More Women In Science:

The Institutional Challenge
The Problem

![Graph showing the percent of women PhDs in different fields from 1974 to 2004. The fields include Social Sciences, Life Sciences, Physical Sciences, and Engineering. The graph indicates an increasing trend for all fields, with the fastest growth in Social Sciences and the slowest in Engineering.]
The Problem

![Graph showing the percentage of women in different academic ranks across different fields: Life Sciences, Physical Sciences, and Engineering. The graph illustrates a decreasing trend in the percentage of women from Ph.D. to Full Professor in all fields.]

- Life Sciences
- Physical Sciences
- Engineering
The Problem

- Women from minority racial and ethnic backgrounds are virtually absent from the nation’s leading science and engineering departments
Past Solutions

- Increasing the pipeline
  - Biology? Chemistry?
- Increased funding for women
  - POWRE awards?
- Teach women how to succeed
  - Leadership training
  - Mentoring
- Policy changes
  - Extend tenure clock
  - Dual career hire
New Approach: Institutional Transformation

- Rules that appear neutral may function in a way that leads to differential treatment or produces differential outcomes for men and women
  - Tenure process coincides with family formation years
  - Outside activities (e.g., family obligations) indicate a “lack of seriousness” about career
  - Use of programs designed to increase flexibility?
  - Deviation or delay from “normal” path
  - Salary increases/outside offers
  - Childcare needs (conferences, field study, time in laboratory)

“Academic organizational structures and rules contribute significantly to the underuse of women in academic science and engineering.”
New Approach: Institutional Transformation

- National Science Foundation ADVANCE program
  - 2001 first solicitation
  - Large, prestigious awards
  - Goal is to transform the *institution*, not the women!
  - Take a scientific approach: data, social science research
  - Provide models for other universities
WISELI Programs

- Vilas Life Cycle Professorships
- Searching for Excellence & Diversity
- Enhancing Department Climate: A Chair’s Role
- Breaking the Bias Habit: Bias Literacy Workshops
- Research & Evaluation
Recognize that life events outside of one’s control happen
- Both men and women experience such events, but women are more likely to experience them early in the career, when they are more vulnerable

Reduce turnover by providing research support for faculty in crisis

Understand what events are problematic and which career junctures are most critical

Understand what faculty need when they are in crisis
Vilas Life Cycle Professorship Program

- Funded by the Vilas Trust since 2005
- Two or three rounds per year
- Approximately 21 applications per year
  - Fund approximately 15 faculty per year
- From $100,000 to $372,000 per year distributed
Vilas Life Cycle Professorship Program

Applicants
- Multiple Reasons: 23.9%
- Spouse/Partner Health: 8.7%
- Parent Health: 6.5%
- Own Health: 23.9%
- Aging: 2.2%
- Child Health: 8.7%
- Childbirth Complications: 6.5%
- Children: 2.2%
- Divorce: 2.2%
- New Baby: 10.9%
- No Life Event: 4.3%

Awardees
- Child Health: 14.3%
- Childbirth Complications: 7.1%
- Children: 3.6%
- Own Health: 32.1%
- Multiple Reasons: 25.0%
- Spouse/Partner Health: 10.7%
- Parent Health: 7.1%
“This program generates a feeling of commitment to this institution, and a desire and willingness to give back, to help ensure that others benefit from similar institutional support in the future. . . I have mentioned it to job candidates as an illustration of how this institution takes seriously life cycle issues and is genuinely humane and supportive.”
Lessons for Graduate Students
Searching for Excellence & Diversity

- Six Essential Elements of a Successful Search
  - Run an effective and efficient search committee
  - Actively recruit an excellent and diverse pool of candidates
  - Raise awareness of unconscious assumptions and their influence on evaluation of candidates
  - Ensure a fair and thorough review of candidates
  - Develop and implement an effective interview process
  - Closing the deal: hiring your preferred candidate
Searching for Excellence & Diversity

- Run approximately 10 workshops per year
  - Some workshops are 2 sessions
- Approximately 90 faculty per year participate
- Multiple formats used
- Materials available to other universities at cost
Percent Female, New Tenure-Track Faculty
Biological & Physical Sciences

Participating Departments 2005:
- 21/84

Non-Participating Departments 2005:
- 17/49

Participating Departments 2006:
- 33/89

Non-Participating Departments 2006:
- 6/20
New Hires’ Satisfaction* With the Hiring Process
Biological & Physical Sciences

* Agree Strongly to the item "I was satisfied with the hiring process overall."
Lessons for Graduate Students
Enhancing Department Climate: A Chair’s Role

- Individuals experience climate in their immediate workplace – the department
- Chairs can significantly influence women’s experiences in their departments
- Chairs’ perspectives of climate differ from those of other faculty, especially women faculty
Importance of department chair

“Before I got here, when [X] was chair, two other people had babies under his leadership and [it] was fine! ‘Oh! Congratulations! Good. Take the semester off. You have a grad student to fill in. Okay, that’s no problem.’ Blah blah blah. And it was, you know, a handshake and a nod and, ‘Of course . . . do what you need to do. Let me know when you can get back on your feet’-type thing. Versus [the new] chair has never had kids, does not think the idea of parental leave is meritorious.”
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<th>Departments Resurveyed</th>
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<th>N</th>
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Lessons for Graduate Students
Bias Literacy

- 2.5 hour workshop on unconscious gender bias
- Delivered to departments
- 45+ workshops delivered so far!
- Provides concrete actions to take to reduce bias
What else?

- Data!
  - NSF indicators
  - Climate surveys
  - Evaluation data
  - Interviews, focus groups
Percent Women Faculty, by Division
University of Wisconsin-Madison

Percent Women Faculty

- Physical Sciences
- Biological Sciences
% Female, Major UW-Madison Faculty Awards*

* Vilas Associate, Hilldale, Romnes, Kellett
Lessons for Graduate Students