

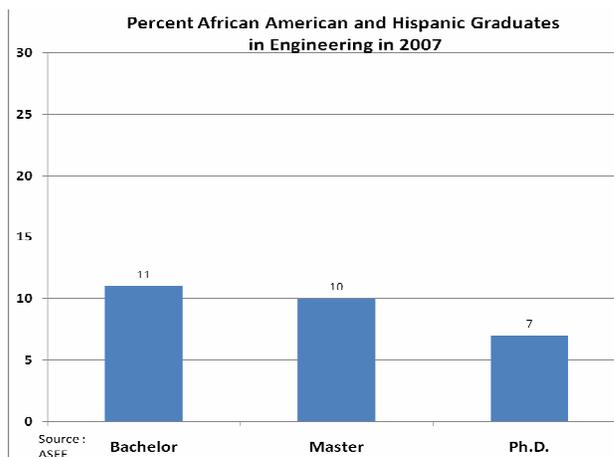
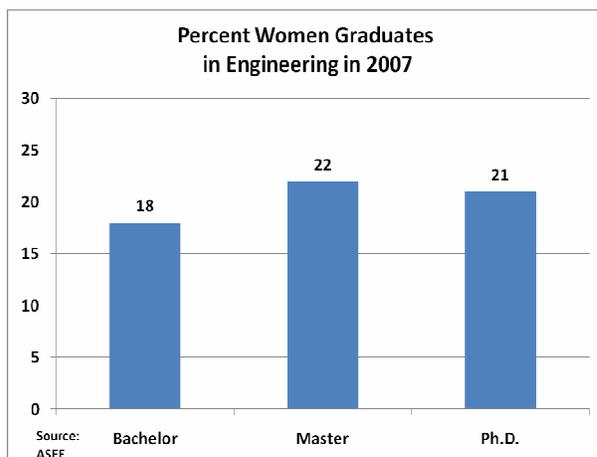
## Engaging More Young Students in Engineering

By Nicole Adrian

As you read this, thousands of young students across the country are actively engaged in learning about engineering, as well as science, math and technology. Thanks to National Engineers Week and other programs and foundations dedicated to increasing exposure to engineering, students are participating in hands-on activities and projects, real engineers are engaging them and sparking their interest in these disciplines.

It's a good thing these activities are occurring. According to a recent ASQ and Harris Interactive survey, 85% of young students (U.S. youth ages 8-17) say they're not interested in engineering as a career—despite listing math and science as their favorite schools subjects. Their reasons for disinterest include they preferred a career that is more exciting than engineering (30%), and they admitted not knowing much about engineering (44%). Additionally, just one in five young students says their parents encourage them to consider engineering.

Cindy Veenstra, Ph.d., *ASQ Higher Education Brief's* advising editor, put together the following graphs based on an American Society for Engineering Education article. They illustrate the percentages of women and minority graduates in engineering.



Here's the good news: In addition to the activities that stem from National Engineers Week, many organizations, programs and schools engage in activities year-round to introduce and interest students in engineering. This jam-packed issue of *ASQ Higher Education Brief* features many of their stories. Here is some a preview of two of them.

A recent Purdue University study suggests hands-on, problem-solving learning

may have advantages over traditional lecture and textbook-based methods of teaching students about engineering and technology. Christena C. Shepherd writes about two NASA programs—Student Launch Initiative and University Student Launch Initiative—that offer hands-on approaches to science and engineering disciplines. These programs allow students to design, build and launch rockets. Many students who participate in the program go on to study math, science and engineering.

While the numbers for all young students interested in engineering are low, they're especially low for girls. The ASQ and Harris Interactive survey shows that only 12% of girls favor science classes and 57% don't know much about engineering. The Women in Engineering Program (WEP) at the University of Texas at Austin is working to better those statistics. One of the activities WEP conducts is the annual Introduce a Girl to Engineering Day, which allows students and their parents and educators to participate in hands-on engineering activities and explore engaging demonstrations. Participation in the event has grown significantly throughout the years—in 2002, 95 precollege students attended. Last year, 1,162 students attended.

ASQ is also actively engaged in engineering awareness efforts. The organization has more than 14,000 members who are engineers, and they are concerned about ensuring a workforce of skilled, highly-educated engineers for the future. ASQ provides a number of resources—including books and certification—and has started some projects to address the situation, such as a webinar titled “Real World of Engineering” and a compilation of different engineering disciplines in PDF format to educate students in seeing the value of an engineering career. Visit [www.asq.org/education](http://www.asq.org/education) to learn more.

It's pretty obvious that if we want students to be interested in engineering, science, math and technology, we must find or develop interesting and engaging hands-on activities that show exactly what engineering can be all about. Please join us in this effort by sending your projects, activities and articles to Crista Kautz, at [ckautz@asq.org](mailto:ckautz@asq.org).