

# Gender & Computing

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Joanne McGrath Cohoon



# What now?

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- ✓ A few reasons girls should study CS
- ✓ Some reasons few of them do
- ✓ What can we do about it?
  
- ✓ Contribute to a resource for high school teachers

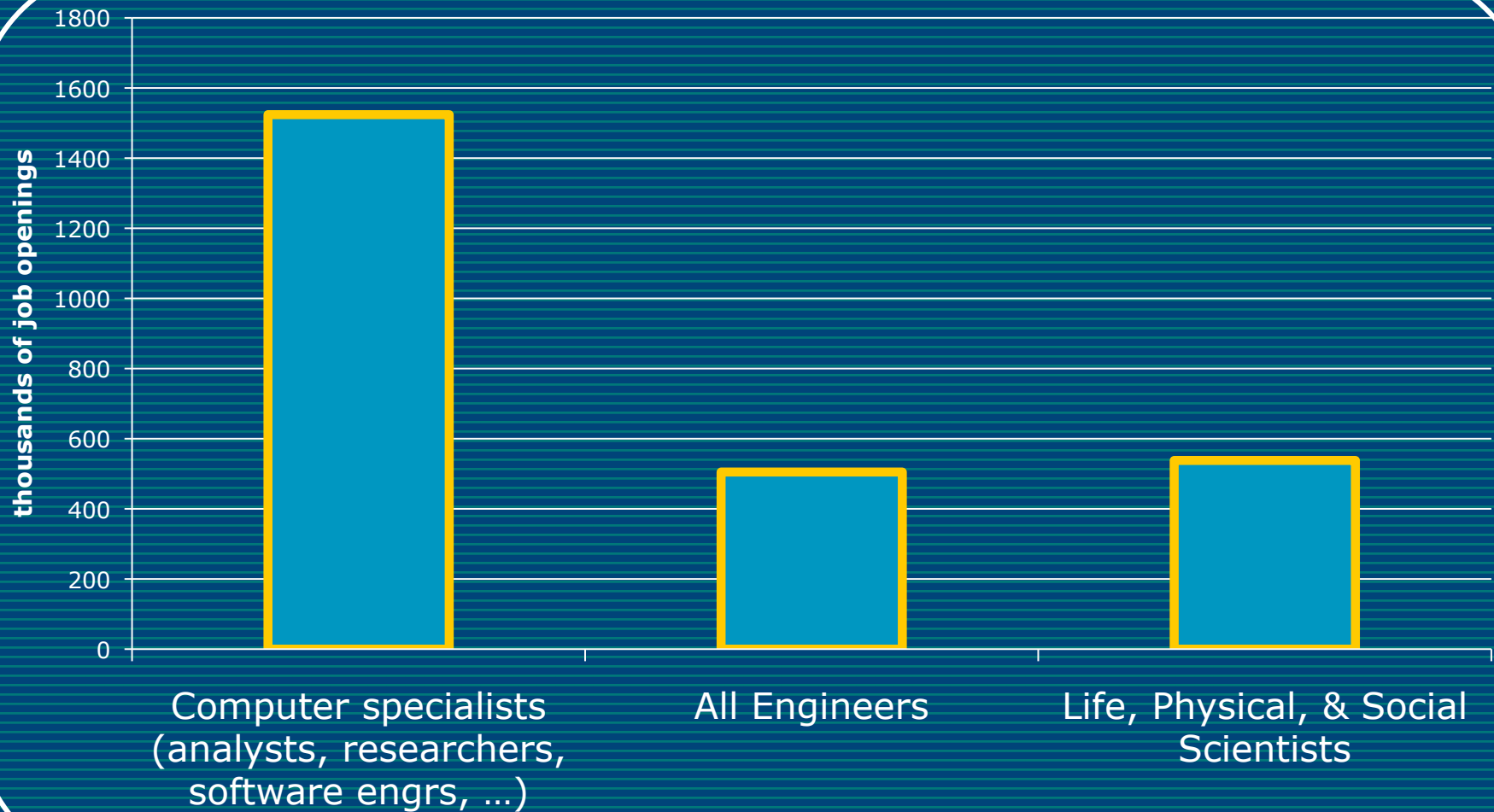


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Why should girls study CS?

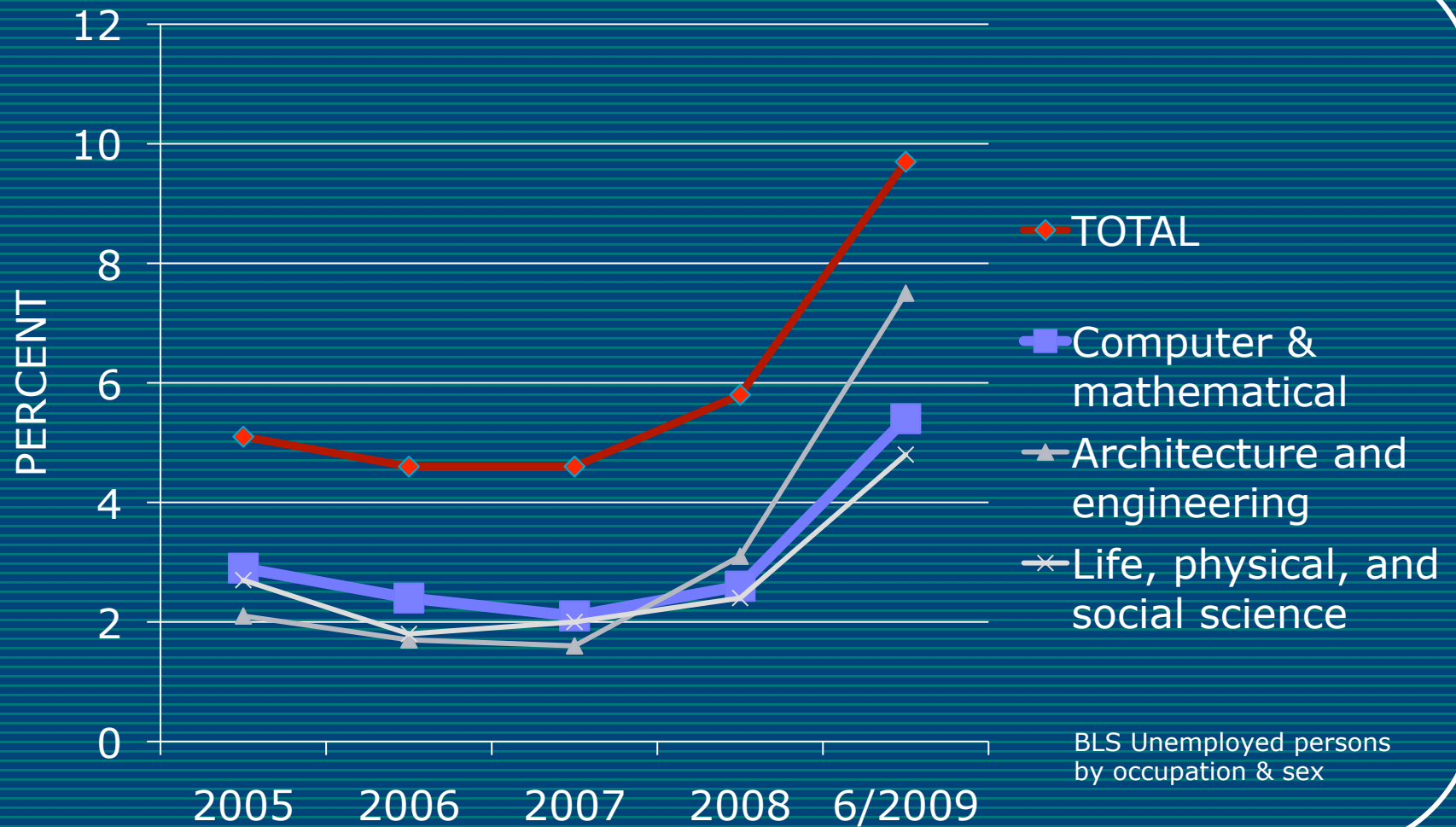
**Flexible, creative, rewarding  
career; unmet need; gender equity;  
enhanced innovation**

# Many Total Job Openings Predicted for 2016



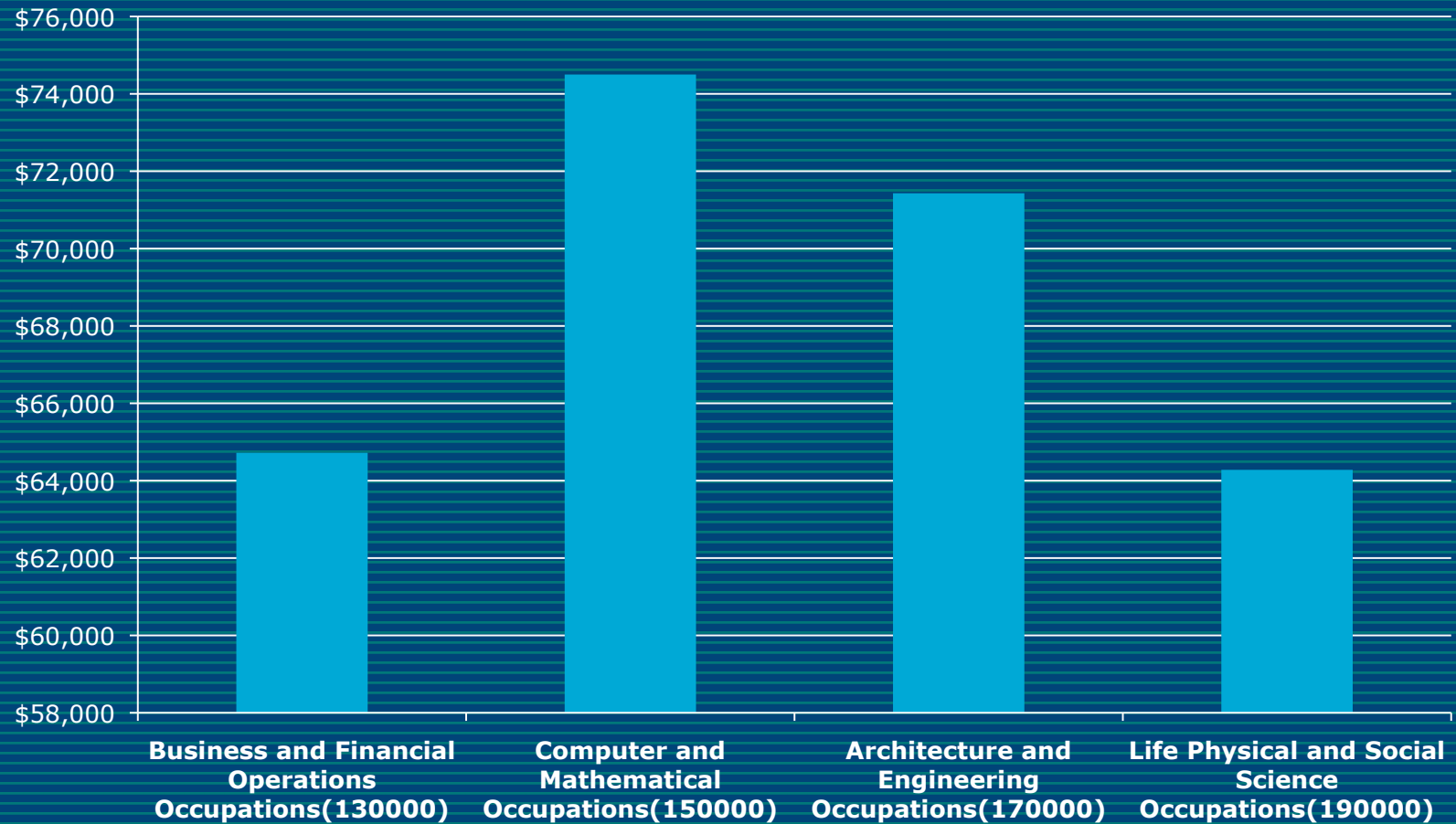
Source: U.S. Bureau of Labor Statistics (BLS)

# Relatively Low Unemployment Rates



# IT occupations are well-paid

Annual mean wage, May 2008



Source: Bureau of Labor Statistics

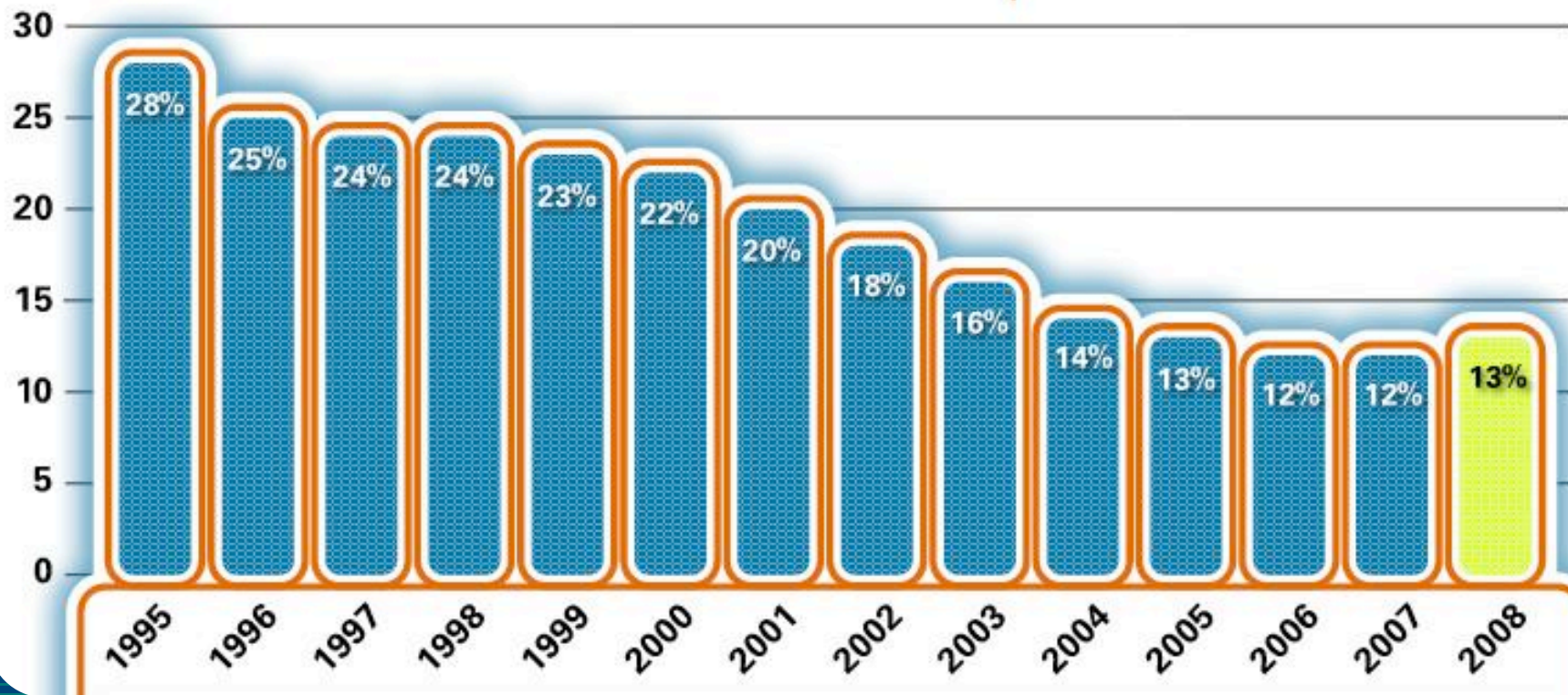
# Workforce needs will be unmet



Calculated with data from the U.S. Bureau of Labor Statistics and National Center for Education Statistics

# Few HS Girls Plan a Computing Career

Female percent of college-bound SAT-takers who intend a CIS major:

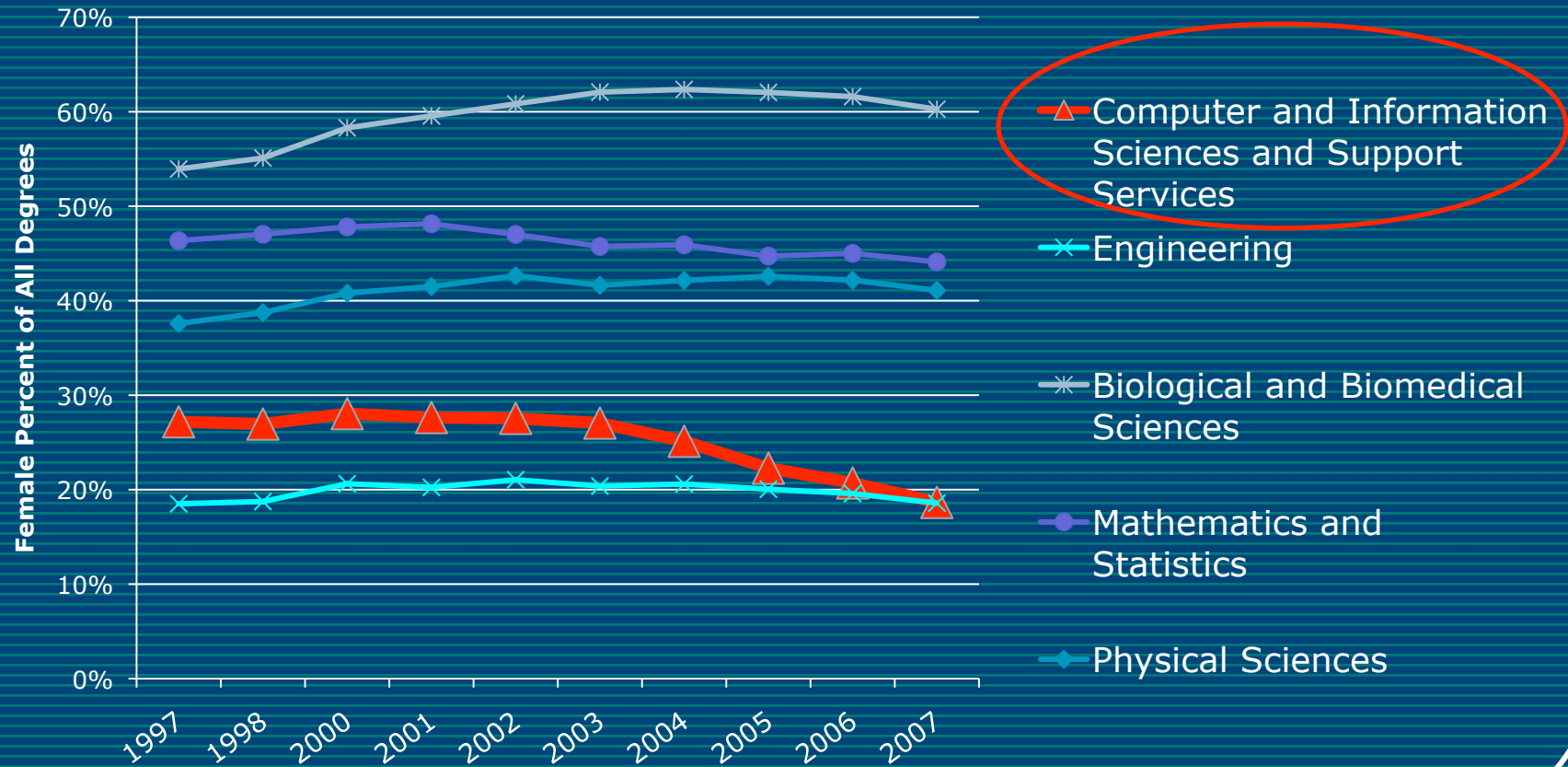


Calculated with data from the College Board



# Only CS is getting worse

## Trends in Female Representation among All STEM Degree Recipients, 1991-2007



Calculated using IPEDS data from the U.S. Dept of Education

# Why do few females pursue computing?



- ✓ Stereotypes reduce confidence and interest
- ✓ Educational policies allow choices influenced by stereotypes

- ✓ Lack of support and encouragement
- ✓ Lack of information
- ✓ Unconscious bias



# Improve the situation by recruiting

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- ✓ Students & their influencers
- ✓ Messages that persuade and stick
- ✓ Media that get attention

more on this topic tomorrow

# NCWIT resources can help with recruiting



For more resources, see [ncwit.org/resources.res.html](http://ncwit.org/resources.res.html)

# Help develop a new resource for recruiting

Aimed at motivating teachers to offer computer science in "camps"

## Computing Workshops and Camps Benefit Students and the Teachers Who Offer Them

### Enrich K-8 Education and Better Prepare Students for the Future

Computing skills and computational thinking are increasingly important 21st-century skills. Most kids are competent computer users, but few can write programs or do computational thinking. These skills are vital for helping students become effective citizens and for preparing them to have influential, rewarding, and flexible careers. Yet teachers have few opportunities during the school year to teach these skills and most students — especially girls — are missing out.



Teachers can help by offering a computing module in existing workshops or summer camps, or even by offering their own summer programs.

### Try Out Interesting Ways to Teach Computing

Teachers can advance their own computing knowledge and professional capabilities while having fun. In workshops and summer camps, teachers can try out interesting and creative ways to teach computing in a relaxed environment — without having to worry about grading. The experience gained can then be translated to the classroom for more engaging lessons.



Workshops and day camps can be cost-effective for teachers as well as affordable for students.

### Engage Girls in Computing

Currently, girls and women are seriously underrepresented in computing professions. For example, in 2008, girls were only 13 percent of the high school seniors who intended to major in computing in college.

Workshops and camps can improve girls' computing skills and may increase their interest and confidence in computing education and careers. Interest, confidence, and skills are essential for ensuring that girls participate fully in creating tomorrow's technology.



## Resources and Programs for Teachers and Camps

**Summer Camps**  
Offers a variety of activities for girls. You can find a quick and lesson

source that

- offers engaging physical activities for conveying computing concepts without a computer.
- Scratch is free software that lets kids create 2D animations and games using drag-and-drop programming.
- Alice is free software that students can use to create 3D movies and games.

### Get More Information

The resources you'll need for adding computing modules to existing summer camps and workshops, or for starting your own, are online at [www.ncwit.org](http://www.ncwit.org).



Visit this NCWIT website for more information and links to free materials.

There are links to free software such as Alice and Scratch, contact information for experienced mentors, lists of potential partners and how to attract them, testimonials, sample lesson plans, needs assessment tools, business plan models, surveys, logistics planning, professional societies with ideas and advice about computing content, and more.

- Council 1-800-452-4273 to locate the office nearest you
- Girls Inc. at [www.girlsinc.org](http://www.girlsinc.org)
- Local YWCA
- Local schools
- Local technology groups such as the Sally Ride Science camps at [www.sallyridecamps.com](http://www.sallyridecamps.com)
- Local 4-H groups
- Religious organizations
- Local universities or colleges

# Jot down your answers to these questions

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- How appealing/unappealing is this card to you?
- If given this card, how likely is it you would read it?
- How engaging is each section of the card?
- After reading the card, what, if anything, would you do as a result?
- What change would most improve this card?

# Thank you for your help!

## 2009 Gotta Have IT



# Gotta have IT

*Gotta Have IT* is an all-in-one computing resource kit designed with educators' needs in mind. A select set of high-quality posters, computing and careers information, digital media and more, the resource kit builds awareness and inspires interest in computing. *Gotta Have IT* is for all students, but is especially inclusive of girls. Roll on an icon below for resource details, or click the icon to download or link to that resource.

