

Where have all the women gone?



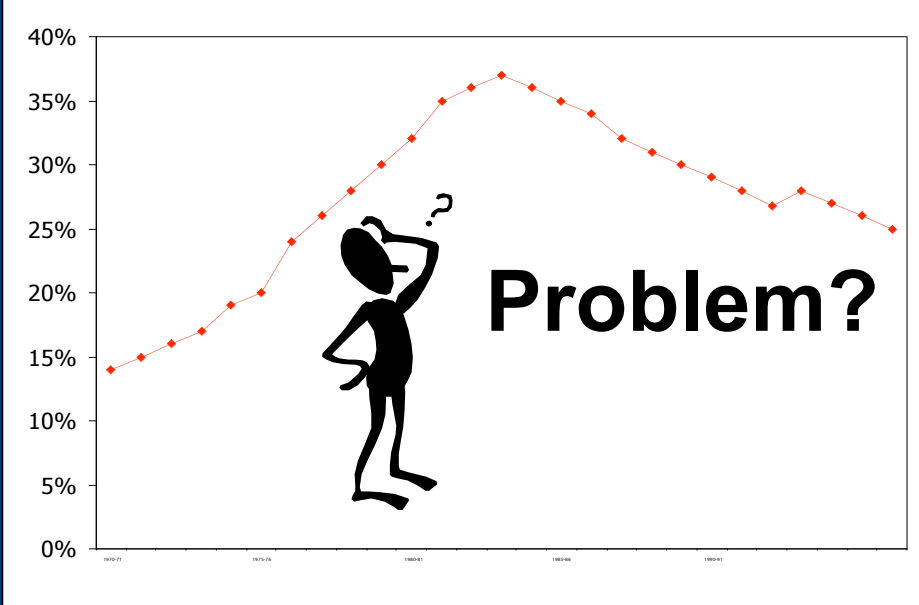
Ada Lovelace,
The 1st Programmer



Grace Hopper,
Creator of Cobol



Katie A. Moor
PhD Student
Indiana University



Recruitment

WOMEN of VALOR
SUPPORT your local female GEEK

Piled Higher & Deeper by Jorge Cham
<http://www.phdcomics.com>

Retention

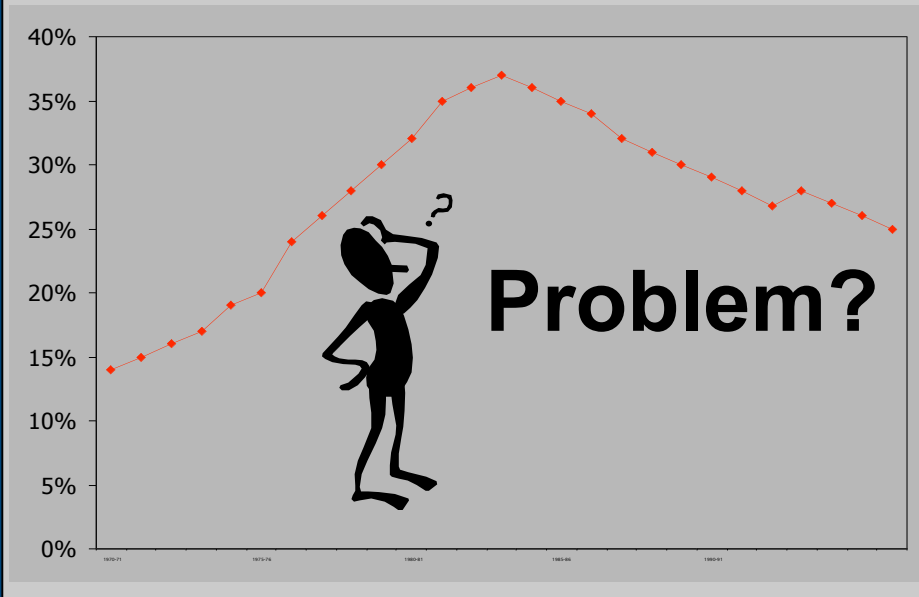
What can we do?

SO, UH, WHO'S READY TO LEARN ABOUT "NOISE PROFILE MATCHING FOR MULTI-CARRIER SYSTEMS"? AND... IF YOU BEHAVE LIKE GOOD LITTLE KIDS...

ACM-W

systems
online community

Piled Higher & Deeper by Jorge Cham



The comic strip shows a woman with short grey hair, wearing a blue button-down shirt, standing with her hands on her hips. She is holding a laptop. The background is a sunset with birds flying. The text "Women in Grad School..." is written in orange at the top. Below the woman, it says "WOMEN of VALOR" in large orange letters, and "SUPPORT your local female GEEK" in smaller blue letters. At the bottom, it reads "Piled Higher & Deeper by Jorge Cham" and the URL "http://www.phdcomics.com".

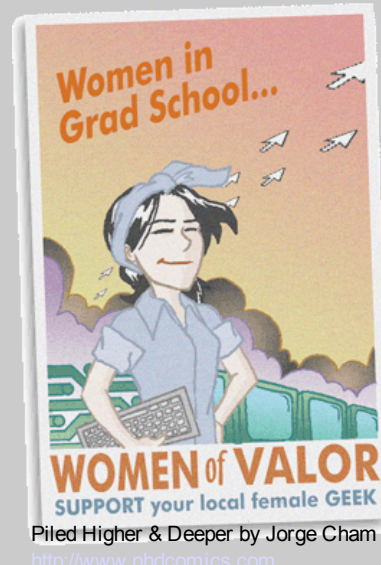
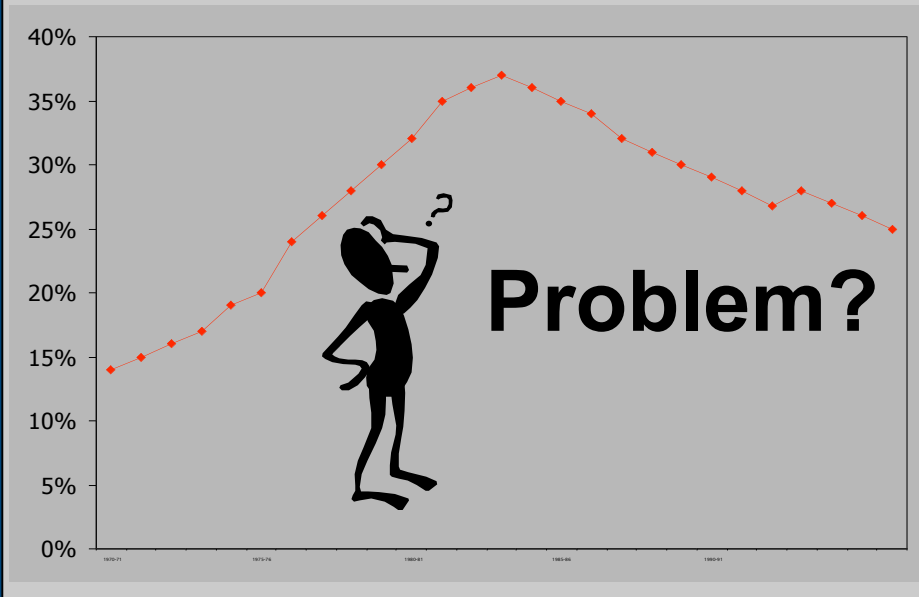
Recruitment

An illustration of two female graduates in blue gowns and blue caps with gold tassels. They are both holding white diplomas. The word "Retention" is written in large black font to the right of the illustration.

Retention

The comic strip panel shows a woman speaking to a group of people. The speech bubble contains the text: "SO, UH, WHO'S READY TO LEARN ABOUT 'NOISE PROFILE MATCHING FOR MULTI-CARRIER SYSTEMS'? AND... IF YOU BEHAVE LIKE GOOD LITTLE KIDS...". To the right of the comic is the ACM-W logo, which is a blue diamond shape with a female symbol and the text "ACM-W". Below the logo is the "systems online community" logo, featuring a stylized ear and the text "systems online community".

What can we do?



Recruitment

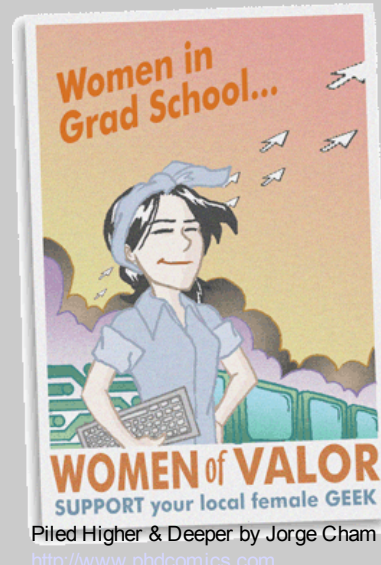
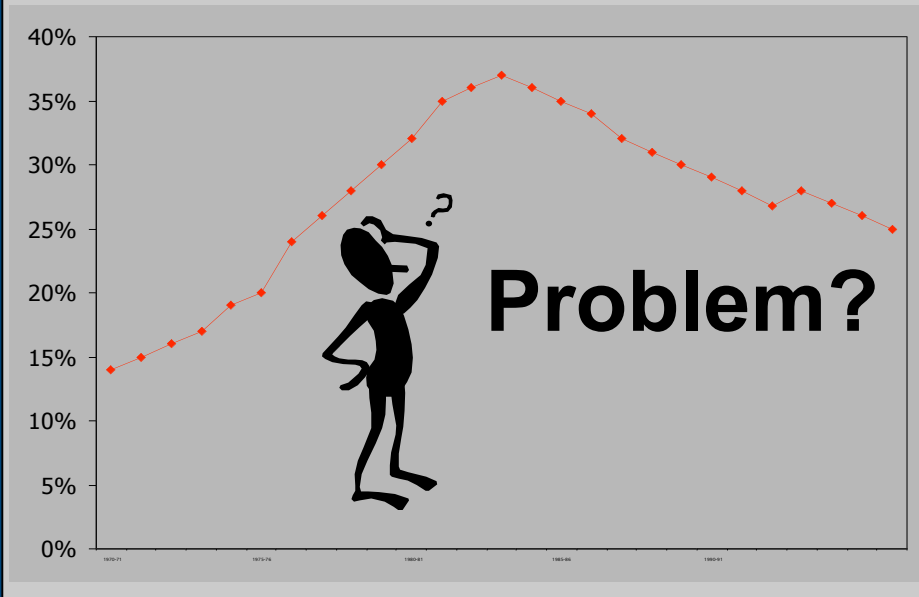


Retention



What can we do?





Recruitment



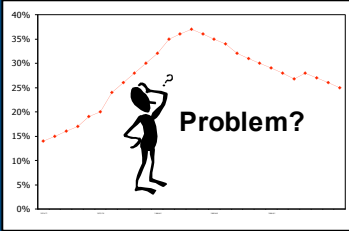
Retention

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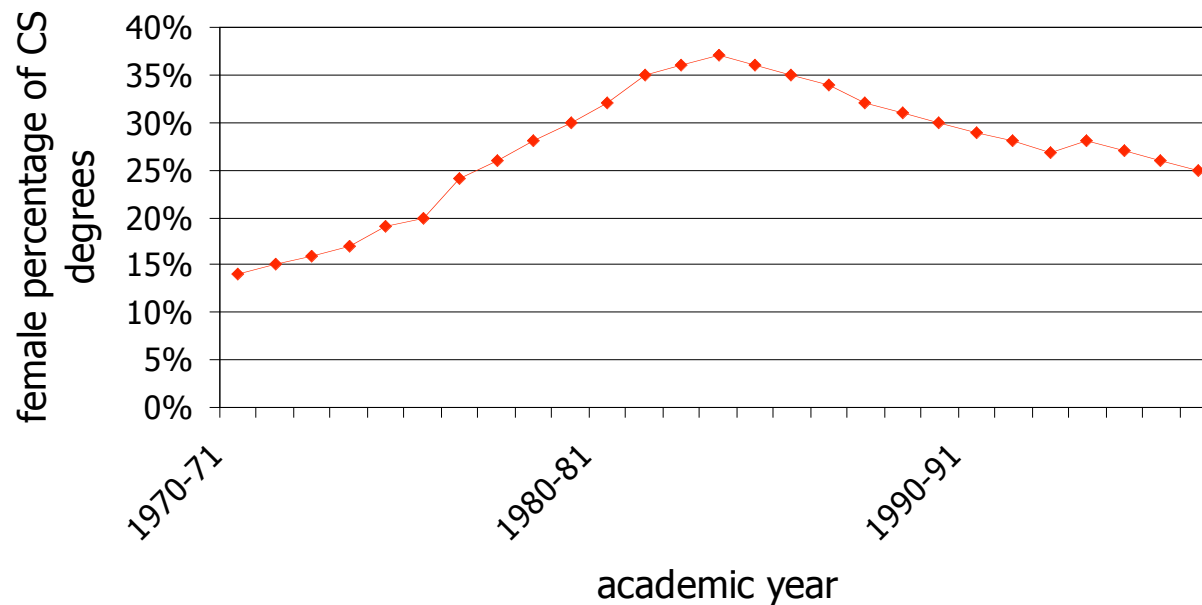


What can we do?

Where have all the women gone?

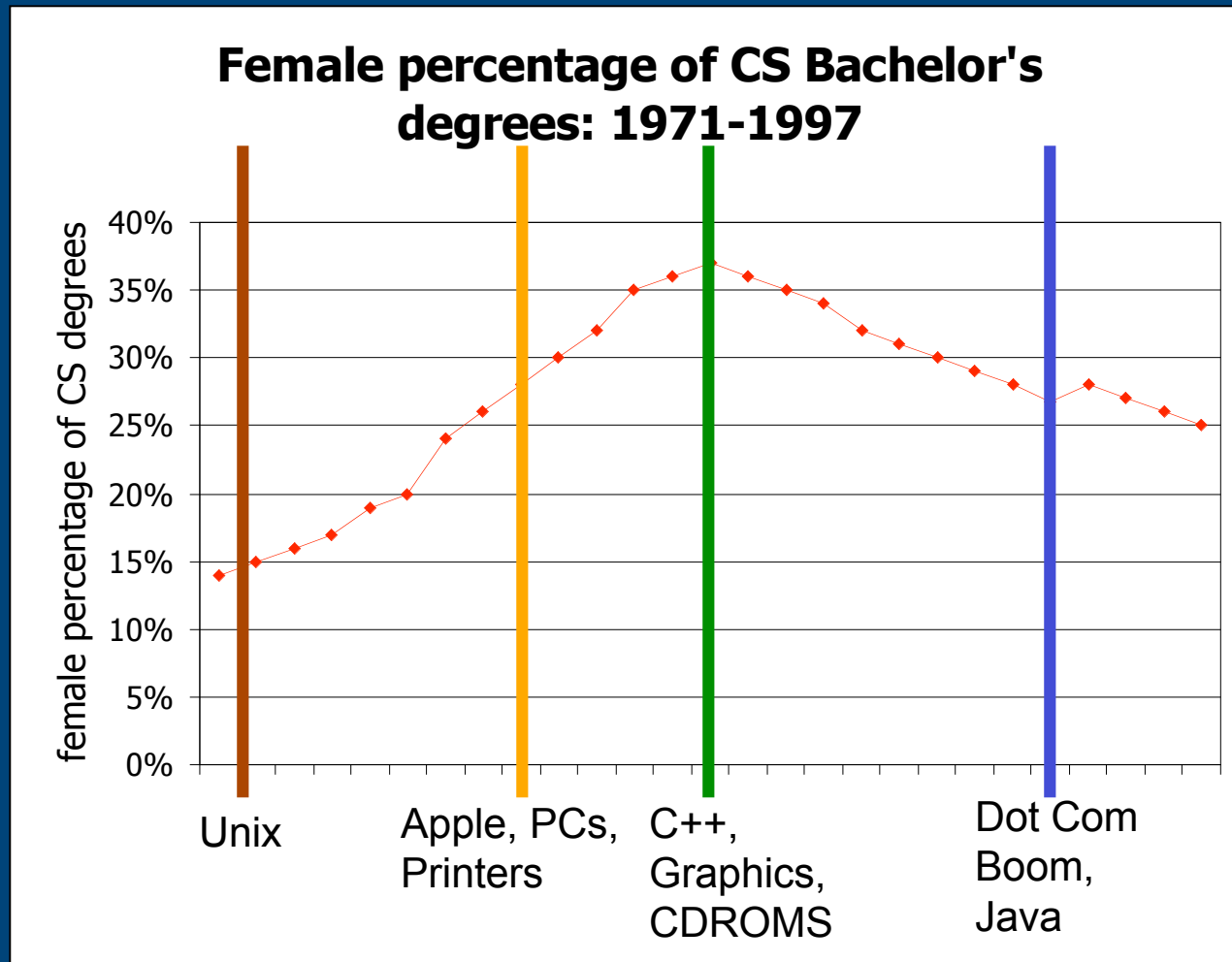
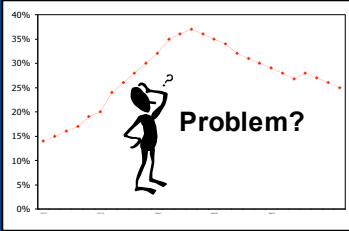


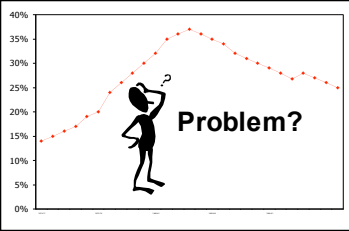
Female percentage of CS Bachelor's degrees: 1971-1997



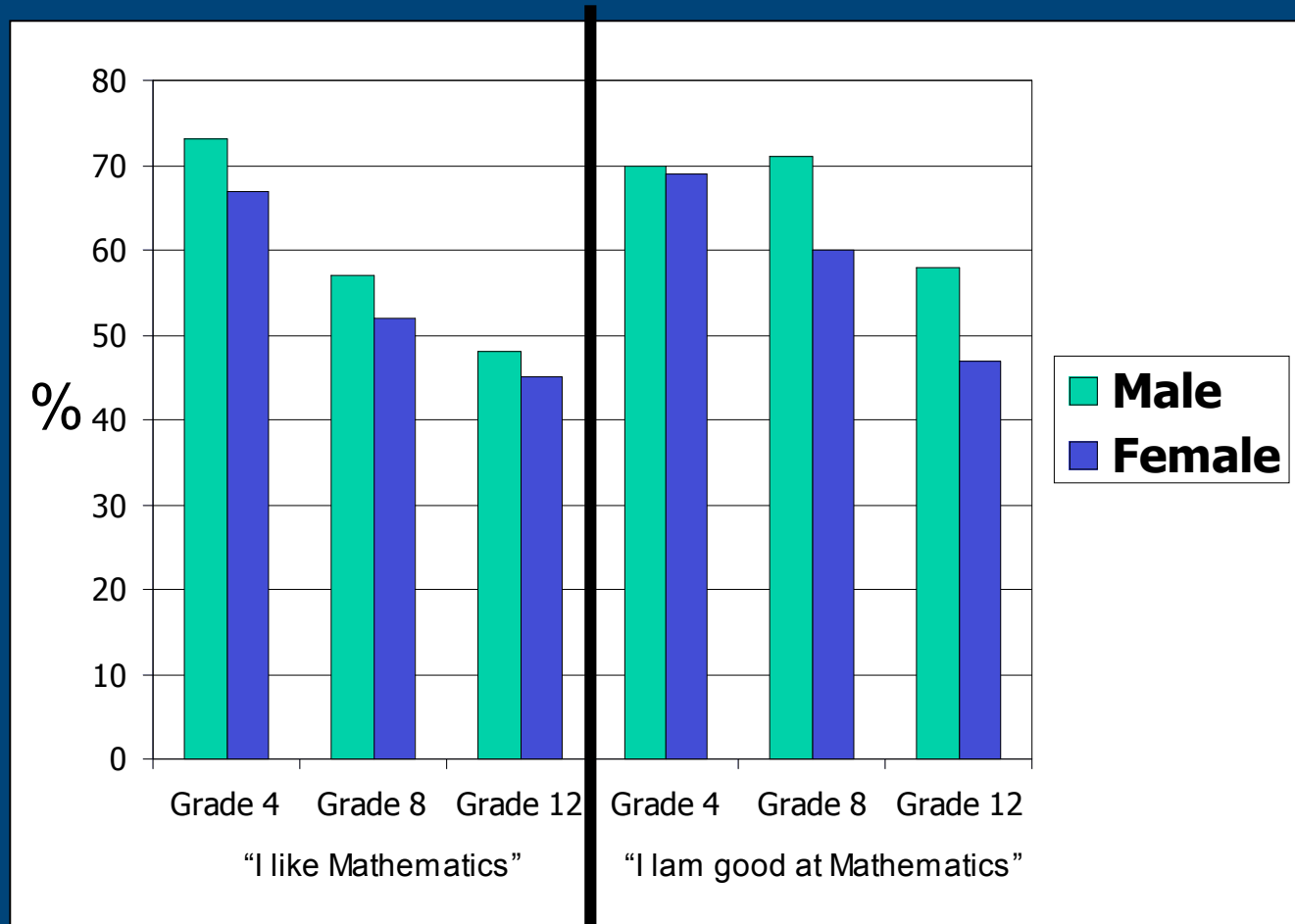
Cohon, J. McGrath. "Toward Improving Female Retention in the Computer Science Major" in Communications of the ACM: May 2001.

Where have all the women gone?

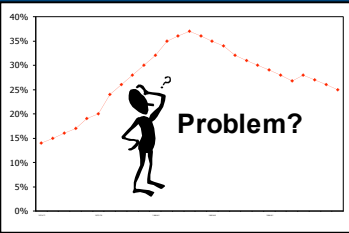




Dispelling some rumors...

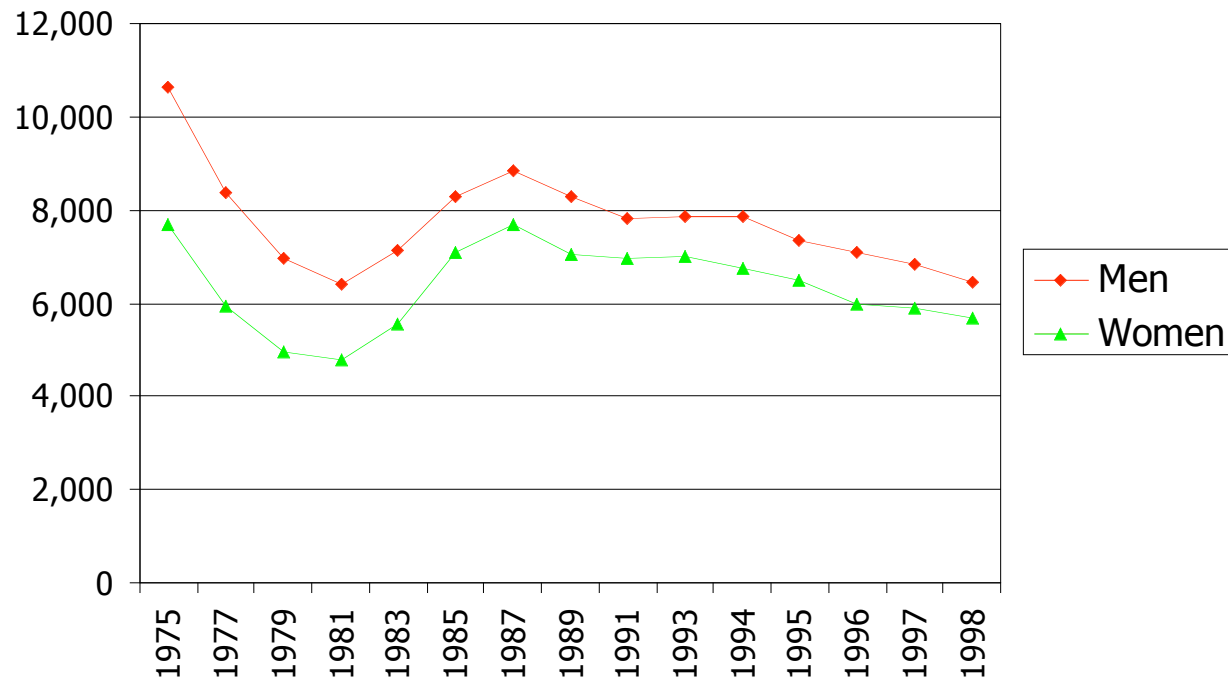


National Science Foundation. Women, Minorities, and Persons with Disabilities in Science and Engineering: 2002. July 2003.

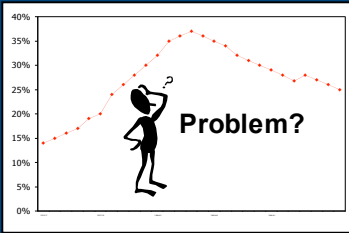


Women can do math

Number of Bachelor Degrees in Mathematics



Association of Women in Science. Statistics:
http://awis.org/statistics/r_statisticsmain.html



Why do we need women in computing?

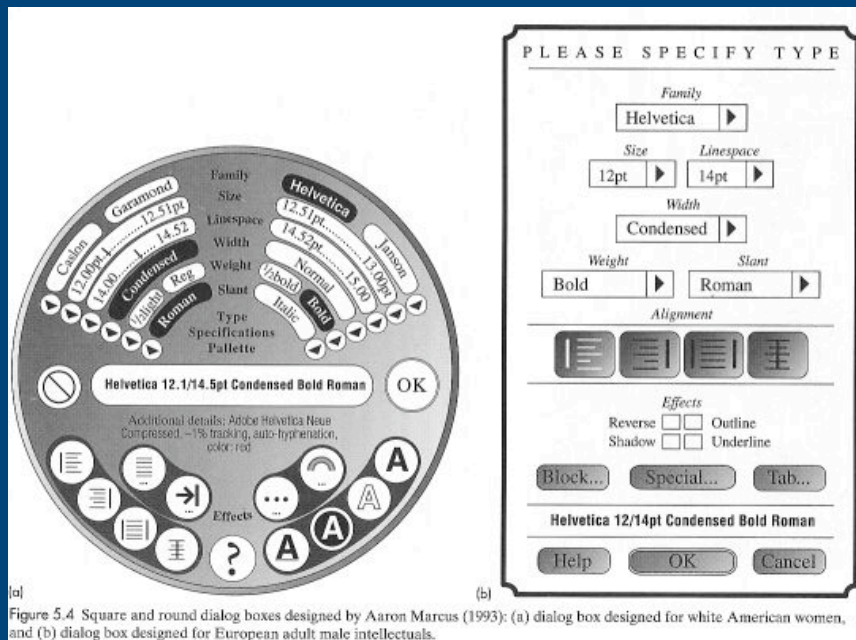


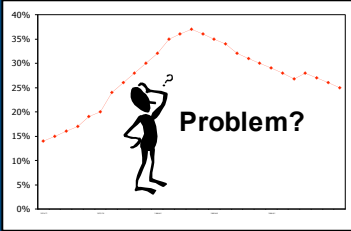
Figure 5.4 Square and round dialog boxes designed by Aaron Marcus (1993): (a) dialog box designed for white American women, and (b) dialog box designed for European adult male intellectuals.

- Program design is improved when designers better understand users.
- Having designers from a diversity of gender and ethnic backgrounds will improve designs.

DESIGN: Marcus, A (1993) Human communication issues in advanced UIs. Communications of the ACM, 101-109.

USER STUDY: Teasley, B., Leventhal, L., Blumenthal, B., Instone, K., and Stone, D. 1994) Cultural diversity in user interface design. SIGCHI Bulletin, 26(1), 36-40.

Is Diversity in Computing a Moral Matter? In Inroads, by Deborah G. Johnson & Keith W. Miller



Give women the opportunity to succeed in computing



- Over half of male students who have a computer at home have the computer in **their room**
- Only 17% of women received a computer early in their education (40% of male students reported having computers early on)

Unlocking the Clubhouse: Women in Computing.
Jane Margolis and Allan Fisher

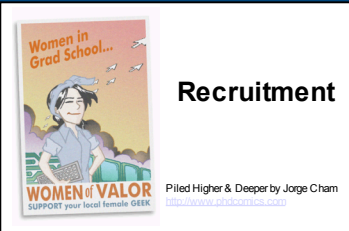


Where do we start?



- At **all ages**, boys spend more times playing video games
 - Age 8, twice as much time gaming than girls
 - Over age 14, over 50% more gaming than girls
- **Gaming = confidence in computing**

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High School is Important

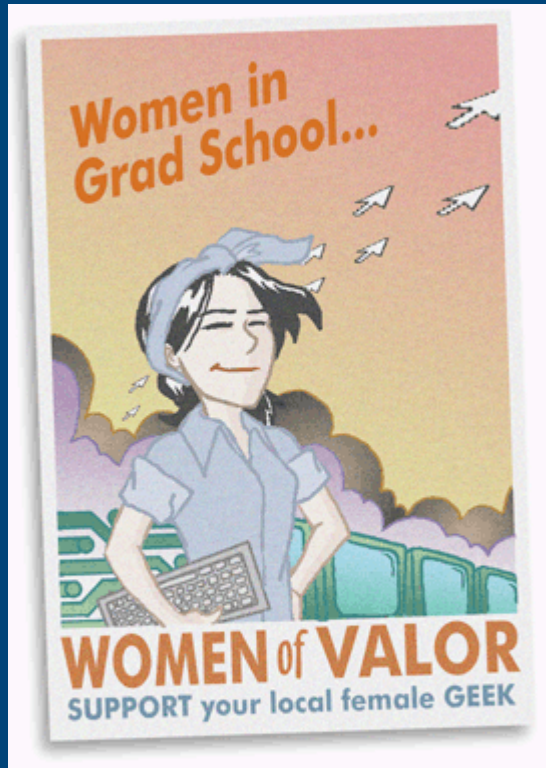


- Boys typically make decisions about computing early on from gaming
- Girls “try things out” in high school


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How do we get women interested in computing?



Women In Grad School...



Recruitment

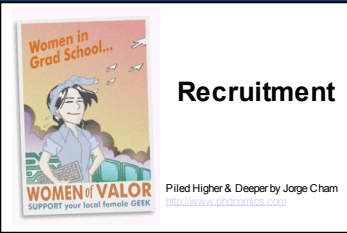
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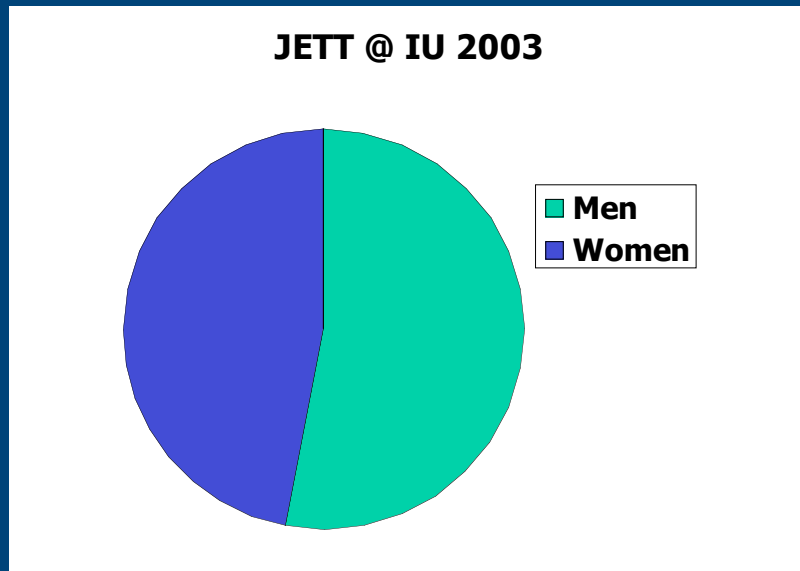
Dispel the geek stereotype



- CMU Roadshow
- Invite guest speakers
- Be a positive role model



Educate yourself, teachers, counselors, and parents



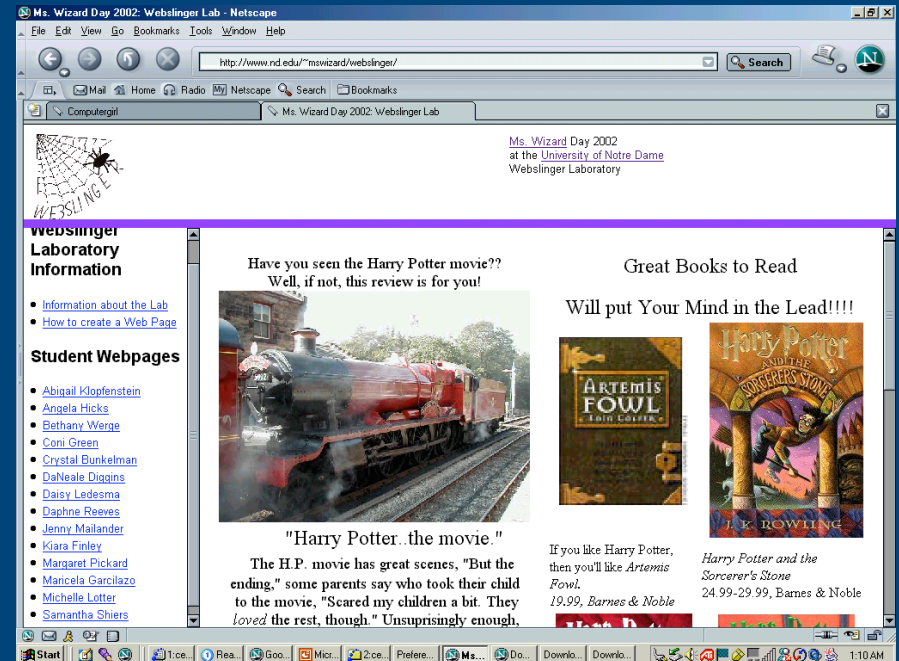
- Recommend home computers be placed in centralized locations
- If your classes are not 50-50, notify administrators
- Talk to parents and counselors to help encourage women
- Create a technology club



Retention

Create opportunities for interdisciplinary work

- Over 40% of women wanted to do interdisciplinary work (art, medicine, education, etc.).
- Women design applications for communication and collaboration. Men design applications as an “extension of power.”



Unlocking the Clubhouse: Women in Computing.
Jane Margolis and Allan Fisher

Honey et al. (1991) Bank Street College Center for
Children and Technology.



Retention

Provide a safe, positive lab environment



- Computer labs allow students to get a break
- Limit harassment and lewd conduct
- Lab set-up influences how students work



Retention

Create a community for all students



- Why aren't there Men in Education or Men in Psychology groups?
- Create a support structure for female students
- Keep in mind how people think



Encourage women!

- Be aware of your voice, gestures, and body language
- Do not “talk down to girls”
- Ask high-order, open ended questions to all students
- Put girls in touch with female scientists
- Encourage questioning and exploration for all students



Get Involved!

- ACM-W High School Chapters
- System
- Computer Girl
- Regional Grace Hopper Conference

