MAINTAINING A CAREER IN ACADEMIC SCIENCE AND ENGINEERING

Phoebe Leboy, President
Association for Women in Science

www.awis.org

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Drexel University
ABOUT AWIS

• A membership organization that advocates for women in STEM

• Builds connections among women across all STEM disciplines

• Founded in 1971, multi-disciplinary

• National office in Washington DC with 50 chapters around the country.

Chapters reach out to K-12 students
AWIS MEMBERSHIP

31% are student members

>80% of non-student members have a doctorate
  53% work in higher education
  28% work in industry

<table>
<thead>
<tr>
<th>Field</th>
<th>Membership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological Sciences</td>
<td>52%</td>
</tr>
<tr>
<td>Physical Sciences</td>
<td>17%</td>
</tr>
<tr>
<td>Medical Sciences</td>
<td>13%</td>
</tr>
<tr>
<td>Math/Computer Sci</td>
<td>3%</td>
</tr>
<tr>
<td>Engineering</td>
<td>3%</td>
</tr>
<tr>
<td>Social/Behavioral Sci</td>
<td>3%</td>
</tr>
<tr>
<td>Other</td>
<td>8%</td>
</tr>
</tbody>
</table>

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RECENT AWIS ACTIVITIES

• Organizing NSF-supported ADVANCE conference on transforming the institutional culture in science.

• Working with discipline-based women’s caucuses to change the culture of professional societies in STEM.

• Diagnosing the reasons why women avoid careers in academic biomedical research.

• Providing career workshops for AWIS members.
LET'S TALK ABOUT-

- The current status of women in STEM:
  - the education pipeline
  - the faculty pipeline

- Factors blocking recruitment and retention of women faculty

- Improving work-life balance

- Will not having kids solve the problems?
Have few women undergrads but the proportion of women in these fields does not decline much with advanced degrees.

**PIPEDLINE LEAKS ON THE WAY TO PhDs**

**Computer Science**

**Physics**

**Engineering**
PhDs EARNED BY US CITIZENS AND PERMANENT RESIDENTS

- **ENGINEERING**
- **BIOLOGY**
- **PSYCHOLOGY**
- **CHEMISTRY**
- **PHYSICS**
- **COMPUTER SCI**
The Image of a PhD-Level Scientist is Changing in All Fields

<table>
<thead>
<tr>
<th>Field</th>
<th>1987</th>
<th>2006*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology</td>
<td>39%</td>
<td>50%</td>
</tr>
<tr>
<td>Geoscience</td>
<td>20%</td>
<td>35%</td>
</tr>
<tr>
<td>Chemistry</td>
<td>21%</td>
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<tr>
<td>Math</td>
<td>16%</td>
<td>30%</td>
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<tr>
<td>Computer Science</td>
<td>14%</td>
<td>21%</td>
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<tr>
<td>Engineering</td>
<td>7%</td>
<td>20%</td>
</tr>
<tr>
<td>Physics</td>
<td>9%</td>
<td>17%</td>
</tr>
</tbody>
</table>

* Survey of Earned Doctorates 2006; Table A-3a
WOMEN FACULTY IN U.S. 2006

Source: CPST analysis of National Science Foundation SESTAT data base. The use of NSF data does not imply NSF endorsement of the research, methods, results or conclusions.
AVAILABILITY POOLS vs JUNIOR FACULTY (2006)

% WOMEN TENURE-TRACK FACULTY

% WOMEN AMONG PhDs

Math

Physics

Pol Sci

Computer Sci

Sociology

Engineering
AVAILABILITY POOLS vs JUNIOR FACULTY (II)

% WOMEN TENURE-TRACK FACULTY vs % WOMEN AMONG PhDs

- Biology
- Chemistry
- Biomed
PROPORTION OF WOMEN JR FACULTY IS DECLINING IN SOME FIELDS!

% WOMEN ASSISTANT PROFESSORS

2003  2006

- COMPUTER SCI
- ENGINEER
- LIFE SCI
- MATH
- PHYSICAL SCI

SOURCE: NSF Division of Science Resource Statistics, Surveys of Doctorate Recipients
WHY ARE NUMBERS OF WOMEN FACULTY NOT INCREASING?

Possibilities:

The culture:
- Only the superstar women get hired.
- Women perceive a chilly climate in STEM departments.
- The playing field is not level because the system is designed by men, for men.

Women’s concern about home and children:
- STEM faculty jobs are family-unfriendly.
- Women (but not men) want “work-life balance”.

AWIS
ASSOCIATION FOR WOMEN IN SCIENCE
A NETWORK, A RESOURCE, A VOICE
WOMEN ARE INCREASINGLY AVOIDING ACADEMIA

We have “a system that claims to reward based on merit but instead rewards traits such as assertiveness that are socially less acceptable for women.”

Beyond Bias and Barriers
National Academies, 2006

“The playing field is not level.”
THE NON-LEVEL PLAYING FIELD

1. A CULTURE DESIGNED FOR MEN
   - Aggressive and increasingly entrepreneurial
   - Expectation of >12hr workdays & working weekends
   - Reliance on unsalaried wives at home

2. WOMEN HAVE LESS PRESTIGE
WHAT CAN STIMULATE A CHANGE?

More young men on the faculty might lead to:

- A more welcoming workplace
- Better work/life balance

...if they have working wives!
Women put all this crap on themselves. They think 'I'm going to cook a great breakfast, wash up the dishes before I leave, take the kids to school, call my college roommate on my way in to work, be a CEO all day, volunteer on the way home, do a little exercising, cook a wonderful dinner, help with homework, have sex.'"

I don't think so.

Carol Bartz  CEO of Yahoo!
More Magazine, June 2006
TARGETS FOR BETTER BALANCE

• Employer

• Partner

• Culture

Swiss National Science Foundation

A system designed for men

A stretch for many women
CHOOSING AN EMPLOYER

• **Family-friendly policies:**
  - Paid maternity leave
  - Extension of tenure-probationary period
  - Family-care relief from duties


• **Workplace stress:**
  - Would you prefer a less competitive, more collaborative culture?
ADVICE FOR INSTITUTIONS

Every institution should have:

- a senior faculty member with the authority to promote and monitor gender equity
- an office devoted to work-life balance for all employees

AWIS Policy Statement
CHOOSING AN PARTNER

• Talk about sharing responsibilities, not helping out

• Marrying your lab partner creates a “two-body problem”
GAMING THE CULTURE

• Get the best students and postdocs

• Build prestige early in your career

• Just say no, to
  - Too many committees
  - Too much teaching
  - Too much mentoring