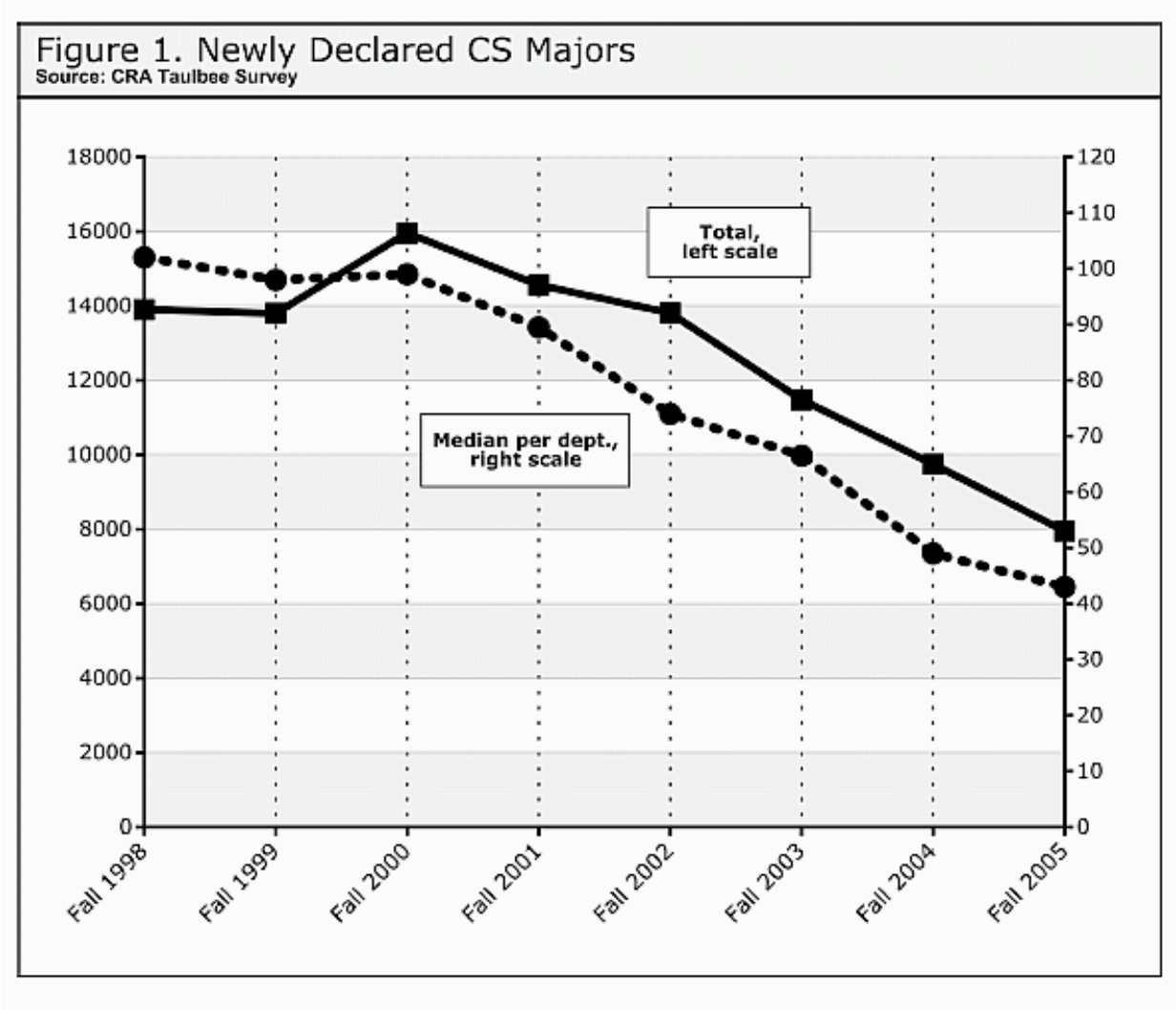
Rethinking CS101: Engaging Students from the Arts and Sciences in Computer Science

moderator: Anne Condon, U. British Columbia

the problems

- we need more majors



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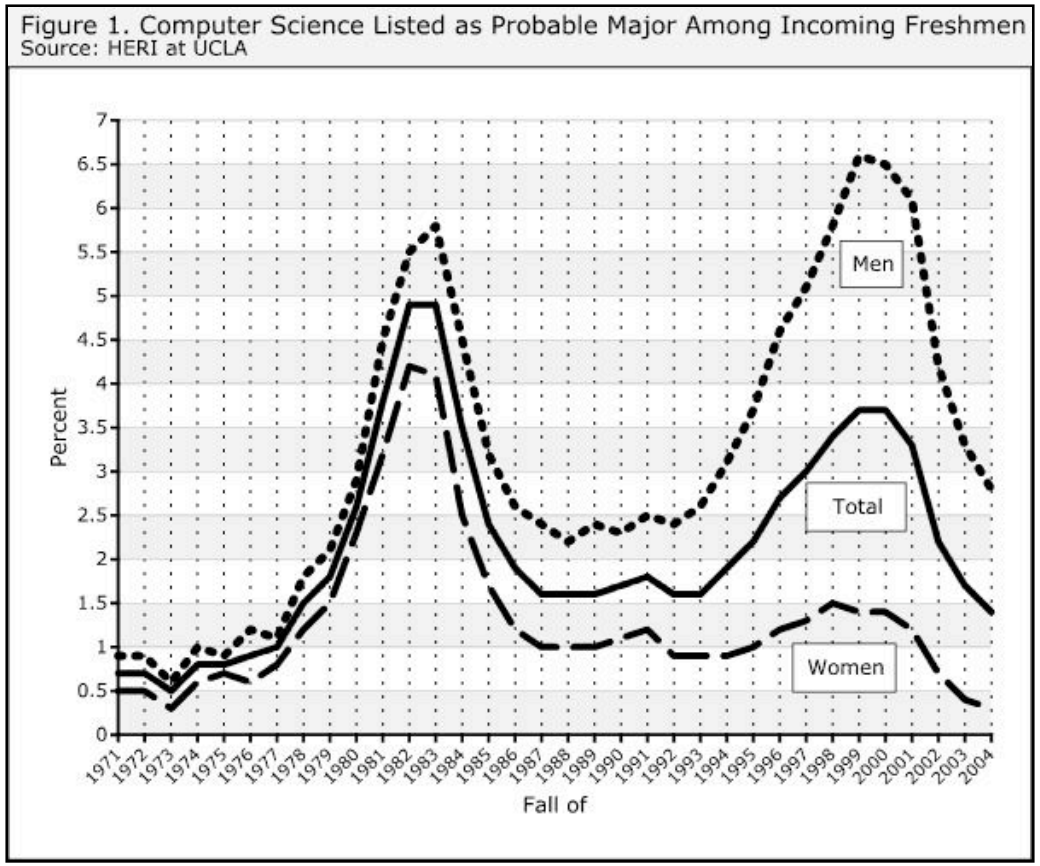

the problems

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- we need more minors
- we need a more diverse student body

how can high-quality intro courses help engage more students?

"If you figure out a way to make technology work for you, you can explore curved shapes and make them possible ... you can do this because of the computer”

—Frank Gehry, Architect

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Panelist introductions

- Duane Bailey (Williams College)
- Kim Bruce (Pomona College)
- Panagiotis Metaxas (Wellesley College)
- Randy Pausch (Carnegie Mellon University)
- Andy van Dam (Brown University)

Tell us about the introductory classes you teach:

course type, class size, student demographics, e.g. fraction intending to major, or minor, fraction from science versus arts

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- **Question:** Virtually all CS intro courses teach computer programming, although the degree of emphasis on programming varies.

Can you comment on what are the best approaches for teaching programming today?

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- **Question:** Alternatives to “programming-centric” approaches are "great ideas in CS" courses, or courses that emphasize the relevance of CS concepts in other disciplines.

What are your thoughts on the effectiveness of these approaches, in terms of attracting undecided students to majors or minors in CS?

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- **Question:** Most of you are at private colleges, with relatively small class sizes.

  Can your methods work in public institutions with large class sizes and labs with aging equipment?

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- **Question:** The range of computer programming experience among students in CS intro classes can be huge.

To what degree do you think this can cause less experienced students to decide against taking further CS courses?

What other factors turn good students off?

Resources

- **Duane Bailey's** "Life as an Algorithm" course: www.cs.williams.edu/~bailey/LAAA
- **Kim Bruce's** intro to cs course: www.cs.pomona.edu/classes/cs051/

  text and associated materials: eventfuljava.cs.williams.edu/
- **Panagiotis Metaxas's** multimedia design and programming course: www.wellesley.edu/CS/courses/CS215/

  Media Arts and Sciences major at Wellesley: www.wellesley.edu/MAS/
- **Randy Pausch's** Alice authoring tool: www.alice.org
- **Andries van Dam's** intro to object-oriented programming course: www.cs.brown.edu/courses/cs015/

  text: www.aw-bc.com/catalog/academic/product/0,1144,0321245741,00.html