

Making Engineering a Desirable Career Choice

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Issues concerning the recruitment and retention of the up-and-coming science, technology, engineering and mathematics (STEM) workforce have begun to take center stage – with no shortage of evidence to support the severity of this situation. A [Boston Globe](#) [1] article highlighted the challenge of finding qualified applicants at Raytheon Co. for the 4,500 engineers the company seeks to hire this year and, according to the U.S. Census Bureau, the first members of the Baby Boom generation will reach the age of 65 by 2011. As they begin to retire, there's an increased concern that this transition will create an alarming skill gap; mainly because by 2025, Generation Y (ages 18-32) will make up 75 percent of the global workforce. The U.S. also faces a decrease in the number of students pursuing STEM degrees. So, why should we care?

Simply put, jobs and economic security are at stake. China and India have increased their influence significantly with success resulting from developing a workforce that increasingly has relevant technical skills and a STEM education. According to an article by Keith Richburg in the [Washington Post](#) [2], China surpassed the United States as the world's largest automaker last year and is now leading the world in high-speed rail. These facts are a strong indicator of fierce global competition.

Facing an acute problem with long term effects, government, business and education have responded with a variety of programs, including President Obama's [Educate to Innovate](#) [2] initiative and the inaugural [USA Science & Engineering Festival](#) [3], that aim to encourage more students to pursue STEM degrees and to help educators teach math and science in a way that is interesting, relevant and engaging. There are also a variety of programs that introduce engineering concepts to elementary school students. Still, we need to make engineering sexy (or approachable at the very least) for the next generation.

To this point, [according to research from Boeing](#) [4], there is no shortage of scientists and engineers on TV and the movies, but, unfortunately, many are

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portrayed in an unsympathetic light. On February 4, Richard Stephens, senior vice-president of human resources and administration at Boeing, offered the following during his Congressional testimony, "In movies and on TV, 10 percent of characters are scientists and engineers. Unfortunately, of those, more than 70 percent kill others, are killed, or are overcome by lay people."

As the country works to encourage STEM in the classroom, we find ourselves fighting engineering stereotypes that simply aren't true. In an effort to make the next-gen engineer as appealing as an athlete or superstar of tomorrow, Knovel has identified steps to position engineering as the #1 career choice for the next generation of workers.

Here's our list, and we look forward to hearing from ECN's readers:

1) **Make Engineering Fun and Competitive**

National contests such as the U.S. Department of Energy's [Solar Decathlon](#) [5] as well as the [FIRST Robotics competition](#) [6] have the ability to transform the way we look at science and technology in order to inspire a new wave of innovation.

2) **Give Engineers Cutting-Edge Tools and Resources to Help Them Get their Job Done and Advance in their Careers**

Engineering is a research and information-intensive occupation. Engineers today have their training and expertise repeatedly stretched by customer demands, new technologies and complex systems that require ever-more interdisciplinary know-how. Give engineers cutting-edge tools and resources to help get their job done effectively and continue to build expertise.

3) **Replace Persistent Stereotypes**

The engineering industry includes individuals with backgrounds and experiences as diverse as the new world problems they seek to solve. [PBS](#) [7], for example, launched a web series to highlight the personal lives and hobbies of engineers and scientists. Even [Barbie](#) [8] has taken a stab at binary code. Positive images of engineers and scientists creates a more favorable and accurate view of the profession.

4) **Bridge the Divide: Match Successful Engineers with Schools in Need**

Promote events such as [National Lab Day](#) [9], an initiative that bridges the gap between the science, engineering and technology industries and K-12 education. The event, first launched in May 2010, gives students memorable hands-on STEM experiences by connecting educators with volunteers, university students, scientists, engineers and other STEM professionals to bring discovery-based science experiences to life.

5) **Highlight the Demand for Engineers**

Ultimately, students are attracted to fields with high demand. The best and the brightest seek opportunities that allow them to make significant contributions, test and develop their skills, grow professionally and earn salaries that reflect the important contributions they make.

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The future of the engineering industry is closely tied to the future prosperity of America. While revamping the way the nation looks at engineers is undoubtedly a large endeavor, with the federal government, industry and academia working together, this challenge can be met in order to make engineering the "IT" career.

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- [1] http://www.boston.com/business/technology/articles/2010/06/23/raytheon_ceo_caught_in_hiring_dilemma/
- [2] <http://www.washingtonpost.com/wp-dyn/content/article/2010/05/11/AR2010051104950.html>
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