

CONNECTICUT ACADEMY FOR EDUCATION

in Mathematics, Science & Technology, Inc.

2010 Operational Plan

GOAL ONE: Position CAE as a prominent advocate and catalyst to increase students' interest, effort, and competence in science, technology, engineering and mathematics (STEM) learning.

ISSUES: Research confirms that student effort and involvement in their academic studies are decisive elements in promoting positive learning outcomes. Research also verifies that children achieve greater success as learners when parents play an active role, regardless of socioeconomic status, ethnic/racial background, or the parents' own level of education. Learning is a personal task and responsibility.

Therefore, a prime 2010 operating priority will be to draw on this research to launch a statewide initiative to achieve three goals, which are to:

- (1) increase students' interest, effort, and competencies in STEM learning;
- (2) help parents and families support children to learn STEM; and
- (3) heighten community expectations that all children will graduate from high school thoroughly prepared to continue their education or to immediately begin working dependant upon a student's interests, strengths and curiosity.

This initiative leverages CAE's expertise in working with educators at the school and classroom levels, as well as its extensive education and community networks. This work will complement the state's effort to improve student achievement in mathematics, science and technology.

RESULTS:

- Develop a five-year plan, with input from stakeholder groups, to validate and begin implementation of consensus goals;
- Establish benchmark data and measurable objectives to measure the progress of the initiative; and
- Garner public and private support to carry out the activities identified in the five-year plan.

ACTIVITIES:

1. Communicate with organizations that already have existing connections with students, parents, educators, and community leaders to build interest in working collaboratively to increase students' interest, effort, and competence in STEM learning.
2. Broaden the CT Business STEM Collaborative to include additional corporate and private foundation sponsorship to support this initiative beyond companies represented on CAE board: Aetna, Boehringer Ingelheim Pharmaceuticals, Bristol-Myers Squibb, General Electric Foundation, Hamilton Sundstrand, Northeast Utilities, Pfizer Global Research and Development, Pratt & Whitney Aircraft, and WTNH Channel 8.
3. Conduct a statewide survey of students, parents, educators and community leaders to

CONNECTICUT ACADEMY FOR EDUCATION

in Mathematics, Science & Technology, Inc.

2010 Operational Plan

- determine the level of interest and concern about student learning in STEM subjects.
4. Formally launch a student interest & effort initiative by way of a statewide summit that includes parent, student, community, public policy, media, and educational stakeholders:
 - 4.1. Collaborate with Barbara Diggs-Brown, an expert on qualitative social research and marketing strategies, to develop a white paper on research that identifies research strategies and messages that have been successful to increase students' interest, effort, and competence in STEM learning;
 - 4.2. Send the white paper to all invitees prior to the summit to serve as foundation for discussions;
 - 4.3. Barbara Diggs-Brown to deliver the opening session, "What research and the GE Foundation's Developing Futures in Education Program experience informs us about motivating and supporting students to learn STEM subjects;" and
 - 4.4. CT Academy Leader opening session conclusion, "What the state survey tells us - bringing educational supply and learning demand into balance for all Connecticut students;"
 - 4.5. Participant breakout sessions, moderated by CT Academy Fellows, to discuss opening presentations, white paper observations, appropriateness of three proposed goals, and suitable measures of progress to monitor progress;
 - 4.6. Breakout groups report back and NEXT STEPS; and
 - 4.7. Convene a program advancement committee, comprised of key representatives from the summit participants and others, to determine annual goals and activities as a result of the summit. Possible activities might include:
 - 4.7.1. Work with CT Departments of Community & Economic Development and Labor, and CT Workforce Boards to identify high school courses and out-of-school activities recommended in preparation for STEM-related college majors, jobs and careers;
 - 4.7.2. Implement a series of one-page information pieces, which can be distributed by the partners, that provide specific and direct actions that parents and communities can take to help children succeed in STEM learning;
 - 4.7.3. Contact CT Representatives and Senators about serving as hosts at community meetings in their voting districts to discuss student interest, effort, and achievement in STEM learning; and
 - 4.7.4. Collaborate with leaders of 35 CT STEM Competitions, CPEP, and other after school STEM-related programs to learn what motivates students to engage in extra work.
 5. Establish a core team of CT Academy Fellows and Board members to serve as an Advisory Committee for programmatic and resource development activities.
 6. Reengineer CT Academy website to better facilitate communication with students, families,

CONNECTICUT ACADEMY FOR EDUCATION

in Mathematics, Science & Technology, Inc.

2010 Operational Plan

and community-at-large about how to increase students' interest, effort, and competence in STEM learning.

7. Seek federal or private foundation research grant to examine the degree to which improving student interest and effort in STEM learning impacts individual subject-matter competencies as calculated by statewide and other achievement measures:
8. Provide research about improving motivation and student engagement as key to improving student achievement to the General Assembly's Education Committee, other public policy leaders, CT Education Association, CSDE, CT Associations of Boards of Education, superintendent's organizations, CT PTA, and others.

GOAL TWO: Collaborate with CSDE to advance secondary school reform and to pilot CT Algebra One for All curriculum.

ISSUES: CT's proposed secondary school reform could impact hundreds of thousands of students for decades. The CT Academy's goal for this effort is that every CT student will graduate thoroughly prepared to enter two- or four-year higher education studies, technical certification and/or apprentice programs, or immediate work opportunities dependant upon the student's interests, strengths and curiosity.

However, without broad-based student/family support for the new policies evidence from other states indicates that massive improvements will not result, especially among our most challenged student populations.

RESULTS:

- CSDE, with support from GE Foundation and CAE, will be awarded a Race to the Top grant to scale up of the secondary school reform initiative;
- CAE will implement a public outreach strategy and materials, in cooperation with the CSDE to help promote the demand for the *CT Algebra One for All* curriculum.

ACTIVITIES: The activities will engage student, parents, community, and educational stakeholders to:

- A. Offer support to the CT State Department of Education to help pilot the *CT Algebra One for All* curriculum to CT school districts; and

Create demand for the *CT Algebra One for All* curriculum by students and families through public presentations by CT Academy staff and Fellows about the curriculum.

GOAL THREE: Successfully fulfill existing science and mathematics professional development (PD) contracts

CONNECTICUT ACADEMY FOR EDUCATION

in Mathematics, Science & Technology, Inc.

2010 Operational Plan

ISSUE: Successfully fulfill our 2010 and multi-year professional development contracts, and where appropriate, accept new mathematics and/or science contracts.

RESULTS:

- All contracts will be successfully completed by August 31, 2010, except for Tri-town II initiative, which will have a third year in 2011.

ACTIVITIES:

- A. Second of three-year contract with Hartford Foundation for Public Giving to provide science PD to Tri-town II districts, which are Windsor, Windsor Locks, and Ellington;
- B. Science PD carryover from 2009 in Bloomfield;
- C. Science PD carryover from 2009 in Region 4;
- D. Science PD 2010, \$8,000 contract in Newtown
- E. Science PD 2010, \$7,200 contract in Torrington
- F. Mathematics 2010, \$14,400 contract in Bloomfield;
- G. Mathematics 2010, \$7,200 contract in East Windsor;
- H. Mathematics 2010, \$9,600 contract in Naugatuck;
- I. Mathematics 2010, \$17,800 contract in Torrington;
- J. Complete Mathematics 2010 contract negotiations in Windsor; and
- K. Complete Mathematics 2010 contract negotiations in Wallingford.

###