The Department of Higher Education, with approval from the Governor’s STEM Advisory Council, contracted with the University of Massachusetts Donahue Institute (UMDI) to develop a statewide science, technology, engineering, and mathematics (STEM) indicators system to benchmark Massachusetts’ progress in key educational and economic areas associated with the Pipeline Fund’s goals. This document highlights the highest level indicators associated with the first of the Commonwealth’s Statewide STEM Goals. More information related to each Goal, as well as information about data sources, can be found in the full 2014 STEM Data Dashboard.

**Goal 1:**
Increase student interest in STEM areas.

Increase interest in STEM college majors among college-going MA public school graduates from 35% in 2009 to 45% by 2016.
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**Goal 2:**
Increase student achievement among all PreK–12 students in order to prepare graduates to be civically and college and/or career ready.

Increase the percentage of all students who score proficient or advanced on the MCAS mathematics and science and technology/engineering assessments by 20 points by 2016.
Allison Scheff, Executive Director, STEM
ascheff@bhe.mass.edu
or
Keith Connors, Program Manager of the STEM Pipeline Fund
kconnors@bhe.mass.edu

Chart 2J: % of MA Students Scoring Proficient or Advanced on 10th Grade MCAS
Asian Test-takers
Public Schools Only

Chart 2M: % of MA Students Scoring Proficient or Advanced on 10th Grade MCAS
Black Test-takers
Public Schools Only

Chart 2P: % of MA Students Scoring Proficient or Advanced on 10th Grade MCAS
Hispanic Test-takers
Public Schools Only

Chart 2S: % of MA Students Scoring Proficient or Advanced on 10th Grade MCAS
White Test-takers
Public Schools Only

Chart 2V: % of MA Students Scoring Proficient or Advanced on 10th Grade MCAS
Low-Income Test-takers
Public Schools Only

Chart 2Y: % of MA Students Scoring Proficient or Advanced on 10th Grade MCAS
Non-Low-Income Test-takers
Public Schools Only
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**Goal 3:**

Increase the percentage of skilled educators who teach PreK–16 STEM classes.

Increase the number/percentage of STEM classes led by skilled educators from PreK–16 by 2016.
The MA STEM Data Dashboard is a project of the MA Department of Higher Education’s STEM Pipeline Fund. For more information please contact:

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Goal 4:
Increase the percentage of students completing post-secondary degrees or certificates in STEM subjects.

Increase the percentage of students who complete STEM-related post-secondary degrees and certificates at public and private institutions by 50% from 2008 to 2016.
**Definition of STEM**


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**Goal 5:**

STEM degrees and certificate attainment will be aligned with corresponding opportunity in STEM-related fields to match the state’s workforce needs for a STEM talent pipeline.

No less than 50% of degrees (associate’s, bachelor’s, and Ph.D.) and certificates earned will provide transferrable knowledge, skills, and work habits for entry into STEM-enabled occupations, ensuring the supply of talent will meet demands of the Massachusetts economy 2016.

**Chart 5A: MA Job Vacancy Rates by Major Occupational Group**

<table>
<thead>
<tr>
<th>Occupation</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Occupations</td>
<td>4.8%</td>
<td>6.1%</td>
</tr>
<tr>
<td>Architecture &amp; Engineering</td>
<td>2.3%</td>
<td>3.3%</td>
</tr>
<tr>
<td>Computer &amp; Mathematical</td>
<td>4.4%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Life, Physical &amp; Social Sciences</td>
<td>2.2%</td>
<td>4.3%</td>
</tr>
<tr>
<td>Healthcare Practitioners &amp; Technical</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Chart 5J: % of Certificates & Degrees Awarded in Architecture & Engineering Across All Levels**

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6.1%</td>
<td>6.0%</td>
<td>6.2%</td>
</tr>
</tbody>
</table>

**Chart 5K: # of Certificates & Degrees Awarded in Architecture & Engineering Across All Levels**

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Students</td>
<td>7,571</td>
<td>7,054</td>
<td>8,480</td>
</tr>
<tr>
<td>Both Public &amp; Private Schools</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Chart 5L: % of Certificates & Degrees Awarded in Computer Science & Mathematics Across All Levels**

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.5%</td>
<td>3.5%</td>
<td>3.6%</td>
</tr>
</tbody>
</table>

**Chart 5M: # of Certificates & Degrees Awarded in Computer Science Across All Levels**

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Students</td>
<td>4,360</td>
<td>4,115</td>
<td>4,964</td>
</tr>
<tr>
<td>Both Public &amp; Private Schools</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Definition of STEM