

# News from Triangle Coalition

## **Bayer Corporation Advice for Business and Education Partners**

Bayer Corporation has published and is making widely available the second report resulting from the Best Practice K-12 STEM (science, technology, engineering, and math) Education Diversity Forum the company hosted last fall in Washington, D.C. as part of its Making Science Make Sense program. The forum addressed the dual issues of diversity and under-representation by women, African-Americans, Native Americans, and Hispanic Americans in STEM fields and showcased for business leaders and others exemplary pre-college STEM education programs that are fostering a more diverse STEM pipeline. The goal was to provide business leaders with the opportunity to support and/or replicate such programs in their local communities. The new report, titled "Bridging the Diversity Gap in Science and Engineering: Introducing STEM Industries to K-12 Best Practice Programs -- Highlights Report," presents the most significant ideas and findings that emerged during the daylong forum.

Among the findings outlined in the report are the key characteristics common among many best practice programs that business leaders should be cognizant of when selecting an education partner. The report also highlights the challenges and rewards that business leaders and their education partners may encounter during the course of their working relationship. The new highlights report is a companion to the first resource guide issued by Bayer at the time of the forum. The 77-page "Planting the Seeds for a Diverse U.S. STEM Pipeline: A Compendium of Best Practice K-12 STEM Education Programs" features a sampling of some of the country's exemplary programs that have a proven track record of helping students -- especially girls and minorities -- to participate and achieve in STEM. The 21 best practice K-12 programs highlighted by Bayer, 14 of which were showcased at the forum, are a mix of formal in-school and informal after-school programs from different regions of the United States and represent urban, suburban, and rural locales. Bayer is making both resource guides available to interested parties free at (<http://www.bayerus.com/MSMS/stem>).

*(Editor's Note: The foregoing was excerpted from the Triangle Coalition Electronic Bulletin for 26 July 2007, reprinted with permission.)*

## **Major competitiveness legislation passes House, Senate**

Yesterday evening the House and Senate completed final passage of a titanic bill on American competitiveness and have sent the measure to the President. The legislation, called the America COMPETES Act, comes nearly two years after the National Academies issued the landmark *Rising Above the Gathering Storm* report and contains billions in new programs for both STEM education and R&D. House Speaker Nancy Pelosi called it an "exciting day for Congress," and claimed that this bill "recognizes that America's greatest resources for innovation are in classrooms across this country." The Senate and the House, whose original bills had been far apart, came together to support the 470-page conference agreement by veto-proof margins. The House voted <<http://clerk.house.gov/cgi-bin/vote.asp?year=2007&rollnumber=802>> 367-57 yesterday afternoon, and the Senate passed the measure by "unanimous consent" yesterday night.

The administration has previously expressed hesitancy over some provisions of the legislation and its high level of authorizations, and President Bush has not said if he will sign the bill.

The final agreement authorizes \$43.3 billion for science and technology programs over fiscal years FY2008-2010. In terms of funding authorizations, the conference report:

- Sets NSF on a seven-year doubling path. The House had proposed ten years; the Senate, five.
- Keeps the DOE Office of Science on a seven-year doubling track, as originally proposed in 2005. The House had been silent; the Senate proposed ten years.
- Sets NIST on a ten-year doubling path. The House had proposed ten years; the Senate had been silent.

The COMPETES Act also authorizes a dramatic increase in STEM education funding at three federal agencies: the Department of Education, the Department of Energy, and the National Science Foundation. Funding authority for new STEM education programs totals in excess of a half-billion dollars for FY'08 alone. The conference agreement also authorizes increases in existing programs. A comprehensive summary of the many STEM education provisions in the legislation is available on the Legislative News website, <http://trianglecoalition.blogspot.com/2007/08/nearly-two-years-after-national.html> here.

Quick highlights:

- Funding for the Education and Human Resources Directorate at NSF (EHR) is mandated to grow at equal to or greater than the rate of growth for the Foundation as a whole.
- Authorizes the Robert Noyce Scholarship program at \$~90M/year. The Noyce Scholarships support university students who earn teacher certification concurrently with STEM degrees and commit to teach in high-need schools. The bill also creates within Noyce a program to attract STEM professionals to teaching and to train existing STEM teachers to be master teachers. The FY'07 funding for this program was only \$9M.
- Authorizes two Math Now programs at \$95M/year each, one for elementary and middle schools and one for high schools.
- Authorizes grants from the DOE to public statewide STEM specialty schools totaling \$~20M/year.
- Creates a \$151M/year program at the Department of Education to fund the development of courses of study in STEM fields and critical foreign languages (high-need subject areas) that lead to a baccalaureate degree with concurrent teacher certification.
- Creates a \$125M/year program at ED to fund the development of 2- and 3-year master's degree programs in STEM education for in-service teachers.
- Authorizes \$120M/year in grants to states to develop P-16 councils to improve coordination of STEM education with workforce needs.
- Authorizes \$75M/year for expanding AP and IB courses in STEM subjects.

A comprehensive summary of the many STEM education provisions in the legislation is available on the Legislative News website, <http://trianglecoalition.blogspot.com/2007/08/nearly-two-years-after-national.html> here.

(*Editor's Note:* The foregoing was excerpted from the *Triangle Coalition Legislative Update* for 3 August 2007, reprinted with permission. President Bush signed the America COMPETES Act into law on 9 August 2007.)

### **Five Myths About Girls and Science**

The National Science Foundation's Research on Gender in Science and Engineering (GSE) program seeks to broaden the participation of girls and women in science, technology, engineering, and mathematics (STEM) education fields by supporting research, the diffusion of research-based innovations, and extension services in education that will lead to a larger and more diverse domestic science and engineering workforce. Though the program's name has changed over the years, it has been supporting these objectives since 1993, and its work has led to real changes in the opportunities available for girls and women to participate in the study of science, technology, engineering, and math. According to GSE, the following are five myths about girls and science, and supporting research which sheds light on reality:

1. **Myth:** From the time they start school, most girls are less interested in science than boys are.

**Reality:** In elementary school about as many girls as boys have positive attitudes toward science. A recent study of fourth graders showed that 66 percent of girls and 68 percent of boys reported liking science. But something else starts happening in elementary school.

2. **Myth:** Classroom interventions that work to increase girls' interest in STEM run the risk of turning off the boys.

**Reality:** Actually, educators have found that interventions that work to increase girls' interest in STEM also increase such interest among the boys in the classroom.

3. **Myth:** Science and math teachers are no longer biased toward their male students.

**Reality:** In fact, biases are persistent, and teachers often interact more with boys than with girls in science and math. A teacher will often help a boy do an experiment by explaining how to do it, while when a girl asks for assistance the teacher will often simply do the experiment, leaving the girl to watch rather than do.

4. **Myth:** When girls just aren't interested in science, parents can't do much to motivate them.

**Reality:** Parents' support (as well as that of teachers) has been shown to be crucial to a girl's interest in science, technology, engineering, and math.

5. **Myth:** At the college level, changing the STEM curriculum runs the risk of watering down important "sink or swim" coursework.

**Reality:** The mentality of needing to "weed out" weaker students in college majors -- especially in the more quantitative disciplines -- disproportionately weeds out women. This is not necessarily because women are failing. Rather, women often perceive "Bs" as inadequate grades

and drop out, while men with "Cs" will persist with the class. Effective mentoring and "bridge programs" that prepare students for challenging coursework can counteract this.

*(Editor's Note: The foregoing was excerpted from the Triangle Coalition Electronic Bulletin for 13 September 2007, reprinted with permission.)*