It’s NOT working
Women in Engineering & Computer Science
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It’s NOT working
This Talk

• Slightly different
  – I have ideas
  – I don’t have answers

• Statistics on Women in Engineering/CS

• Boise State’s numbers

• Outreach

• What can we do?
Figure 2-15
Female share of S&E bachelor’s degrees, by field: 1985–2005

NOTES: Physical sciences include earth, atmospheric, and ocean sciences. Data not available for 1999.


Science and Engineering Indicators 2008
Low participation fields for women: Computer sciences and engineering, 1991–2010

NOTE: Data not available for 1999.
Percentage of Bachelor’s Degrees Awarded to Women by Discipline: 18.9% of Total

American Society of Engineering Education, 2012 Data
Figure 2-21

NOTES: Physical sciences include earth, atmospheric, and ocean sciences. Life sciences include biological sciences, agricultural sciences, and medical/other life sciences.


Science and Engineering Indicators 2008
Employed women 16 years and older as a percentage of selected occupations: 2011

- All occupations
- Registered nurses
- Dietitians
- Therapists
- Teachers, except postsecondary
- Psychologists
- Social scientists
- All professional and related occupations
- Pharmacists
- Biological and life scientists
- Postsecondary teachers
- Physical scientists
- Physicians
- Lawyers and judges
- Mathematical/computer scientists
- Engineers

Percent
What about Boise State?
COEN Undergraduate Enrollment Fall 10th Day

Number of Undergraduate Students Fall tenth Day

Year: Fall 200x

- Civil
- Electrical
- Materials Science
- Mechanical
- Computer Science
- Const Mgmt
Engineering Undergraduate Degrees Awarded

![Bar Chart]

- CE
- CS
- EE
- MSE
- MBE
- TOTAL

YEAR:
- 2007-2008
- 2008-2009
- 2009-2010
- 2010-2011
- 2011-2012
- 2012-2013
Women in Engr/CS at Boise State

- Undergraduate: 12 to 13%
- Graduate: 18 to 20%
- Faculty members: 24%
- Women:
  - Retention is good (as good or better than men)
  - Time to degree is shorter
  - They don’t apply and they don’t enroll
  - Recruiting/Calling campaign
  - Scholarships
Outreach

• Terrific programs across the nation.
• Boise State: host or partner on more than 12 programs per year
• eGirls
  – 40 to 50 girls each year
  – Approximately 40% go on to study in STEM discipline
• STEM Exploration: More than 5000 people on campus each year
We need outreach.
It’s NOT enough
Societal Issues

• Role models are not very visible
• What is an engineer?
  – Engineers improve the quality of life
  – Engineers design the world
• Wrong message ("Big Bang Theory")
• Need our own TV show: CSI – Forensics
• Cartoons/Children’s books etc
New Toys

GOLDIEBLOX

• A book series plus construction set starring Goldie, the girl inventor.
• Builds spatial skills, engineering principles, and confidence in problem-solving.
• Comes equipped with 16 design ideas and unlimited building possibilities.
Roominate: the original wired dollhouse building kit
Bo and Yana
i-Play
Books

- Girls Think of Everything: Stories of Ingenious Inventions by Women
- Rosie Revere, Engineer
- Almost Astronauts: 13 Women Who Dared to Dream
We have to reach ALL girls.

What it is is beautiful.

Have you ever seen anything like it? Not just what she's made, but how proud it's made her. It's a look you'll see whenever children build something all by themselves. No matter what they've created.

Younger children build for fun. LEGO® Universal Building Sets for children ages 3 to 7 have colorful bricks, wheels, and friendly LEGO people for lots and lots of fun.

Older children build for realism. LEGO Universal Building Sets for children 7 to 12 have more detailed pieces, like gears, rotors, and treaded tires for more realistic building. One set even has a motor.

LEGO Universal Building Sets will help your children discover something very, very special: themselves.
We have to make a difference!

• Make sure teachers (especially elementary school) know what engineers do.
• Better message
  – Engineers improve the quality of life
  – Engineers design the world
• Recruiting College Freshmen
• Talk to **EVERY** girl you know
• Buy toys/books for every pre-school, kindergarten, and childcare location
But Wait

Do we need more engineers?

Engineering is the liberal art for the 21st century.
Help

• Adopt a 5th grade teacher and introduce them to engineering
• Support an outreach event for girls
• Buy a toy/book for every girl you know
• Talk about engineering
Thank you