STEM Workforce Goal

Goal 6 – Align STEM education programs with the workforce needs of key economic sectors to:

- Improve the competence (knowledge, skills and attitudes) of current and prospective workers for in-demand career tracks across relevant job levels,
- Increase the availability and diversity of STEM competent workers to support the replacement (retirement) and growth needs of employers,
- Increase total employment of the STEM workforce, regionally and statewide.

Strategies – In collaboration with representatives of the regional and statewide education and workforce community, outreach to and engage employers that provide significant STEM employment in key economic sectors, with the objective of:

- Informing and continuously evolving STEM education programs based on current and projected industry practices (competency and certification requirements) aligning curriculum with in-demand career tracks and jobs;
- Partnering with vocational technical schools and programs, community colleges and state universities to adjust the capacity of education programs consistent with projected workforce demand;
- Facilitating the provision of internships, co-ops, externships, clinical placements, mentorships and other experiential learning/advising opportunities as a complement to classroom education, instruction and counseling;
- Promoting awareness of STEM education programs and workforce development pipelines to maximizing hiring of the commonwealth’s STEM talent

Standard(s):

- Identify and engage regional and statewide industry/education advisory groups with broad business representation that routinely collaborate to inform, plan, facilitate and promote STEM education programs

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• Increase the number of STEM education programs that address in-demand career tracks and jobs for key economic sectors.
  1. Programs incorporate profession-based competencies and industry certifications as validation of student outcomes.
  2. Competency definitions and certifications are published for key industry sectors
  3. Programs and pathway maps are aligned to competency and certification outcomes
  4. Programs produce a diverse and competent pipeline of STEM talent

• Improve response of vocational schools and colleges/universities to adjust capacity of STEM programs consistent with projections for a more diverse pipeline of new and replacement STEM workers targeting the following categories of students over time.
  1. Adult incumbent workers - upgrading knowledge and skills in current industry
  2. Adult displaced workers - transferring and upgrading knowledge and skills for new opportunities
  3. Traditional students ages 18-24 seeking initial employment opportunities
  4. Aspiring workers – developing foundation knowledge and skills contextualized to STEM growth sectors and preparing for entry into post-secondary programs.

• Increase the number of experiential learning opportunities offered in each key economic sector, statewide and regionally, as a percentage of enrolled students.
  1. Pre-employment/UI Internships
  2. Co-op placements
  3. Clinical Placements
  4. Teacher Externships
  5. Summer internships for high school and college students
  6. Connecting activities for K12 school year internships

• Quantify the number and % increase of Massachusetts STEM talent hires including underrepresented group hires

• Decrease persistent and above norm vacancy rates for in-demand STEM defined job categories

• Measure and report (growth/decline) of STEM job postings by economic sector and career tracks (technical, managerial and scientist/engineer) as a percentage of employment in these sectors/tracks.

  a. Tool(s): TBD

  b. Reference Data: ELWFD Job Vacancy Survey, other sources TBD