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National Robotics Week: Kids Need STEM Inspiration

BY COLIN ANGLE

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The first robot was created in 400-350 BC, a steam-powered pigeon engineered by the mathematician Archytas. Since then, robots have captured our imagination. They embody innovation, success and progress, and they inspire our vision of the future.

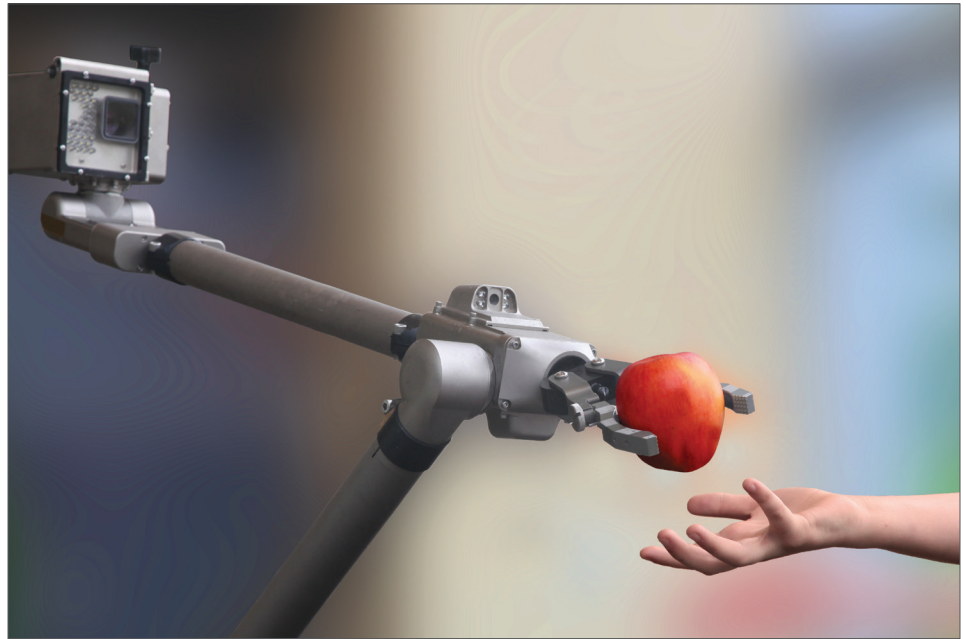
National Robotics Week, now in its fourth year, helps us realize that we are already knee deep in the robotics era. Robots are cleaning floors, making cars, keeping our military safe, assisting in patient care, exploring the depths of the oceans and patrolling the skies. However, for the United States to remain a dominant force in this quickly growing industry, we will need significantly more skilled professionals in science, technology, engineering and math (STEM) in the future.

Companies, universities, museums and associations across the U.S. are embracing National Robotics Week as an opportunity to capture the imaginations of children and share the exciting world of robots with all. Robots serve as a way to engage and show off the fun side of STEM in the hopes of inspiring youth to pursue technology-related fields and combat the STEM crisis in the U.S.

Established by the U.S. House of Representatives (H.Res. 1055) in 2010, National Robotics Week celebrates the strength of robotics in the U.S. as a symbol of American innovation. Here in Massachusetts, we are home to almost 100 robotics companies and 10 robotics research institutions.

Throughout history, the U.S. has earned international respect as a leader in business and industry. Much of this falls on the back of our nation's educational system and innovation in STEM. Yet our ability to produce the next generation of STEM graduates has become inadequate and is trending in the wrong direction. The World Economic Forum's 2012-2013 Global Competitiveness Report ranks the United States as 47 out of 144 countries in terms of quality of math and science education, and 7th overall in terms of global competitiveness.

If you think of our educational system as a pipeline, a very troubling picture is emerging. By the end of middle school, we have lost 79% of our potential STEM workforce.¹ According to the STEMconnector's 2012 annual report, "Where are the STEM Students?", we lose more than half of



those remaining in high school.² Although STEM covers a tremendous number of industries and opportunities, only about 1 in 10 students graduating high school has an interest in STEM careers.

At the college level, this grim scenario gets even worse. For every 100 students who graduate with a bachelor's degree, only 10 will end up working in a STEM-related job. It seems we are convincing our children and young adults that science and math are hard and scary.

According to Change the Equation, a shocking 30% of the population would rather clean a bathroom than solve a math problem.

So what do we do? We start with National Robotics Week. At iRobot, we organize, publicize, laud and shout about the more than 180 National Robotics Week events. There is at least one event in every single state in America. We applaud our friends in Alaska hosting student workshops. We say 'aloha' to the Hawaiian students hosting a robot competition. We laugh with the robot comedian in Montana. We invite you to join us at the Robot Zoo in Cambridge on April 13, where more than 40 local robot companies, teams and researchers will gather to show off the latest and greatest in robotic innovations.

But still, that's not enough. National Robotics Week is too short to reverse the trend by itself. Rome wasn't built in a day, nor are robots or the skills needed to build them. We need to prove to kids that science and math are cool. We need to go to classrooms with world-changing robots, explain where they come from and educate students on how they can be a part of it all. We need to bring kids to labs and introduce them to the amazing engineers who turn these products from science fiction into reality.

It's up to us to prove to kids just how important and fun STEM is, and to show them a path to get there. National Robotics Week is here and now. Join us at these events and in the online conversations. I also challenge you. Who will you inspire after this week? At iRobot, the thank-you notes we get from soldiers saying that our robots have saved lives inspire us every day. We need to provide the same level of inspiration to our students - the next generation of engineers, roboticists and inventors who stand ready to change the world. The STEM gap is ours to fill.

Colin Angle is Chairman of the Board, Chief Executive Officer and Co-Founder of iRobot Corp.

¹ STEM Perceptions: Student & Parent Study, Microsoft and Harris Interactive, (<http://www.microsoft.com/en-us/news/presskits/citizenship/docs/STEMPerceptionsReport.pdf>), Sept 2011

² Where are the STEM Students?, STEMconnector, (<http://www.stemconnector.org/sites/default/files/store/STEM-Students-STEM-Jobs-Executive-Summary.pdf>), Jan 2013