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IBM volunteer finds his 'calling' helping kids in Texas have fun with science and engineering

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Rick McMaster estimates he has presented and led activities for more than 4000 students in the last year—as Rick the Science Guy, Professor Sparky or Dr. Kold—helping young people get excited about the STEM subjects of science, technology, engineering and math.

“Arguably, if you look around a room, there is little that hasn’t been influenced or doesn’t owe its existence to science, technology, engineering and math—the ‘STEM’ disciplines as we call them,” says Rick McMaster, a project manager for IBM in the United States and the company’s STEM advocate in university programs—a career that matches his passion for engaging students.

The acronym for Science Technology Engineering Math (STEM) is often associated with the effort to bolster school curriculums and student participation in those subjects. Some countries have difficulty both attracting a diverse student population in STEM, which is important for fresh perspectives, and retaining those who started studies in STEM but have become discouraged.



For 17 years, Rick, based in Austin, Texas, has been reaching out to students, schools, organizations and corporations looking for ways to get and keep students interested in math and science. He’s been passionate about these subjects his whole life since, as a young boy, he was caught “mixing up all the cleaning products to make a super soap.”

“When my manager asked if I’d be interested in coordinating our participation in Engineers Week, I said yes because I wanted to make sure that my daughter, who was two at the time, would not see any limitations to her career choices simply because she was a female,” says Rick. “I want children, no matter what their background and situation, to be successful.”

In the future, many believe that the best jobs are likely going to require candidates to be STEM-capable, which can provide a pathway to success. Yet in countries such as the U.S. and UK, women and minorities, despite making up the bulk of the future workforce, are underrepresented in many STEM areas.

Adding partners and growing outreach

In 1996, Rick’s effort to coordinate Engineers Week, or EWeek, activities in his area involved bringing together IBM and two other local technology companies. Today, this portion of his outreach has grown to more than 60 partners, including companies, universities, professional societies and community organizations, and EWeek has become a year round program.

The endeavor, now known locally as [Central Texas Discover Engineering Community Foundation](#) (CTDE), operates with help from two not-for-profit organizations—[Austin Skillpoint Alliance](#) for financial management and [Skillpoint Alliance](#) for program and training management.

CTDE’s outreach includes a substantial number of Hispanic, African American and young women. The program engages more than 11,000 students a year through hundreds of classroom visits by volunteers, while also reaching more than 5,000 additional students and their parents through science nights at schools and events at various other venues.

Rick the science guy

While participating behind-the-scenes at CTDE and several other STEM-related organizations and advisory boards, Rick also volunteers to visit schools to personally get students excited about STEM—and in this case he does so in several on-stage personas including Rick the Science Guy, Dr. Kold and Professor Sparky.

Designed to make the science and engineering activities even more fun for students, Rick’s Dr. Kold eats graham crackers dunked in liquid nitrogen and makes ice cream in less than 30 seconds. His Professor Sparky lights up an electric pickle and makes students’ hair stand on end. Ideas for Rick’s classroom activities and live experiments come from many sources including [TryScience](#), [Teachers Try Science](#), and [IBM’s library of volunteer activity kits](#).

“I have always been hands-on and feel that’s the best way to truly understand what works and what doesn’t, what needs and can be done now, and what should be done for the future,” Rick says.

Being in the classroom with students also reminds Rick that there is more to education than STEM. “An art teacher asked me to develop something that blended art and science,” he says. “We did activities on light, color and art. Both the art and science teachers joined us in the lab and the students loved it.” Writing in the [MIT STEM Pals newsletter](#), Rick discusses the need to add other letters to STEM—such as A for Art, yielding STEAM.

In the 2012-13 school year, Rick estimates he presented and led activities for over 4000 students. He recalls the end of one presentation. “I overheard a fifth grade student ask her teacher as they were leaving the science lab after my visit, ‘Will we have a Rick the Science Guy in middle school?’”

“STEM has so many connections to things that students touch everyday, from baseballs to books, from cars to cooking, from shoes to smartphones,” says Rick. “I help them see the relationships so they understand why what they study is important.”

A calling that makes a difference and a career

Efforts at STEM education appear to be making a difference. Teachers and principals at individual schools credit Rick’s visits with increased enthusiasm among students for math and science. One elementary school where he has volunteered, Lake Pointe, reports that their test scores in science on Texas standardized tests have improved.

“Keep STEM linked to the experiences that students have every day and keep everyone, regardless of gender or ethnicity, excited about STEM. Formal and informal educators just need to help make the connection, and we’re seeing it happen,” says Rick.

It’s possible that in Rick’s job at IBM he has evolved his career to match his volunteerism. “I read a while ago that ‘you can have a calling in which the work itself is the end,’” he says. “I discovered in discussions with my manager over the last two years that my passion and position now match perfectly—my calling.” He adds, “I would suggest that everyone give volunteering a try. It will make you feel great. It gives you tons of energy for your day job, and may lead you to your calling.”

Rick will retire from IBM at the end of this year but his work with STEM will continue for many years. He says, “Retirement will just give me more time to spend encouraging students in math and science. I already have over 10 school visits planned for 2014 and that’s just the beginning. I’ll have time to develop new activities and materials for all the volunteers.”

Rick is a winner of the 2012 IBM Volunteer Excellence Award which recognizes IBM employees or teams who best exemplify the IBM values of dedication, innovation and trust through their volunteer efforts.



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