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## Competitions to Support STEM

TO PROSPER IN THE GLOBAL ECONOMY, EACH NATION MUST FOCUS ON GROWING ITS NEXT generation of scientists, engineers, and entrepreneurs. Success will require exciting many more young students about science and mathematics. When appropriately organized and directed, science and engineering competitions can provide a lifelong appreciation of, interest in, and enjoyment of science and engineering activities in much the same way that involvement in sports competitions provides a lifetime enjoyment of sporting events. In February, the second-ever White House Science Fair celebrated the student winners of a broad range of science, technology, engineering, and mathematics (STEM) competitions from across the United States. And this year will see monetary and scholarship prizes awarded to students by longstanding prestigious competitions that include the Intel Science Talent Search; the Siemens Competition in Math, Science and Technology; the Google Science Fair; the FIRST Robotics Competition; and the Toshiba/National Science Teachers Association ExploraVision competition, among others. But these competitions require financial support in much the same way that extracurricular sports and Olympic teams do. More private industries, large and small, are needed to support STEM education by sponsoring such competitions.

Many competition programs, both international and local, are supported by corporate contributions. For many students, involvement is driven by the chance of a scholarship that can range from a few hundred dollars to full support at college. In the International Science and Mathematics Olympiad competitions, top precollege students worldwide solve theoretical and experimental problems. On the local level, there are science fairs, olympics, quiz programs, and robotics competitions. Many of these competitions provide an opportunity for a student to choose and explore an original problem. Students, with guidance from teachers, scientist mentors, and other adults, work independently or in small groups on a project that they find motivating. Student participation can spill over to enhance science instruction in classrooms and provide lifelong memories of doing science; later in life, most entrants can still distinctly remember their student science fair project.

More international corporations should consider creating competitions that don't duplicate already available programs, but instead increase the range of ways in which students can be involved in STEM. It's wonderful that local companies support youth baseball and soccer teams, but they should also encourage STEM success in the schools. Most participants in major competitions started with simpler competition projects; thus, this is an approach that keeps students engaged and motivated over the years, building both interest and skills. Unfortunately, many industries lack the staying power to remain committed to supporting STEM education. Too often, marketing departments of large corporations must decide between funding an educational initiative or putting their company's logo on a banner at a sporting event. STEM education often loses that competition.

Despite 8% unemployment today, the United States cannot fill 600,000 jobs that require analytical and technical skills.\* Business needs to think in the long term: The success of longstanding and widely recognized competitions, such as Intel and Toshiba, should serve as models for other large corporations to explore. Teachers and scientists can work with local industry to start a science fair or an invention competition. Producing future graduates with STEM skills must become a universal goal, and meeting it will be critical for the economic and societal well-being of each and every nation.

— Arthur Eisenkraft

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\*[www.themanufacturinginstitute.org/~media/A07730B2A798437D98501E798C2E13AA.ashx](http://www.themanufacturinginstitute.org/~media/A07730B2A798437D98501E798C2E13AA.ashx).

