WISELI
Women in Science & Engineering Leadership Institute
University of Wisconsin-Madison
More Women In Science:  
*The Institutional Challenge*
The Problem

The graph shows the percentage of women in various scientific fields from 1974 to 2004. The fields include Social Sciences, Life Sciences, Physical Sciences, and Engineering. The data indicates an increasing trend in the percentage of women in all fields over the years.
The Problem

[Graph showing the percentage of women in different academic ranks in Life Sciences, Physical Sciences, and Engineering.]

- 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
- 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 15 faculty per year
- $372,000 per year distributed
Life Cycle Grant evaluation

“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. ”
Searching for Excellence & Diversity

- 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
  - 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
- 33/89
- 6/20

2003-2005
2006
New Hires' Satisfaction* With the Hiring Process
Biological & Physical Sciences

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

<table>
<thead>
<tr>
<th>Participating Departments</th>
<th>Non-Participating Departments</th>
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<tbody>
<tr>
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<td>39/58</td>
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<tr>
<td>28/45</td>
<td>*19/44</td>
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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
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.”
Figure 1. The climate for women in my department is good
<table>
<thead>
<tr>
<th>Departments Resurveyed</th>
<th>Mean 1&lt;sup&gt;st&lt;/sup&gt; Survey</th>
<th>N</th>
<th>Mean 2&lt;sup&gt;nd&lt;/sup&gt; Survey</th>
<th>N</th>
<th>Change</th>
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<tbody>
<tr>
<td>Department A</td>
<td>3.21</td>
<td>24</td>
<td>3.71</td>
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<tr>
<td>Department B</td>
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<td>15</td>
<td>3.29</td>
<td>17</td>
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<tr>
<td>Department C</td>
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<td>60</td>
<td>4.25</td>
<td>53</td>
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<tr>
<td>Department D</td>
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<td>124</td>
<td>3.63</td>
<td>86</td>
<td>-0.16</td>
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<tr>
<td><strong>Overall Mean Score</strong></td>
<td><strong>3.47</strong></td>
<td></td>
<td><strong>3.72</strong></td>
<td></td>
<td><strong>0.25</strong></td>
</tr>
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</table>
Percent Agree: The Climate for Women In My Department is Good

- Women
- Men
- Chairs

- Participating
- Non-Participating

2003
2006
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*  
Biological & Physical Sciences

* Vilas Associate, Hilldale, Romnes, Kellett
Women as Percentage of Named Professorship Recipients

% Women

0% 5% 10% 15% 20% 25%

2000 2001 2002 2003 2004 2005 2006 2007
% Women Department Chairs
Biological & Physical Sciences

2000 2001 2002 2003 2004 2005 2006 2007
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
- Fearless intervention when required
- Refrain from gender-specific programming