# Slides Taken from The National Landscape

**csta** | Computer Science Teachers Association

# Fastest Growing Occupations

**Projected Percent Change,
STEM Occupations 2006-2016**

| Occupation | Percent |
|---|---|
| Industry Average | 10 |
| Network Systems Analysts | 53 |
| Computer Sofware Engineers | 45 |
| Computer Systems Analysts | 29 |
| Biological Scientists | 9 |
| Chemists | 8 |
| Electrical Engineers | 5 |
| Mechanical Engineers | 4 |
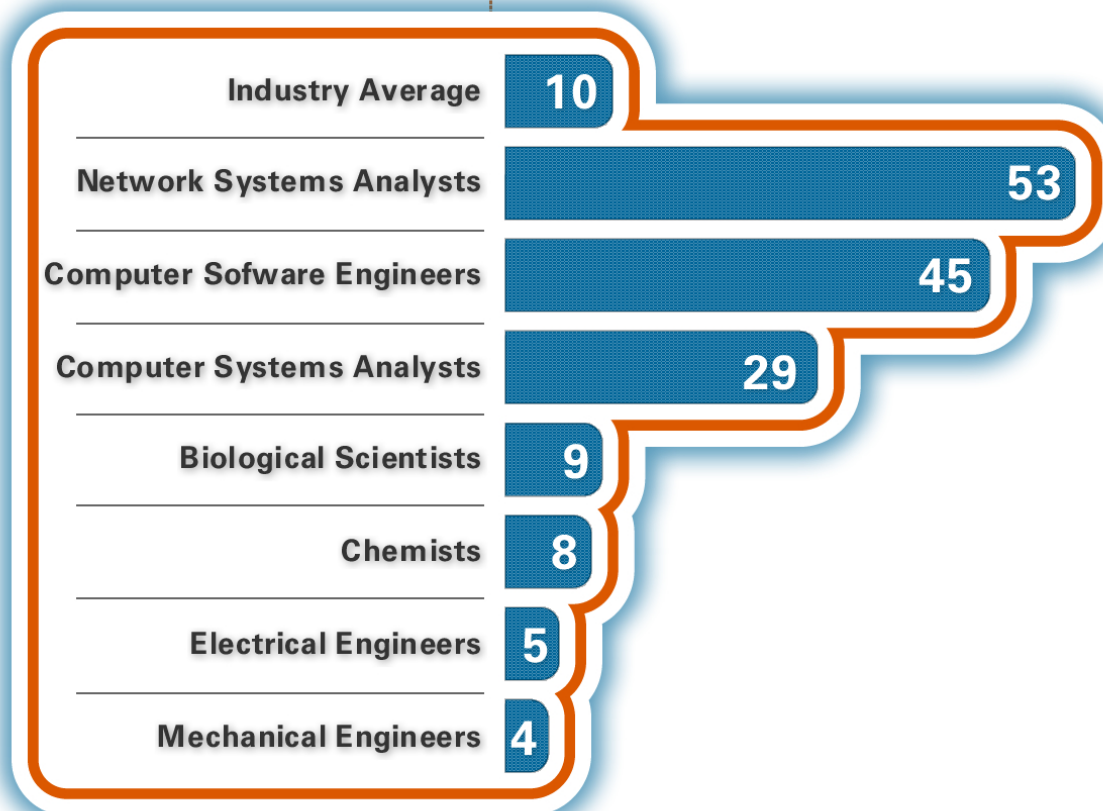
Source: Bureau of Labor Statistics, Monthly Labor Review, November 2007

# Uneven Computing Preparation in High School



PERCENTAGE OF STUDENTS REPORTING COMPUTER COURSEWORK/EXPERIENCE IN HIGH SCHOOL, 1999-2009

Legend:
- F / M — Computer Literacy
- F / M — Computer Programming
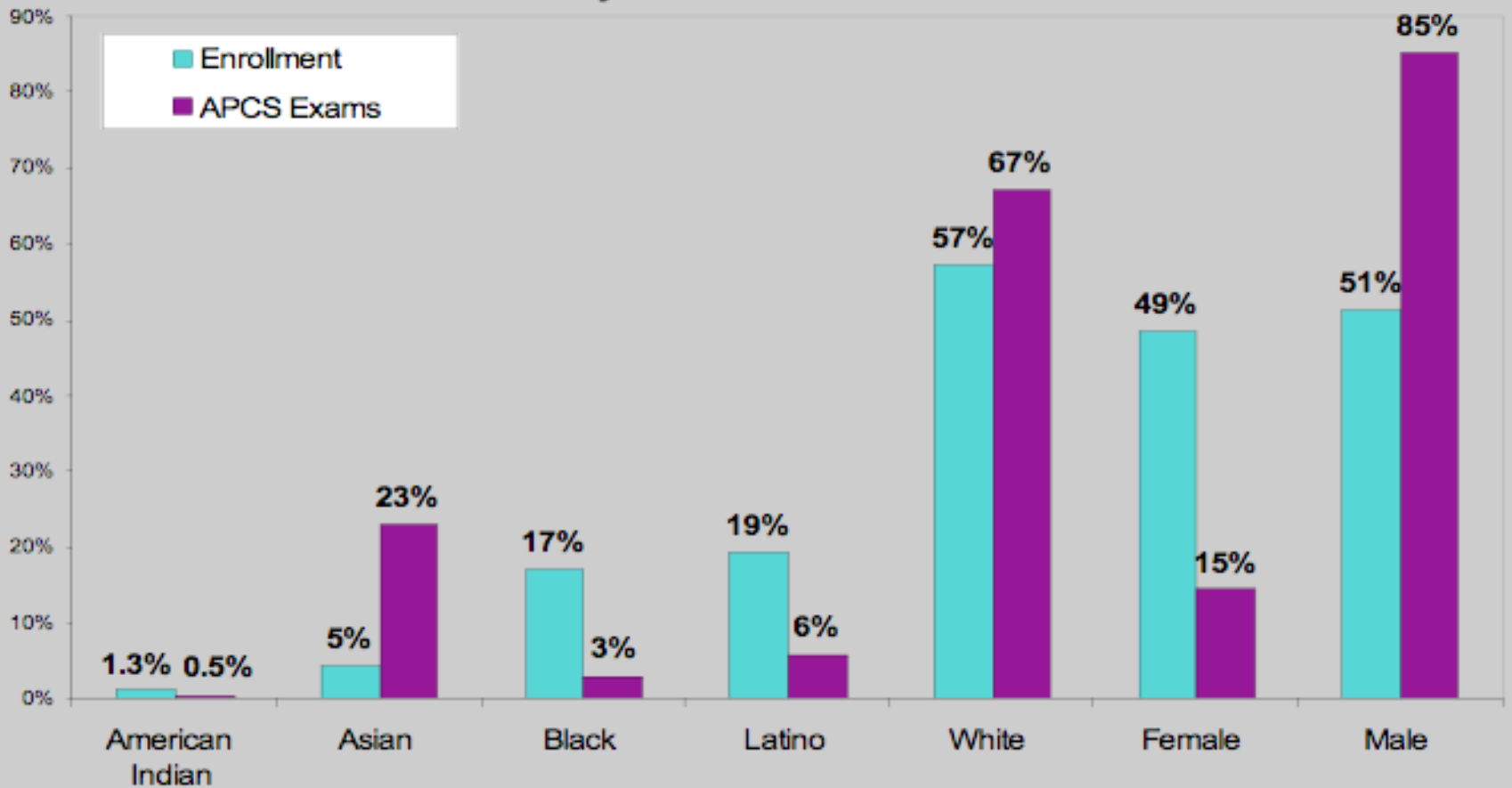- F / M — None
- F = female
- M = male

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# High-school Girls Too Seldom Participate in Advanced Computing



NUMBER OF ADVANCED PLACEMENT (AP) COMPUTER SCIENCE EXAM-TAKERS BY GENDER, 1999-2009
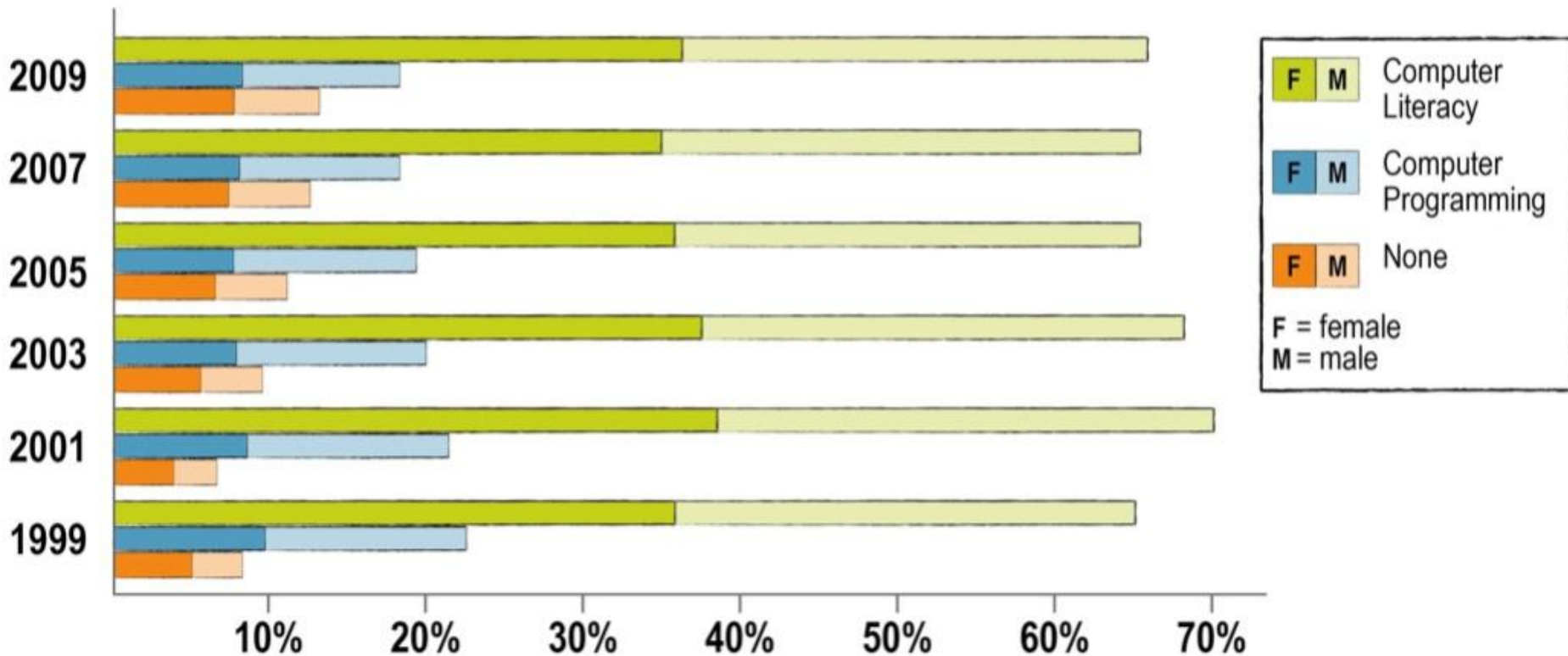
© NCWIT. Source: The College Board, AP National Summaries, 1999-2009.

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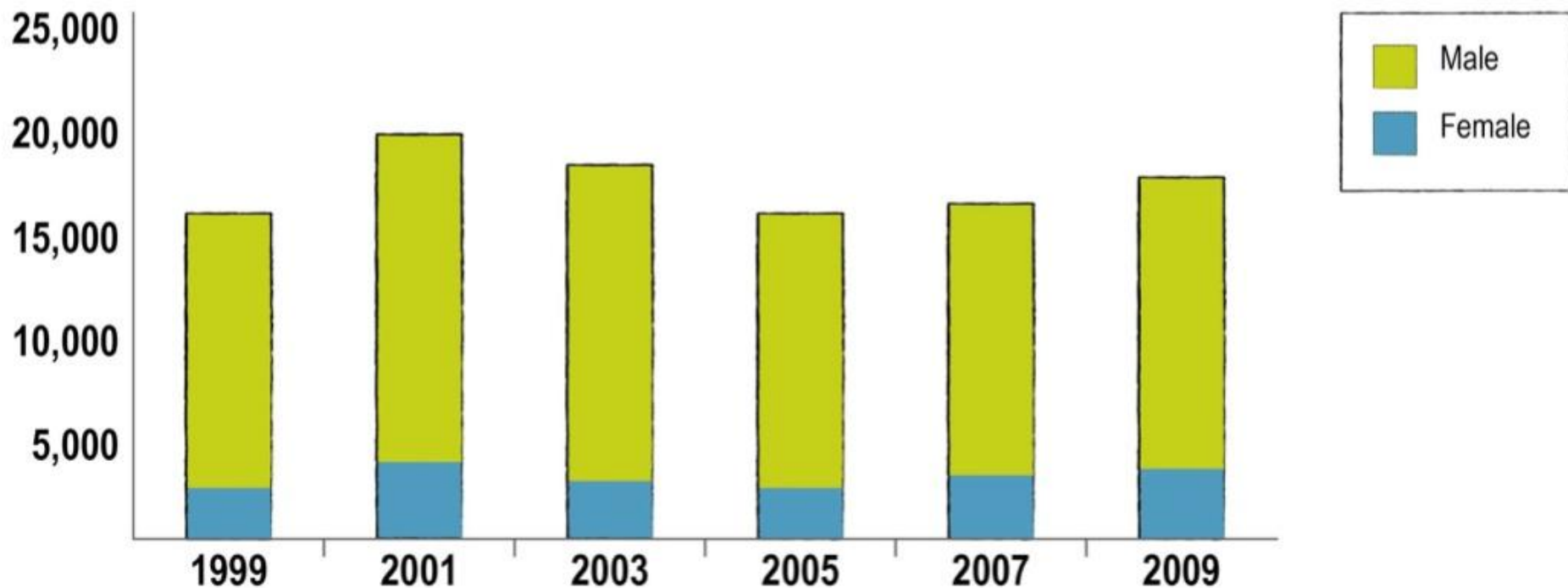
National School Enrollment and APCS Exam Participation by Race and Gender

# Why is this happening?

- Dot com bubble burst in late 1990s
- Perception of economic climate: "Don't go into CS because your job will be outsourced"
- Lack of rigorous CS education in K-12 schools
- Perception of the CS field

# Computer Science typically…

- Is not a graduation requirement

- Doesn't count as academic graduation credit

- Is often classified as a "vocational course" and/or competes with music, foreign language, or sports electives

- Is taught by teachers with little technical/computing background or by techies with little teacher training

- Is hard to integrate across curriculum because of education and testing requirements

Tech standards (NETS) exist, but often translate into familiarity with office software.

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# The Challenges



Repenning 2011 AERA

# Close your eyes and imagine a computer scientist. After you have an image in mind, please draw and/or describe what this person looks like.



Mercier, E., Barron, B., O'Conner, K. (2006). Images of self and others as computer users: the role of gender and experience. *Journal of Computer Assisted Learning*.