

Washington STEM Initiative: Preparing Every Student for Success

Our Vision: Washington students will be leaders, innovators and problem-solvers

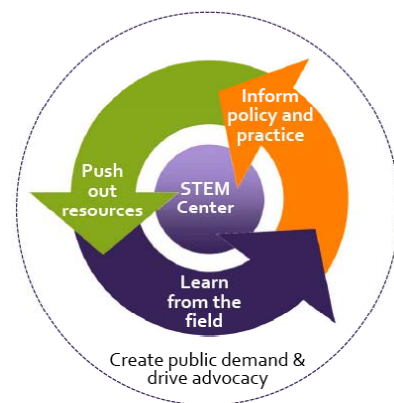
To succeed in the 21st-century knowledge economy, Washington students need the ability to create, design, innovate, and think critically to solve complex challenges. Every young person should possess deep knowledge and strong skills in math, science, technology and engineering — and be excited and ready to use that knowledge in the real world.

Washington is not currently prepared to offer students the opportunities they deserve. The state has too few adequately prepared math and science teachers. While the state benefits from some promising STEM education programs, these efforts are not often evaluated, integrated or scaled. Evidence about what works to improve teaching and learning is too rarely connected to classroom practices and policy decisions.

Our students pay a price. Only 43 percent of Washington's 4th graders and 39 percent of 8th graders scored proficient or above on the most recent National Assessment of Educational Progress, and only 29 percent and 33 percent, respectively, scored that well in science. Approximately 50 percent of community and technical college students must take remedial courses. Less than 5 percent of STEM postsecondary degrees awarded in the state are earned by students of color. Washington ranks fourth in the country in technology-based corporations, but 46th in participation in science and engineering graduate degree programs. Too many young people do not have the skills required to fill the family wage jobs available in Washington. We need to engage and ignite the imaginations of young people, educators and the public to achieve dramatic improvements.

The Washington STEM Initiative

To meet this challenge, the Washington Roundtable and Partnership for Learning are launching a Science, Technology, Engineering and Math (STEM) Initiative to accelerate improvements in the state's K–12 education system, transform the teaching profession, and dramatically increase the number of Washington high school students who graduate ready to succeed in STEM postsecondary degree programs and careers. The Initiative is intended to benefit every K–12 student in the state, with a particular emphasis on reaching low-income, minority, and other under-represented students.



A new nonprofit STEM Center, managed by a world-class staff with expertise in policy, programs, and communications, will open in the spring of 2010. The STEM Center will offer leadership in the following areas in order to accelerate improvements in STEM instruction throughout the state:

Investor: Identify, evaluate and leverage existing resources so that they have a greater impact; secure and target resources to disseminate effective models to benefit and serve all students, as well as to generate knowledge where innovation is needed to drive transformative change.

Partnership-builder: Create and support an expanding statewide STEM network of practitioners, policymakers, and researchers with a shared vision and commitment to dramatically improve STEM instruction at scale.

Coordinator: Ensure that the work of the Initiative is focused on strategic priorities that align with evidence of best practice generated at the state and national level.

Evaluator: Assess the quality and impact of various programs, policies, and interventions to support a learning network that uses evidence to guide its actions and communications.

Communicator: Create and use a state-of-the-art information network to proactively facilitate knowledge sharing among schools, districts, policymakers, and researchers, as well as serve as a conduit to disseminate best practices from the national arena.

Champion: Advocate for improved policies and practices at the state and national level, especially those that will improve the achievement of groups historically underrepresented in STEM.

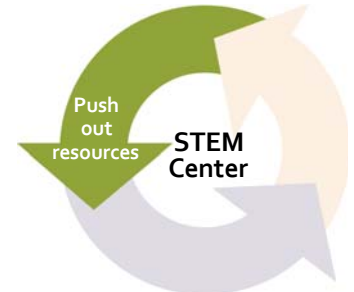
Leading Dramatic and Sustainable Improvements

Four Strategies for Lasting Impact

With leadership from the STEM Center, four key strategies will create a dynamic network able to effectively implement programs and practices in the field, supported by a robust policy agenda and communications strategy to drive significant and lasting changes in the education system.

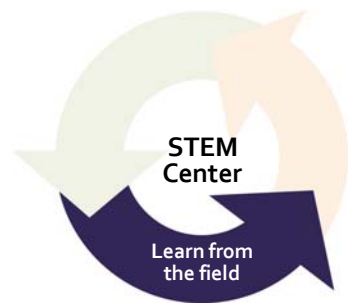
Strategy 1: Identify, support, coordinate, share quality resources

The STEM Center will support and coordinate state, regional, and local STEM teaching programs, practices and policies. By identifying and sharing proven existing practices identified at the district, state or national level, the STEM Center will be able to effectively disseminate what is known about effective instruction. By helping to coordinate and focus existing resources as well as generate new and private funds, the STEM Center will be able to both “expand the pie” and ensure funds are spent on high-impact work, as well as target high-priority areas for new investments to spur innovation. By fostering a cycle of continuous improvement and rigorously measuring outcomes, the STEM Center will serve as a quality control clearinghouse of effective innovations and will help create and sustain a culture of evidence.



Strategy 2: Learn from the field

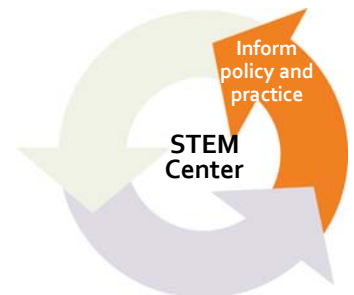
The key to strengthening instruction and accelerating student achievement in STEM fields at scale is to improve practices for recruiting, preparing, hiring, retaining, supporting, and evaluating higher-quality teachers. By focusing the expertise and resources of business, industry, K–12 schools and districts, and colleges and universities, the Initiative will create an environment for continuous learning. Schools and districts will learn from each other as well as from state and national organizations whose expertise will address targeted priorities.



Strategy 3: Inform policy and practice

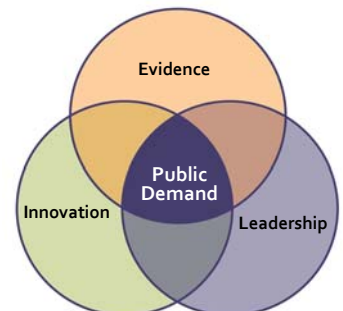
The STEM Center will actively engage in local, state, and national initiatives to gather information on successful interventions and use the information to promote public policies and evidence-based practices that advance teacher effectiveness in the STEM fields. Priorities include:

- Stronger statewide standards, assessments, graduation requirements, and linked longitudinal data systems.
- Improved curriculum tools that make the standards actionable for teachers and students.
- Better diagnostic assessments that teachers can use to strengthen instruction.
- Professional development and certification models that prepare teachers to engage students and families in rigorous and relevant learning that connect school, careers, and life.



Strategy 4: Create public demand for quality

By advocating for students who need the most assistance, the Initiative will ensure that all students have the opportunity to compete for STEM jobs of the future. The STEM Center will develop and implement a coordinated statewide communications plan that will build public understanding and demand for higher-quality STEM education for all students. Families and communities will expect excellent STEM instruction and student outcomes in every Washington school. Expect more, get more.



Creating a Network for Learning and Improvement

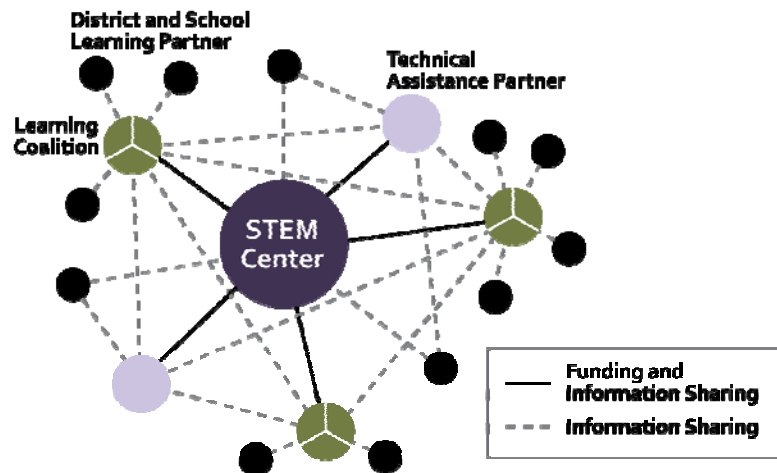
A Statewide STEM Network

To develop and implement these strategies, the STEM Center will create and support a statewide network of K-12 districts and schools, institutions of higher education, and business and community partners with a common focus: to dramatically scale up the development and dissemination of best practices in STEM instruction to benefit all students.

The network will focus on three priority areas:

- Establishing a **common vision of effective STEM teaching and learning** based on research;
- Enacting **instructional programs that align with rigorous standards** to prepare students for college (two-year or four-year), work, and life; and
- Implementing **frequent, ongoing formative assessments** to monitor and diagnose student progress toward learning targets and routine summative assessments to assess proficiency.

A Statewide Network to Identify, Develop, Share, and Scale Up Best Practices



STEM Center. At the heart of the network, the STEM Center will provide direct support to all schools, districts, and institutions of higher education by serving as a clearinghouse and broker of information on evidence-based practices, programs, and policies to support STEM teaching and learning. As a grant-making organization, the STEM Center will fund Technical Assistance Partners and Learning Coalitions to support implementation efforts across the state. The Center will play an active leadership role in state-level policymaking, advocating for effective curriculum, materials, and resources, to assure that all students across the state benefit from high-quality STEM educational experiences.

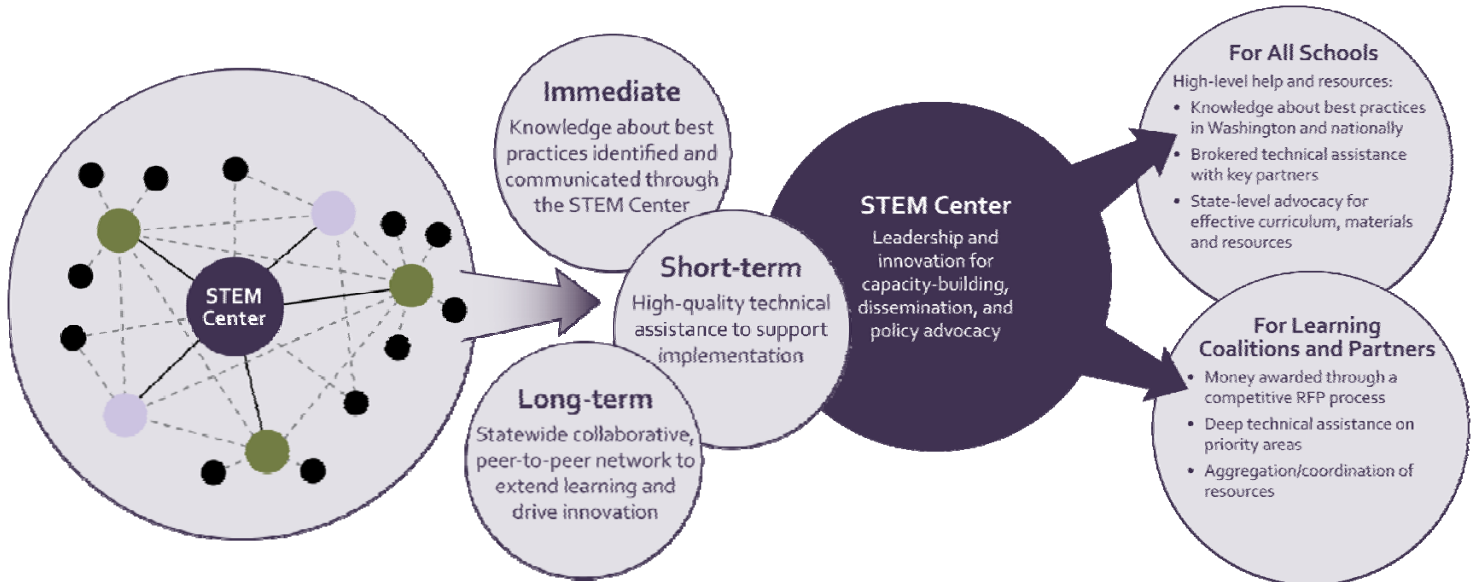
Technical Assistance Partners. Technical Assistance Partners, typically based at universities, nonprofit, or for-profit organizations, will support all schools and districts throughout the state, the STEM Learning Coalitions, and the STEM Center in their shared efforts to improve instructional effectiveness. The STEM Center will support Technical Assistance Partners based on their demonstrated expertise in supporting the specific program, practice, and policy needs of K-12 school systems and institutions of higher education throughout the state.

STEM Learning Coalitions. STEM Learning Coalitions will represent partnerships among businesses, higher education, and K-12 school systems to foster collaborative learning about effective instructional practices and to incubate ideas to generate knowledge to address current challenges. A subset of partners, defined by a proven track record of effectiveness in areas that correlate with positive student outcomes will act as a Leadership Core. The Leadership Core will implement a strategic scaling strategy to engage other schools and districts and grow the network. The STEM Center will support a feedback system to ensure Coalitions learn from successes and failures and adjust their actions and strategies accordingly.

Driving Better Outcomes for Every Student

All Districts and Schools Will Benefit

The STEM Center is committed to disseminating knowledge and tools to *all* schools and districts across the state as soon as it opens in spring 2010. As the STEM Center identifies research-based effective practices, tools, and policies, it will disseminate the information widely. The STEM Center also will broker connections to key partners to support implementation efforts. State-level advocacy for effective curriculum, materials, and resources will also benefit all educators and students across the state. In time, STEM coalitions will include more and more school and district partners, adding yet another means for schools to access support for long-term continuous improvement.



Measuring Success

The STEM Initiative will operate as a “learning network” by carefully monitoring and assessing the ability of all participants and grantees to drive transformational outcomes, including:

- Students across the state have access to high-quality STEM teaching
- Washington K-12 and college students are internationally competitive
- STEM teaching careers and professions are viewed as desirable
- Research findings drive policy changes that improve teacher effectiveness
- Public demand for quality STEM education rivals that of reading and writing
- Local businesses have a steady supply of well-prepared STEM graduates
- Washington’s schools and companies are recognized as innovation leaders

An early priority of the STEM Center will be to partner with a nationally recognized evaluation firm and define short-term measures of progress toward these desired long-term impacts. The STEM Center will break new ground in identifying, collecting and sharing data on meaningful indicators that go beyond state assessment scores, course enrollments and the number of teacher preparation program graduates. The network’s success will depend on its ability to adapt and evolve based on the evidence of what works to improve teacher effectiveness and accelerate student performance.

Ultimately, our success will be judged by our students’ ability to innovate, lead, and solve tomorrow’s challenges.

Partnership for Learning welcomes your feedback and is happy to answer any questions regarding the Washington STEM Initiative. For comments, suggestions or inquiries, please email stem@partnership4learning.org and visit www.partnership4learning.org/stem.