

OVAE CONNECTION

American College Students Lack Preparation for STEM Degrees

“Every year in the United States, nearly 60 percent of first-year college students discover that, despite being fully eligible to attend college, they are not academically ready for postsecondary studies,” concludes *Beyond the Rhetoric*, a report issued by the National Center for Public Policy and Higher Education and the Southern Regional Education Board in June 2010. They learn they must take remedial classes in English and math to succeed in their courses. Many other reports reach the same conclusion. For example, in the June 30 edition of *OVAE Connection* we noted that ACT estimated that 78 percent of high school graduates (not all of whom go to college) were not college-ready. The situation is even more alarming for those wanting to take the rigorous courses of study required for degrees in science, technology, engineering, and mathematics (STEM).

In the July 7 issue of *OVAE Connection* we noted that college majors in these fields at the undergraduate level made up less than 20 percent of the degrees granted. This is no accident. High school graduates who need remedial college courses in mathematics are not ready to take the rigorous courses of study that degrees in the STEM fields require. Neither can these students aspire to be medical doctors, pharmacists, or members of other professions that require rigorous, advanced study of mathematics and science. To meet the projected demands of our economy, the United States will need to drastically increase the number of college aspirants who are capable of undertaking and succeeding in these academically demanding disciplines.

Why the emphasis on STEM? First, Americans’ style of living and our strength as a nation depend on the innovation flowing from those engaged in the STEM disciplines. Second, individuals in the STEM professions have the ability to support themselves and their families quite well. Several studies have made these and similar points. One such is, *Successful K-12 STEM Education*, a recent report of the National Research Council, which, while citing the work of an earlier NRC committee, found: “The primary driver of the future economy and concomitant creation of jobs will be innovation, largely derived from advances in science and engineering 4 percent of the nation’s workforce is composed of scientists and engineers; this group disproportionately creates jobs for the other 96 percent.” Moreover, according to *Successful K-12 STEM Education*, an “increasing number of jobs at all levels—not just for professional scientists—require knowledge of STEM.” Finally, intelligent citizenship increasingly requires knowledge of the STEM disciplines. Future issues of *OVAE Connection* will examine some of these studies in more detail.



OVAE Welcomes Kelsey Miller and Felix Zhang

Kelsey Miller has joined the OVAE team as a volunteer student intern for the summer. She will be a senior this fall at Northern High School in Owings, Md. In addition to her engaging in her academic activities, she serves as the student member of the Calvert County Board of Education, a position to which she has twice been elected by her peers.

Miller is assisting OVAE in achieving its goals, mainly in the areas of incorporating STEM into adult education and presenting OVAE’s platform and goals to international audiences. She has been playing the violin for nine years and plans to do so in college, where she hopes to study neuroscience and behavior.

OVAE is also pleased to announce that Felix Zhang, a rising senior at Pomona College studying public policy analysis, with a concentration in politics and education, has joined OVAE as a volunteer student intern this summer. He is conducting research for the immigrant integration project, as well as for the development of a technology infrastructure as proposed in the National Education Technology Plan.

OVAE Awards *Promoting Teacher Effectiveness in Adult Education Contract to AIR*

OVAE awarded a three year contract—Promoting Teacher Effectiveness in Adult Education—to the American Institutes for Research (AIR) on June 28, 2011. This contract will extend lessons learned from earlier investments in teacher quality that OVAE has made. It also will strategically address issues related to teacher effectiveness in adult education. Some of the key activities for this three-year project are: conducting a review of both K–12 and adult education research and practice; creating, validating, and field-testing model teacher competencies; developing a tool kit to support implementation of the competencies at the state and local levels; field-testing the competencies and tool kit in several states; conducting secondary analyses of adult education teachers’ and students’ backgrounds and the relationship between teacher characteristics and student achievement; and producing two research briefs for the field.