WOMEN’S WAY INTO SCIENCE

Lessons Learned and New Challenges for Gender Equality

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More Women In Science: *The Institutional Challenge*
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, organizational change approach
  - Provide models for other universities
WISELI Programs

- Vilas Life Cycle Professorships
- Searching for Excellence & Diversity
- Enhancing Department Climate: A Chair’s Role
- Research & Evaluation
Vilas Life Cycle Professorship Program

- 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
- Three rounds per year
- Approximately 21 applications per year
  - Fund approximately 14 faculty per year
- $372,000 per year distributed
- Program in flux due to economy!
Percentage of Vilas LCP Applicants & Awardees By Primary Life Event Reason

- New Baby
- Child Health
- Childbirth Complications
- Divorce
- Own Health
- Parent Health
- Spouse Health
- Other

Vilas Applicants
Vilas Awardees
“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.”
Five 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
Searching for Excellence & Diversity

- Run approximately 10 workshops per year
  - Most 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

<table>
<thead>
<tr>
<th></th>
<th>Participating Departments 2005</th>
<th>Non-Participating Departments 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-2005</td>
<td>21/84</td>
<td>33/89</td>
</tr>
<tr>
<td>2006</td>
<td>17/49</td>
<td>6/20</td>
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**New Hires' Satisfaction* With the Hiring Process  
Biological & Physical Sciences**

* Agree Strongly to the item "I was satisfied with the hiring process overall."

**Participating Departments**
  - 29/53

**Non-Participating Departments**
  - 39/58
  - 19/44

* * Agree Strongly to the item "I was satisfied with the hiring process overall."
The Climate for Faculty of Color is Good

Biological & Physical Sciences

Participating Departments 2004-05

Non-Participating Departments 2004-05

2003 Survey 2006 Survey
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
- 38 depts have participated since 2004
Figure 1. The climate for women in my department is good

% Agree Strongly or Somewhat

Women Faculty | Men Faculty | Dept. Chairs

- Women Faculty
- Men Faculty
- Dept. Chairs
Overall rating of department climate

Year | Rating
---|---
Spring 2004 | 3.21
Spring 2005 | 3.71
Spring 2006 | 3.61
Spring 2007 | 3.61
Spring 2009 | 3.87
I experience subtle or overt forms of harassment or discrimination due to my gender, race or other personal attributes.
Percent Agree: The Climate for Women In My Department is Good

* Biological and Physical Science Departments Only

Chairs

Women

Men

Participating
Non-Participating
Participating
Non-Participating
Participating
Non-Participating

0.0%
20.0%
40.0%
60.0%
80.0%
100.0%

2003
2006
Percent Women Faculty, by Division University of Wisconsin-Madison

- **Physical Sciences**
- **Biological Sciences**

<table>
<thead>
<tr>
<th>Year</th>
<th>Physical Sciences</th>
<th>Biological Sciences</th>
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<tbody>
<tr>
<td>2000</td>
<td>10.0%</td>
<td>20.0%</td>
</tr>
<tr>
<td>2001</td>
<td>11.0%</td>
<td>22.0%</td>
</tr>
<tr>
<td>2002</td>
<td>12.0%</td>
<td>24.0%</td>
</tr>
<tr>
<td>2003</td>
<td>13.0%</td>
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<tr>
<td>2004</td>
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<tr>
<td>2005</td>
<td>15.0%</td>
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<tr>
<td>2006</td>
<td>16.0%</td>
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<tr>
<td>2007</td>
<td>17.0%</td>
<td>34.0%</td>
</tr>
<tr>
<td>2008</td>
<td>18.0%</td>
<td>36.0%</td>
</tr>
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</table>
Women as Percentage of Named Professorship Recipients

% Women

ADVANCE Elements of Success

- Support of high-level administrators
- Resources
- Peer-to-peer interactions
- Use of data (both qualitative & quantitative)
- Use of literature on unconscious bias and assumptions
- Active learning strategies
- Collect and feedback data on everything = data drives change
Next Steps

- Approaching gender bias on the individual level as an unconscious habit
- Mobilizing research on facilitating intentional behavioral change
- Workshop format
- Using conversation analysis in pilot to address negative affect
Motivation – person has to want to change
Self-efficacy – person must have self-perceived ability to act in new way
Positive outcome expectations – person must believe that his/her new actions will result in desired outcome
Deliberate practice
Progressive movement toward habitually acting without bias (and feeling good about it!)

Motivation to respond without prejudice

<table>
<thead>
<tr>
<th>Low External</th>
<th>High External</th>
<th>High External</th>
<th>High Internal</th>
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<tbody>
<tr>
<td>Low Internal</td>
<td>Low Internal</td>
<td>High Internal</td>
<td>Low External</td>
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Stages of change – health behaviors

Precontemplation > Contemplation > Preparation > Action > Maintenance

Adult learning

<table>
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<tr>
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<th>Conscious</th>
<th>Conscious</th>
<th>Unconscious</th>
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</thead>
<tbody>
<tr>
<td>Incompetence</td>
<td>Incompetence</td>
<td>Competence</td>
<td>Competence</td>
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</tbody>
</table>

1 Plant & Devine, 1998; Devine, 1989. 2 Prochaska & DiClemente, 1984; Carnes et al., 2005
3 Howell, 1982. 4 Bandura, 1977
Women in Science & Engineering Leadership Institute
University of Wisconsin-Madison