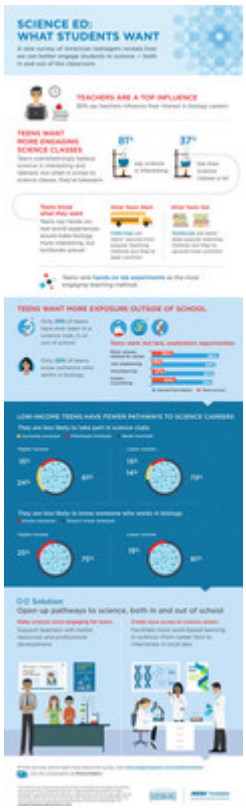
New National Survey Sheds Light On How To Better Engage Students In Science Education

June 7, 2016

American Students Want More Hands-on, Real-World Experiences
Teachers Are Critical to Inspiring a Lasting Interest in Science

THOUSAND OAKS, Calif. and WASHINGTON, June 7, 2016 /PRNewswire/ -- The Amgen Foundation and Change the Equation (CTEq) today announced results of a survey conducted to better understand what motivates U.S. high school students to study science, technology, engineering and math (STEM). The report, titled "Students on STEM: More Hands-on, Real-World Experiences," shows that students want additional opportunities that will inspire them to explore careers in scientific fields, and teachers are uniquely positioned to stimulate students' interest in STEM.



The survey found that large majorities of teenagers like science and understand its value, but common teaching methods, such as teaching straight from the textbook, do not bring the subject matter to life in the same way hands-on, real-life experiences do. Several results reveal an opportunity to better engage students in the classroom. For example:

- Eighty-one percent of students are interested in science, and 73 percent expressed interest in biology. However, only 37 percent of teenagers said they like their science classes "a lot." By contrast, 48 percent reported liking non-science classes "a lot."
- Among teenagers who are interested in biology careers, teachers (85 percent) and classes (86 percent) rank right alongside their parents or guardians (87 percent) as the biggest influences on their career decisions.
- Two-way, hands-on learning, like experiments and field trips, are most likely to engage teenage students in biology, followed by tools that help them relate biology to real life. One-way communication, such as class discussions or teaching straight from the book, are least interesting, but among the most common.

"We are in an era where scientific advances provide the opportunity to make meaningful progress against some of the world's most serious diseases," said Raymond C. Jordan, senior vice president of Corporate Affairs at Amgen and Amgen Foundation Board of Directors member. "To sustain this momentum, we must inspire the next generation of innovators. Through this study, we have seen that teachers are critical catalysts to inspiring a love of science in students."

The survey also looked beyond the classroom, revealing that most teenagers lack access to additional resources and opportunities to learn more about scientific careers and engage with science professionals—experiences that are critical to developing a lifelong love of science. For example:

- Most survey respondents believe knowing an adult in their field of interest would be helpful, but only 32 percent actually know an adult in a science-based career. And just 22 percent know someone with a job involving biology.
- Only 33 percent of teenagers have ever been involved in a science club or group, either in or out of school. Low-income

teenagers are especially unlikely to have been involved, and are more likely to be unaware of extracurricular science offerings.
- Low-income students also have the fewest pathways to science careers. They are less likely to know someone who works in biology (19 percent versus 25 percent of higher-income students) and not as likely to have access to career-planning resources.

"Students who pursue a STEM education today are the innovators who will solve the world's greatest problems tomorrow, whether or not they become scientists or engineers," said Linda P. Rosen, chief executive officer of Change the Equation. "Change the Equation is pleased to partner with the Amgen Foundation to help uncover how we can ensure all U.S. students, regardless of income level or location, have access to the right resources."

To expand youth access to the nation's best STEM education opportunities, CTEq maintains the STEMworks honor roll of programs that have proven their impact through rigorous third-party review. Over the past two years, CTEq's state and corporate partners, including the Amgen Foundation, have rallied around STEMworks programs, bringing them to almost 1 million more youth nationwide.

To help science teachers give their students more hands-on learning experiences and insight into career options in and out of the classroom, the Amgen Foundation created the Amgen Biotech Experience. This program provides professional development training to teachers and state-of-the-art equipment to schools, bringing real-life biotech experiments into the classroom.

For more information about the survey, visit amgeninspires.com/studentsonstem and join the conversation using #TeensTalkSci. Visit AmgenInspires.com and follow @AmgenFoundation to learn more about our commitment to inspire the next generation of scientists. For more on CTEq, visit changetheequation.org and follow @changeequation.

About the survey

The research was commissioned by the Amgen Foundation and Change the Equation and conducted by C+R Research Services, a national marketing research firm that specializes in research with youth. A total of 1,569 online surveys were completed by students ages 14-18 years old. Participants were high school students (sophomore, junior and senior levels) currently attending public and private schools in the U.S. Hispanics and Blacks/African Americans were oversampled to ensure adequate representation, and the data was weighted by ethnicity and region to mirror the U.S. population. Data collection took place November 2015. For the full methodology, visit changetheequation.org/students-on-stem.

About the Amgen Foundation

The Amgen Foundation seeks to advance excellence in science education to inspire the next generation of innovators, and invest in strengthening communities where Amgen staff members live and work. Since 1991, the Foundation has donated more than $250 million in grants to local, regional and international nonprofit organizations that impact society in inspiring and innovative ways. The Amgen Foundation brings the excitement of discovery to the scientists of tomorrow through several signature programs, including Amgen Scholars, Amgen Biotech Experience, and Amgen Teach. For more information, visit AmgenInspires.com and follow us on Twitter @AmgenFoundation.

About Change the Equation

Since 2010, Change the Equation has been championing the value of a good start through K-12 STEM education as a means to build and inspire the next generation of America's workforce. The nonprofit CEO coalition works at the intersection of business and education to ensure that all students are STEM literate by collaborating with schools, communities and states to adopt and implement excellent STEM policies and programs. For more information, visit changetheequation.org and follow us on Twitter @changeequation.

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