STEM Needs Diversity

Without minorities and women in science and technology, the U.S. is in peril

I joined Girl Scouts because I believe girls are essential to the national pipeline of talent needed to fill future science, technology, engineering and math (STEM) positions. My dedication to preparing young people from diverse backgrounds for success began in the late 1990s during my tenure at IBM. My colleagues and I were concerned that a deficit of promising STEM professionals, especially among women, Hispanics, Native Americans and African-Americans, would impair IBM's long-term ability to compete.

At that time, an executive from Inroads — a nonprofit organization whose mission is to develop and place talented minority youth in businesses — and I conducted a study of potential STEM talent from underrepresented communities. What we discovered was shocking. We found that thousands of potential STEM professionals from underrepresented communities were out of the running by the time they entered eighth grade due to poor academic preparation.

> The economic future of the United States depends on encouraging women and minorities to prepare for and pursue careers in science, technology, engineering and math.

Ten years have passed, but little progress has been made. Data from a 2009 study of eighth-graders conducted by the National Assessment of Educational Progress showed that 43 percent of Hispanics, 44 percent of American Indians and 50 percent of African-Americans scored "below basic" in math.

In 2008, more than 40 percent of children in the United States under age 5 were Hispanic, African-American or Native American, according to the U.S. Census Bureau. Those numbers likely have increased, and our failure to prepare underrepresented youth for STEM-related careers will greatly impact America's capacity for global economic leadership:

- A 2008 Bayer Corp. study found that 89 percent of CEOs and senior executives stated that recruiting minorities and women was critical to meeting their need for STEM professionals. Some 95 percent of those surveyed believed a shortage of STEM professionals would cause the U.S. to sacrifice its economic leadership.
- The Pentagon's Defense Advanced Research Projects Agency stated that the nation's lack of progress in developing a strong STEM pipeline, especially among minorities and women, was a threat to national security due to a shortage of workers with key technical skills.
- China, India and other emerging economies fiercely compete for STEM talent and now encourage their citizens who are studying and working in the U.S. to seek professional opportunities in their home countries.

The cornerstone of our economic growth is continued American leadership in the full spectrum of high-tech industries: information technology, green energy, nanotechnology, biotechnology and others. If we fail to develop a robust pipeline of STEM professionals containing women and those from underrepresented communities, the consequences will be dire: a shortage of technical innovation, lower economic growth and higher unemployment for all Americans. Avoiding this outcome demands that we take the following steps:

1. Accelerate the adoption of best practices that produce superior academic outcomes for underrepresented students, especially from urban and economically disadvantaged backgrounds.
2. Unite separate programs sponsored by corporations, universities, nonprofit organizations, churches and other entities into a national effort that prepares underrepresented students.
3. Incorporate STEM education within Head Start and other early educational initiatives, and strengthen those programs so their results last longer.
4. Engage parents in preparing their children academically for STEM education and as advocates for STEM careers.

The economic future of the United States depends on encouraging young women and minorities to prepare for and pursue careers in science, technology, engineering and math today. Their emerging talents drive our future prosperity, and that talent must not be wasted. «

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