The Sky's the Limit Regarding Innovation

by Jill Gilbert

Jill Barson Gilbert, QEP, is president of Lexicon Systems, LLC. E-mail: jbgilbert@lexicon-systems.com.

Many jobs in information technology (IT) and other technical areas remain unfilled in the United States and globally, and the number is on the rise. Recruiting teachers and students for science, technology, engineering, and math (STEM) careers presents a challenge. How can we entice young students to consider STEM?

Addressing the Innovation Gap

On June 12, 2013, a Boeing 747 flew from San Francisco to London. The flight carried 130 forward-thinking innovators in the world's first airborne technology summit. The passengers put away their smart phones, tablets, and other tech toys and just talked.

British Airways launched UnGrounded, an "innovation lab in the sky" earlier this year.[1] They invited a diverse group ranging from people in their 20s to senior citizens; from Silicon Valley entrepreneurs and inventors to venture capitalists; from educators to industry leaders to journalists. Most of the passengers represented relatively unknown small businesses and nonprofits. All had knowledge of technology and a desire to improve education.

The purpose of the innovation workshop was to brainstorm solutions to a global problem policymakers call the "misalignment of talent."[2] Discussion groups captured concepts and solutions for global talent challenges that directly affect innovation, entrepreneurship, and the world economy. The groups developed concepts to help people with STEM skills to utilize their talent and drive global innovation, focusing on four issues:

- the roles of women and girls;
- meeting growing demand for STEM talent in the United States;
- growing local STEM opportunities in emerging economies; and
- expanding the reach of STEM in general.[3]

UnGrounded presented its findings to the United Nations International Telecommunications Union Committee at the Decide Now Act summit in London on June 14, held along with the annual G8 Innovation Conference. The UN and other sponsors will fund the winning concept, AdviseHer, an online community to advocate for women and girls in STEM education.[4]

> The United States has become a global leader, in large part, through the genius and hard work of its scientists, engineers, and innovators. Yet today, that position is threatened as comparatively few American students pursue expertise in the fields of science, technology, engineering, and mathematics (STEM)—and by an inadequate pipeline of teachers skilled in those subjects.
>
> Even among those who do go on to pursue a college major in the STEM fields, only about half choose to work in a related career. The United States is falling behind internationally, ranking 25th in mathematics and 17th in science among industrialized nations
>
> *—U.S. Department of Education, Science, Technology, Engineering, and Math: Education for Global Leadership*

Geeks Influence STEM Careers

I was raised by geeks, and proud of it. My father was an aeronautical engineer and my mother a registered dietitian. Dad carried a small slide rule in his shirt pocket next to his mechanical pencil. When I took physics and was puzzled by a homework assignment, I called him long distance and he talked me through the problem, solving it in his head. This annoyed me at the time. Dad had a great sense of humor and wrote well.

Mom worked in health care and academic food service her entire career. She could advise patients on special diets and adjust recipes to feed the desired number of people—all in her head, without the benefit of electronic calculators, computers, or the Internet. When not working or tending to four children, she enjoyed playing bridge and gardening without the distractions of texting, digital TV, eBay, and Facebook.

As a young child, I was curious about how things worked. I preferred a Spirograph (drawing tool) or an Erector Set—that Dad passed down to my brother—over dolls. I learned to fix things, paint home interiors, change the oil in my car, and cook gourmet meals for six or sixty people. This informal education, plus science teacher–mentors in middle school and high school, helped pave the way toward scientific degrees and an unexpected career path. When I attended college, there was no such thing as environment, health, and safety (EH&S) software, let alone a consulting industry to support it.

Jump-Starting Technology and Innovation

Regaining our innovative edge in the United States and globally requires more initiatives than "take your daughter/son to work" day. With STEM jobs in the United States alone increasing much faster than jobs in other occupations (see Figure 1), regaining an edge will take more than overnight. We can recruit teachers and encourage young men and women to enter STEM programs. We need to get students interested when they are young.

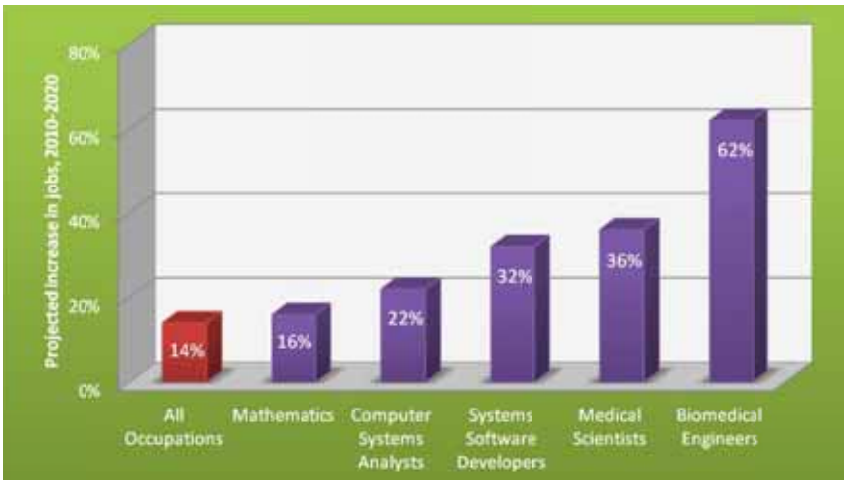

Figure 1. Projected percentage increases in STEM jobs, 2010–2020.

Millennials have different goals and communication methods than even the most tech-savvy older workers. They live in an "always on," socially connected world. We need to meet their needs via social networking channels, as well as via more traditional methods.

As EH&S and business leaders, we can make an impact with the help of our employers and organizations like A&WMA. For years, A&WMA's Education Council has held Environmental Resource Guide workshops for K-12 science teachers, often with members' organizations funding. This is just one educational initiative.

If asked to help with STEM initiatives, say "Yes"; if not asked, volunteer. Mentor students and young professionals. Share your knowledge before it's lost forever. I did a hands-on computer demo for a group of Girl Scouts some years back and lectured many times on EH&S auditing, consulting, risk management, and IT topics to students in EH&S degree programs. It was rewarding for me, as well as the students.

The next generation of scientists, technologists, engineers, and mathematicians needs our help. STEM careers of the future may not exist today, and we must provide skills and support to keep innovation alive. **em**

References

1. British Airways, Ungrounded. See www.dnasummit.com/ba-ungrounded-innovation-in-the-sky.
2. Baverman, L. Silicon Valley Elite Hack British Airways Flight to DNA Summit; *Upstart Business Journal*, June 13, 2013; available online at http://upstart.bizjournals.com/entrepreneurs/hot-shots/2013/06/13/british-airways-flight-to-g8-summit.html?page=all.
3. Priemesberger, C. IT Thought Leaders Tackle Global STEM Issues in Meetup; *eWeek*, June 14, 2013; available online at www.eweek.com.
4. Primesberger, C. UN Will Back Project AdviseHer to Aid Women in STEM Education; *eWeek*, June 1, 2013; available online at www.eweek.com.