

Grace Hopper Celebration of Women in Computing Welcome

**Baltimore, MD
October 5, 2012**

Good morning. On behalf of the National Science Foundation, I wish to welcome you to this incredibly important and inspirational conference for computing. I'm so thrilled to see more than 1500 students in attendance at Grace Hopper this year.

We all recognize that a breathtaking pace of advances has brought our discipline into the forefront of science, medicine, commerce, arts and entertainment in ways that were barely imagined twenty years ago.

These advances have transformed the way we live, work, learn, play, and communicate.

The computing discipline forms a pervasive intellectual fabric that connects a wide range of disciplines, recognizing that:

- Many of tomorrow's breakthroughs will occur at the intersections of diverse disciplines.
 - And advances in computing accelerate the pace of scientific discovery and technological innovation in nearly all fields of scientific and engineering inquiry ... for example, in biology, physics, social science, and economics.
- As a field of inquiry, computer, communication and information science and engineering has a rich intellectual agenda – highly creative, highly interactive, with enormous possibilities for changing the world!
 - In fact, computing is at the core of our response to societal challenges and is crucial to achieving our major global priorities – from environment and sustainability, education and workforce development, and on to healthcare, public safety, and cybersecurity.

Today, advances in computing and information underpin our economic prosperity and national security. Consider, for example,

- Since 1995, Networking & IT industries accounted for 25% of US economic growth.
- In 2010 alone, IT industries grew 16% and contributed 5% to the overall US GDP.

And, the IT sector is a job generator. Between 2001 and 2011, a decade characterized by a tough economic climate, job growth in our sector has grown significantly faster than any other sector.

The work and leadership from our community truly matters.

Let me move on to say just a few words about this year's theme, "*Are We There Yet?*"

As many of you in this room well know, the computing community faces three significant and interrelated challenges: underproduction of degrees, underrepresentation, and lack of a presence in K-12.

62% of all projected job growth in science, technology, engineering, and math (2010-2020) will be in IT, yet we are estimated to produce enough degrees to fill only about 2/3s of the projected openings each year.

And as for underrepresentation, women, African Americans, Hispanics, and other underrepresented groups — together representing 70% of US population — participate in very low numbers in computing.

The lack of diversity is a loss of opportunity for individuals and a loss of talent and creativity to the discipline. This directly impacts our economic prosperity.

NSF is committed to growing the participation of all groups in computing.

Computer science is both the enabling discipline for the development of technologies that enhance learning, and a discipline with an immediate and critical need for cyberlearning technologies as it aims to scale educational transformations to the national scale.

Let me leave you with three key messages.

First, as a community, we must educate and empower the next generation. We must lead a cyber- and technology-enabled transformation in education and learning to develop the next generation workforce. This includes empowering citizens by promoting understanding of the principles and uses of computation- and data-intensive techniques.

Second, we must embrace a collaborative culture for research and development:

- Interactions of research ideas multiply their impact and seed new ideas with the potential to lead to unanticipated advances.
- The unanticipated outcomes are often as important as the anticipated ones.

And third, as a community, we need to nurture and support a culture of engagement and service. We have the opportunity to...

- shape the future directions of the field and priorities for the nation
- and formulate a research and education agenda to address societal challenges.

Our investments in research and education have returned exceptional dividends to our nation. To keep those benefits flowing, we need to constantly replenish the wellspring of new ideas and train new talent.

Let me close by adding a word of thanks to the Grace Hopper Conference committee for their leadership and to you for your participation. THANK YOU.

Farnam Jahanian
CISE Directorate
National Science Foundation