support in their roles,** especially to help acclimate them to a new culture, understand and evaluate various career paths, and identify continuing education opportunities. Employer culture is highly variable and employers who are not used to hiring talent from non-traditional backgrounds may not be aware of the supports that would benefit underrepresented adults in the industry. Employers may need to be educated about the value of ongoing talent support & coaching.
- 6. The highest-impact intermediary functions are also heavy lifts, and the Life Sciences Career Alliance will need to select a few core priorities for its first pilots.** Lower effort functions like convening and best-practice sharing may have less long-term impact, but need to be prioritized to build community and buy-in.



Year 1 Recommended Intermediary Activities

To ensure value creation for employers, training providers, and talent, the Life Sciences Career Alliance should focus on the following immediate, high priority functions in Year 1.

Build an employer-friendly hiring process for candidates from identified training providers to fill point-in-time hiring needs

- Such a process should be designed around employer needs and reflect how they typically operate, including providing the opportunity to quickly fill point-in-time hiring needs. It should be a unified system across small and large employers that allows them to easily hire underrepresented talent for a variety of roles. This type of system would build trust with large employers, engage smaller employers, and enable employers to hire more underrepresented talent into more role types, thus building buy-in over time. Possible components could be an aligned intake process of trained candidates, aligned assessments, and/or a matching process to live jobs, and these should be determined by a team of qualified employer representatives.

Build broad visibility into hiring trends and in-demand skills across employers to ensure that training and career awareness programs can quickly adapt to emerging industry needs

- Currently, providers mostly rely on their individual employer relationships to request feedback and understand industry trends. The Life Sciences Career Alliance can build regular and meaningful opportunities for employers, training providers, and career awareness providers to collectively discuss currently industry needs. For example, these opportunities could enable a stronger collective understanding of emerging technologies and new products, which would drive skill requirements.

Build and administer tools for hiring managers about how to hire, onboard, and support underrepresented candidates coming in through identified training providers

- While some organizations are implementing innovative practices to ensure that underrepresented employees are well-supported through mentoring, proper training, and career path guidance, these efforts are fragmented. Many employers are not yet implementing these practices and smaller employers struggle with limited resources to invest in change internally. We recommend that the intermediary develop a shared set of standards with associated training and tools to ensure that all underrepresented participants entering the field receive the supports they need to succeed over time. In addition, hiring timelines and onboarding practices may need to be modified for candidates coming in through the intermediary (for example, providing a shorter hiring timeline for a pre-vetted, underrepresented candidate).

Implement a technology system that enables system-wide outcomes tracking & impact reporting

- Individual programs do regularly track participant outcomes, but currently there is no system to track outcomes over time as participants transition from programs to employers (and in some cases, across multiple programs). The intermediary should develop systems to track incoming participants and regularly monitor their outcomes. In addition, the intermediary should engage stakeholders to regularly review these outcomes and adapt their solutions accordingly. This system should enable inputs from stakeholders across organizations and report on the impact of shared efforts.

Build stakeholder community, buy-in, and shared knowledge

- *Implement opportunities for convening and best practice sharing:* The intermediary can create opportunities for employers, training providers, and career awareness providers to convene regularly and share their work with each other, which could include regular meetings or conferences. It can also act as a conduit to aggregate and disseminate high-potential best practices to encourage wider adoption. These efforts are low-cost and can add significant value to stakeholders.
- *Centralize and communicate information about training and career awareness providers:* One near-term recommendation is for the intermediary to build upon work already done by MassBioEd to aggregate information about training and career awareness providers in a clear and usable manner. We can also disseminate this information in a way that our target population and employers can easily utilize it.



Year 2 Recommended Intermediary Activities

Develop career pathways for advancement that connect different training programs and work-based learning opportunities to help underrepresented candidates with industry experience move into high-potential non entry-level roles

- Market research clearly indicates that certain high-skill roles are accessible for underrepresented adults who have industry experience, but that career pathways for advancement are unclear and poorly supported. We suggest that the intermediary identify select high-skill roles to focus on, work with employers and training programs to map advancement pathways from entry-level into high-skill roles, and support talent to access these pathways.

Develop an accreditation process for training providers

- The Life Sciences Career Alliance can work with training providers and employers to align on post-training success criteria that can be regularly reviewed via an equitable & neutral process. Accreditation of training providers would provide a way to gain access to new employers, as well as a mechanism to build buy-in from new departments who haven't previously hired underrepresented talent. It would also easily allow for integration of new training partners for the intermediary. Training providers are already using a variety of assessments (such as these [microcredentials](#)) that can be used as a foundation for aligned success criteria, and they should drive accreditation efforts together with employers.

Advocate for and identify solutions to help reduce cost of transportation for participants to get to jobs outside of Boston

- A consistent theme that came up was that most life sciences roles are located outside of the city of Boston. To truly open up new opportunities for city residents, the life sciences ecosystem must implement creative and cost-effective solutions to help underrepresented adults get to these jobs. We suggest that the intermediary facilitate discussions with the City of Boston, employers, and other stakeholders to build buy-in and resources for a shared solution to the transportation gap.

Establish consistent and ongoing feedback loops between ecosystem stakeholders

- The Life Sciences Career Alliance can build on year 1 stakeholder community-building efforts to develop regular opportunities for employers, training providers, career awareness providers, government representatives, and other stakeholders to surface, prioritize, and solve for ecosystem gaps and challenges.



Stakeholder Engagement Recommendations

Successful intermediaries have demonstrated the importance of deep engagement of ecosystem stakeholders to build a shared vision and plan for implementation. Below are recommendations for stakeholder engagement:

Build an industry advisory board consisting of champions of this work across different types of employers. This advisory board could regularly meet to identify common skill gaps, align on promising roles for underrepresented adults, and collectively develop core requirements for intermediary hiring systems. The Mass Life Sciences Center has so far agreed to serve as a member of the advisory board.

Build a training & talent advisory board consisting of key representatives of training programs and underrepresented adults working in the industry. This advisory board could discuss common challenges, work together to identify solutions for skill gaps or upcoming role needs, and collectively advocate for resource needs or policy changes. They could also lead efforts to build an accreditation system.

Develop and implement an ongoing communication strategy to ensure all stakeholders stay up-to-date on intermediary progress towards its goals

- Host a series of discussions with all advisory board members to collectively build a shared vision, build alignment for intermediary priorities, and agree on roles and responsibilities for implementation.
- Follow up with broader dissemination of the intermediary vision and strategy to training program and life sciences company employees, community organizations, and community members
- Provide regular updates via standing meeting cadence and / or regular newsletter

Funding Recommendations

We recommend that the intermediary build employer revenue streams to ensure financial sustainability beyond the city's grant funding. The type of revenue stream can differ based on service type and employer type:

A membership fee structure could provide ongoing access to a range of services, including access to talent, ability to post needs to a job search, and even coordination of other common asks of employers (such as ongoing needs for volunteers or guest speakers). Large employers are likely to be hiring significant number of candidates and utilizing the intermediary regularly and thus may prefer a set fee. A tiered membership structure by employer size or by desired services could also open up membership to a greater number of employers, regardless of hiring needs.

Some employers may prefer to pay a fee for each adult hired through the intermediary and/or for posting roles to the intermediary job board. This approach acknowledges that smaller companies do not typically hire large numbers of candidates at once and may be unwilling to pay a membership fee.

Recommendations to Address Concerns

Build trust early with training providers by clearly laying out policies for equitable and ethical intermediary practices to ensure that individual programs do not see their own recruiting and employment pipelines cannibalized.

Demonstrate the role each training provider plays in the larger ecosystem and work with training providers to collectively fill identified gaps.

Develop formal agreements that outline roles and responsibilities for intermediary functions and ensure follow-through of these agreements.

Consider a “portfolio manager” approach in which the intermediary coordinates employer hiring needs and matches them to training provider needs, but then ensures that employers and training providers work directly with each other on follow-through and logistics. This would enable providers to continue maintaining their own employer relationships, especially when a structured internship or apprenticeship is part of the provider program model.



Appendix A: Overview of Interviewed Training Providers

Program	Length	# Trainees	Target Population	Role Focus
Franklin Cummings Institute of Technology	2 years	20-30	Stronger academic background than the average HS graduate	Research associate ("training scientists not lab hands"), regulatory
Quincy College (pathmaker)	5 weeks	80 over two years (2 cohorts per year)	Underserved, underemployed Boston residents with basic math skills	Lab tech / research assistant
Quincy College (AA)	2 years	10		Quality, manufacturing tech, lab tech, research assistant
Quincy College (Certificate)	10 months	15		Quality, manufacturing tech, lab tech, research assistant
Bioversity	8 weeks	~100 – 120 total	Someone who lives in or around Dorchester; ages 20-42; Black / Latinx; People who want a job after the program	Lab ops, facilities, safety, some manufacturing
MassBioEd Pre-Apprenticeship	10-12 weeks	~20	People who need soft skills and basic understanding in order to qualify for apprenticeship	Core science / soft skills
MassBioEd Apprenticeship	9-15 weeks training 1 year apprenticeship	Max 20	Priority for women, people of color, underemployed / unemployed	Biomanufacturing
RCC Phlebotomy / Medical Assistant	90 hours (phlebotomy), 150 hours (medical assistant)	72 per semester	People in Roxbury, Mattapan, Dorchester	Phlebotomist & Medical Assistants
RCC Biotech Cert / AA	3 semesters + internship	20-30 per year	People in Roxbury, Mattapan, Dorchester	Research Assistant at Universities, QA / Lab Tech / Manufacturing Tech at Companies
JAS	9 months	36 per year	Primarily students in Metro-North (Cambridge / Somerville); almost all immigrants and people of color; typically late 30s - early 40s	Lab Tech, Manufacturing Tech, Cell Culture Tech, Clinical Lab Assistants, Animal Care, QC
BHCC Phlebotomy	Self-guided	120 in 2 years	Largely students of color;	Phlebotomist
BHCC Medical Lab Ass't Certificate	9 months + 3 months clinical	10-15	more women than men; avg age 26 (reflecting BHCC's overall population)	Medical Ass't
BHCC Medical Lab Tech AA	2 years	10-15		Medical lab tech
BHCC / MGH Medical Lab Post-Bac	10 months	10-15		Medical lab tech
JVS Biotech Manufacturing Cert	Frequent starts (5x per year); 8 weeks	10 per cohort		Lab Associate I (lab tech)
JVS College to Careers	~6months			Lab research, manufacturing, QC
Year Up	Starts Sep & Mar; 6 months training, 6 mo internship	Depends on # internships	Non-degreed young adults 18-20; people of color	Lab tech, manufacturing, QA / QC, tech writing, supply chain
LabCentral CareerForge	Frequent starts per year; 80 hours		"Exceptional" career-ready people who pass work-related competencies (often used for upskilling)	Research Associate / QC Analyst



Appendix B: Stakeholder Interview Guides

For stakeholder interviews, we utilized discovery interview guides which primarily focused on the following questions:

- Training and career awareness providers
 - What is working particularly well in your program? What challenges are you experiencing as a program? What is your biggest pain point?
 - What is working well with your employer partnerships? What is challenging?
 - What benefits do you anticipate in being part of a broader network of stakeholders working in the Life Sciences sector? What concerns do you anticipate?
- Employers
 - What are your greatest entry-level and middle-skill job needs? What changes do you anticipate moving forward?
 - In what ways do you seek or target diverse or non-traditional candidates?
 - What are your biggest challenges and pain points in sourcing, hiring, retention, and performance for entry-level and middle-skill staff?
 - What benefits do you anticipate in being part of a broader network of stakeholders working in the Life Sciences sector? What concerns do you anticipate?
- Underrepresented adults
 - What attracted you to the life sciences industry?
 - What was helpful and what was challenging about your training program?
 - What was your experience with your job search?
 - What opportunities and challenges did you face when you first started working in the industry? What opportunities and challenges do you face now?
 - What could your employer be doing more of to help you be successful in your career?

Appendix C: Definitions Used to Prioritize Potential Intermediary Functions

	Impact	Resource Requirements
High	Function would add significant value both to employers and underrepresented talent	Function would take significant funding, staff time, and/or coordination
Medium	Function would add some value both to employers and underrepresented talent, or would significantly benefit one but not both	Function requires some but not significant resources
Low	Function would add limited value to employers and underrepresented talent because it is not a priority need or weakness of the current ecosystem	Function could be quickly implemented without expending much funding or staff time