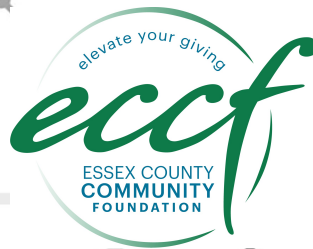


Re-Imagining Our Technology Workforce on the North Shore

A Community Think Lab

May 23, 2022 | Endicott College

Organized by



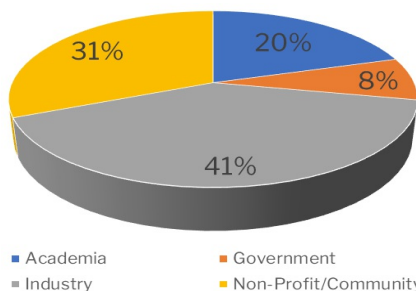
How We Got Here

The North Shore Technology Council (NSTC) in conjunction with the Essex County Community Foundation (ECCF), MassHire North Shore Workforce Board (NSWB), North Shore InnoVentures (NSIV), and Endicott College organized an event for Re-Imagining the North Shore Technology Workforce. The event invited industry, academia, government, and non-profit organizations to meet and discuss the challenges of fulfilling the workforce needs of industry on the North Shore, specifically in the technology area.

The day began with presentations from Kendalle Burlin O'Connell (President & COO, MassBio), Carolyn Kirk (Executive Director, Massachusetts Technology Collaborative), and Sara Fraim (Vice President, Programs & Policy, Mass Technology Leadership Council). Collectively, these 3 state-wide experts provided an in-depth overview of the current state of the high tech workforce, the workforce challenges facing the tech industry, and the kinds of actions that industry, government and academic/training institutions need to take to address these challenges. This was followed by a Think Lab, involving breakout sessions of six groups, facilitated by staff from ECCF, utilizing the Innovators' Compass (<https://innovatorscompass.org/>).

What is an ECCF Think Lab?

Think Labs are interactive community convenings that lead participants through a design-thinking process to creatively problem-solve, define common goals and prioritize actions. These sessions are where coalitions are built, creative ideas blossom, priorities are honed and solutions are incubated.



More than 60 individuals participated in the Think Lab activity, representing four major sectors.



The Work

Together, Think Lab participants were asked to bring their expertise to clarify the current state, brainstorm, and propose ideas and experiments that could produce creative, sustainable solutions to meet the ever-growing technology workforce needs of our North Shore communities.

Who Should Help Strengthen our Regional Technology Workforce?

Participants identified the different people, roles, and organizations that should be involved in the technology workforce re-imagining and collaborative work.

- Government and Government Agencies at the Municipal, State, and Federal Levels
- Community Leaders and Changemakers
- Business Leaders, Entrepreneurs, and Financiers
- Employers and Property Owners/Developers
- Associations/Chambers
- Investors and Philanthropist
- K-12, Technical Schools and Colleges/Universities
- Non-Profit Organizations
- Successful Cluster/Coalition Leads From Other Communities



Principles - What Matters the Most?

Next, participants were asked: What are the PRINCIPLES that will guide this journey and matter the most? The core basic values and mindsets were identified as follows:

Values

Inclusivity ● Equity ● Resiliency
Transparency ● Access ● Respect
Humility ● Collaboration

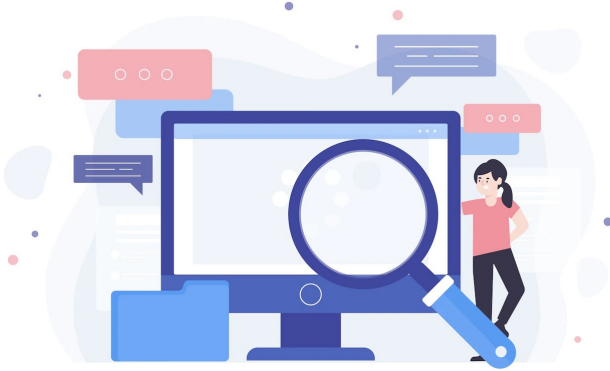
Mindset

Long Term Focus ● Living Wage
Innovation/Creativity
Focus on Root Cause ● Agile
Systems Thinking ● Holistic
Growth-Mindset ● Open Minded ● Dream!
Asset Focused

Major Themes

Observations

What's Happening? Why?



Ideas

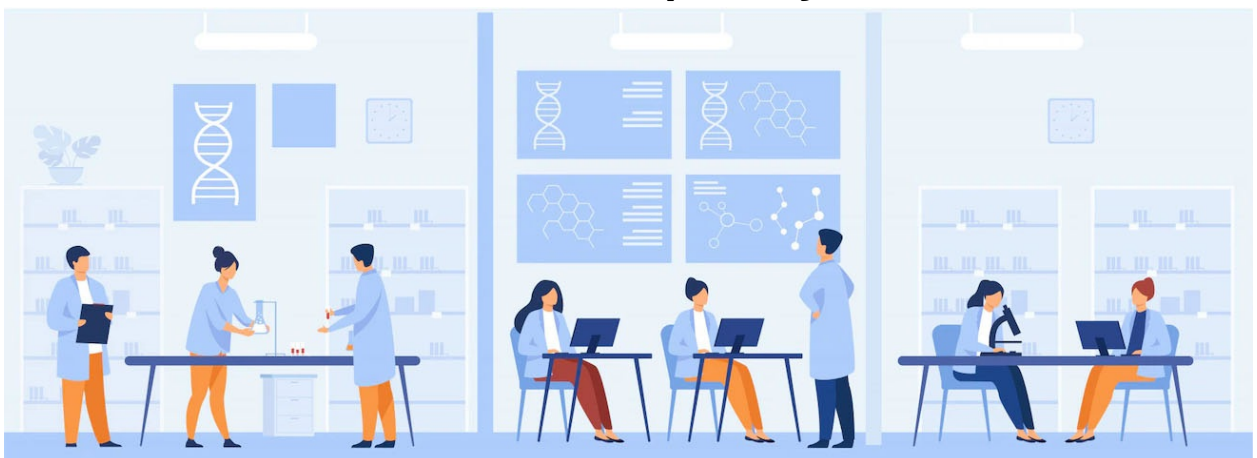
What Ways are There?



From the breakout sessions, the participants explored the current and future possible state of the technology workforce. The groups documented **Observations** of today and dreamed of **Ideas**, and proposed **Experiments** of the future to prototype and test these dreams.

Experiments

What's a Step to Try?



These observations and their possibilities fell into six main categories:

Demographics, Diversity, and Accessibility

Observations

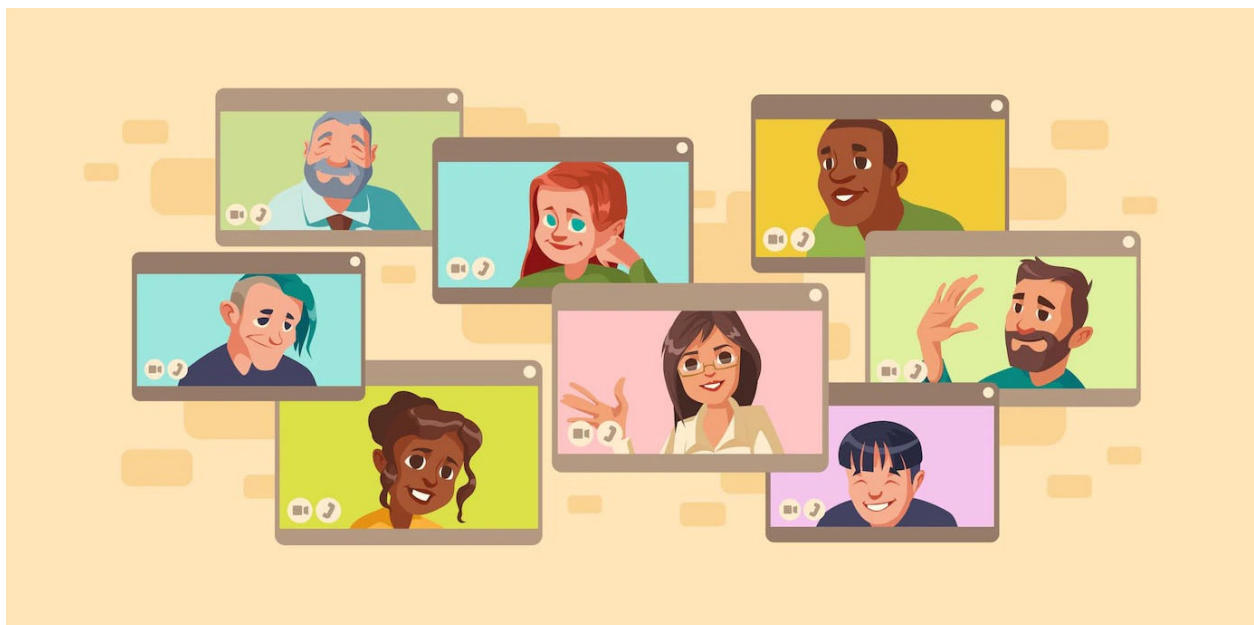
- Less than 10% of the STEM workforce is Black or Latino in Massachusetts.
- Low- and medium-income individuals (LMI) do not enter technology fields, and have unequal opportunities in securing internships.
- The workforce is aging and a declining number of high school students is leading to lower college enrollments.

Ideas

- Research on diversity and LMI individuals to identify and target them for specific programs.
- Paid internship/apprenticeship opportunities that lead to full-time employment.
- North Shore businesses as partners in work training programs.
- Consider geographic diversity in addition to socio-economic diversity.

Experiments

- Address inclusion, diversity and accessibility when developing programs for career exploration with equity and expand partnerships with organizations that can best be the voice of the community.
- Create, fund and promote regional apprenticeships/internships with local business partners and schools with an emphasis on equity and diversity.



Education and Training (K-12 thru Higher Education)

Observations

- Misconceptions and a lack of awareness by students, their families, teachers, and North Shore residents about technology sector opportunities and the skills required.
- Disconnect between industry and the public schools and lack of industry involvement with higher education.
- Lack of inspiration/guidance to middle and high school students for STEM fields.
- Lack of coordinated curricula at community colleges.
- Declining college enrollment and degrees losing their luster.
- Industry perceives certificate programs as mediocre.
- Experiential learning opportunities are needed as on-the-job training is not always happening, as students with this experience are employed faster.

Ideas

- Increase awareness of technology industry opportunities by featuring the types of work and skills required versus degrees in a particular field.
- Expand career mentoring and advisory services (especially in high schools) with leadership development in collaboration with industry.
- Expand the educator pipeline to provide technology literacy and advanced training.
- Engage K-12 students with industry help in hands-on STEM opportunities to start a technology career pipeline, including internships, summer programs/camps with existing organizations (i.e. YMCA, LEAP), field trips to technology companies, competitions (hackathons, robotics), and career fairs.
- Expand technical school capacities to eliminate wait lists.
- Industry and higher education should build a common and integrated curricula across Massachusetts and vastly increase experiential learning opportunities.
- Paid experiential learning should occur throughout an academic career.

Experiments

- Profile different industries, executives, employees, and students to increase the awareness of the types of careers and salaries available in the technology sector.
- Provide teachers with better insights into the technology industry through training and externships, and have high school students complete internships.



Workplace Expectations and Challenges

Observations

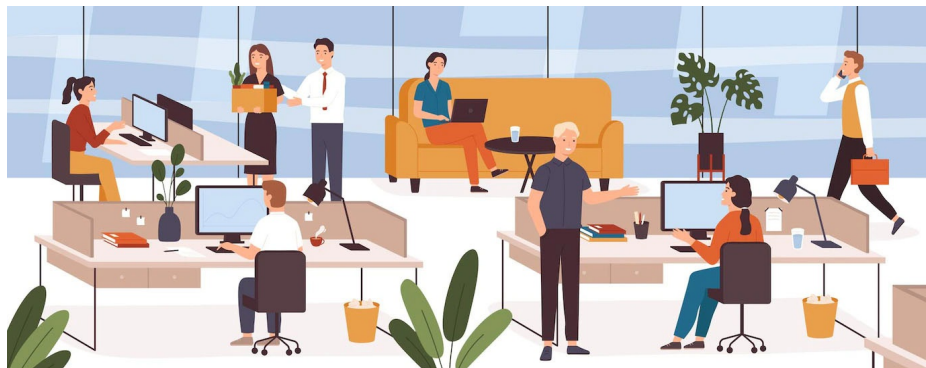
- COVID disrupted legacy business models and changed the work environment significantly, as work at home has become a reality.
- COVID added to the difficulty in finding experienced people, with many vacant positions and a daunting/looming workforce gap.
- Traditional human resources (HR) practices are encouraging employees to leave.
- There is a gap in postings for entry-level positions, where 1-2 or 3+ years of experience is required.
- Mental health challenges are on the rise in the workforce.
- Young people are rejecting the traditional work models and making decisions later in life.
- Job seekers are looking for the best possible scenarios with regards to hours, benefits, pay, location, and advancement.

Ideas

- Employers should up-skill their workforce with additional training that provides professional and educational credits, all paid for by the company.
- Evaluate criteria for entry-level positions (i.e. the necessity of a college degree), and change hiring practices to consider two-year degrees and certificate programs.
- Rethink HR practices to be current, equitable and optimized to attract all talent.
- Companies cooperate to create an employee sharing network to find expertise elsewhere.
- Funding or cost sharing across companies for clinical support, and training to ensure employees are mentally healthy.

Experiments

- Establish an HR working group to share and discuss how to expand their networks and seek new partners that can assist them to be more inclusive and expand their geographic and diversity reach.
- Offer hybrid and remote positions, where augmented reality and other high tech solutions could be leveraged to facilitate remote work and provide employee scheduling flexibility.



Financial Considerations and Cost of Living

Observations

- The traditional educational pathway is long and expensive.
- Financial aid is not enough for students, who also require stipends.
- The cost of living in Massachusetts is high, where entry-level salaries may not be enough for living expenses along with student loan repayments.
- Students and others are more focused on salary instead of passions, where higher retail pay is a competitive factor against entry-level technology jobs.
- Workforce development funding through the American Rescue Plan Act (ARPA).

Ideas

- Offering more scholarships to students and employees to continue their education from sources that include the state, industry, and other stakeholders.
- State funding to industry or other organizations (i.e. academic institutions) towards workforce development through local partnerships.
- Encourage venture capital investments to fund future workforce development, such as providing 100 stipends a year for technology certification courses.

Experiments

- Inspire and seek social impact venture capital investments in creating workforce development economic models.



Infrastructure

Observations

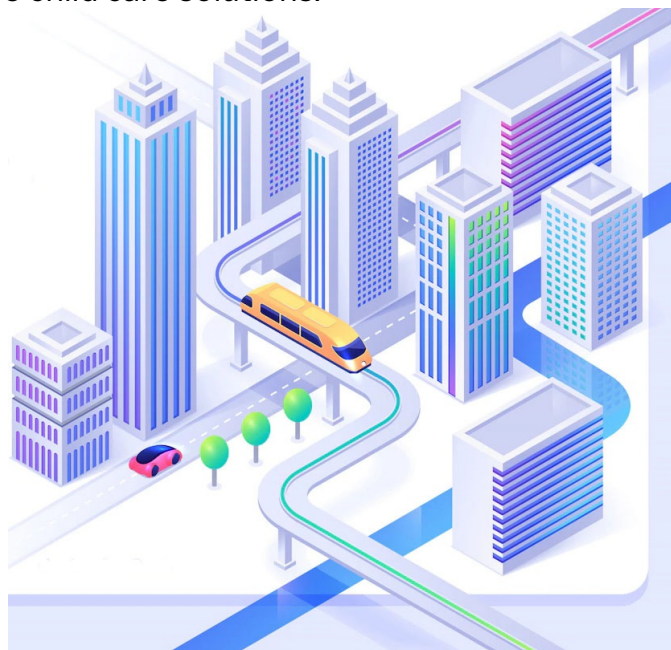
- There is difficulty in attracting young workers to the North Shore.
- Affordable housing is difficult to find, with residential costs skyrocketing.
- Many have difficulty commuting to educational institutions and jobs through public transportation, where routes do not extend into some communities or the “last mile” issue.
- Densely populated communities make commuting with vehicles difficult.
- Other barriers to transportation include child care, especially when one needs to leave due to a family issue.

Ideas

- New zoning laws to allow for affordable housing.
- Companies provide housing through subsidies or their own housing options for employees, on-site child care, and more on-demand transportation for employees.
- The Cape Ann Transportation Authority (CATA) can be a model for “the last mile,” with CATA on Demand which is free or low cost.

Experiments

- Create regional advocacy efforts to promote housing and transportation improvements aligned with business needs and growth and employment.
- Aligned with advocacy work noted above, consider options for:
 - building employer-based housing or creating a housing subsidy program for employees.
 - transportation solutions (i.e. last mile) consistent with business need and creative free child care solutions.



Regional Challenges Specific to the North Shore

Observations

- Local tech talent is exported to other communities and Boston.
- Pace of innovation is outstripping the ability to fill positions with the local workforce (i.e. biotechnology sector).
- There is a lack of a collaborative and cohesive regional marketing of the North Shore as an innovation destination within and outside of the region.
- The North Shore is not perceived as a place for the technology industry or for technology workers.


Ideas

- Develop a “regional vision” of technology, with business leaders increasing awareness and championing the North Shore as a place for innovation through a regional campaign.
- Start corporate, community, and labor coalition partnerships to create community-based jobs and attract younger workers.
- Work with policy makers to create economically beneficial legislation.
- Establish a North Shore cluster similar to Worcester, with regional leadership to build a collaboration towards technology-driven economic growth.



Moving Forward

In looking ahead with regard to how workforce development can move forward, a number of ideas and experiments were suggested in each theme, but not all can be done at once. Some key priorities addressing multiple themes that can be initiated include:



Establish a cross-sector regional technology coalition and hubs in the North Shore by learning from other regional efforts



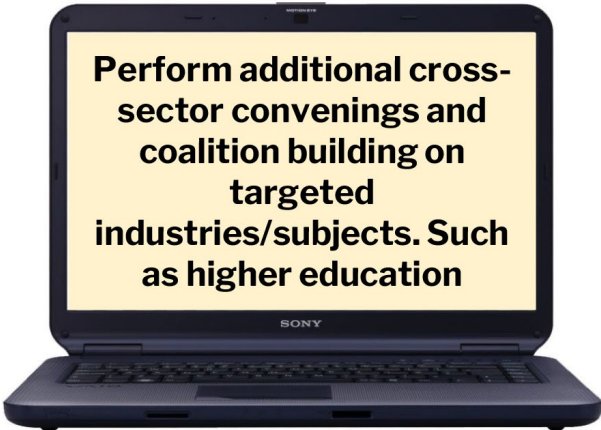
Gather industry/workforce trend data in partnership with other state and industry experts



Create and fund technology education programs and paid apprenticeships/internships, emphasizing equity and diversity through public-private partnerships, businesses, and schools



Establish an HR working group to share and discuss hiring practices and review minimum requirements for positions



Perform additional cross-sector convenings and coalition building on targeted industries/subjects. Such as higher education

Next Steps

1. Complete and share report.
2. Continue to convene in smaller targeted groups.
3. Further refine and prioritize identified experiments .
4. Ongoing communication on evolution of regional work.

JOIN US

If you would like to volunteer, fund or be more involved in shaping the future of our **Regional Technology Workforce** effort, contact us at president@nstc.org or administrator@nstc.org

