We Love Computer Science So Much
Why Don’t More Students Share The Love?

Valerie Barr
Union College

April 4, 2013
False Assumptions - 1

Say “yes” if you drive a car.
Say “yes” if you ever wondered how a car engine works.
Say “yes” if you ever wanted to be an automotive engineer or designers.
Say “yes” if you are an automotive engineer or designer.

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We, incorrectly, believe that today’s youth:
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- are more technologically adept because they are tethered to phones, games, and social media

Yet we aren’t overrun with automotive engineers, and we aren’t overrun with computer scientists!
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Yet we aren’t overrun with automotive engineers,
and we aren’t overrun with computer scientists!
What is true today?

There are

- pockets of increased enrollment
- pockets of increased numbers of majors

These are not the same thing! And...

diversity is still lacking.
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It’s just pockets. And...
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What questions might we ask?

Can we increase enrollments everywhere? and how?

Besides # of majors, are there other measures of success?

Is 'relevance' really the key?
What questions might we ask?

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- Besides # of majors, are there other measures of success?
- Is ’relevance’ really the key?
What about excitement, engagement, and utility?

The Union College experiment:
Six theme-based introductory courses:
- Taming Big Data
- Robots Rule!
- Game Development
- Can Computers Think?
- Creative Computing
- Programming for Engineers

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### Impact

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Doubled the percentage of women in the intro courses
Had enough overage for two more sections per term
70% increase in total number of declared majors per year

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  - expect to take additional CS courses? 60% say “yes” or “maybe”
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- Data Structures have been 13% women over a multi-year period, except...
  - This year - 33% women
  - This term - 42% women!
How can we sustain interest?

More excitement, engagement, and utility.....

- Natural Language Processing
- Data Visualization
- Modeling & Simulation
- Web Programming
- The Computer Science of Computer Games
- Intro to Bioinformatics

plus the usual route into the major
Data Visualization

29% OF THE HOUSE OF REPRESENTATIVES
All but 2 U.S. Presidents have been Greek since their founding
63% of U.S. Cabinet members since 1900 have been Greek
40 OF THE 47 U.S. SUPREME COURT JUSTICES ARE GREEK

All Apollo 11 astronauts were Greek
2% of the population is Greek

43% OF 100 MEMBERS OF THE US SENATE ARE GREEK
85% of 7 out of 10 in who's who are Greek

Fortune 500 Executives are Greek
7 million is raised per year by Greeks for charities

Greeks give about 850,000 volunteer hours a year
Greeks are more likely to participate in community service activities after graduation

Over 70% of Greeks graduate as opposed to 50% of non-Greeks
43 of 50 of the largest American corporations are headed by Greeks

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And if we get some women, then what?

ACM-W supports, celebrates, and advocates internationally for the full engagement of women in all aspects of the computing field.....
ACM-W is committed to ....

- .....ACM as an organization (increase membership)
- .....women members of ACM and women in computing in general
- .....putting ourselves out of business!
Primary Programs

- Scholarships
- Regional women in computing celebrations
- Chapters

- Athena Award

Katherine Yelick

Speaking at SC 2013
Regional Celebrations

- Approx. 25 distinct conferences, 12-13 each year
- 100-125 attendees, primarily students
- usually 24 hours
- career fair, poster competition, resume review
- research presentations, lightning talks, industry panels
Regional Conferences & Chapters

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Where are they?

- Atlantic Canada
- Ontario
- New Zealand
- Pune, India
- Europe (forthcoming)
- Pacific Northwest
- Southern Cal.
- Rocky Mountains
- New Mexico
- Utah
- MO-IA-KS
- Northern KY
- KY Community Colleges
- Indiana
- Ohio
- Carolinas
- MD-DC-VA
- New York (upstate)
- Tennessee
- and next....

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SouthEast Women in Computing Conference
November 13-15, 2013
Guntersville State Park, AL