



The Honorable Paula Stern, Phd. on behalf of the National Center for Women & Information Technology (NCWIT)
Remarks to the President's Council of Advisors on Science and Technology (PCAST)
National Academy of Sciences - Washington, DC
January 4, 2013

I want to thank Dr. Holdren for meeting with me and Lucy Sanders, who heads the National Center for Women and Information Technology (NCWIT) and for inviting us to provide him a letter concerning unimplemented recommendations for K-12 computing and computer science education made in prior PCAST reports -- specifically the Sept 2010 K-12 Stem for America's Future and the Dec 2010 report "Designing a Digital Future: Federally Funded Research and Development Networking and Information Technology."

The PCAST K-12 STEM for America's Future report recommends a definition of K-12 STEM Education that includes computer science – a definition that unfortunately is not yet in common use in federal and local STEM policy and education discussions.

The PCAST states that computer science and engineering are critical subjects "whose concepts k-12 students should be familiar." This language seems innocuous and lacking in controversy. But PCAST deserves "thanks". Why? Because EXPLICIT mention of computer science as a critical STEM discipline is important. It reinforces the efforts of a growing national coalition called "Computing in the Core", the focus of which is to mainstream computer science into the K-12 core curriculum for all American students – regardless of their gender or ethnic background. This is urgently needed so that America can assure its innovation future and so young people will be prepared to fill the pipeline demand for skilled workers for the 21st century. There is a growing community of organizations advancing Computing in the Core, and it is no coincidence that it includes forward leaning efforts by two companies whose leaders are PCAST members --Microsoft and Google.

NCWIT is participating actively with Computing in the Core because we understand that we can't attract more girls to computing if America's K-12 educational system doesn't teach computing at all, or doesn't teach it well.

Another PCAST report, The December 2010 emphasized the notion of "computational thinking." That report recommended,

"If Americans are to acquire proficiency in all levels of computing, their education must begin when they are children. Fluency with NIT skills, concepts, and capabilities; facility in computational thinking; and an understanding of the basic concepts of computer science must be an essential part of K-12 STEM education."

So, PCAST has thrown the spotlight on the need for computer science education throughout the US. Unfortunately, many of the PCAST recommendations concerning computer science education are not yet implemented. We urge PCAST to recognize that the unheeded recommendations in their reports cry out for a response in the form of a national action plan. If, as the December 2010 PCAST report asserts that "every citizen – not just the NIT professional – needs to be fluent with information technology," then the American people need to provide their children with curriculum to master, innovate, and apply information technology to their lives. Every child that graduates from U.S. high schools needs access to rigorous, relevant and inclusive computer science curriculum. Much thanks to PCAST for breaking new ground in the conversation, and we hope you continue to do so.