

Opening Statement - Rep. Daniel Lipinski (D-IL)
Subcommittee on Research & Science Education
Hearing on
STEM In Action: Transferring Knowledge from the Workplace to the Classroom

November, 3 2011

Thank you Chairman Brooks for holding this hearing; as you know, working to improve STEM education has always been a priority for me. Today, only one-third of the undergraduate degrees earned by American students are in a STEM field, compared with 63 percent in Japan and 53 percent in China. In a world where nearly everything we do is built on math, science, and technology, these numbers should concern us greatly for America's future. Students with these skill sets are not only needed to change our world with the next vaccine, energy source, or communications system, but also to help drive a thriving American economy that produces good-paying jobs here at home. And STEM jobs do pay well. According to a Wall Street Journal survey, majors in engineering, computer science, and accounting outpace their peers in marketing, psychology, or communications by ten to twenty thousand dollars a year in their first job out of college.

I know that many of our country's leading companies are deeply aware of our workforce challenges. We're going to hear from IBM and Abbott today about some of their initiatives to improve STEM education in this country, and many others --- especially defense sector companies like Boeing and Honeywell --- have similar programs. I am especially looking forward to hearing from Dr. Jones about how the Abbott education and outreach programs in both Chicago and at her facility in California are enabling their scientists and engineers to work directly with students, teachers, and parents.

Underlying many of these initiatives, as well as a number of federal programs, is the idea that it is easiest to attract students to STEM careers when they are inspired by the best and brightest teachers, mentors, and professionals. This is especially true at the K-12 level, where researchers can play a unique role in improving STEM education by volunteering, serving as mentors to students, and by becoming STEM teachers themselves.

We know that that the success of students is highly dependent on the quality and effectiveness of their teachers. In fact the number one recommendation of the National Academies' *Rising Above the Gathering Storm* report was to train more highly-qualified STEM teachers and to enhance the content knowledge of current ones. Professional scientists and engineers already possess strong content knowledge, so they have potential to be great STEM teachers if given the opportunity to develop the skills needed in the classroom. I'm interested in hearing about some of the challenges associated with this transition.

One teacher training program that I'm particularly proud of is the Robert Noyce Teacher Scholarship program at the National Science Foundation. In 2007, in the America COMPETES Act, I helped then Chairman Gordon improve this program by adding NSF Teaching Fellowships for STEM professionals who want to complete their masters in education, get certified, and

transition into a career in teaching. I look forward to hearing more from Dr. Beeth today about the teacher preparation program he is running at the University of Wisconsin with Noyce funding from NSF.

While we do not have any of the federal agencies represented on the panel today, I want to take this opportunity to highlight the important role of the federal STEM workforce in inspiring the next generation to pursue careers in the STEM fields. Historically, NASA has been the most visible example, helping to create an entire generation of scientists and engineers. We hear testimony from such individuals all the time, and I'm sure that Chairman Brooks has many of them in his own district. I find that today's students are equally inspired and energized by the scientific and technological challenges we face in energy and the environment. There is great value in connecting talented federal scientists and engineers from the Department of Energy, NOAA, and the other mission agencies, with STEM students who have a passion for these issues.

Today's hearing provides us with an opportunity to hear more about how STEM professionals with expertise and valuable real-life experience are helping students better understand STEM concepts and learn about career opportunities. This is vital, not just for the companies involved, but for the future competitiveness of our nation.

I want to thank the witnesses for being here this morning and I look forward to your testimony.