The @Scale Project Initiative

A portfolio of best practice projects

@Scale

Massachusetts published A Foundation for the Future: Massachusetts Plan for Excellence in STEM Education in the fall of 2010. A central theme of this plan responds to a common concern of school district leaders, educators and funders (foundations and corporations) expressed as – ***How do we invest strategically and with an expectation of predictable and measurable outcomes through the plethora of competing STEM education projects?*** Educators called for guidance in their process of adopting projects that demonstrate efficacy in teaching and learning practices and that align with statewide strategies, curriculum standards and frameworks. Funders sought similar guidance to better inform their investment of philanthropic resources in support of local education priorities, and to achieve strategic, statewide impacts.

In response, the Governor's STEM Council launched the @Scale initiative to focus public and private resources in support of an integrated portfolio of education enhancement projects aligned to achieve the goals of the Commonwealth's STEM plan.

Massachusetts STEM Key Goals
1. Increase student interest in STEM.
2. Increase STEM achievement of PreK-12 students.
3. Increase the percentage of students who demonstrate readiness for college-level study in STEM fields.
4. Increase the number of students who graduate from a post-secondary institution with a degree in a STEM field.
5. Increase the number/percentage of STEM classes led by effective educators, from PreK-16.
6. Align STEM education programs with the workforce needs of key economic sectors.

The STEM Council recognizes and celebrates the many innovative education enhancement projects that emerge from the community of non-profit organizations, higher education faculty, corporate partners and others. However, the Council also recognized the need to identify a short list of successful projects that are designed for replication and scale-up to serve large number of students, quickly. The characteristics for selection of @Scale projects include:

- Effective use of data to identify, quantify and measure outcomes in context of the goals of Massachusetts STEM plan,
- A strong foundation in research and demonstrated success in achieving quantifiable student and worker outcomes,

- Promotion of partnerships, coordinated through the Regional STEM Networks, to include K-12 school districts, colleges and universities as well as workforce development organizations to align education with the requirements of key industry sectors, and
- Success in securing matching private/other funds to support scale-up implementation projects that achieve widespread, measurable student and worker outcomes.

Building the Projects Portfolio

In 2012, the first phase of projects were selected and endorsed as having met the @Scale criteria established by the STEM Council. These projects each proposed scale-up projects requiring a match of public funds with private funds on a target ration of $1:$3 public to private. These projects have completed their funding match requirement (or are working to complete those commitments) and now have begun their scale-up implementations.

Subsequent to this first phase, the STEM Council announced an expansion of the initial seven project pilot to a planned portfolio of approximately 20 projects that will address the spectrum of Science, Technology, Engineering and Mathematics across learning levels from Pre-K/Elementary through Middle/High School and on to College/Workforce. Looking forward, this system of projects must articulate across grade levels to provide a seamless progression of student-centered supports focused on education and career outcomes (Figure 1). The selection of this initial portfolio of projects is underway and scheduled for completion by the end of calendar 2012.

@Scale Projects Portfolio

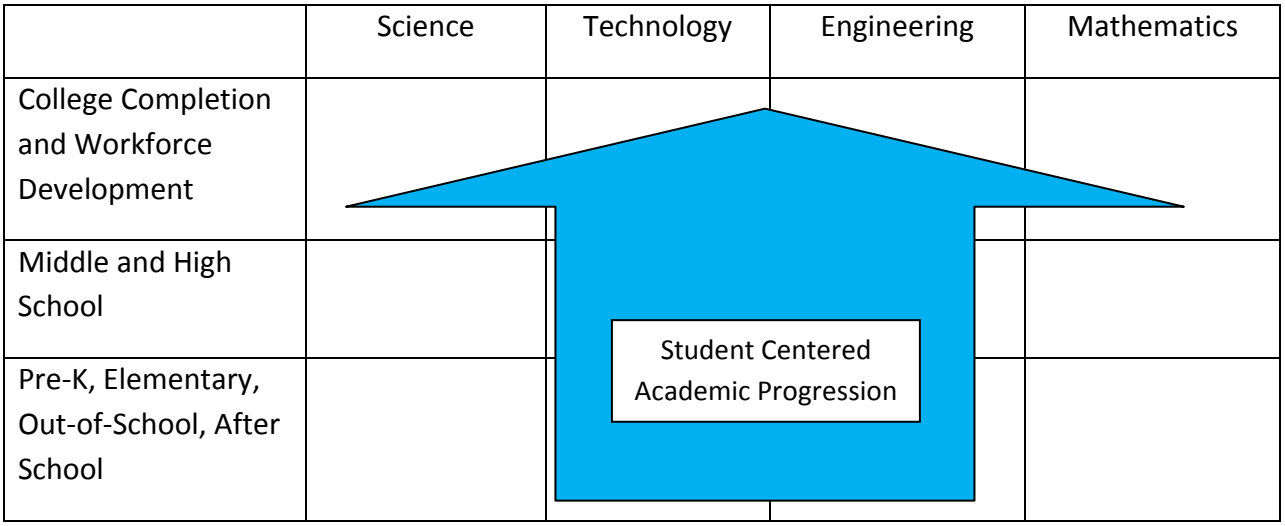

Figure 1

Fully funding the complete projects portfolio will require a commitment of approximately $4M annually of which $1M in state funds has been committed for FY13, pending completion of a private funding match of $3M.

- Phase I of @Scale addressed Student Interest and Student Readiness (Goals 1 & 3 of the State STEM Plan). Seven projects were selected through a competitive process and endorsed by the

STEM Council. These projects have secured approximately $700K in matching funds against a target of $1M. Potential funding partners have been engaged to complete the funding match.

- Phase II of @Scale, which addresses College Graduation Rates and Workforce Development (Goals 4 & 6 of the State STEM Plan) was launched in August 2012 with a $400K commitment of public funds requiring a $1.2M private/other match.
- Phases III and IV of @Scale will be launched before the end of calendar 2012 with a $250K commitment of public funds requiring a $750K match. Phase III will focus Science Inquiry and Applied Mathematics at the middle and high school level and address Student Academic Achievement and Educator Effectiveness (Goals 2 and 5 of the State STEM Plan). Phase IV will focus on Pre-K, Elementary and Out-of-School programs addressing Student Interest and Educator Effectiveness (Goals 1 and 5 of the State STEM Plan).

Private partners (foundation, and corporate) are encouraged to select and directly fund projects from this portfolio that align with their philanthropic values, completing the funding match by the end of 2012. As the success of this initiative will span multiple years, funders should consider the need for a multi-year commitment to the projects they select.

Best Practices - Research

The next step in the @Scale strategy is to conduct targeted research investigations of the portfolio of @Scale projects - formatively evaluating implementation policies and practices, assessing summative outcomes, informing redesigns for sustainability and advancing full system scale-up. The goals of this research agenda are two-fold. First to inform actions that will promote high-levels of performance, effectiveness and efficiency of this initial portfolio of projects, and second to establish a planning framework and reference benchmarks to guide new project innovations and implementations throughout the ecosystem of STEM projects in Massachusetts.

A team is seeking funding for this research phase of the @Scale initiative through federal programs and private foundations which will complement the investment in implementation scale-up projects by the Commonwealth and local funding partners (foundations/corporations).

Standards Alignment

Two major initiatives led by multi-state coalitions are underway to redefine and realign standards for mathematics and science education. The Common Core and NextGen Science standards represent major initiatives to transform K-12 curriculum and improve alignment from secondary to post-secondary education. The @Scale projects portfolio will reflect and complement this redefinition and realignment of standards, especially in context of vertically articulated student progression pathways through the education system.