

MEMO: The Massachusetts STEM Initiative and STEM Advisory Council

TO: Governor-elect, Lt. Governor-elect

FR: Allison Scheff, Executive Director of STEM and Adam Freudberg, Governor’s Office

Date: November 5, 2014

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## **GOV Role**

The Science, Technology, Engineering, and Math (STEM) Advisory Council (created in 2009 by Executive Order and codified into law in 2014 by legislative action) bridges three very important public policy issues: STEM education, workforce development, and job growth. Its role is to advise the Governor, Executive Branch Officials and Legislators on these policy issues. The Council is led by Honorary Co-Chair Congressman Joseph P. Kennedy III and Co-Chair Dr. Jeffrey M. Leiden, CEO of Vertex Pharmaceuticals. The STEM Advisory Council aligns STEM education efforts with workforce development needs in order to continually prepare a well skilled workforce for our innovation economy. The Council authors the state wide STEM plan, which provides common direction and focus for the PreK-Workforce pipeline via five goals. The goals have clearly identified benchmarks, and progress made toward those benchmarks is measured annually by the UMass Donahue Institute. The STEM Plan and the goals are endorsed by industry partners, academic partners, and the Commonwealth through a rigorous approval process through the various education departments, secretariats, and Governor’s office.

Massachusetts has a history and tradition of leadership in the fields of scientific discovery and technological innovation. Key to the Commonwealth’s preeminent position in the global marketplace is the availability of a skilled workforce. However, for more than a decade, Massachusetts has ranked below the national average and lagged behind other leading technology states in high school students’ interest in STEM careers even though research has clearly shown that STEM jobs pay more than non-STEM jobs, that the number of STEM jobs is expected to grow faster than non-STEM jobs, and STEM workers are less likely to experience joblessness. As a result, Massachusetts faces a critical economic and workforce challenge – to increase the quality and quantity of workers in the STEM pipeline to fill the jobs being created now and in the future. The STEM Advisory Council is taking the lead in addressing this challenge.

## **Top Issues**

**@Scale:** The STEM Council created a national model, which is called @Scale, to identify high quality STEM programs that have demonstrated success and are scalable across the state with the goal of reaching more students and educators. This investment strategy began to identify projects in 2010 and concluded its portfolio selection process in 2013. The seventeen @Scale projects are in the process of being evaluated to inform and refine @Scale model. The evaluation of this strategy will conclude in November 2014. The evaluation data will be the foundation for a National Science Foundation proposal on researching the impact of @Scale in communities; this proposal is due in February 2015.

**Business Engagement:** One of the major challenges that the STEM Council continues to face is the lack of coordinated engagement by the business community. The Council

strives to have industry engagement result in the support of the STEM Pipeline in order to make transformative change. The STEM Council responded to the business community’s call to help them identify projects that could be invested in and scaled across Massachusetts, which became the @Scale program. However, up to now, the Council has not seen significant investment by the business community in @Scale and those companies continue to fund their own, one-off programs that reach only a handful of students in the school districts that are often clustered around Boston and Route 128. With Dr. Leiden’s appointment, the Council has true leadership behind its business engagement strategy. Dr. Leiden and the STEM Council are in the process of identifying a small group of business leaders to create a STEM business engagement advisory group. This advisory group will align with the Council and be used to determine why investment has not come at the rate that the Council anticipated and determine what can be done by industry help grow the STEM Pipeline in a transformative way in Massachusetts.

### **Key Decisions that need to be made**

The Governor-elect will need to make three key decisions that will directly impact the success of the STEM Council during the administration.

1. Identify a key contact person in the Governor’s office to work with the Executive Director of STEM and the STEM Advisory Council. This relationship is paramount to ensuring a close connection between the Governor and the STEM Advisory Council.
2. Determine what role this administration would like to have in identifying key industry partners to be part of the business advisory group. There is a real opportunity for the Governor-elect to show its support of STEM to the Council and to industry by working with Dr. Leiden to recruit key leaders for this group.
3. Funding for the STEM Pipeline. The STEM Pipeline Fund was originally funded at a rate of \$4 million each year for five years before the recession. The Council is very thankful for the \$1.5 million that the STEM Pipeline Fund has received annually in recent years. As state revenues rebound, considering a raise from the current allocation would allow more STEM gains to be made. More funding would also put the Commonwealth at a funding level that is aligned with other state’s that are leaders of STEM movements, including Iowa and Utah. These additional funds would be used to encourage a higher quality pool of programs to apply for @Scale and provide additional capacity to support all areas of STEM at all levels, including outreach to parents to encourage their children to explore careers in high need areas.

### **Upcoming Milestones/Deadlines**

The STEM Council will conclude its @Scale evaluation in November 2014. The STEM Council will identify its business engagement advisory group in January 2015. The Council via the Department of Higher Education, Education Development Center, and UMass Donahue Institute will submit a proposal to the National Science Foundation in February 2015. Support from the Governor and your Administration will strengthen these efforts.

### **Partners**

The Massachusetts STEM Advisory Council is a forty member group that is made up of local STEM business and education leaders, as well as ex officio members from

government, UMass and quasi-public agencies. The Council is led by honorary co-chair Congressman Joseph P. Kennedy III and co-chair Dr. Jeffrey M. Leiden of Vertex Pharmaceuticals. All members have two year terms scheduled to expire in the fall of 2016. There are no term limits. The Council works with the nine Regional STEM Networks and numerous associations.

### **Recurring Meetings and Recurring Reports**

The STEM Council meets quarterly at locations throughout the state. The Council also has a seven member executive committee that meets monthly. There are twelve STEM Council subcommittees and working groups that also meet throughout the year. They are:

- STEM and the Arts to evaluate how to best integrate Arts and Music into STEM
- Data and Measurement
- Diversity
- Global STEM
- Media and Communication
- STEM Awareness
- Teacher Recruitment, Preparation, and Training
- Workforce and Training
- Defining STEM
- STEM Networks
- STEM Readiness
- STEM Summit Proposal Review Panel

Massachusetts is home to the longest running annual state-wide STEM Summit in the nation which the Governor and/or members of the Cabinet attend each year. The STEM Pipeline Fund, which receives guidance from the Council and is administered through the Department of Higher Education, submits an annual report to the legislature. The Council has a state-wide STEM Plan, with version 2.0 released in November 2013. The next STEM Plan version is projected to be released in 2016.

### **CONTACT**

For more information or a detailed briefing on any of this material, please work through Allison Scheff, Executive Director of STEM and the MA STEM Advisory Council, Department of Higher Education.

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### **Other Important Information**

**Files Related to this work are located on our XYZ server at:** <INSERT LINK/PATH>

**Online Material is located at:** [www.mass.edu/stem](http://www.mass.edu/stem)