



Survey of State STEM Legislation

In August the 42 state Science and Mathematics coalitions comprising the National Alliance of State Science and Mathematics Coalitions were asked to provide brief reports on recent, current, and pending state legislation impacting STEM education in their respective states. These reports are not limited to education appropriations bills but include legislation and activity viewed by concerned stakeholders in the business, education and policy communities in those states as having significance (negatively or positively), in efforts to improve STEM education.

It is at the state level that legislation has its most direct and profound influence on the future outcomes of science, mathematics and technology education. State coalitions of business, education and public policy undertake to inform lawmakers in this regard. These briefs include education bills, workforce and economic development bills, and executive actions directly bearing on STEM issues.

This is a preliminary report and represents the first responders. Additional states will be added to this document as reports are received. Legislative activity in all 50 states will be reflected in the finalized survey.

ALABAMA

Alabama legislature's approved the 2009 state education budget that (in a year of tremendous cuts) increased the Alabama Math, Science, and Technology Initiative (AMSTI) budget by \$5 million. The total AMSTI budget for 2009 is approximately \$40 million. Training was just completed for 8,500 K-12 teachers in 11 regional centers. For more information on AMSTI go to: www.amsti.org . Additionally, see pg. 6 www.myaea.org/PDFfile/ASJ/ASJMay52008.pdf for more information on the Alabama education budget and AMSTI highlights.

CONNECTICUT

2008-2009

The Connecticut State Department of Education's Framework for Connecticut's High Schools: A Working Guide for High School Redesign provides a common framework for leaders at the state, district, school and community levels to use in initiating conversation and action by local stakeholders in the hard work of transforming high schools and ensuring success for each high school student. The framework identifies seven expectations and recommended strategies for each that will promote academic rigor for each student and add relevance to the curriculum, thereby promoting civic and personal growth.

The seven expectations are interrelated and nonnegotiable for the successful redesign of all Connecticut high schools:

1. A mission that clearly defines the essence of what the school seeks to achieve.
2. Curriculum that is standards-based, rigorous and challenging with an emphasis on



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learning that is authentic, relevant and includes exploration of postsecondary opportunities.

3. Strong, educational leaders who have developed the capacity of teachers, parents and students to enable all stakeholders to achieve the school's mission and expectations for student learning.
4. Small, safe, personalized and positive learning communities.
5. Embedded professional development programs with the single purpose of improving teaching and learning.
6. The regular and purposeful use of data to form and transform teaching, learning, leadership and management practices to provide a rationale for educational decisions.
7. Learning opportunities for all students that extend into the community.

2007

- Bill 8003 - An Act Implementing Provisions of the Budget Concerning Education: Sec. 32. Section 10-223e of the general statutes is amended by adding subsections (c) to (f), inclusive, as follows (Effective July 1, 2007):
 - Any school or school district identified as in need of improvement pursuant to subsection (a) of this section and requiring corrective action pursuant to the requirements of the No Child Left Behind Act, P.L. 107-110, shall be designated and listed as a low achieving school or school district (educational disciplines used are math, reading, language arts and now science) and shall be subject to intensified supervision and direction by the State Board of Education.
 - The Comptroller shall, pursuant to the provisions of section 10-262i, as amended by this act, withhold any grant funds that a town is otherwise required to appropriate to a local or regional board of education due to low academic achievement (math, reading, language arts and now science) in the school district pursuant to section 10-262h, as amended by this act.
 - The Commissioner of Education shall conduct a study, within the limits of the capacity of the Department of Education to perform such study, of academic (math, and now science) achievement of individual students over time as measured by performance on the statewide mastery examination in grades three



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to eight, inclusive. If this study evidences a pattern of continuous and substantial growth in educational performance on said examinations for individual students, then the commissioner may determine that the school district or elementary school shall not be subject to the requirements of subsection (e) of this section, but shall still comply with the requirements of the No Child Left Behind Act, P.L. 107-110, if applicable.

- Sec. 33. (Effective July 1, 2007) Each local or regional board of education with jurisdiction over an elementary or middle school that fails to make adequate yearly progress based on whole school academic achievement in mathematics, reading, or both, as determined under the state-wide accountability plan adopted under section 10-223e of the general statutes, for two consecutive years, may reorganize such school to provide that:
 - Each class in each academy has a ninety-minute mathematics block and a two-hour literacy block every day.
- Sec. 34. (Effective July 1, 2007) The Commissioner of Education, chairperson of the State Board of Education, Secretary of the Office of Policy and Management, and the co chairpersons and ranking members or their designees, of the joint standing committee of the General Assembly having cognizance of matters relating to education shall form a committee to study high school graduation requirements, including, but not limited to, the total number of credits required for graduation, the number of credits required in each discipline, the means of acquiring credits and the use of an appropriate examination or other assessments measuring the competencies needed to earn a high school diploma. Not later than January 15, 2008, the committee shall report, in accordance with the provisions of section 11-4a of the general statutes, on such study to the Governor and the joint standing committee of the General Assembly having cognizance of matters relating to education.
- Sec. 39. (Effective from passage) (a) For the fiscal year ending June 30, 2009, two hundred fifty thousand dollars of the funds appropriated to the Department of Education



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for CommPACT schools, established pursuant to section 37 of this act, shall be transferred to the Department of Higher Education for purposes of this section.

- (b) The Department of Higher Education shall, not later than March 1, 2008, contract with the Board of Trustees for the Connecticut State University system to develop a college readiness grant program to address core subject-matter deficiencies (mathematics, which has a 50% remediation rate at State University System) among high school students who will transition to institutions of higher education and to improve such students' performance on Connecticut mastery examinations and college placement examinations. The Board of Trustees for the Connecticut State University system, in consultation with the Departments of Higher Education and Education, shall develop a plan for implementation of college readiness programs at state universities within the Connecticut State University system and submit such plan to the Commissioners of Higher Education and Education. Upon receipt of the plan, the commissioner shall release all funds, described in subsection (a) of this section, to the Board of Trustees for the Connecticut State University system for implementation of such plan.

2006

- P.A. 06-83, AN ACT CONCERNING JOBS FOR THE TWENTY-FIRST CENTURY. Requires the Department of Education to establish, within available appropriations, the following three pilot programs:
 1. A high school mathematics and science challenge program that uses student performance results for mathematics and science on the state-wide 10th grade mastery examination (CAPT) to design and implement mathematics and science curricula for students in the 11th grade in public high schools (Sec. 17, effective July 1, 2006). (Note: \$350K has been appropriated for this program for 2006-07, see Sec. 1 of P.A. 06-186, below.)
 2. "Generation Next," a program to provide industry-based job shadowing and internship experiences for high school students and externship experiences for teachers (Sec. 18, effective July 1, 2006). (Note: \$125K has been appropriated for



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this program for 2006-07, see Sec. 1 of P.A. 06-186, below.)

3. "Future Scholars," a matching grant program for the development and implementation of an interdisciplinary mathematics, science and technology curriculum, including the establishment and staffing of mathematics and science laboratories, in middle and high schools that have demonstrated support and involvement by local or state-wide mathematics, science or technology intensive businesses in the state (Sec. 19, effective July 1, 2006). (Note: \$125K has been appropriated for this program for 2006-07, see Sec. 1 of P.A. 06-186, below.)

COLORADO

- Colorado legislators passed a bill referred to as CAP4K - The Colorado Achievement Plan for Kids. While it doesn't directly refer to STEM, the State School Board and the Colorado Commission of Higher Education are currently holding meetings to define the standards of this plan. The good news is they have included business members on their panel for this process.
- Another bit of legislation toward STEM that went through last year was for STEM after school programs. While the parameters are so rigid that they only fit one program, they are looking at it as a pilot to raise the standards of other programs.

For more information go to www.ColoradoSTEMeducation.com

FLORIDA

2008

- Senate Bill 1908 (passed and signed into law) provides for implementation of revised content standards for K – 12 science and mathematics (available online at <http://www.floridastandards.org>) and requirements to provide optional testing and remediation for high school juniors who plan to attend a Florida Community College and would like to avoid the cost and time for developmental or remedial mathematics courses at the college level (instead, remediation is provided while the student is in high school).
- Senate Bill 1906 (passed and signed into law) provides for a pilot program for students who complete specific high school level Career and Technical Education (CTE) courses



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that include a majority of content benchmarks from a core curriculum course (such as Algebra I or Biology) may take an examination to get credit for both the CTE and the core curriculum course.

- Senate Bill 2692 (did not pass) recommended protection against discrimination for public school teachers who objectively present scientific information relevant to the “full range of scientific views” regarding the theory of evolution. It also recommended that public school students might not be penalized in any way because they subscribe to a particular position or view regarding the theory of evolution.

2007

- Senate Appropriations (passed and signed into law) provided for funding to a consortium of Florida universities to investigate and plan for the establishment of a “Governor's School for Science and Technology” that would be a residential high school near NASA Kennedy Space Center.
- Senate Bill 290 (did not pass) recommended that a student who passed 3 Career and Technical Education (CTE) courses in studies to be an electrician would receive one core curriculum credit in science.

2006

- House Bill 7087 (commonly called the A++ legislation, passed and signed into law) accomplished several items related to STEM:
 - Increased the number of mathematics credits required for high school graduation from 3 to 4
 - Established that FL high school students must select a “Major Area of Interest” for 4 elective credits (that can be a focus in exploring a STEM career)
 - Required that the FL Department of Education begin the process of revising the K – 12 content standards for all core academic areas
 - Required that prior to promotion to high school, students must pass 3 science and 3 math courses at the middle grades (grades 6 – 8) level



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	<ul style="list-style-type: none">• HB 1489 (passed and signed into law) created the Florida Center for Research in STEM, which was competitively awarded to Florida State University (see http://www.fcrstem.org).
IDAHO	<ul style="list-style-type: none">• In 2008 Idaho legislature appropriated \$3.97 million to implement a statewide mathematics initiative developed by the State Department of Education.• The Idaho Math Initiative will offer professional development for teachers, assessment tools for all grades and research-based intervention programs for students. By 2015, every elementary and math teacher in Idaho will have the opportunity to complete a three-credit course focused on SDE selected math content pedagogy. The SDE will set up a series of regional training workshops for math educators. The SDE will establish math specialists in every region of the state to help continue professional development for math teachers.
IOWA	<ul style="list-style-type: none">• Iowa again funded the Iowa Mathematics and Science Coalition for \$47,000.• Iowa put an additional 4.2 million dollars in a Regent's Math and Science Initiative that has evolved to be called the Iowa Mathematics and Science Educational Partnership. This is supposed to be a continuing amount of money that is placed in the University of Northern Iowa's budget to run this statewide Educational (higher education- universities and community colleges that will impact K-12).• An additional amount of money has gone to Project Lead the WAY - an engineering initiative for 7-12 students & teachers.• Corridor Science Initiative - An after-school mathematics and science program for K- 6 students.• Workplace Learning Connection - Placing students in STEM work-study positions,



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organizing STEM speakers for classes & placing teachers in STEM businesses for short-term real-work experience to bring back to the classroom.

- RAISE Project - Placing teachers for 6 weeks in the summer with practicing scientists to do research in a lab. (University of Northern Iowa).

See an inventory of all the projects happening in Iowa in STEM at <http://kaparthi2.cba.uni.edu/MSInventory/listProjects.cfm>

KENTUCKY

- Senate Bill 2 (passed in 2008): This is a key piece of legislation passed (but not fully funded) recently, focused on developing more AP courses, providing training and incentives for students in terms of bonus KEES scholarships based on AP exam qualifying scores (students can earn \$\$ credits that can be applied to annual expenses for attending Kentucky colleges if they maintain a minimum college GPA.) While the legislation was passed, there is funding for only the KEES portion so I would classify this as our currently pending funding.
<http://apps.sos.ky.gov/Executive/Journal/EJimages/2008-Reg-SB-0002-959.pdf>
- 2007 CPE STEM Task Force Report: The STEM task force is a fairly recent development that discusses other STEM considerations.
http://cpe.ky.gov/news/reports/cpe_reports/stem.htm

LOUISIANA

Over strong opposition from the state STEM Coalition in Louisiana, the state has passed the Louisiana Science Education Act. This law allows for the teaching of creationism in science classes. The coalition opposed the move and organized efforts to testify before both the Senate and House Education Committees. In addition, the coalition requested and received assistance and letters of support from national professional science organizations and brought together top scientists from across the state to testify against the measure. The bill was backed by both the state supt. of education and the new governor. The act passed without opposition in the full Senate and in the Louisiana House of Representatives by a vote of 94-3. It was enacted by the



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signature of Louisiana Governor Bobby Jindal in June 2008. The bill allows local school boards to approve supplemental classroom materials specifically for the critique of scientific theories. The coalition continues to work in opposition to the measure.

MAINE	<ul style="list-style-type: none">• There was a major legislative bond authorization passed by Maine voters in the last year. It was a 50\$ million bond to support research, development and commercialization of STEM projects that will boot economic development and create jobs in Maine. These funds will be administered by the Maine Technology Institute.• There was no legislation last session related to STEM areas.
MASSACHUSETTS	<ul style="list-style-type: none">• STEM Pipeline Fund: http://www.bhe.mass.edu/currentinit/currentinitPipeline.asp• STEM Scholar Intern Program: http://www.bhe.mass.edu/currentinit/currentinitscholarintern.asp• Commonwealth Covenant Fund Tuition Loan Repayment Program (for College Students) and Commonwealth Covenant Fund Tuition Loan Repayment Program (for Middle / High School Students): http://media.umassp.edu/massedu/stem/CCF_Financial_Aid_Office.pdf
NEW HAMPSHIRE	<ul style="list-style-type: none">• *The Governor has established a council on STEM issues.• *The School Approval Standards requirement for Competencies for High School Courses goes into effect this fall.• *There is some legislation around high school re-design and extended learning opportunities, which of course could be STEM related but do not have to be.



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	<ul style="list-style-type: none">• *The Dept. of Ed. just redid the Science Credentials for Certification and those go through rule making but I am not sure they technically are legislation. They have dropped the Physical Science Certification - so now there will be 5: Middle Level Science (5-9); Life Science (7-12); Earth Space Science (7-12); Chemistry (7-12) and Physics (7-12).
NEW MEXICO	<ul style="list-style-type: none">• Current state statute requires future Elementary (K-8) teachers to have 6 credits of Math content courses and 12 credits of History courses a part of their General Education. We are proposing to even that out to 9 credit of Math and 9 credit of History.• The coalition is proposing an increase in state funding for Summer Reading, Math and Science Institutes from \$2.5M to \$5.2M, and \$5M to support future high school Math and Science teachers during the academic year and for research/teaching experiences during the summer.• The 2007 legislation that requires 4 units of Math for high school graduation (including Algebra II unless parents opt their kids out) will go into effect for students entering Grade 8 this Fall.
OHIO	<ul style="list-style-type: none">• The Ohio Board of Regents has also helped by initiating Choose Ohio First Scholarships, which are designed to attract more college students toward STEM degree attainment. http://universitysystem.ohio.gov/chooseohio1st/index.php <p>See http://www.ohiostem.org/doc/statewide-stem-initiatives for more information.</p>
PENNSYLVANIA	<ul style="list-style-type: none">• Pennsylvania Supports STEM Investments, Expands Keystone Opportunity Zones. Several bills from the 2008 legislative session were signed into law by Governor Ed Rendell during the past two weeks, including the fiscal year 2008-2009 budget, providing enhancements to K-12 programs encouraging science, technology, engineering and mathematics (STEM) and a measure to significantly expand the Keystone Opportunity



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Zone (KOZ) tax incentive program.

- Gov. Rendell signed SB 1412 into law enabling the Pennsylvania Department of Community and Economic Development (DCED) to designate up to 15 new zones, allow for expansion of existing zones, and extend the expiration dates of existing unoccupied parcels. The KOZ program was created in 1999 and provides state and local tax incentives to businesses that develop old industrial sites and underused areas. DCED also will receive \$50.7 million in general funds from the FY 2008-09 budget for the Ben Franklin Technology Development Authority Fund – \$1 million less than last fiscal year and \$15.1 million for the Manufacturing Extension Partnerships Industrial Resource Centers, down from \$15.2 million in FY08.
- Lawmakers supported several of Gov. Rendell’s STEM proposals aimed at building a highly-qualified workforce. The following K-12 initiatives are slated to receive funding in the upcoming fiscal year:
 - \$45 million for the Classrooms for the Future Program (half of the governor’s recommendation) to help prepare students for high-tech careers through enhanced technology, laptop computers and extensive technology training for teachers;
 - \$14.5 million (\$500,000 less than the governor’s recommendation, but \$1 million above the FY 2007-08 appropriation) for Science: It’s Elementary, a K-6 initiative that provides hands-on learning and preparation for higher-level science classes in middle and high school;
 - \$10.9 million – a slight decrease from last year for Project 720, a program that increases college and career ready curriculum for high school students;
 - \$10 million – the same amount as last year for dual enrollment for high school students; and,
 - \$2.7 million – a slight increase over last year for math and science education programs in K-12.



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- The State System of Higher Education and community colleges will both receive a 3 percent boost for operating expenses in the coming fiscal year.
- Despite appeals to legislators over the past months to seed the Jonas Salk Legacy Fund, no funding was included in the approved budget for the initiative. First proposed in 2006, the Jonas Salk Legacy Fund would have used \$500 million from the state's Tobacco Settlement Fund to provide dollar-for-dollar matching grants to the state's leading biosciences research in academia and industry (see the Feb. 6, 2006 issue of the Digest: <http://www.ssti.org/Digest/2006/020606.htm#Pennsylvania>)
- The enacted budget is \$545 million less than the spending plan unveiled by the governor in February and 3.8 percent more than the FY 2007-2008 budget. As of June 30, the state's projected surplus has dropped to \$159 million from the \$427 million projected in February, according to the Pittsburgh Post Gazette.
- The FY 2008-2009 enacted budget is Act No. 38A and is available at: <http://www.legis.state.pa.us>
- Governor Edward G. Rendell said today that Pennsylvania's innovative work in science education has been recognized by the U.S. Department of Education, which has awarded a \$9.95 million grant to a Pennsylvania consortium to establish the only national center of its kind that will draw on the advancements of cognitive science.
- The Commonwealth of Pennsylvania was one of six states selected to receive a two-year \$500,000 award for the STEM Center Grant Program. Twenty-four states submitted applications for consideration. Pennsylvania's successful application was made possible through the generous commitment of \$500,000 in matching funds by the Team Pennsylvania Foundation through a partnership between the Pennsylvania Departments of Labor & Industry, Education, Environmental Protection, and Community & Economic Development. The other awardees are Colorado, Hawaii, Minnesota, Ohio, and Virginia.



WEST VIRGINIA

- Senate Bill 595 (WV Code §18B-14-9 among others)—passed and effective March 8, 2008—outlined Vision 2020: An Education Blueprint for 2020; required the State Board of Education to establish a plan with specific goals, policy-oriented objectives, and performance-oriented objectives for public education, consistent with the state’s 21 Century initiative, and created the Process for Improving Education Council, which would consult with, and make recommendations to, the State Board on issues related to Vision 2020. This bill also established state goals for higher education, outlined elements of accountability for public higher education, and specified postsecondary priorities related to economic and workforce development, education access and affordability, student preparation, degree completion, college recruitment, and retention of working-age adults, emphasis on STEM (science, technology, engineering, and mathematics) courses and programs, institutional research capacity, and the functional literacy of adults.
- We are in the process of forming a STEM Advisory Council/Coalition consisting of business, higher education, public education, June Harless STEM Center, agencies, etc. We are hopeful that this group will have their first meeting this fall.
- The Math Science Partnership (MSP) Program was created under the No Child Left Behind Act of 2001 (NCLB), which reauthorized the elementary and Secondary Education Act (ESEA). The MSP Program is intended to increase the academic achievement of students in mathematics and science by enhancing the content knowledge and teaching skills of classroom teachers. Partnerships between high need school districts and the science, technology, engineering, and mathematics (STEM) faculty in institutions of higher education are at the core of these improvement efforts. Other partners may include state education agencies, public charter schools, or other public schools, businesses, and nonprofit or for-profit organizations concerned with mathematics and science education. Currently, the West Virginia Math Science Partnership Program has 9 active partnerships located across the state. There are approximately 360 teachers from 24 counties participating in the partnerships. Ten Higher Education institutions have also partnered with the nine partnerships.



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- In West Virginia, efforts to improve low-performing high schools have been undertaken in the context of statewide reforms to assure that all schools are preparing students for success in postsecondary education and for a 21st century workplace, and career technical education is playing a significant role in the states high school reform effort. The states participation in the Southern Regional Education Board (SREB) network of High Schools That Work (HSTW) program involves 76 West Virginia member schools. Nineteen West Virginia high schools participate in the Enhanced HSTW Network to more deeply implement newly designed schools. According to SREB, the state has made significant progress in providing training and support for leadership teams in low-performing schools. The SREB report described West Virginia as a pacesetter among southern states in helping leaders in low-performing schools build the skills they need to create and sustain high-performing schools.