A New Future for K-12 CS Education:
Why You Should Care

Bobby Schnabel, Indiana University and Chair, ACM Education Policy Committee
Organization of Session

- Bobby Schnabel: *Introduction, Context*
- Chris Stephenson, Computer Science Teachers Association:  
  *Motivation, current status, national need*
- Cameron Wilson, ACM:  
  *Policy challenges, community response*
- Jan Cuny, NSF:  
  *Community effort to reform AP / high school CS*
- Lucy Sanders, National Center for Women & Info. Tech’y:  
  *Importance of all parts, and what you can do*

**DISCUSSION**
K-12 Computer Science Education

Strong interest recently from:

• Government Leaders
• Popular Press
• Computing Research Community

WHY?
Reasons for Interest in K-12 CS Education

• Large demand for computing professionals

• Number of university / college computer science graduates falls far short of current and projected demand

• K-12 doing very little to expose students to rigorous computer science
Where the STEM Jobs Will Be
Projected Annual Growth of Total STEM Job Openings 2010-2020

- Computing: 51%
- Engineering: 27%
- Mathematics: 1%
- Physical Sciences: 5%
- Life Sciences*: 7%
- Social Sciences: 9%

* STEM is defined here to include non-medical occupations.

Where the STEM Jobs Will Be
Projected Annual Growth of NEWLY CREATED STEM Job Openings 2010-2020

- Computing: 62%
- Engineering: 20%
- Life Sciences*: 6%
- Physical Sciences: 3%
- Mathematics: 1%
- Social Sciences: 8%

* STEM is defined here to include non-medical occupations.


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Where the STEM Jobs Will Be
Degrees vs. Jobs Annually

Higher Education Pipeline in Computing

Higher Education Pipeline in Computing
CRA Taulbee Survey Results

High School Advanced Placement

Exams 1997-2011

High School Advanced Placement

Exams 2011

Male

Total AP Tests
45% 55%

Biology
42% 58%

Environmental Science
45% 55%

Statistics
49% 51%

Calculus
53% 47%

Chemistry
53% 47%

Physics
69% 31%

Female

Computer Science
19% 81%

How Computer Science “Counts” In K-12

FIGURE 12 How Computer Science Courses Count Toward Graduation Requirements

- Elective: 35
- Mathematics: 8
- Science: 1
- District Determined: 6

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DISCUSSION