

# MIDDLE-SKILL STEM STATE POLICY FRAMEWORK

By Ian Rosenblum and Richard Kazis | OCTOBER 2014



The sector of the economy frequently referred to as STEM (Science, Technology, Engineering and Mathematics) is the subject of much national interest and debate. While there is general consensus across various stakeholders such as policymakers, educators, and industry that STEM education and careers are essential to maintaining an innovative and vibrant country, there are frequent and heated disputes: Are there labor shortages in STEM, either overall or in particular fields or regions? How should resources be targeted? What dimensions of the STEM agenda are most critical?

Over the last year, Achieving the Dream and Jobs for the Future have focused on a specific segment of the STEM economy that has not been embroiled in those debates—it has, in fact, not received adequate attention until now. With the generous support of The Leona M. and Harry B. Helmsley Charitable Trust, Achieving the Dream and Jobs for the Future have zeroed in on those STEM jobs that can be defined as “middle-skill,” requiring less than a baccalaureate credential. Middle-skill STEM jobs represent an incredible intersection of economic opportunity for individuals from low-

income backgrounds and for labor markets with persistent and growing workforce needs. These jobs are far more plentiful than is generally understood, and they pay more than the typical jobs available to those with less than a Bachelor’s degree.<sup>1</sup> They are an important and growing source of opportunity for lower-income, less academically prepared individuals, those leaving high school and those treading water in low-wage, low-skill employment.

Preparation for a surprisingly large proportion of these jobs now takes place at public community colleges. This presents both an opportunity and a challenge. For students who find their way quickly and efficiently into well-designed and well-delivered programs of preparation for a middle-skill STEM career, the community college provides a relatively low-cost way to dramatically improve their employment, earnings, and career trajectory. Yet for a host of reasons, too many community college students have a very different experience, failing to complete their chosen program of study and advance to employment in their field, or dropping out before they even make any serious progress toward meeting STEM or other program requirements.

<sup>1</sup> Rothwell, Jonathan. 2013. *The Hidden STEM Economy*. Washington, DC: The Brookings Institution.

To elevate the middle-skill STEM agenda and its urgency in national debates on both STEM education and postsecondary student success, and to articulate a set of policy targets and priorities for states that want to be more active in supporting middle-skill STEM pathways, Achieving the Dream and Jobs for the Future have created a *Middle-Skill STEM State Policy Framework*. It includes five major recommendations:

- > **Create pathways to careers:** Ensure that STEM programs meet employer needs
- > **Open doors to stem:** Improve math preparation and developmental education to boost student success
- > **Focus on student completion:** Create new models that lead to degree attainment
- > **Make informed decisions:** Improve data collection and data use to enhance transparency, accountability, effectiveness and equity
- > **Provide incentives for success to both students and community colleges:** Encourage innovation and reward better outcomes for STEM students and the STEM workforce

Within each recommendation, we offer several policy levers and opportunities for strengthening middle-skill STEM pathways such as:

- > **Developing systems for using current labor market information and employer engagement** to tailor program offerings, curricula, and equipment on an ongoing basis

- > **Aligning math requirements with STEM program expectations** and establishing differentiated math pathways based on the content that students need
- > **Organizing meta-majors at community colleges** to encourage early selection of a career cluster
- > **Adopting public goals for STEM degree and certificate production**, with metrics and strategies for improvement and accountability for demonstrating progress
- > **Ensuring transparency around student outcome data** disaggregated by population subgroups and establishing goals for reducing attainment gaps
- > **Providing tax breaks for STEM graduates who work in-state** (or in targeted underserved parts of states) in order to stop the STEM-skill “brain drain”

The *Middle-Skill STEM State Policy Framework* is the first of its kind to lay out concrete opportunities for states and community colleges to leverage policy levers in support of strengthening middle-skill STEM pathways. This is a living document that will be refined over time as the national debate on middle-skill STEM jobs evolves and evidence mounts on effective policies and institutional strategies that improve outcomes for community college students.

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Full report available at: <http://www.jff.org/publications/middle-skill-stem-state-policy-framework>

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