

How to Save the World
Dr. Ray O Johnson
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Science festivals and expos have long been a grassroots way to excite kids about careers in the science, technology, engineering, and math (STEM) fields. My friend Larry Bock and I worked together on the San Diego Science Festival last year, and we were thrilled to see the enthusiastic turnout at the event. It attracted over 100,000 people – a crowd so large for Balboa Park that officials had to start turning away cars wanting to enter the park on the afternoon of the expo. Reflecting later on the festival's success, Larry and I thought: if a local event excites this many kids, what could we accomplish with a festival on a national scale?

Today, Lockheed Martin is the proud host sponsor of the inaugural USA Science & Engineering Festival, culminating this weekend in a two-day expo on the National Mall. We hope to have a million people there, visiting exhibits on aerospace, green energy, medicine, climatology, robotics, nanotechnology, and many other science and engineering fields. It is an ambitious undertaking in size and scope, and the "national" nature of this festival is part of what makes it unique. The festival is an acknowledgement that robust math and science education is in our country's strategic interest.

We hope that the festival is a lot of fun, but make no mistake – this is also serious business. Innovation has been the cornerstone of U.S. economic growth throughout our nation's history. Never have the global security challenges been greater, and never have we needed a STEM-educated workforce in the U.S. more than we do today.

A new report delivered to Congress recently by Norm Augustine, the former Chairman and CEO of Lockheed Martin, adds new urgency to our efforts. The report finds American science and math education is actually "worse off" than it was five years ago, when a similar report sounded alarm bells among educators and policymakers. Our country, a world leader in just about every respect, ranks 48th in terms of STEM education. Nearly half of all Americans cannot say how long it takes the Earth to circle the sun. Our education system is simply not graduating enough engineers to keep the U.S. competitive.

For those of us in high-tech industries, this is a real concern. At Lockheed Martin, we rely on the skill, talent, and creativity of our 70,000 engineers and scientists to develop solutions to our most critical global security challenges. Innovation is the cornerstone of the products and services that we develop for our customers, and a STEM education is vital to that technical innovation. It is imperative that we have a technical talent pipeline that will enable us to provide the innovative solutions for which we are known.

These are the reasons that we are so committed to developing the future workforce of our country. As a corporation, we set a goal to reach close to 3 million students this year with STEM standards-based curriculum. Along with our other education initiatives, the USA Science & Engineering Festival is helping us reach that goal.

Ultimately, we think that enticing kids to study math and science is an easy sell. It is as simple as this – students need to know that engineers and scientists, like those in my corporation, create the future. They work on high-tech projects that make a profound difference in our world: space systems, high-performance airplanes, clean

energy solutions, cyber security, and national security technologies that I can't even talk about. Great careers await them if they just sign up for those tougher courses in calculus, chemistry, and physics.

As we look toward our technology future, we are also celebrating a landmark event in our recent past. Twenty-five years ago last month, a Nobel Prize-winning team in Texas discovered what is known as the Buckminsterfullerene carbon molecule – one of the building blocks of nanotechnology. Nano is a field rich with possibilities. Like plastics a generation ago, it promises to revolutionize the way we live.

One member of that Nobel Prize-winning team, the late Dr. Richard Smalley, was outspoken about the need to tackle humanity's most pressing challenges, from energy and the environment, to poverty and disease. In speeches, he would issue a call that, today, might serve as an appropriate invitation to the USA Science & Engineering Festival.

"Be a scientist," he would say. "Save the world."

Dr. Ray O Johnson is the Senior Vice President and Chief Technology Officer of the Lockheed Martin Corporation. As an Officer of the Corporation and a member of the executive leadership team, Dr. Johnson guides the Corporation's technology vision and provides corporate leadership in the strategic areas of technology and engineering, which include more than 70,000 people working on more than 4,000 programs. In addition to executive leadership and management positions, Dr. Johnson has experience in strategic planning, program development, program management, and venture capital funding. Dr. Johnson holds B.S., M.S., and Ph.D. degrees in Electrical Engineering.