

# Pathmaker

## Life Sciences Workforce Partnerships Program

Jeanne LeClair

Vice President of Economic  
Development & Partnerships



**Massachusetts**  
LIFE SCIENCES CENTER

The capital of scientific revolution.

# Who We Are

**The MLSC was created in 2007 as a quasi-public economic development and investment agency to support the growth & development of the life sciences in MA, and to:**

- serve as the “hub” of the MA life sciences ecosystem
- encourage innovation by investing in good science
- strengthen and protect Massachusetts’ global leadership position in the life sciences
- accelerate the commercialization of promising treatments that will improve patient care
- drive economic and STEM workforce development

# Agenda

- **Context & goals of the program**
- **Core Competencies**
- **Eligibility**
- **Industry partnership**
- **Evaluation**
- **Post-award process**
- **Resources & ways to engage**
- **Questions & answers**

# Life Sciences Workforce Challenges

## Problem & Context

**Massachusetts is experiencing a workforce shortage across the life sciences, and existing programs are not sufficient to meet the projected growth.**

- +42,000 life science workers over the next 10 years
- Housing costs, childcare, and transportation are barriers
- Other states run successful training programs and use that data for business development in competition with Massachusetts
- Companies have been at the table for collaborative solutions and have expressed strong interest and support for training partnerships

# Pathmaker Overview

## New Funding for Harmonized Training

### Pathmaker Program Outcomes

- Train entry-level life science workers
- Branded “Pathmaker” validation awarded to training programs for satisfying Core Competencies, regardless of MLSC funding
- 2 prioritized tracks—PathmakerBIO, PathmakerTECH, plus an option to apply under a third “open” track for QA/QC, lab support, supply chain, etc.
- New or expanded 8 – 10-week (80 – 120 hours) trainings with industry partner input on overall curriculum & letter of support
- Aiming to diversify and grow the life sciences workforce through increased life science career marketing and by addressing barriers
- Target underrepresented communities and workers with high school diploma / GED

# Pathmaker Core Competencies

## Minimum Coordinated Requirements

Required for all Pathmaker-funded programs and all Pathmaker-validated programs (whether fund-seeking or not)

### PathmakerTECH

#### General Competencies

- Career track options: *example positions, average wages, company info, potential career paths*
- Basic professional skills: *soft skills, computer literacy, meeting etiquette, communication, teamwork, problem-solving, resume/interview, time management, 5S / Lean production*

#### Role Specific Competencies

- Good Documentation Practices: *following standard operating procedures (SOPs)*
- Clean room/sterilization: *gowning, equipment sterilization*
- Quality and Regulatory: *statistical process control, cGMP, health and safety, OSHA*
- Components and materials: *sensors, basic metallurgy, ceramics*
- Automation and processes: *robotics, technical drawings, basic electricity, electronics, mechanics, electromechanical assembly*

#### Optional Company-Specific

- geometric dimensioning and tolerancing, 3D printing, other core skills deemed necessary by a partner employer*

# Pathmaker Core Competencies

## Minimum Coordinated Requirements

Required for all Pathmaker-funded programs and all Pathmaker-validated programs (whether fund-seeking or not)

### PathmakerBIO

#### General Competencies

- Career track options: *example positions, average wages, company info, potential career paths*
- Basic professional skills: *soft skills, computer literacy, meeting etiquette, communication, teamwork, problem-solving, resume/interview, time management, 5S /lean production*

#### Role Specific Competencies

- Good Documentation Practices: *following standard operating procedures (SOPs)*
- Lab math: *unit conversion, dilution, molarity, calculations*
- Clean room/sterilization: *gowning, equipment sterilization, autoclave, filtration, sterile welding*
- Culture techniques: *cell, bacterial, yeast, freeze/thaw, passaging, media prep, aseptic technique*
- Overview of assays and protein purification: *HPLC, MALDI-TOF MS, microscopy, cell lysate, AKTA, TFF, separation, detection, quantification of proteins, SDS-PAGE gels, Western blot, ELISA, PCR, UV-vis spectrophotometry, centrifugation, pH measurement*
- Overview of product classes: *cell and gene therapy, biopharmaceuticals, mRNA, vaccine production*
- Quality and Regulatory: *cGMP, critical quality attributes, critical process parameters, efficacy, safety, environmental monitoring*
- Equipment and process: *bioreactor function, basic process monitoring, feedback, and control loop systems*

#### Optional Company-specific

- Fermentation, mixing and aeration, yield and productivity, DNA isolation, validation, or other core skills deemed necessary by a partner employer*

# Eligibility

- Life Science company located in the Massachusetts and registered to do business in Massachusetts
  - A Certificate of Good Standing from the Massachusetts Secretary of State + Certificate of Good Standing from the Massachusetts Department of Revenue
- Community-Based Organizations (CBOs)
- Community Colleges, Colleges, and Universities
- Comprehensive and Vocational High Schools, including Vocational Schools offering an after-hours or Career Technical Initiative evening training program
- For-Profit Entities
- Non-Profit Entities
- Municipalities
- Workforce Development Organizations
- MassHire Workforce Investment Boards and Career Centers



# Industry Partnership

- Applicants will need a letter of support from an industry partner who can attest to the relevance of the curriculum for existing or expected open positions
  - Companies are not required to hire or financially contribute to the Pathmaker training program at this time
- Projects with the most active and engaged company partners are preferred and will be prioritized
- Discuss company employment requirements in advance
- Should outline a plan for ongoing company engagement, meetings, troubleshooting, and ideation as the training programs launch and run
- MLSC can advise companies and/or training providers on potential regional partners and make introductions, but the partnership is ultimately the responsibility of the training provider and the company

# Application Evaluation

Applications will be reviewed by MLSC staff and an outside review panel, prioritizing applications that show:

- Detailed understanding of target roles and skills
- Clear program design that addresses the Core Competencies of desired program and conveys practical evaluation methods
- Effective approach to recruitment and outreach
- Strong letter of support from company partner that includes an articulation of the engagement of the employer partner that may include curriculum design, advisory board participation, equipment donations, mentoring, job shadowing, guest speakers, and/or funding support
- Reasonable, practical, detailed budget
- Potential for training program to benefit students who are underrepresented in the life sciences or are economically disadvantaged, efforts by Applicant to evaluate the success of its program by tracking student outcomes
- Applicant shows ability and commitment to students through additional support services, career awareness, and job readiness
- Stipends for students

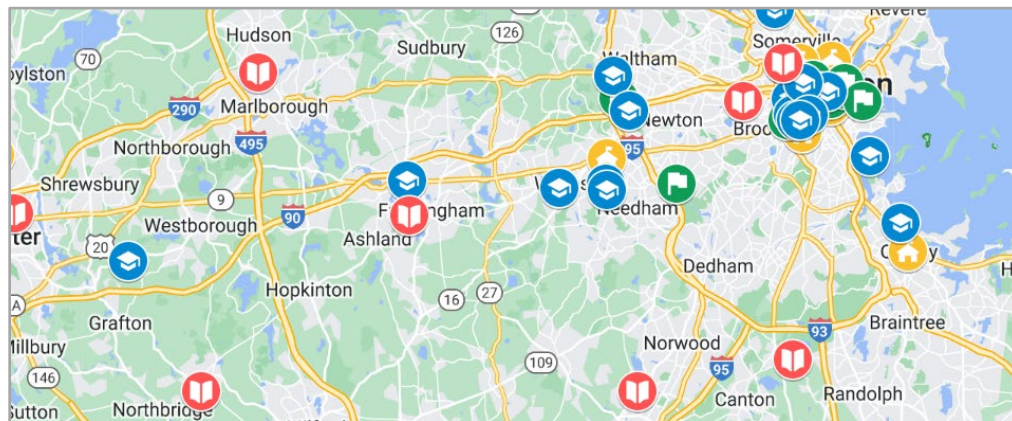
# Post-award Process

- Strong applications will be presented for approval by the MLSC Board
- Upon final approval, and the execution of a signed grant agreement, applicants will be eligible to receive 60% of their funding amount immediately, with the remaining 40% available upon submission of backup documentation for 100% of the funding expended
- Reporting and metrics: quarterly reporting to MLSC on program enrollment / graduation, as well as longer-term tracking of individual participants' employment status
- Future funding will be focused on scaling successful previous Pathmaker projects, on the basis of the data and metrics reported showing the success of the program and its participants
- Program participants/trainees are considered successful if they complete the program and secure employment in the life sciences industry (whether at the company partner or not) or decide to pursue additional training or higher education in the life sciences field

# Resources & How to Engage

- The online application is open and applications are being considered on a rolling basis
- Applicants may apply for funding or apply for Pathmaker validation without funding, to benefit from life science career marketing and recruiting efforts
- Pathmaker validation for existing programs will include a site visit and can requested via an online form on the Pathmaker program page
- MLSC will provide support on partnerships, recruitment, outreach, marketing, and is happy to advise on process and curriculum development as needed

*Companies can consult the [Life Sciences Workforce Roadmap](#) to guide training provider partnerships in their region*



# Questions?

[Pathmaker@masslifesciences.com](mailto:Pathmaker@masslifesciences.com)

**Jeanne LeClair**

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[jleclair@masslifesciences.com](mailto:jleclair@masslifesciences.com)