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# *Why STEM?*

- **STEM companies vital to MA economic health**
- **37.1% of HS graduates plan to study STEM** (*SAT indications*)
- **Last 10 years, growth in STEM jobs 3X greater than non-STEM jobs** (*USDDOC*)

## ***Why STEM.2***

***Next 10 years, STEM occupations projected to grow 17%, vs 9.8% for other occupations. (USDOD)***

***STEM workers earn more on average than non-STEM workers.***

***Average 2009 STEM wage - \$77,880***

***Non-STEM wage - \$43,460 (NGA)***

## ***Why STEM.3***

- ***STEM workers less likely to experience joblessness.***

**2010, unemployment rate for STEM workers 5.3%; all other occupations, 10%. (NGA)**

- ***US graduating fewer people with STEM degrees.***

**1/3 BA Degrees in US in STEM fields 53% for China; 63% for Japan. (USDOC)**

## ***STEM Activity in the Commonwealth***

- **Creation of STEM Pipeline Fund in 2004  
- \$11.5 million in total**
- **STEM Summit – annually since 2004;  
organized by UMass**
- **Lt Governor agreed to become STEM  
leader & champion - 2009**
- **Mass. Business Roundtable issued  
seminal report - status of STEM**

## ***STEM Activity in the Commonwealth.2***

- **Governor's Executive Order created STEM Advisory Council w. broad representation of STEM constituencies - 2010**
- **Release of Statewide STEM Plan with 6 goals:**
  - **students (interest, achievement, preparation for college & graduation in STEM fields)**
  - **increasing number of qualified STEM teachers, aligning efforts & workforce needs**

STEM Council 2012 Priorities							
STEM Plan Goals							
Student Interest	Academic Achievement	Student Readiness	Graduation Rates (post-secondary)	Educator Effectiveness	Workforce Development Employer Awareness & Readiness	Public Awareness	
Diversity							
Data							
Longitudinal Evaluation							
<b>Partners and Stakeholders</b>							
Districts & Schools		Innovation Schools (STEM)		STEM ECHS			WOW
EOE	EEC				STEP		
	ESE	OMSTE; Innovation Schools (STEM)		STEM ECHS	UTeach	ABE	
	DHE		GEAR Up; Dual Enrollment	Vision Project	ITQ	Nursing and Allied Health Initiative	
EOLWFD					Choosing to Compete 21 <sup>st</sup> Century		
EOHED					Choosing to Compete 21 <sup>st</sup> Century		
Regional Systems	STEM Networks; ESAs	Readiness Centers; ESAs	Readiness Centers; ESAs	Connect	Readiness Centers; ESAs	STEM Networks	STEM Networks
Public Higher Education				ABEL4 STEM	UTeach	MACCWDTA	STEM Summit
Private Higher Education					WPI STEM Center; NU STEM Center		
Non-Profits	Innovation Schools (STEM)						
	MAP				MAP		
	Latino STEM Alliance		YPFC				YPFC
Quasi's	Girl Scouts						
	CEC					<a href="http://cleanenergyeducation.org/">http://cleanenergyeducation.org/</a>	
	MTC						
Mass TLC							
Corporations							
Foundations							

# CURRENT FOCI

- **@ Scale Initiative**
  - *State funding requires 3:1 match*  
*\$3 private: \$1 public*
  - *4 Phases –provide funding for projects that address 6 goals*  
*(in Phase 2 now)*
- **Public Awareness**
  - *WOW Campaign, Branding & Messaging*
- **Stakeholder Alignment**
  - *Public & private partners on the same page*



# National Recognition

- **National Governors Association Center for Best Practices – hosted leadership teams from 10 states for Learning Lab based on Massachusetts**
- **Recognition by President Obama Initiative**
- **Grant from national non-profit Innovate + Educate to support implementation of state STEM plan**
- **One of 4 states chosen by NASA for Summer of Innovation initiative – grant of \$1.5 million to 6 colleges partnering with local schools**

**And yet...**

**No one in MA can know all  
the initiatives & programs  
There is no single place to find  
that information**

# **The origin of Search4STEM**

## ***A cautionary tale!***

- **Waltham 2005**
- **Promoting LIFT<sup>2</sup>**
- **Question: How do I Know?**

# The Proposition

- **Develop a searchable & interactive knowledge exchange /connector to coordinate available STEM resources**
- **Bring them to end-users to support PK-16 teaching & learning to improve STEM education outcomes in MA STEM Plan**  
*(Gov. STEM Advisory Council)*

# The Attributes.1

- **High quality STEM content organized by comprehensive & comprehensible criteria**
- **Single user interface /on-demand access**
- **Easy personalized access/ personalized searching capacity**
- **Networking/community functionality**

# The Attributes.2

- **A suite of publishing tools**
- **Sustainable design**
- **Continuous updating of info**
- **Alignment with standards**
- **Ease of use/intuitive**

# The Actions

- **Develop support (MassCUE) & other agencies (MA & IA)**
- **Funding (NSF grant in Iowa; MLSC)**
- **Advisory Council**
- **Create the website**
- **Test it**      • **Make adjustments**
- **Distribute it**
- **Maintain interest & use of the site**

# The Challenges

- **Rhode Island experience**
- **Redundancy**
- **Currency**
- **Quality**
- **Utilization**



# The Realities

- **MA technical development**
  - **\$7K a week vs \$4K a month abroad**
- **Support with constraints from funders**
- **When in MA, use MA vendors**
- **Other agencies w. more...**

# Change The Equation

- Consortium of IKZ Advisors, Tufts Engineering Education & Outreach Center, Rockman et al submitted proposal
- The chosen other...WestEd
- Announcement in late September  
<http://changetheequation.org/improving-philanthropy/stemworks>

# Differences

## **CTEq**

- **Intended for member investment in STEM**
- **(100 companies)**
  
- **National orientation**

## **Search4STEM**

- **Intended for use by all stakeholders:  
educators, parents,  
students, businesses,  
policy makers...**
  
- **State by state orientation starting with MA, IA**

# Resources.1

[http://changetheequation.org/  
improving-philanthropy/stemworks](http://changetheequation.org/improving-philanthropy/stemworks)

<http://www.stemconnector.org/>

# Resources.2

**STEM Pipeline (Networks, etc.)**

**<http://www.mass.edu/forinstitutions/prek16/pipeline.asp>**

**@Scale**

**<http://www.mass.edu/forinstitutions/prek16/documents/2012-09-07-At-Scale-RFP.pdf>**

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