

TODAY'S SPUTNIK MOMENT IS THE LACK OF SCIENCE EDUCATED STUDENTS

By Dr. Melvyn D. Schiavelli**

Fifty years ago, the former Soviet Union surprised the West by launching the world's first satellite, Sputnik, into space. The October 4, 1957 launch was a wake-up call that our nation may be falling behind our Cold War foe.

The apparent Soviet lead in rocket technology marked the start of the space age and ushered in new political, military, technological, and scientific developments in the nation. Student enrollments in college level science, technology, engineering, and math—known as the STEM disciplines—began to surge in America. Science was seen as relevant and important for both the nation's future and as a career path.

Fifty years later, the U.S. faces a critical talent gap in the STEM disciplines, and the nation is not producing as many STEM-educated students as other countries. The demographic trends are sobering: baby boomer retirements will deplete the science and engineering workforce by 50 percent, compounded by a one-third drop in the number of U.S. students interested in pursuing engineering degrees.

Globalization is this generation's Sputnik moment. The flattening of the world economy has brought competition to every aspect of our lives. Regions long synonymous with their industrial identity now face transformation, and employers now have competitors from all corners of the globe.

If America is to remain the world's primary source of innovation, we must develop the U.S. talent pipeline necessary for a highly skilled workforce. This is not only about producing more scientists and engineers; all students must have a strong foundation in math and science to succeed in the rapidly changing global economy. More and more companies throughout the nation are looking for employees who can offer a combination of professional expertise, interpersonal skills, and a solid understanding of technology. Unfortunately, there is a shortage of college-educated students with these traits.

Although we no longer have a Cold War foe, we are in a global battle for the future. Investments in STEM education and developing our workforce for careers in 21st century global economy are keys to winning.

The leaders in the capital region of Harrisburg reached this conclusion in the 1990s. Our regional economic portfolio lacked a four-year university focused exclusively on the production of science and technology-educated graduates needed to capitalize on our local information-technology opportunities. With too few technology-educated workers available, our region's economic growth was depending too heavily on sectors with lower-paying jobs and dimmer long-term prospects. We were in danger of becoming a "warehouse economy."

The strategic solution was to create The Harrisburg University of Science and Technology. Chartered in 2005, Harrisburg University became the first private, non-profit science and

technology-focused, comprehensive university in the Commonwealth since The Carnegie Institute of Technology a century earlier.

Central Pennsylvania's leaders recognized that the STEM fields are where the high-paying, high-growth career paths will be over the next decade. Harrisburg University can now become the hub of STEM education in the Central Pennsylvania region, driving innovation in our region. Members of regional industry are playing a role by developing our course curriculum, and participating as corporate faculty and program advisory team members. Additionally, we match every student with a business mentor and work with the executive search firm, Arcus, LLC, to match our students with internships beginning their first year.

The future alumni of this university will enter the marketplace equipped with the skills to succeed immediately. And as the number of alumni grow, so too will the talent in this region. This in turn will attract new companies to the region and begin the cycle that leads to the vitality and creativity that breeds innovation.

Creating a knowledge-based economy in Central Pennsylvania will not happen overnight. But the engine of growth that fuels our economic competitiveness is linked firmly to our ability to develop and educate the most competent and adaptable workforce. Only by encouraging students to combine strong science skills, problem-solving abilities, and creative thinking, will we be able to develop that workforce.

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