



Revolutionizing the Face  
of Technology



Woodrow Wilson  
International  
Center  
for Scholars

# 21<sup>st</sup> Century Pathways to a Skilled Technology Workforce

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October 13, 2011





# Agenda

- 8:00 AM:** Registration & Continental Breakfast
- 8:30 AM:** Opening Remarks
- 9:45 AM:** Keynote Addresses
- 9:30 AM:** Panel 1: STEM and the Search for Technical Talent
- 10:30 AM:** Coffee & Conversation
- 10:45 AM:** Panel 2: National Security & the US Technical Workforce
- 11:45 AM:** Panel 3: Approaches for Creating a Skilled Technology Workforce
- 12:45 PM:** Closing Remarks



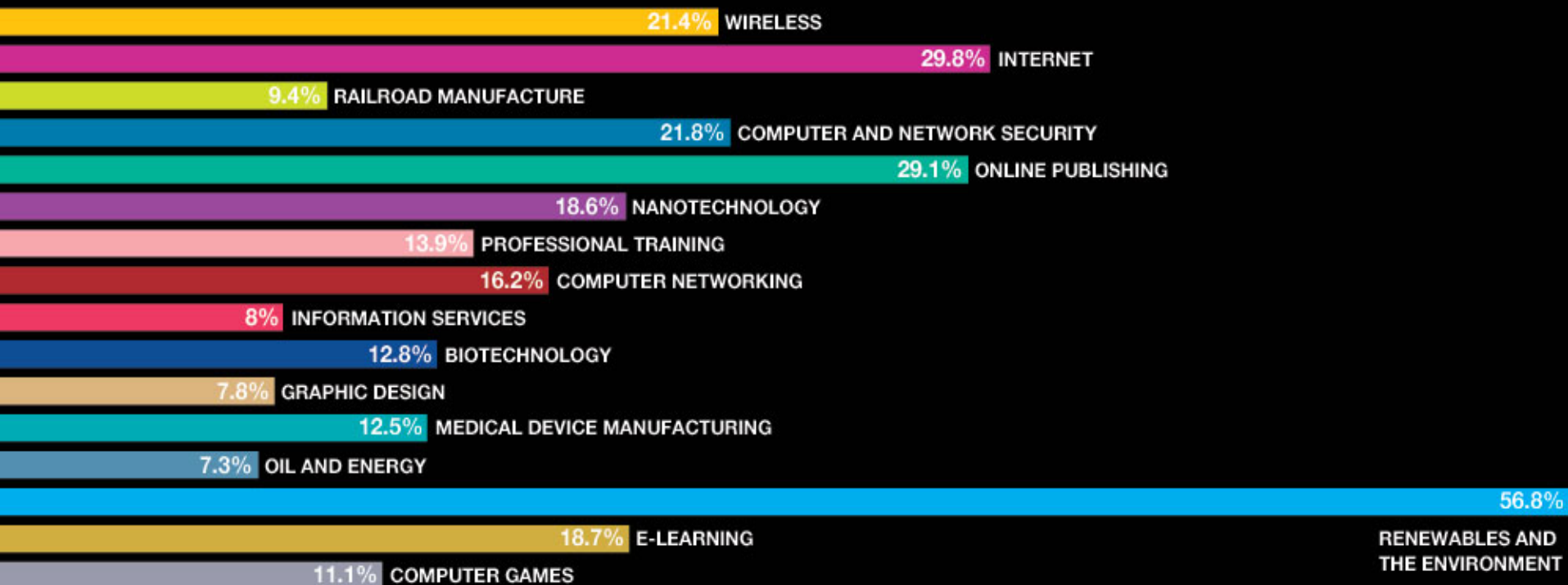
# Opening Remarks

- » **Kent Hughes:** Director, Program on America and the Global Economy, Woodrow Wilson Center
- » **Lucinda Sanders:** CEO & Co-founder, National Center for Women & Information Technology (NCWIT)



# New Job Classifications Emerging

Percentage Gains In Job Category, 2006-2010\*



\*WIRED asked LinkedIn to analyze the 7 million US members who have switched industries during the past five years. Here are some of the fields that gained members (average percentage change per year).

Source: Wired Magazine and LinkedIn – June 2011



# Today, “Smart Jobs” = Post-Secondary Education

**68%** Percentage of STEM workers with a bachelor’s degree or higher

**23%** Percentage of STEM workers with an associate’s degree

**9%** Percentage of STEM workers with high school or less



# Traditional “Non-STEM” Jobs Now Require More Technical Skills

**40%** **Percent of non-STEM workers today have a high school education or less**



# An Example - The Computing Sector

**1.4M**

**Number of computing/technology job openings the U.S. Dept. of Labor estimates will be available by 2018**

**29%**

**Portion of these jobs that can be filled with graduates of U.S. computing degree programs**



# US K-12 Computing Education Pipeline is Eroding

Two-thirds of states teach computing *literacy* (word processing) instead of *fluency* (computing concepts).

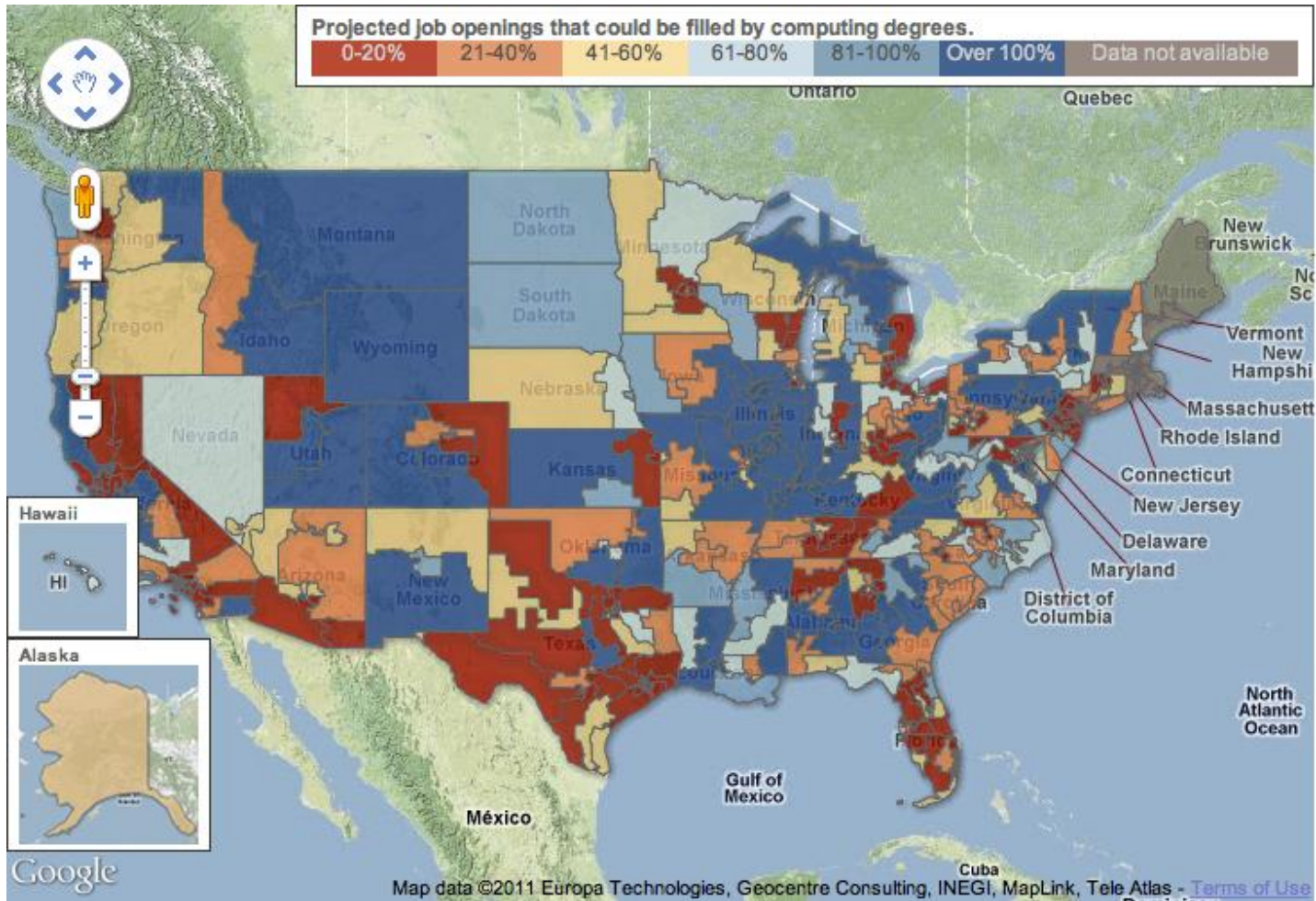
Only 9 states allow computing courses to count towards high school math or science requirements for graduation.

Girls comprise 46% of Advanced Placement (AP) Calculus test-takers, but only 19% of AP Computer Science test-takers.



# Matching Computing Jobs, Education

[www.ncwit.org/edjobsmap](http://www.ncwit.org/edjobsmap)

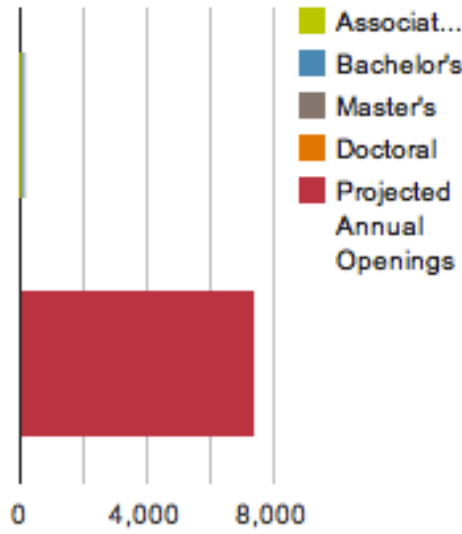


# What's the Story Where You Live?

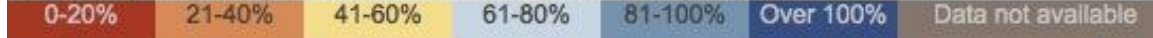
## Virginia District 10

Comparison of Projected  
Computing Jobs and CIS  
Degrees Earned

Projected job openings that could be  
filled by computing degrees: 3%



Projected job openings that could be filled by computing degrees.



### Projected Workforce Indicators (2006-2016)\*\*

Average Annual Computing Job  
Openings: **7379**  
10-year Percent Change in Computing  
Jobs: **42.0%**  
10-year Change in Number of  
Computing Jobs: **49,335**

### Education Indicators\*

AP Computer Science Test-takers  
2009: **555**

### Degrees Earned in Computer and Information Sciences 2007-2008 Academic Year

Associate's: **87**  
Bachelor's: **64**  
Master's: **38**  
Doctoral: **0**

# Keynote Addresses

# Panel 1: STEM & the Search for Technical Talent

- » **Avis Yates Rivers:** President & CEO, Technology Concepts Group, Inc.
- » **Donagh Herlihy:** Senior VP & CIO, Avon Products, Inc.
- » **Dr. Anthony Carnevale:** Director, Georgetown University Center on Education and the Workforce
- » **Cordell Carter:** Director of Public Policy, Business Roundtable
- » **Dan Zelem:** CIO, Medco Health Solutions, Inc.

Defense Secretary Robert Gates has stated that the Pentagon is “desperately short of people who have capabilities (defensive and offensive cyber-security war skills) in all the serves and we have to address it.”

*Cyber-Insecurity, Booz Allen Hamilton and Partnership for Public Service*





## Panel 2: National Security

- » **Kelly Carnes:** President & CEO, TechVision21
- » **Laura Adolfie:** Director, STEM Development Office, Department of Defense
- » **Susan Lavrakas:** Director, Workforce, Aerospace Industries Association
- » **Matt Fussa:** Managing Attorney for Global Government Solutions, Cisco Systems, Inc.
- » **Robin Williams:** Director, National Cybersecurity Education & Workforce Development Office, Department of Homeland Security



## Panel 3: Creative Approaches

- » **Bill Kamela:** Senior Director for Education and Workforce Law and Corporate Affairs, Microsoft
- » **Daphne Kis:** IT Advisor, National Academy Foundation (NAF)
- » **Sara Akbar:** Senior Manager, Government Affairs, Oracle Corporation
- » **Bob Baugh:** Executive Director, AFL-CIO Industrial Union Council



# Closing Remarks

- » **Kent Hughes:** Director, Program on America and the Global Economy, Woodrow Wilson Center
- » **Lucinda Sanders:** CEO & Co-founder, National Center for Women & Information Technology (NCWIT)



# Multiple Pathways, Multiple Careers



With a two-year degree or technical certification you can become a...			
Job Title	Projected Growth 2008-2018	Average Annual Wage	Average Hourly Wage
Computer Support / Help Desk Specialist	14%	\$49,930	\$24.00
Network Technician	14%	\$49,930	\$24.00
Nuclear Medicine Technologist	16%	\$69,050	\$33.00
Medical Record, Health Information Technician	20%	\$35,010	\$17.00



If during service you have these assignments ...	You may get jobs such as ...	For which the 2008 wage was ...	
		Annually	Hourly
Network Systems which allow computers to connect	Network Technician	\$43,450	\$20.90
	Network Administrator	\$67,710	\$34.87
Information Support Services which aid users as they do their work	Help Desk Specialist	\$43,450	\$20.90
	Technical Writer	\$66,313	\$31.90
	Database Administrator	\$69,740	\$41.75

# Matching Computing Jobs, Education

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