Annual Report of ADVANCE program for University of Wisconsin-Madison
2005

Principals, *University of Wisconsin-Madison*:

Prof. Molly Carnes, Department of Medicine
Prof. Jo Handelsman, Department of Plant Pathology
Dr. Jennifer Sheridan, WISELI

Preparation of this report was made possible by a grant from the National Science Foundation (NSF #0123666). Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

Executive Summary: Major Accomplishments in Year 4

In 2005, Provost Peter Spear announced his retirement. Before he left campus he sent the following note to co-PIs Jo Handelsman, Molly Carnes, and Jennifer Sheridan:

> "The ADVANCE grant and WISELI have made an enormous positive impact on our campus, and I believe the programs that have been started will continue to do so for many years. None of that would have been possible without your leadership, energy, hard work, and skills in working with people across campus."

Indeed, we are finding that after four years WISELI has become a recognized leader on campus in the areas of departmental climate and faculty hiring. We are the "go-to" resource for questions related to not only women in science and engineering, but for diversity in the academy in general. When someone needs a reference, they call us. When someone has an idea for a great speaker or workshop, they call us. When someone has a problem with a tenure case, they call us. Campus leaders recognize how the work we have done has enhanced the environment at UW-Madison for everybody.

During the past year, WISELI has not only continued the important work begun in the first three years, but we have begun disseminating our work on both a state and national level. While we continue to provide and refine the two workshop series we offer, we have found that the demand for one workshop (training hiring committee chairs) was so high that we developed a one-day "train-the-trainer" workshop to export our approach to other 4-year campuses in the University of Wisconsin System. We also have been disseminating WISELI research through publication of articles and national viewing of our documentary video. Finally, our experience at creating institutional change at UW-Madison through the ADVANCE program left us poised to seize the opportunity to educate the public and other universities about our efforts when Harvard President Lawrence Summers made his now-infamous remarks on January 14, 2005. Some of our greatest accomplishments of 2005 include:

Workshops

- We continued implementing workshops for chairs of search committees. We designed multiple formats for use in training chairs of hiring committees and have broadened the training to include other faculty and staff, training over 90 individuals in 2005.
- In response to repeated requests to provide our hiring workshops at other campuses, we offered a one-day workshop to the 4-year campuses participating in the Wisconsin Alliance for Minority Participation (WiscAMP) project. Entitled "Searching for Excellence & Diversity: Implementing Training for Search Committees," we assisted teams from 11 different campuses in the University of Wisconsin System in learning about our approach and adapting it for use on their own campuses. In addition, we trained 23 new UW-Madison faculty and staff to be facilitators and presenters at our own workshops at UW-Madison.

- For the first year, training for hiring committees was made mandatory by Gary Sandefur, Dean of the College of Letters and Sciences. We worked with Dean Sandefur and his Associate Deans to create a 2-session workshop for L&S faculty and staff.
- Our Climate Workshops for Department Chairs have continued to provide an intensive experience for Chairs who want to improve the climate in their departments. In 2005 we worked with 12 new chairs. An evaluation completed in late spring of 2005 indicates that participating chairs appreciated the opportunity to assess climate in their departments, gained new insights about how various members of their departments experience climate, and successfully initiated changes that improved climate in their departments. The evaluation report also provides specific advice about how to enhance the workshop series to make it more useful in future iterations.
- In April 2005, we partnered with two different campus organizations to offer unique panel presentations. Along with the Women Faculty Mentoring Program, we provided all women faculty on campus the opportunity to learn from the five women UW-Madison Deans. Science Alliance helped us convene a panel of local experts to discuss the research basis (or lack thereof) for Harvard President Lawrence Summers' comments about women in science.
- The Office of the Provost invited WISELI input and presentation to their all-day training workshop for new department chairs (August 2005). WISELI was also invited to an all-day workshop for Deans and Department Chairs in the Medical School (March 2005).

Grants

- We awarded five new Celebrating Women in Science & Engineering grants. WISELI successfully "piggybacked" on two of the invited presenters funded by these grants, offering additional workshops to all women faculty and staff in the sciences and engineering.
- In 2005, in cooperation with the Provost's Office, we wrote a proposal to the Estate of William F. Vilas to fund the Life Cycle grants for the UW-Madison campus each year, for all faculty and academic staff with Permanent PI status. We were delighted that the Vilas Trustees voted to fund these awards (renamed the Vilas Life Cycle Professorships) in the amount of $310,000 per year. In 2005 we have received 26 applications, and funded at least 12 of them.

Research & Evaluation

- We have published four papers in 2005—one of them a highly-visible Policy Forum in *Science*. In addition, we have one manuscript accepted that will appear in *Journal of Technology Transfer* in 2006, and five other completed manuscripts that are under review.
- Plans for our interviews and surveys in 2006 have been made. Interviews with the 26 women faculty in the sciences and engineering who formed our initial interview sample (now 24, as two have since left campus) will proceed in early 2006. The *Study of Faculty Worklife at the UW-Madison* instrument is complete and will be mailed to

all faculty on January 23, 2006. As in 2003, the Office of the Provost is contributing considerable funds to expand the survey to all UW-Madison faculty (i.e., Social Studies and Humanities faculty).

- The third "issue study" has been determined; it will be an analysis of the tenure-track conversion initiative. Women who have attempted a conversion will be interviewed, institutional data will be presented, and survey data from the 2003 *Study of Faculty and Academic Staff Worklife at the UW-Madison* will be included. This study will begin in early 2006.
- An ethnographic study of men and women faculty in science and engineering is continuing.
- Prof. Cecilia Ford secured a contract with Palgrave/Macmillan for a book about her WISELI-supported work that analyzes women's conversation and verbal leadership in naturally-occurring academic meetings entitled, *Women's Talk in the Professional Workplace: Talking Change.*

Leadership

- WISELI Leadership Team members continue to occupy key positions that have influence over gender-related policy and practice. New in 2005: Patricia Brennan became Chair of the University Committee, Amy Wendt became co-Chair of Electrical and Computer Engineering, and Jo Handelsman became co-chair of the National Academy of Science Committee on Metagenomics. In addition, of the three finalists for Provost announced on 12/21/2005, two are closely connected to WISELI. Pat Farrell is on WISELI's Leadership Team, and Sue Rosser is a member of WISELI's External Advisory Team.
- WISELI's co-Directors have leveraged resources from the Graduate School for a Project Assistant to assist with data collection and analysis in 2006.
- WISELI leaders continue to provide guidance, coaching, and mentorship to individual women students, faculty, and staff. Such activities have contributed to success in grant funding, conversion of staff to tenure track, departmental re-assignment, tenure achievement, and less-quantifiable outcomes of improved satisfaction with professional life.

Other

- The second WISELI video was completed this year, and screened during the September 22, 2005 WISELI Seminar. Entitled *WISELI: Building on a Legacy*, this video will be added to The Research Channel line up in early 2006.
    - Without our assistance or knowledge, a local Madison community access channel began airing the first WISELI video beginning in fall 2005. This has increased our visibility tremendously on campus. Now that we have this second venue for dissemination, we are working with the Madison Metropolitan School District to air the second video immediately upon its release.

- The WISELI Seminars, held three times per semester, continue to attract a large audience (30-40 attendees) from multiple departments and schools.
- WISELI continues to collaborate closely with our new Wisconsin Alliance for Minority Participation (WiscAMP) program.
- We met with two of our five external advisors in 2005. Prof. Sally Kohlstedt from the University of Minnesota visited in February 2005. In addition to meeting with the WISELI co-directors and Leadership Team, Dr. Kohlstedt agreed to give a WISELI seminar. In October 2005, we hosted Dean Sue Rosser. Dr. Rosser met with the WISELI co-Directors, and also gave a campus-wide lecture on her book *The Science Glass Ceiling*. The Kohlstedt discussions with the WISELI team focused on dissemination of the WISELI projects, and the Rosser discussions focused on sustainability of WISELI.

In addition to these concrete programmatic elements, we have become active players on the national women in science and engineering movement:

- WISELI was a leader in the national conversation about issues for women in science after Harvard president Larry Summers made some questionable remarks at a January 14, 2005 conference. WISELI produced our own response to the remarks, we started a much-visited website to track the press and response to the remarks, we were featured in several prominent newspaper articles about the controversy, our work was requested by the Harvard Task Forces, and co-PI Jo Handelsman was invited by President Summers to work with the Harvard Deans to plan implementation of search chair and department chair training that is based on the WISELI model.
- Jennifer Sheridan has been participating on a committee led by Dr. Lisa Frehill to standardize the collection of indicator and other data by ADVANCE institutions. In addition, Dr. Sheridan has been included in a working group of the Association of American Universities Data Exchange (AAUDE) that is creating a "standard" set of questions for climate surveys so that Universities might compare climate items across campuses.
- WISELI was consulted by more than 36 other colleges and universities across North America in 2005, for a variety of reasons. Some wanted our hiring brochures, some wanted information on our climate survey, some wanted help and advice as they wrote their own ADVANCE Institutional Transformation grant, some wanted specific information about a UW-Madison policy. Several of the colleges/universities were fellow ADVANCE sites.
- WISELI Co-PI Molly Carnes is President of the Association of Academic Women's Health Programs (AAWHP). AAWHP wrote a letter to the NIH regarding the absence of women awarded the NIH Director's Pioneer Awards and arguing for changes to the award processes based on the social science literature. Dr. Carnes followed this up by publishing several specific recommendations. In 2005, the NIH Pioneer Award process changed dramatically, and 6 of 13 awardees were women.
- WISELI co-PI Jo Handelsman is serving on the committee for the National Academies' new study, "*Maximizing the Potential of Women in Academic Science and Engineering.*"

Overview

WISELI
Women in Science & Engineering Leadership Institute
University of Wisconsin-Madison

An Overview of WISELI

In response to the concerns that we as a nation are not training enough or sufficiently diverse people to meet the growing demands of our scientific workforce and that there are already critical shortages in some fields, the National Science Foundation launched the ADVANCE program. The goal of this program is to increase the participation and advancement of women in academic science and engineering, with particular emphasis on increasing the number of women in positions of leadership. Under this program, nine initial sites were awarded Institutional Transformation Awards ($3.75 million over five years). The UW-Madison project, which began January 1, 2002, has established the Women in Science & Engineering Leadership Institute (WISELI). WISELI is approaching the issue comprehensively and with an evidence-based framework designed to answer the questions: What are the barriers impeding the participation and advancement of women in science and engineering? How can we eliminate or overcome these barriers?

We have assembled a broadly interdisciplinary Leadership Team that includes faculty and staff from departments of Medicine, Plant Pathology, Electrical Engineering, Industrial Engineering, Engineering Physics, Mechanical Engineering, Environmental Studies, Chemistry, Physics, Ob/Gyn, Sociology, English, and the Schools of Education and Nursing. The Leadership Team works closely with the co-Directors and Executive Director to provide direction for the design and implementation of initiatives and for evaluation of new and existing initiatives that are intended to enhance the participation of women in science and engineering. The evaluation scheme includes quantitative and qualitative approaches, drawing on campus expertise in statistics, sociology, anthropology, and linguistics.

The major initiatives that WISELI has begun include:

- Workshops for Search Committee Chairs
- Climate Workshops for Department Chairs
- Celebrating Women in Science and Engineering Grant Program
- Vilas Life Cycle Professorship Program
- WISELI Seminar
- WISELI Listserv
- WISELI Website
- Documentary Videos

Organizational Chart

WISELI Management and Infrastructure

Directors

Co-Director: Molly Carnes
Co-Director: Jo Handelsman
Research & Executive Director: Jennifer Sheridan

Staff

Researcher: Eve Fine
Research Specialist: Deveny Benting
Webmaster: Stephen Montagna
University Grants & Contracts Specialist: Carol Sobek

Leadership Team

Vicki Bier, Patti Brennan, Wendy Crone, Bernice Durand, Pat Farrell, Cecilia Ford, Linda Greene, Douglass Henderson, Nancy Mathews, Cathy Middlecamp, Paul Peercy, Manuela Romero, Gary Sandefur, Gloria Sarto, Lillian Tong, Amy Wendt

Evaluation Team

Evaluation Director: Christine Maidl Pribbenow

Deveny Benting, Cecilia Ford, Ramona Gunter, Margaret Harrigan, Jennifer Sheridan, Amy Stambach, John Stevenson

Administrative Partners

Chancellor John Wiley	Interim Provost Virginia Sapiro	Dean Martin Cadwallader, Graduate School
Sr. Vice President Cora Marrett, UW System	Dean Jeanette Roberts, Pharmacy	Dean Daryl Buss, Veterinary Medicine
Dean Phil Farrell, Medical School	Interim Dean David Hogg, College of Agricultural & Life Sciences	Assoc Dean Donna Paulnock, Graduate School
Assoc Dean Terry Millar, Graduate School	Dean Robin Douthitt, School of Human Ecology	Dean Katharyn May, School of Nursing
Assoc. Dean Mariamne Whatley, School of Education	Don Schutt, Human Resources	Director Luis Pinero, Equity & Diversity Resource Center

Campus Affiliates

Women in Science and Engineering and other supporters, through WISELI Listserv

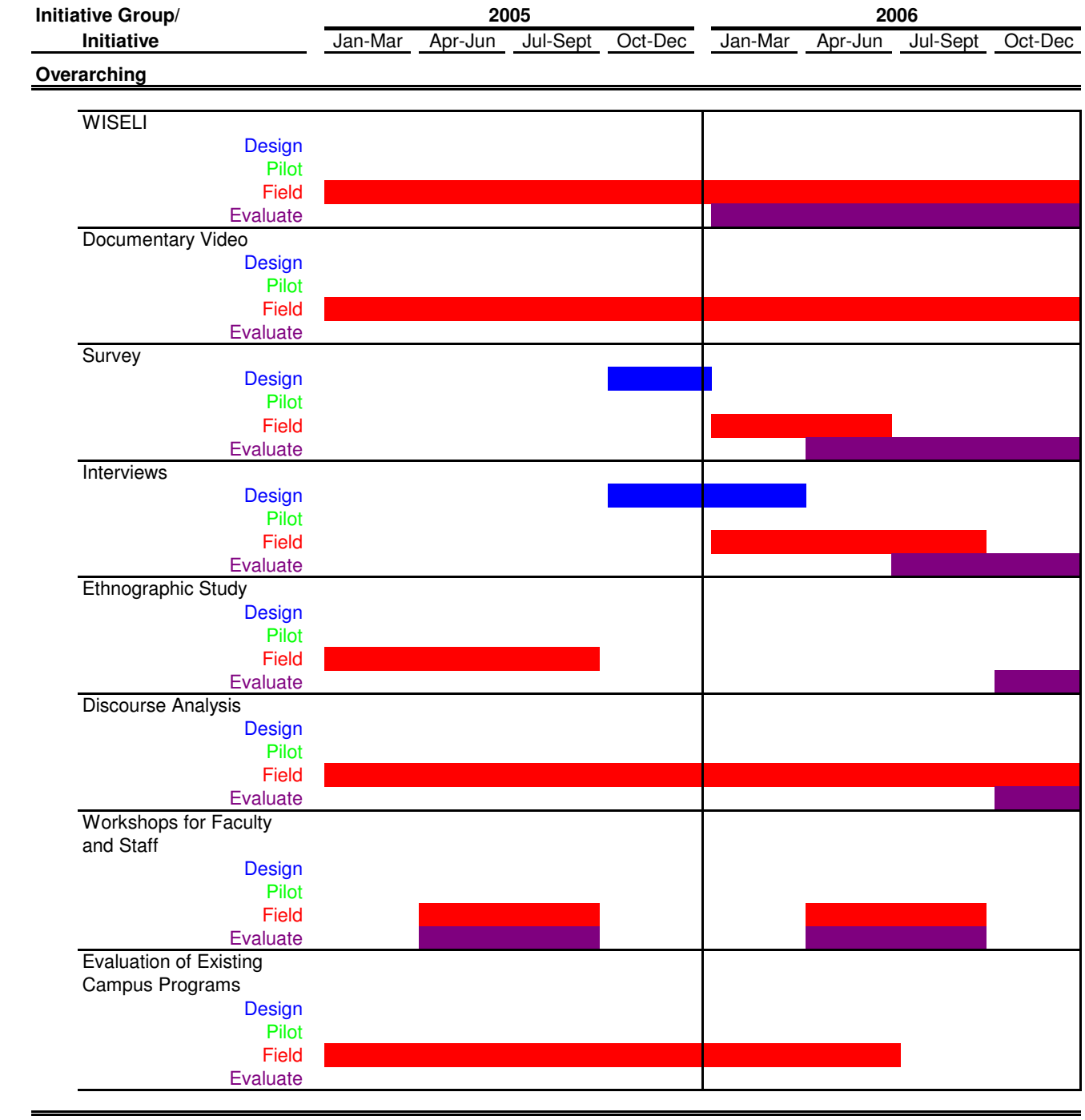
External Advisory Team

Denice Denton, Joan King, Sally Kohlstedt, Charlotte Kuh, Sue Rosser

Timelines for New Initiatives

Timelines for Design, Pilot, Field, and Evaluation of New NSF ADVANCE Initiatives

Women in Science & Engineering Leadership Institute, University of Wisconsin-Madison


Initiative Group/
Initiative
2005
2006
Jan-Mar
Apr-Jun
Jul-Sept
Oct-Dec
Jan-Mar
Apr-Jun
Jul-Sept
Oct-Dec
Overarching
WISELI
Design
Pilot
Field
Evaluate
Documentary Video
Design
Pilot
Field
Evaluate
Survey
Design
Pilot
Field
Evaluate
Interviews
Design
Pilot
Field
Evaluate
Ethnographic Study
Design
Pilot
Field
Evaluate
Discourse Analysis
Design
Pilot
Field
Evaluate
Workshops for Faculty
and Staff
Design
Pilot
Field
Evaluate
Evaluation of Existing
Campus Programs
Design
Pilot
Field
Evaluate

Papers and Presentations

WISELI Publications and Presentations

Papers Published:

Bakken, Lori L.; Jennifer Sheridan; and Molly Carnes. 2003. "Gender Differences Among Physician-Scientists in Self-Assessed Abilities to Perform Clinical Research." *Academic Medicine*. 78(12):1281-6.

Gunter, Ramona and Amy Stambach. 2003. "As Balancing Act and As Game: How Women and Men Science Faculty Experience the Promotion Process." *Gender Issues*. 21(1):24-42.

Gunter, Ramona and Amy Stambach. 2005. "Differences in Men and Women Scientists' Perceptions of Workplace Climate." *Journal of Women in Minorities in Science & Engineering*. 11(1):97-116.

Handelsman, Jo, Nancy Cantor, Molly Carnes, Denice Denton, Eve Fine, Barbara Grosz, Virginia Hinshaw, Cora Marrett, Sue Rosser, Donna Shalala, and Jennifer Sheridan. 2005. "More Women in Science." *Science*. 309(5738):1190-1191.

Carnes, Molly; Jo Handelsman; Jennifer Sheridan; Eve Fine. 2005. "Diversity in Academic Medicine: The Stages of Change Model." *Journal of Women's Health*. 14(6):471-475.

Carnes, Molly; Stacie Geller, Jo Handelsman and Jennifer Sheridan. 2005. "NIH Pioneer Awards: Could the Selection Process Be Biased Against Women? " *Journal of Women's Health*. 14(8): 684-691.

Sheridan, Jennifer; Patricia Flately Brennan; Molly Carnes; and Jo Handelsman. 2006. "Discovering Directions for Change in Higher Education Through the Experiences of Senior Women Faculty." *Journal of Technology Transfer*. Accepted for publication.

Working Papers:

Carnes, Molly; Stacie Geller; Eve Fine; Jennifer Sheridan; and Jo Handelsman. 2005. "NIH Director's Pioneer Awards: What a Difference a Year Makes." Under review.

Pribbenow, Christine Maidl; Jennifer Sheridan; and Deveny Benting. 2005. "Extending One's Tenure Clock: The Experiences of Faculty at One University." Under review.

Pribbenow, Christine Maidl and Jennifer Sheridan. 2005. "The Department Chair and Climate: Contradicting Perceptions." To be submitted.

Sheridan, Jennifer; Jo Handelsman; Molly Carnes. 2004. "Assessing "Readiness to Embrace Diversity": An Application of the Trans-Theoretical Model of Behavioral Change." In progress.

Pribbenow, Christine Maidl and Deveny Benting. 2004. "Why Women Leave." In progress.

Frehill, Lisa; Cecily Jeser-Cannavale, Priscilla Kehoe, Ellen Meader, Jennifer Sheridan, Abby Stewart, and Helena Sviglin. January 2005. "Proposed Toolkit for Reporting Progress Toward NSF ADVANCE: Institutional Transformation Goals." Draft available online at: http://www.nmsu.edu/%7Eadvprog/Indicators.htm .

Frehill, Lisa; Elena Batista, Sheila Edwards-Lange; Cecily Jeser-Cannavale, Jan Malley, Jennifer Sheridan, Kim Sullivan, and Helena Sviglin. September 2005. "Using Program Evaluation To Ensure the Success of Your Advance Program." In progress.

Ford, Cecilia E. and Teddy Kardash. 2005. "Combining Frameworks for Understanding Women's Participation in Meetings: Expanding Expectation States Theory through Conversation Analysis. In progress.

Ford, Cecilia E. and Barbara A. Fox. 2005. "'Can I Make a Brief Comment on That': Reference and Social Organization In and Around an Extended Turn." In progress.

Ford, Cecilia E. 2006. *Women's Talk in the Professional Workplace: Talking Change.* Palgrave/Macmillan.

Presentations:

Carnes, Molly and Jo Handelsman. October, 2002. "The NSF ADVANCE Program at the University of Wisconsin-Madison: An Interdisciplinary Effort to Increase the Recruitment, Retention, and Advancement of Women in Academic Departmetns in the Biological and Physical Sciences." Presented at the *Retaining Women in Early Academic Science, Mathematics, Engineering, and Technology Careers* conference. Ames, Iowa.

Handelsman, Jo and Molly Carnes. December, 2002. "University of Wisconsin-Madison Women in Science and Engineering Leadership Institute." Presented at the Plant Pathology research seminar series. Madison, Wisconsin.

Murphy, Regina. November, 2002. "The Women in Science & Engineering Leadership Institute at UW-Madison." Presented at the American Institute of Chemical Engineers (AIChE) Annual Meeting. Indianapolis, Indiana.

Ford, Cecilia. July, 2003. "Gender and Language in/as/on Academic Science: Combining Research with a Commitment to Institutional Change." Presented at the Perception and Realization in Language and Gender Research conference, Michigan State University, East Lansing, Michigan.

Stambach, Amy and Ramona Gunter. May, 2003. "As Balancing Act and As Game: How Women and Men Science Faculty Experience the Promotion Process." Presented at the Gender, Science, and Technology International Conference, Norway.

Sheridan, Jennifer; Molly Carnes; and Jo Handelsman. June, 2003. "The University of Wisconsin-Madison ADVANCE Program: Progress to Date." Presented at the WEPAN meetings. Chicago, IL.

Wendt, Amy. September 2003. "NSF ADVANCE at UW-Madison: WISELI Activities." Presented at the 25th anniversary of the Women in Computer Science and Engineering organization. Berkeley, CA.

Ford, Cecilia. September 16, 2003. "Gender and Talk: Looking back and looking forward." Presented at the Women's Health Forum of the UW-Madison Center for Women's Health and Women's Health Research. Madison, WI.

Gunter, Ramona. October 20, 2003. "Science Faculty Talk about Self, Home, and Career." Presented at the WISELI Seminar. Madison, WI.
Sheridan, Jennifer. November 17, 2003. "Faculty Worklife at the University of Wisconsin-Madison: Preliminary Findings." Presented at the WISELI Seminar. Madison, WI.

Sheridan, Jennifer. January 12, 2004. Panelist at Virginia Tech's AdvanceVT Inaugural Workshop, "ADVANCEing Women in Academe: Voices of Experience." Roanoke, VA.

Carnes, Molly. February 13, 2004. Discussant on the "Status of STEM Female Faculty Recruitment, Retention and Advancement" panel for the "Systemic Transformations in the Role of Women in Science and Engineering" Symposium for the Annual Meeting of the American Association for the Advancement of Science meetings. Seattle, WA.

Ford, Cecilia. February 16, 2004. "Getting our Voices Heard: Patterns of Participation in University Meetings." Presented at the WISELI Seminar. Madison, WI.

Sheridan, Jennifer. February 17, 2004. "Implementing a campus climate survey: logistical notes and preliminary findings." Presented to the Center for Demography & Ecology Training Seminar. Madison, WI.

Pribbenow, Christine Maidl. March 22, 2004. "The Climate for Women Faculty in the Sciences and Engineering: Their Stories, Successes, and Suggestions." Presented at the WISELI Seminar. Madison, WI.

Sheridan, Jennifer. April 13, 2004. "Study of Academic Staff Work Life at UW-Madison: Preliminary Results." Presented at the Wisconsin Center for the Advancement of Postsecondary Education Academic Staff Institute 2004. Madison, WI.

Sheridan, Jennifer. April 20, 2004. Session Coordinator, "ADVANCE Institutional Data" panel. NSF ADVANCE National Conference. Atlanta, GA.

Carnes, Molly. April 20, 2004. Presenter, "Women from Underrepresented Groups" panel. NSF ADVANCE National Conference. Atlanta, GA.

Durand, Bernice. April 20, 2004. Session Coordinator, "Senior Women and Advancement—A Facilitated Discussion" panel. NSF ADVANCE National Conference. Atlanta, GA.

Sheridan, Jennifer. April 21, 2004. Presenter, "Campus Climate Surveys" panel. NSF ADVANCE National Conference. Atlanta, GA.

Spear, Peter. April 21, 2004. Presenter, "Sustainability of ADVANCE Programs" panel. NSF ADVANCE National Conference. Atlanta, GA.

Ford, Cecilia. May 3, 2004. ""Having our ideas ignored": CA and a Feminist Project." Presented at the American Association for Applied Linguistics Annual Conference, colloquium entitled " CA as Applied Linguistics: Crossing Boundaries of Discipline and Practice." Portland, OR.

Sheridan, Jennifer; Jo Handelsman; Molly Carnes. August 14, 2004. "Assessing "Readiness to Embrace Diversity": An Application of the Trans-Theoretical Model of Behavioral Change." Presented at the American Sociological Association meetings, session entitled "Workplace Diversity." San Francisco, CA.

Carnes, Molly. October 13, 2004. "Searching for Excellence, Equity & Diversity: Unconscious assumptions and lessons from smoking cessation." Virginia Commonwealth University. Richmond, VA.

Sheridan, Jennifer. October 14, 2004. "WISELI's Life Cycle Research Grant Program." Presented at the Society of Women Engineers National Conference, Milwaukee, WI.

Carnes, Molly. October 20, 2004. "Women in Academic Leadership: The Issues, the Goals, the Process." [to over 50 women faculty from STEM departments at UIC]; NSF ADVANCE Program at UW-Madison [approx 30 faculty, chairs, and deans from STEM departments.], Chicago, IL.

Brennan, Patricia; Molly Carnes, Bernice Durand, Jo Handelsman, and Jennifer Sheridan. November 10, 2004. "Discovering the Experiences of Senior Women in Academic Science & Engineering." Presented at the WISELI Seminar. Madison, WI.

Carnes, Molly. November 17, 2004. "The Impact of Unconscious Biases on Evaluation: Relevance to the NIH Director's Pioneer Awards." Invited presenter, Office of Research on Women's Health Roundtable discussion, NIH, Bethesda, MD.

Carnes, Molly; Jo Handelsman, Lillian Tong, and Amy Wendt. December 8, 2004. "WISELI Update—Status of Our Efforts to Promote the Advancement of Women in Science and Engineering." Presented at the WISELI Seminar. Madison, WI.

Peercy, Paul. December 13, 2004. "NSF ADVANCE Institutional Transformation Award at UW-Madison." Presented at the NSF ADVANCE Engineering Workshop, Washington DC.

Handelsman, Jo. March 2, 2005. Informal workshop on bias and prejudice in academic evaluation. Oregon State University. Corvallis, OR.

Carnes, Molly. March 4, 2005. "Women in the World of Medicine: What's Holding Us Back?" Presented at the *Leadership Skills and Equity in the Workplace: Lessons Learned* conference, Virginia Commonwealth University. Richmond, VA.

Carnes, Molly. March 12, 2005. "Women Physicians and Leadership: The Issues, The Goals, The Process." Keynote speaker, Women's Physician Council of the American Medical Association. Washington, DC.

Coppersmith, Sue. April 8, 2005. "NSF ADVANCE Institutional Transformation Award at UW-Madison." Mathematical and Physical Sciences Advisory Committee Meeting, National Science Foundation, Washington, DC.

Carnes, Molly. April 26, 2005. "Women in Academic Leadership: Institutional Transformation Required." Grand Rounds and Merritt Lecture, Indiana University School of Medicine. Indianapolis, IN.

Carnes, Molly. May 9-10, 2005. "Incorporating Research on Biases and Assumptions into Search Committee Training;" "Women in the World of Academic Health Sciences: What's Holding Us Back?" "Women in Academic Leadership: Has There Been Progress?" University of Minnesota. Minneapolis, MN.

Carnes, Molly. May 13, 2005. "Women in Academic Leadership: Has There Been Progress?" Keynote address at the Women Against Lung Cancer meeting. Orlando, FL.

Sheridan, Jennifer. May 19, 2005. "WISELI's Life Cycle Research Grant Program." NSF ADVANCE P.I. Meeting, National Science Foundation. Washington, D.C.

Sheridan, Jennifer. May 19, 2005. "Indicators and Dissemination: Question 2. What are the Outcomes of Institutional Processes of Recruitment and Advancement for Men and Women?" NSF ADVANCE P.I. Meeting, National Science Foundation. Washington, D.C.

Carnes, Molly. May 19, 2005. "Insights from Social Science Research on Achieving Academic Awards and Honors: A Local and a National Example." NSF ADVANCE P.I. Meeting, National Science Foundation. Washington, D.C.

Carnes, Molly. May 19, 2005. "Converting Academic Staff to the Tenure Track at the UW-Madison: A Viable Strategy?" NSF ADVANCE P.I. Meeting, National Science Foundation. Washington, D.C.

Handelsman, Jo. May 20, 2005. "Affecting Climate/Culture Change — Using Multiple Points of Entry in the Department of Kumquat Science." NSF ADVANCE P.I. Meeting, National Science Foundation. Washington, D.C.

Fine, Eve. May 20, 2005. "Working with Department Chairs: Enhancing Department Climate." NSF ADVANCE P.I. Meeting, National Science Foundation. Washington, D.C.

Zweibel, Ellen. June 2, 2005. "Dual Career Initiatives at U. Wisconsin ." Presented at the American Astronomical Society's annual meeting (session entitled "Institutional Solutions to the 'Two-Body Problem'"), Minneapolis, MN.

Handelsman, Jo. June 9-10, 2005. "Sex and Science." Howard Hughes Medical Institute New Investigator Training. Chevy Chase, MD.

Ford, Cecilia. June 11-16, 2005. "'Can I Make a Brief Comment on That': Reference and Social Organization In and Around an Extended Turn." Invited lecture for a symposium on Reference and Referential Form in Interactional Linguistics. Organized by the Nordic Research Board. Helsinki, Finland.

Ford, Cecilia. July 6-9, 2005. "Interactional Grammar and Managing a Meeting Contribution." Plenary address for the 15th Annual Meeting of the Society for Text & Discourse. Amsterdam, Netherlands.

Handelsman, Jo. July 11, 2005. "Diversity, Bias, and Change." Presentation to Harvard Deans' Retreat. Cambridge, MA.

Ford, Cecilia. July 25, 2005. "Women's agency and participation: Feminist research for institutional change." Presented for the *Symposium on Gender in Public Settings: Approaches to Third Wave Feminist Analysis* at the 14th World Congress of Applied Linguistics Conference. Madison, WI.

Carnes, Molly. October 17, 2005. "Women in Academic Leadership: Institutional Transformation Required" and "Advice From a Few Mistakes I've Made & Some Things I've Done Right (workshop)." 8th Annual Professional Development Conference Focus on Health & Leadership for Women. University of Pennsylvania School of Medicine. Philadelphia, PA.

Carnes, Molly. October 21, 2005. "Women and Leadership: When Working Hard is Not Enough." Wisconsin Women's Health Foundation Rural Women's Health. Madison, WI.

Handelsman, Jo. November 29, 2005. Roundtable discussion with faculty and administrators on women in science. Colorado State University. Ft. Collins, CO.

Handelsman, Jo; Molly Carnes; Jennifer Sheridan; Eve Fine; and Christine Pribbenow. Dec. 9, 2005. "NSF ADVANCE at the UW-Madison: Three Success Stories." Poster presentation at the National Academies' "Convocation on Maximizing the Potential of Women in Academic Science and Engineering," Washington, DC.

WISELI in the Press:

"Women in Science Get a Major Boost From NSF, UW-Madison." *Wisconsin Week*. October 19, 2001. http://www.news.wisc.edu/6687.html .

"Institute plans effort to boost women in science." *Wisconsin Week*. March 26, 2002. **http://www.news.wisc.edu/7231.html .**

"Documentary Depicts Women in Science." *Wisconsin Week*. February 24, 2004. http://www.news.wisc.edu/9465.html .

"NSF Program Working to Help Women Attain Leadership in Science and Engineering." *UW-Madison College of Engineering Perspective*. Spring 2004. http://www.engr.wisc.edu/alumni/perspective/30.3/PerspectiveSpr2004.pdf .

"Working for Women." *Wisconsin State Journal*. May 23, 2004. http://www.madison.com/archives/read.php?ref=wsj:2004:05:23:373339:DAYBREAK .

"Women in Medicine Said to Face Widespread Bias." *Richmond Times Dispatch*. March 6, 2005.

"Gender, Attitude, Aptitude and UW: In the Wake of the Harvard President's Comments, UW Women Take a Look at Their Own Campus." *Wisconsin State Journal*. March 27, 2005. http://www.madison.com/archives/read.php?ref=wsj:2005:03:27:410257:FRONT .

"For Women in Sciences, Slow Progress in Academia." *The New York Times*. April 15, 2005. http://select.nytimes.com/gst/abstract.html?res=FA0912FE3A5A0C768DDDAD0894DD404482 .

"A Woman's Place in the Lab: Harvard Studies Efforts to Boost Female Faculty at U-Wisconsin." *The Boston Globe*. May 1, 2005. http://www.boston.com/news/local/articles/2005/05/01/campus_strives_to_boost_female_faculty/ .

"Women still face bias in science." *Financial Times*. August 19, 2005.

"Women in Science: Climbing the Career Ladder." Talk of the Nation, *National Public Radio*. August 26, 2005. http://www.npr.org/templates/story/story.php?storyId=4817270.

"The gender gap in science is shrinking at universities." *St. Louis Post-Dispatch*. October 23, 2005.

Products Available to the Public:

"Study of Faculty Worklife at the University of Wisconsin-Madison." Climate survey instrument and results. http://wiseli.engr.wisc.edu/initiatives/survey/results/facultypre/index.htm .

"Study of Faculty and Academic Staff Worklife at the University of Wisconsin-Madison." Climate survey instrument. http://wiseli.engr.wisc.edu/Products/academicstaffversion.pdf .

"Enhancing Department Climate: A Chair's Role. Resources." Available online at: http://wiseli.engr.wisc.edu/initiatives/climate/ALSWorkshop_Resources.doc .

"Searching for Excellence and Diversity: A Guide for Faculty Search Committee Chairs." Available in PDF format online at: http://wiseli.engr.wisc.edu/initiatives/hiring/SearchBook.pdf , and also available for purchase for $4.00 per book plus mailing costs by contacting wiseli@engr.wisc.edu.

"Reviewing Applicants: Research on Bias and Assumptions." Brochure available online at: http://wiseli.engr.wisc.edu/initiatives/hiring/Bias.pdf , and also available in large quantities for 25¢/brochure plus mailing costs by contacting wiseli@engr.wisc.edu.

"Advancing Your Career through Awards and Recognitions: A Guide for Women Faculty in the Sciences & Engineering." Brochure available in large quantities for 50¢/brochure plus mailing costs by contacting wiseli@engr.wisc.edu.

"WISELI: ADVANCEing Institutional Transformation." Documentary Video, first in series of three. Available online through The Research Channel: http://www.researchchannel.com/program/displayevent.asp?rid=2217 .

"Benefits and Challenges of Diversity." Essay available online at: http://wiseli.engr.wisc.edu/initiatives/climate/Benefits_Challenges.pdf .

"Advice to the Top: Top 10 Tips for Academic Leaders to Accelerate the Advancement of Women in Science and Engineering." Essay available online at: http://wiseli.engr.wisc.edu/Products/top_10_tips.pdf .

"Sex and Science: Tips for Faculty." Essay available online at: http://wiseli.engr.wisc.edu/Products/Sex_and_Science.pdf .

Evaluation Reports:

Sheridan, Jennifer; Jo Handelsman; and Molly Carnes. 2002. "Current Perspectives of Women in Science & Engineering at UW-Madison: WISELI Town Hall Meeting Report." Available online at: http://wiseli.engr.wisc.edu/reports/TownHallReports/WISELI_Town_Hall_Report.pdf

Benting, Deveny and Christine Maidl Pribbenow. July 24, 2003. "Meetings with Senior Women Faculty: Summary of Notes."

Pribbenow, Christine Maidl and Deveny Benting. August 14, 2003. "Interviews with WISELI Leadership Team Members (2002-2003): Summary Report."

Benting, Deveny and Christine Maidl Pribbenow. November 14, 2003. "Survey of the Virginia Valian Luncheon: Final Report."

Pribbenow, Christine Maidl. November 14, 2003. "WISELI Department Climate Workshops: Formative Evaluation Report."

Pribbenow, Christine Maidl and Deveny Benting. June 9, 2004 (revised September 23, 2004.) "WISELI's Life Cycle Research Grant Program: Formative and Summative Evaluation."

Sheridan, Jennifer; Deveny Benting; and Christine Maidl Pribbenow. July 27, 2004. "Evaluation of the Women Faculty Mentoring Program at the University of Wisconsin-Madison."

Sheridan, Jennifer and Deveny Benting. October 29, 2004. "Evaluation of the Tenure Clock Extension Policy at the University of Wisconsin-Madison."

Winchell, Jessica. October 2004. "Celebrating Women in Science & Engineering Grant Program, 2002-2004. Interim Evaluation Report."

Benting, Deveny and Christine Maidl Pribbenow. July 5, 2005. "Survey Results of WISELI's 'Implementing Training for Search Committees' Workshop." Evaluation report.

Pribbenow, Christine Maidl. July 14, 2005. "WISELI's Climate Workshops for Department Chairs: Evaluation Report."

Sheridan, Jennifer; Deveny Benting; and Christine Maidl Pribbenow. December 2005. "Evaluation of Childcare Needs and Practices at the University of Wisconsin-Madison."

Pribbenow, Christine Maidl and Jessica Winchell. December 2005. "WISELI's Workshops for Search Chairs: Evaluation Report."

Presentations of WISELI Activities to Campus Groups

Deans' Council—9/4/2002, 12/10/2003, 4/27/2005, 10/26/2005
CALS Department Chairs/Deans—10/28/2002, 1/26/2004, 12/1/2005, 1/23/2006
ENGR Department Chairs and Deans—11/6/2002, 2/4/2004, 1/4/2006
Medical School Clinical Science Chairs—10/14/2002, 3/9/2004, 1/10/2006
Medical School Basic Science Chairs—10/8/2002, 1/9/2006
Medical School Retreat—3/12/2005
Pharmacy Division Heads and Deans—4/12/2004, 12/15/2005
SVM Department Chairs and Deans—12/17/2002, 2/5/2004, 11/15/2005
L&S Natural Science Chairs—11/18/2002, 9/20/2004, 12/19/2005
L&S (All) Department Chairs—12/19/2005
SoHE Department Chairs and Deans—2/23/2004
Education Department Chairs and Deans—3/3/2004
Biological Science Deans—12/16/2003

Graduate School Deans—9/30/2004, 8/31/2005
University Committee—2/14/2005
UW System AA/EEO Program Directors—2/21/2005
Wisconsin Technical Colleges AA/EEO Officers—10/14/2005

Other Groups:

Department of Plant Pathology—12/4/2002
Women in Physical Sciences—5/2003, 2/23/2004
Women in Engineering—3/18/2004
University League—11/24/2003
College of Engineering (CoE) Academic Affairs—11/21/2003
CoE Equity & Diversity Committee—4/14/2004
CoE Committee on Academic Staff Issues—4/28/2004
Committee on Women in the University—2/18/2004, 1/12/2005, 11/9/2005
Women Faculty Mentoring Program—9/19/2003
Plan 2008 Campus Resource Fair—5/7/2002
Showcase—4/3/2002, 4/5/2004
Women Faculty in Medical School—3/11/2005
Academic Staff Executive Council—3/6/2003, 3/5/2004, 2/25/2005
Office of Human Resources—2/16/2005
WEMPEC—2/11/2005
UW System EEO Officers—4/13/2005
William S. Middleton Memorial VA Hospital—3/17/2005, 4/26/2005
CIRTL/DELTA—2/2/2005, 9/20/2005
UW Teaching & Learning Symposium—5/24/2005
UW Foundation—8/23/2005, 11/10/2005, 12/7/2005
WISELI Seminar—10/20/2003, 11/17/2003, 2/16/2004, 3/22/2004, 11/10/2004, 12/8/2004, 3/9/2005, 9/22/2005, 11/10/2005

NSF Informational Handout

WISELI
Women in Science & Engineering Leadership Institute
University of Wisconsin-Madison

Program: **ADVANCE Institutional Transformation**
Funding Agency: National Science Foundation
NSF Program Officer: Alice Hogan (ahogan@nsf.gov)

Objective NSF ADVANCE at the University of Wisconsin-Madison is a five-year project to promote institutional transformation in science and engineering fields by increasing the participation, success and leadership of women faculty in academic science and engineering. The grant is administered through the **Women in Science & Engineering Leadership Institute (WISELI)**.

Constituents Science and engineering faculty and staff in the **six schools** with the largest science and engineering faculty: College of Engineering, College of Letters & Sciences, College of Agricultural and Life Sciences, the School of Veterinary Medicine, the School of Pharmacy, and the Medical School. In total, we target **over 50 departments and 1,200 faculty** in the biological and physical sciences.

Activities With a strong evaluation component in all that we do, our research and initiatives feed back to each other, improving our activities with each iteration

Grant Programs
- Vilas Life Cycle Professorship Program
- Celebrating Women in Science & Engineering Grants

Workshops
- Workshops for Search Committee Chairs
- Climate Workshops for Department Chairs
- Workshops on Building Effective Research Teams (in development)

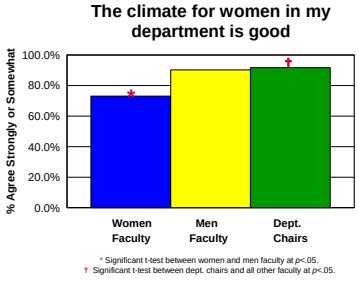
Other Initiatives
- Conversion of staff to tenure track
- Awards and honors for women faculty
- Leadership development for academic staff
- Conversations with senior women faculty
- Documentary video
- WISELI Seminar series
- WISELI website, listserv

Evaluative Research
- Interviews with women faculty and staff
- Study of Faculty and Academic Staff Worklife (climate survey)
- Resource studies
- Issue Studies
- Evaluation of existing programs at UW-Madison

Other Research
- Discourse analysis of women's communication strategies
- Ethnographic study of gendered interactions in the laboratory setting
- Study of Career Choices in Engineering
- Expanding Entrepreneurial Activity for Senior Women

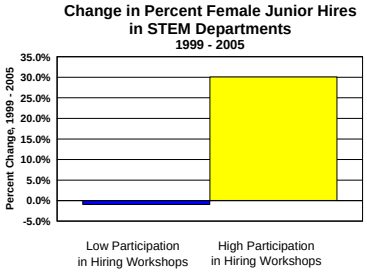
Selected Results

Climate:



- Climate survey and interviews with women faculty identify DEPARTMENT CHAIRS as key influences on the experiences of women faculty.
- To date, 27 department chairs have participated in our Climate Workshops; the improvements made as a result of this will affect thousands of faculty and staff in those departments.
- Climate will be re-assessed in select departments to evaluate the overall effects of the Climate Workshops.

Hiring:



- New faculty hires in STEM have increased overall, from 18% women in 2002, to 21% in the 2005 hiring cycle.
- Departments who participate in WISELI workshops (2003-2005) show more gains in hiring women (30% increase) than those departments who have not participated (no change).
- Approximately 70 hiring committee chairs have participated in our training workshops in 2004, and 92 participated in 2005.
- Evaluation of composition of hiring pools is underway.

Products (see http://wiseli.engr.wisc.edu/products.htm):

Climate:
- *Benefits and Challenges of Diversity*
- *Enhancing Department Climate: A Chair's Role: Resources*
- *Advice to the Top: Top 10 Tips for Academic Leaders to Accelerate the Advancement of Women in Science and Engineering*
- *Sex and Science: Tips for Faculty*
- *Study of Faculty Worklife at the University of Wisconsin-Madison* (survey instrument and results)

Recruiting:
- *Recruiting Applicants: Research on Bias and Assumptions*
- *Searching for Excellence and Diversity: A Guide for Faculty Search Committee Chairs*

Papers:
- Handelsman et al. 2005. "More Women in Science." *Science.* 309(5738):1190-1191.
- Carnes et al. 2005. "Diversity in Academic Medicine: The Stages of Change Model." *Journal of Women's Health*. 14(6):471-475.
- Carnes et al. 2005. "NIH Director's Pioneer Awards: Could the Selection Process be Biased Against Women?" Journal of Women's Health. 14(8):684-691.
- Sheridan et al. 2006. "Discovering Directions for Change in Higher Education Through the Experiences of Senior Women Faculty. *Journal of Technology Transfer*. 31(1).

Awards & Honors:
- *Advancing Your Career through Awards and Recognitions: A Guide for Women Faculty in the Sciences & Engineering*

Documentary Videos:
- *WISELI: ADVANCEing Institutional Transformation*
- *WISELI: Building on a Legacy*

Principal Investigators

Molly Carnes, Jean Manchester Biddick Professor of Medicine
Email: mlcarnes@wisc.edu
Phone: (608) 267-5566

Jo Handelsman, Howard Hughes Medical Institute Professor of Plant Pathology
Email: joh@plantpath.wisc.edu
Phone: (608)263-8783

Jennifer Sheridan, Executive & Research Director, WISELI
Email: sheridan@engr.wisc.edu
Phone: (608)263-1445

Evaluation Director

Christine Maidl Pribbenow (cmpribbenow@wisc.edu)

Program Staff

Researcher and Workshop Developer: Eve Fine (efine@wisc.edu)
Research and Evaluation Specialist: Deveny Benting (dbenting@wisc.edu)
Grants Specialist: Carol Sobek (csobek@engr.wisc.edu)

Contact Information

Website:	http://wiseli.engr.wisc.edu
Email:	wiseli@engr.wisc.edu
Phone:	(608) 263-1445
Fax:	(608) 265-5290
Mailing Address:	WISELI 2640 Engineering Hall 1415 Engineering Drive Madison, WI 53706

ADVANCE institutions will serve as exemplars for other colleges and universities aiming to increase the participation and status of women in science and engineering faculty.

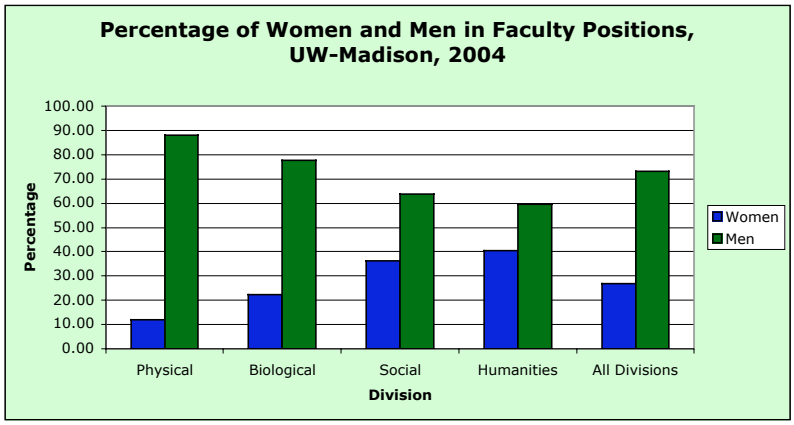
Fundraising Brochure, 2005

WISELI
Women in Science & Engineering Leadership Institute
University of Wisconsin-Madison

Overview of WISELI

The mission of the **Women in Science & Engineering Leadership Institute (WISELI)** is to increase the participation and leadership of women in academic science and engineering. Through research and programs, WISELI brings the issues of women scientists and engineers from obscurity to visibility. WISELI programs address some of the key institutional barriers to the advancement of women. We provide an effective means of networking women faculty across departments, decreasing isolation, advocating for and mentoring women faculty, and linking junior women in predominantly male environments with a variety of senior women faculty.

WISELI began on January 1, 2002, with funding from the National Science Foundation ADVANCE program. The NSF launched the ADVANCE program in response to concerns that the United States was not training an ample or sufficiently diverse workforce to meet growing scientific needs. Its goal is to increase the number of women in positions of leadership in science and engineering. WISELI's approach to this challenge is comprehensive and employs an evidence-based framework designed to answer the questions: What are the barriers impeding the participation and advancement of women in science and engineering? How can we eliminate or overcome these barriers?



Source: WISELI Annual Report, 2004.

WISELI's Initiatives

WISELI has identified climate, unconscious bias, visibility of women, and the life-career interface as the key areas that affect women's success in academic science. Our initiatives focus on these concerns.

The results to date have been profound. Examples of WISELI's successful programs include:

- **Enhancing Department Climate: A Chair's Role:** WISELI has developed a workshop that engages department chairs in discussions about climate in their own departments. The chairs study the climate in their departments, identify key issues, and learn from each other as they develop plans to address these issues. A discussion topic in the workshops is the role of unconscious bias in academic life, with an emphasis on designing strategies to reduce the impact of bias on departmental process.
- **Training Search Committees:** To enhance the recruitment and hiring of an accomplished and diverse faculty, WISELI has developed guidelines, workshops, and resources for search committees. The workshops teach search committee chairs successful strategies to increase the diversity of candidate pools. Research indicates that search committees may unconsciously evaluate candidates based upon negative stereotypes associated with their personal attributes (sex, age, and race, among others), thereby

Zoology and anatomy professor Mary Halloran peering into a tank of zebrafish. © UW-Madison University Communications (Photo by Jeff Miller)

precluding objective assessment of their academic performance or potential. The workshops include a focus on developing strategies to reduce the effect of prejudice on hiring.

- **Vilas Life Cycle Professorships:** Thanks to the generosity of the Vilas Trustees, the Vilas Life Cycle Professorships provide funds to faculty and permanent PIs at the University of Wisconsin-Madison who are at critical junctures in their professional careers and whose research productivity has been directly affected by personal life events (such as complications from childbirth, parental care, a life partner's illness, or one's own illness). The funds are available to both men and women.

- **Celebrating Women in Science & Engineering Grant Program:** This grant program is supported by WISELI and six schools/colleges at UW to fund departments, centers, or student groups who wish to increase the visibility of women scientists. The awards have been used to bring outstanding women scientists to campus for lectures or symposia. Recent awardees include Graduate Women in Science, the Medical Scientist Training Program, and Graduate Women in Chemistry.

Postdoctoral fellow Dali Yang's face is seen reflected in the glass of a protective fume hood as she prepares stem cell cultures in Su-Chun Zhang's research lab at the Waisman Center. © UW-Madison University Communications (Photo by Jeff Miller)

WISELI's National Role

In addition to serving the University of Wisconsin-Madison, WISELI is a national resource and recently has drawn national acclaim. Many of WISELI's materials and workshops have served as models for other universities' efforts to address the barriers to the advancement of women in science on their own campuses.

In May 2005, the *Boston Globe* featured WISELI's programs in an article detailing Harvard's recent commitment to implementing programs to attain gender equity among its faculty, and Harvard's Task Force on Women in Science and Engineering used WISELI's programs as models as they developed their recommendations. A group of prominent women scientists led by WISELI's leaders, authored an article about the issues facing women scientists and engineers that appeared in *Science* magazine. The article stimulated a flurry of international media coverage, bringing further visibility to women in science and the University of Wisconsin-Madison.

Through these efforts, WISELI is promoting women's participation and leadership in academic science and engineering both locally and nationally.

For More Information

WISELI Website: http://wiseli.engr.wisc.edu

M. Bombardieri, 2005. A Woman's Place in the Lab. *Boston Globe* (May 1): B1, B8.

J. Handelsman et al., 2005. More Women In Science. *Science* 309: 1190-1191.

With her face reflected in a small glass port, physics graduate student Pengpeng Zhang peers into a scanning tunneling microscope that uses electrical current to measure atomic-sized features on the surface of nanoscale silicon membranes. © UW-Madison University Communications (Photo by Jeff Miller)

Annual Report of ADVANCE Program for University of Wisconsin-Madison

2005

Principals, *University of Wisconsin-Madison*

Dr. Molly Carnes, Jean Manchester Biddick Professor of Medicine
Dr. Jo Handelsman, Howard Hughes Medical Institute Professor of Plant Pathology
Dr. Jennifer Sheridan, WISELI

December, 2005

Table of Contents

I. Executive Summary: Major Accomplishments in Year 4

In 2005, Provost Peter Spear announced his retirement. Before he left campus he sent the following note to co-PIs Jo Handelsman, Molly Carnes, and Jennifer Sheridan:

> "The ADVANCE grant and WISELI have made an enormous positive impact on our campus, and I believe the programs that have been started will continue to do so for many years. None of that would have been possible without your leadership, energy, hard work, and skills in working with people across campus."

Indeed, we are finding that after four years WISELI has become a recognized leader on campus in the areas of departmental climate and faculty hiring. We are the "go-to" resource for questions related to not only women in science and engineering, but for diversity in the academy in general. When someone needs a reference, they call us. When someone has an idea for a great speaker or workshop, they call us. When someone has a problem with a tenure case, they call us. Campus leaders recognize how the work we have done has enhanced the environment at UW-Madison for everybody.

During the past year, WISELI has not only continued the important work begun in the first three years, but we have begun disseminating our work on both a state and national level. While we continue to provide and refine the two workshop series we offer, we have found that the demand for one workshop (training hiring committee chairs) was so high that we developed a one-day "train-the-trainer" workshop to export our approach to other 4-year campuses in the University of Wisconsin System. We also have been disseminating WISELI research through publication of articles and national viewing of our documentary video. Finally, our experience at creating institutional change at UW-Madison through the ADVANCE program left us poised to seize the opportunity to educate the public and other universities about our efforts when Harvard President Lawrence Summers made his now-infamous remarks on January 14, 2005. Some of our greatest accomplishments of 2005 include:

Workshops

- We continued implementing workshops for chairs of search committees. We designed multiple formats for use in training chairs of hiring committees and have broadened the training to include other faculty and staff, training over 90 individuals in 2005.
- In response to repeated requests to provide our hiring workshops at other campuses, we offered a one-day workshop to the 4-year campuses participating in the Wisconsin Alliance for Minority Participation (WiscAMP) project. Entitled "Searching for Excellence & Diversity: Implementing Training for Search Committees," we assisted teams from 11 different campuses in the University of Wisconsin System in learning about our approach and adapting it for use on their own campuses. In addition, we trained 23 new UW-Madison faculty and staff to be facilitators and presenters at our own workshops at UW-Madison.
- For the first year, training for hiring committees was made mandatory by Gary Sandefur, Dean of the College of Letters and Sciences. We worked with Dean

Sandefur and his Associate Deans to create a 2-session workshop for L&S faculty and staff.

- Our Climate Workshops for Department Chairs have continued to provide an intensive experience for Chairs who want to improve the climate in their departments. In 2005 we worked with 12 new chairs. An evaluation completed in late spring of 2005 indicates that participating chairs appreciated the opportunity to assess climate in their departments, gained new insights about how various members of their departments experience climate, and successfully initiated changes that improved climate in their departments. The evaluation report also provides specific advice about how to enhance the workshop series to make it more useful in future iterations.
- In April 2005, we partnered with two different campus organizations to offer unique panel presentations. Along with the Women Faculty Mentoring Program, we provided all women faculty on campus the opportunity to learn from the five women UW-Madison Deans. Science Alliance helped us convene a panel of local experts to discuss the research basis (or lack thereof) for Harvard President Lawrence Summers' comments about women in science.
- The Office of the Provost invited WISELI input and presentation to their all-day training workshop for new department chairs (August 2005). WISELI was also invited to an all-day workshop for Deans and Department Chairs in the Medical School (March 2005).

Grants

- We awarded five new Celebrating Women in Science & Engineering grants. WISELI successfully "piggybacked" on two of the invited presenters funded by these grants, offering additional workshops to all women faculty and staff in the sciences and engineering.
- In 2005, in cooperation with the Provost's Office, we wrote a proposal to the Estate of William F. Vilas to fund the Life Cycle grants for the UW-Madison campus each year, for all faculty and academic staff with Permanent PI status. We were delighted that the Vilas Trustees voted to fund these awards (renamed the Vilas Life Cycle Professorships) in the amount of $310,000 per year. In 2005 we have received 26 applications, and funded at least 12 of them.

Research & Evaluation

- We have published four papers in 2005—one of them a highly-visible Policy Forum in *Science*. In addition, we have one manuscript accepted that will appear in *Journal of Technology Transfer* in 2006, and five other completed manuscripts that are under review.
- Plans for our interviews and surveys in 2006 have been made. Interviews with the 26 women faculty in the sciences and engineering who formed our initial interview sample (now 24, as two have since left campus) will proceed in early 2006. The *Study of Faculty Worklife at the UW-Madison* instrument is complete and will be mailed to all faculty on January 23, 2006. As in 2003, the Office of the Provost is contributing

considerable funds to expand the survey to all UW-Madison faculty (i.e., Social Studies and Humanities faculty).

- The third "issue study" has been determined; it will be an analysis of the tenure-track conversion initiative. Women who have attempted a conversion will be interviewed, institutional data will be presented, and survey data from the 2003 *Study of Faculty and Academic Staff Worklife at the UW-Madison* will be included. This study will begin in early 2006.
- An ethnographic study of men and women faculty in science and engineering is continuing.
- Prof. Cecilia Ford secured a contract with Palgrave/Macmillan for a book about her WISELI-supported work that analyzes women's conversation and verbal leadership in naturally-occurring academic meetings entitled, *Women's Talk in the Professional Workplace: Talking Change.*

Leadership

- WISELI Leadership Team members continue to occupy key positions that have influence over gender-related policy and practice. New in 2005: Patricia Brennan became Chair of the University Committee, Amy Wendt became co-Chair of Electrical and Computer Engineering, and Jo Handelsman became co-chair of the National Academy of Science Committee on Metagenomics. In addition, of the three finalists for Provost announced on 12/21/2005, two are closely connected to WISELI. Pat Farrell is on WISELI's Leadership Team, and Sue Rosser is a member of WISELI's External Advisory Team.
- WISELI's co-Directors have leveraged resources from the Graduate School for a Project Assistant to assist with data collection and analysis in 2006.
- WISELI leaders continue to provide guidance, coaching, and mentorship to individual women students, faculty, and staff. Such activities have contributed to success in grant funding, conversion of staff to tenure track, departmental re-assignment, tenure achievement, and less-quantifiable outcomes of improved satisfaction with professional life.

Other

- The second WISELI video was completed this year, and screened during the September 22, 2005 WISELI Seminar. Entitled *WISELI: Building on a Legacy*, this video will be added to The Research Channel line up in early 2006.
    - Without our assistance or knowledge, a local Madison community access channel began airing the first WISELI video beginning in fall 2005. This has increased our visibility tremendously on campus. Now that we have this second venue for dissemination, we are working with the Madison Metropolitan School District to air the second video immediately upon its release.
- The WISELI Seminars, held three times per semester, continue to attract a large audience (30-40 attendees) from multiple departments and schools.

- WISELI continues to collaborate closely with our new Wisconsin Alliance for Minority Participation (WiscAMP) program.
- We met with two of our five external advisors in 2005. Prof. Sally Kohlstedt from the University of Minnesota visited in February 2005. In addition to meeting with the WISELI co-directors and Leadership Team, Dr. Kohlstedt agreed to give a WISELI seminar. In October 2005, we hosted Dean Sue Rosser. Dr. Rosser met with the WISELI co-Directors, and also gave a campus-wide lecture on her book *The Science Glass Ceiling*. The Kohlstedt discussions with the WISELI team focused on dissemination of the WISELI projects, and the Rosser discussions focused on sustainability of WISELI.

In addition to these concrete programmatic elements, we have become active players on the national women in science and engineering movement:

- WISELI was a leader in the national conversation about issues for women in science after Harvard president Larry Summers made some questionable remarks at a January 14, 2005 conference. WISELI produced our own response to the remarks, we started a much-visited website to track the press and response to the remarks, we were featured in several prominent newspaper articles about the controversy, our work was requested by the Harvard Task Forces, and co-PI Jo Handelsman was invited by President Summers to work with the Harvard Deans to plan implementation of search chair and department chair training that is based on the WISELI model.
- Jennifer Sheridan has been participating on a committee led by Dr. Lisa Frehill to standardize the collection of indicator and other data by ADVANCE institutions. In addition, Dr. Sheridan has been included in a working group of the Association of American Universities Data Exchange (AAUDE) that is creating a "standard" set of questions for climate surveys so that Universities might compare climate items across campuses.
- WISELI was consulted by more than 36 other colleges and universities across North America in 2005, for a variety of reasons. Some wanted our hiring brochures, some wanted information on our climate survey, some wanted help and advice as they wrote their own ADVANCE Institutional Transformation grant, some wanted specific information about a UW-Madison policy. Several of the colleges/universities were fellow ADVANCE sites.
- WISELI Co-PI Molly Carnes is President of the Association of Academic Women's Health Programs (AAWHP). AAWHP wrote a letter to the NIH regarding the absence of women awarded the NIH Director's Pioneer Awards and arguing for changes to the award processes based on the social science literature. Dr. Carnes followed this up by publishing several specific recommendations. In 2005, the NIH Pioneer Award process changed dramatically, and 6 of 13 awardees were women.
- WISELI co-PI Jo Handelsman is serving on the committee for the National Academies' new study, "*Maximizing the Potential of Women in Academic Science and Engineering.*"

II. Activities: Status of WISELI Initiatives

A. Workplace Interactions

Climate Workshops for Department Chairs

- In 2005, 12 department chairs participated in our Climate Workshops for Department chairs. This brings the total number of department chairs to 27, and the total number of departments affected to 26 (one department is participating for a second time, as it has a new department chair.) WISELI has brought this intensive effort to affect departmental climate to 34% of the 70 "science" departments at UW-Madison.
- In 2005, we have administered electronic surveys to approximately 3,345 faculty, academic and classified staff, postdoctoral fellows, scientists, researchers and graduate students to assess climate in their departments. Of these, 1,480 responded for an average response rate of 44% (range 21% to 79%).
- A description of the workshops and a resource book are available publicly on the WISELI website at http://wiseli.engr.wisc.edu/initiatives/climate/workshops_deptchairs.html . These materials are updated annually to provide the most current resource information to chairs (last updated Fall 2005).
- Some of the specific interventions that chairs have been implementing as a result of their participation in these workshops include:
    - Initiating or reinvigorating department professional and social events to foster a sense of belonging;
    - Enhancing communication by meeting more frequently with individual or groups of departmental members, including hosting a facilitated departmental retreat that used "appreciative inquiry" to foster open discussions about departmental climate;
    - Including staff and student representatives in departmental meetings.
- To evaluate the impact of these workshops, we completed a formative evaluation, delivered in July 2005. The report indicates that "the participants find value in the workshops, that many of the goals are being met, and that the survey allows the chairs to understand climate in their department at one point in time." The report concludes that the Department Chair Climate Workshop series is a "successful WISELI program."
- We plan to use data from the 2006 faculty survey to compare climate in departments whose chairs participated in these workshops to other STEM departments who did not participate; we hope to see an improvement in those departments which participated.

Workshops for Search Committee Chairs

- A majority of search committee chairs in CALS and Engineering and many in the Medical School have participated in these workshops. Additionally, for the first time, a Dean (Gary Sandefur, Letters & Sciences) has required that search committee chairs attend our workshops before releasing the Position Vacancy Listing (PVL) for the position. In total, this year we have run 17 sessions and trained 92 search chairs and committee members.
- We have developed three different "modes" for delivering material to chairs of hiring committees:
    - A 2- or 3-session workshop that relies on trained facilitators to present information and resources, lead small-group discussions about how to diversify the faculty, and encourage peer learning. Each session is timed according to critical points in the search process (before the application deadline, reviewing applicants, before the interviews.)
    - A 1-session group in which a trained facilitator presents information and resources to a small group of search committee chairs, facilitates small-group discussion, and encourages peer learning. This one session covers all stages of the search process.
    - A 1-session formal workshop with carefully chosen presenters from within the College or organization in which it occurs. These internal presenters not only incorporate information and resources relevant to their particular school/college/organization, but also lend authority to the messages that WISELI's materials convey. These workshops are open to all members of search committees, and also to departmental administrators who assist with faculty searches. Interactive discussion is incorporated by seating participants in small groups at round tables and providing them with trained facilitators who guide discussion of the presentations, introduce discussion questions about implementing efforts to diversify the faculty, and encourage participants to learn from one another.
- We produced a guidebook for search committee chairs and a brochure that summarizes research on unconscious assumptions and biases. These documents, especially the brochure, are in high demand on campus and beyond, and we have provided them to at least nine different campuses and organizations outside the UW-Madison. Over 6,000 copies of the brochure have been distributed at UW-Madison and beyond.
- In response to repeated requests to provide our hiring workshops at other campuses, we offered a one-day workshop to the 4-year campuses participating in the Wisconsin Alliance for Minority Participation (WiscAMP) project. Entitled "Searching for Excellence & Diversity: Implementing Training for Search Committees," we assisted teams from 11 different campuses in the University of Wisconsin System in learning about our approach and adapting it for use on their own campuses. In addition, we trained 23 new UW-Madison faculty and staff to be facilitators and presenters at our own workshops at UW-Madison.

Workshops in Building Effective Research Teams

- While researching the resources available for such a workshop on our campus, we discovered that the Howard Hughes Medical Institute (HHMI) is developing a program remarkably similar to what we had in mind. WISELI co-Director and Howard Hughes Medical Institute (HHMI) Professor Jo Handelsman contributed to the development of PI workshops at the HHMI in June 2005. The HHMI materials can be used as a basis for future workshop development. WISELI is looking for partners both on the UW-Madison campus, and within the CIC (Committee on Institutional Cooperation) to further develop this initiative.

B. Life-Career Interface

Life Cycle Grants

- The Provost's Office and the Graduate School jointly funded one round of Life Cycle grants in late 2004/early 2005. In this round, we received five applications and funded three of them.
- In spring of 2005, the Trustees of the Estate of William F. Vilas voted to fund this program for all faculty and permanent PIs on the UW-Madison campus. The Trustees awarded $310,000 per year for the program. The program has been renamed the "Vilas Life Cycle Professorship" program. Changes to the program include:
    - Funds cannot be used for faculty salary;
    - Awards are capped at $30,000 per year; and
    - Funds must be spent within one year; no extensions.
- As of Dec. 31st 2005, we have completed three rounds of Vilas Life Cycle applications. 26 applications were received in 2005, and at least 12 awards were made (decisions on 10 applications will be made in early January 2006.)
- The Life Cycle Research Grant/Vilas Life Cycle Professorship program is featured prominently in the second WISELI video entitled *WISELI: Building on a Legacy*.
- An evaluation form for Life Cycle Research Grant/Vilas Life Cycle Professorship recipients has been developed and will be distributed annually to all recipients. A report will be provided to the Trustees in the first quarter of each year to apprise them of the outcomes of the faculty they are funding, and to encourage them to fund the program each year. The Trustees will vote to continue the program when the Provost submits a budget for Vilas funds each spring.

Time-Stretcher Services

- The UW Hospital has already developed this service. It is available to all UW-Madison faculty and staff.

Lactation Space

- The initial lactation space chosen in Engineering was well-publicized in Fall 2005. Women graduate students have been the primary users of this space, and the School of Engineering has now designated a second space in another Engineering building for use by nursing mothers.

C. Development, Leadership, Visibility

Celebrating Women and Science and Engineering Grants

- Since 2002, we have awarded 25 grants, and have brought in 57 women speakers to 20 departments/programs in five schools/colleges.
- Each grantee completes his or her own evaluation of the impact of their guest(s). These individual reports were collectively summarized in 2004, and indicated that the program is successful at reaching both "wide" and "deep", and supports women scientists in a number of ways. The major recommendation was that WISELI help more to publicize events; we have made a special effort to advertise all Celebrating events on our listserv in 2005.
- In 2005, WISELI was able to expand the reach of this program by organizing additional events or workshops utilizing visitors paid for by the program. For example, the Graduate Women in Science brought in Valerie Young to teach a workshop on the Imposter Syndrome to graduate student women. WISELI was able to use the rest of Dr. Young's time to teach a similar workshop for women faculty and academic staff. This was very successful, with over 90 attendees at the faculty and staff workshop and over 210 at the graduate student workshop. We also received many requests to bring her back to Madison. As another example, the Chemistry department brought in COACh presenter Dr. Nancy Houfek to teach a workshop on communication. WISELI was able to create a second workshop available to women faculty in the sciences.
- The next call for proposals will go out in late spring, 2006, for the 2006/07 academic year. This program is funded through contributions from the College of Engineering, College of Letters & Sciences, School of Pharmacy, School of Medicine and Public Health, and School of Veterinary Medicine.

Study the impact and feasibility of moving outstanding non-tenure line researchers into faculty positions

- WISELI co-Directors Carnes and Handelsman have actively pursued 9 cases in which an accomplished academic staff member wished to move to a tenure-track faculty position. Their efforts and experiences will allow us to produce a "road map" for switching tracks that will identify characteristics of the ideal candidate and outline the appropriate steps to take. To date, the successful cases (4) have all been clinical faculty who have been switched to the tenure track in the Medical School. The 4 unsuccessful cases have been teaching or research staff outside of the Medical School, and one case is pending.

- In 2006, WISELI's final "issue study" will be an in-depth look at four cases. Interviews with the women staff (both successful and unsuccessful), the PIs, and the department chairs of the candidates will be combined with survey and institutional data regarding academic staff to outline what we have learned from these efforts, and especially to publicize the efforts for future academic staff who might wish to join the tenure-track faculty at the UW-Madison.

Senior Women Faculty Initiative

- The special issue of the *Journal of Technology Transfer* has been postponed until 2006. Our paper outlining our work with Senior Women ("Discovering Directions for Change in Higher Education Through the Experiences of Senior Women Faculty") will be published at that time.
- A study on senior women faculty and their motivations for (and against) entrepreneurship is underway. The first step is to analyze data obtained from the Wisconsin Alumni Research Foundation (WARF), which is the patenting and licensing arm of the University. WARF has given WISELI Leadership Team member Patricia Brennan a dataset containing the names of all disclosure applicants for 2001 – 2004. We are linking this data to gender data in order to investigate whether there are gender differences in the disclosure and patent processes for UW-Madison faculty.
- We offered to send senior women faculty to three campus workshops offered through WISCAPE in 2005; six of them attended at least one of these workshops. More senior women attended other workshop offerings made to the entire WISELI affiliates list (see below).

Develop networks, promote communication, increase visibility of women in S & E

- With WISELI as the visible center of ADVANCE activity, networking and communication are flourishing. WISELI maintains a listserv and a website, sponsors receptions and hosts meetings with prominent visitors, maintains contact with senior women faculty, publishes the accomplishments of women faculty and academic staff prominently on its website, uses the Leadership Team members to nominate women for awards, and supports women who speak on women-in-science issues at their own professional organizations.

Cluster hire initiative

- This is not an active initiative for two reasons: (1) no new cluster hire positions have been released since early 2002, and (2) faculty and staff gave this initiative a very low priority in our initial Town Hall Meetings.

Nominations and Awards for Women Faculty

- We continue to distribute copies of the "Advancing Women" brochures. To date, we have distributed over 400 copies.
- In spring 2005 when the newest senior-level campus awards were announced (Romnes, Vilas Associates, Kellett Mid-Career awards, and Vilas

Professorships), senior faculty member Laura Kiessling noted the lack of women awardees and demanded that the Graduate School examine possible causes. The Graduate School provided Dr. Kiessling with data indicating the gender of all nominees and awardees for four prestigious campus awards. WISELI analyzed the data and set a meeting with the Graduate School deans in August 2005.

- We devoted the November 10, 2005 WISELI seminar to discussing awards and honors for women. Included in this seminar:
  - Discussion of Graduate School data mentioned above;
  - Discussion of process for NIH Pioneer awards and the outcome of all men as the first 9 awardees;
  - Discussion of the WISELI awards brochure; and
  - Discussion from the Graduate School on changes they have made to their processes as a result of the August meeting. These changes include reminding department chairs to consider all faculty when making nominations, and training research committees to be aware of unconscious bias before evaluating applications.
- Leadership Team members have actively pursued nomination of women faculty and staff for awards, nominating women or requesting that their department chairs do so. Two of the successful nominations include Judith Burstyn for the Doris Slessinger Mentoring Award, and Lindsey Stoddard-Cameron for the UW Foundation Women in Philanthropy Award.

Endowed Professorships for Women in Science

- The Chancellor's list of fundraising priorities for the current "Create the Future: The Wisconsin Campaign" capital campaign includes these professorships. We are in discussions with the UW Foundation to consider reconfiguring these as "rewards" or "awards" for departments that have particularly good records on hiring, promoting, and retaining women.

Leadership Development of Non-Tenure Line Women in Science and Engineering

- When appropriate courses become available, WISELI offers professional development opportunities (including awards nominations) to academic staff. In 2005, we sent at least 12 academic staff members to various workshops and mini-courses, including a Wisconsin Women in Higher Education Leadership conference featuring Linda Babcock (*Women Don't Ask*).
- Academic staff members are always invited to all public WISELI events, and our Leadership Team includes academic staff members.

D. Overarching

Establish the Women in Science and Engineering Leadership Institute (WISELI)

Established in January 2002, the Women in Science & Engineering Leadership Institute (WISELI) is a visible entity that centralizes all ADVANCE activity at the UW-Madison. WISELI became an official UW-Madison research institute in Summer 2003.

- ***Leadership.*** Co-PIs Molly Carnes and Jo Handelsman continue to co-Direct WISELI, and in 2005 Jennifer Sheridan was added as co-PI as well. Handelsman remains at 30% effort on the project, and Carnes has reduced her effort to 40%. Jennifer Sheridan remains as WISELI's Executive and Research Director, at 100% effort.

- ***WISELI Seminar.*** The WISELI seminar series has remained popular, with between 30 and 40 attendees from multiple departments and schools for each seminar, on average. In 2005 the following speakers presented their work at the seminar:
  - Sally Kohlstedt, Professor of History of Science and Technology, University of Minnesota**. "**The Rajender Consent Decree: Discrimination, Institutional Response, and Women's Alliances."
  - Lorraine Meisner (Professor, Cytogenics); Cyrena Pondrom (Director, L&S Honors Program); Lynn Edlefson (Director, Office of Child Care and Family Resources); and Vicki Bier (Professor, Industrial and Systems Engineering and WISELI Leadership Team member). "Child Care on the UW-Madison Campus: Past, Present, and Future."
  - Catherine Middlecamp, Distinguished Faculty Associate, Department of Chemistry. "Teaching Chemistry: The Intellectual Challenge of Diversity."
  - (Video) *WISELI: Building on a Legacy*.
  - Sue V. Rosser, Dean of the Ivan Allen College and Professor of History, Technology, and Society, Georgia Institute of Technology. "The Science Glass Ceiling."
  - Jennifer Sheridan (co-PI, WISELI); Molly Carnes (Professor of Medicine and co-PI, WISELI); Donna Paulnock (Professor of Medical Microbiology and Immunology and Associate Dean for Biological Sciences in the Graduate School); and Patricia Brennan (Professor of Industrial and Systems Engineering and Nursing, and WISELI Leadership Team member). "Honors and Awards for Women: Issues of Equity."

- ***WISELI Website.*** As a result of the Larry Summers controversy in January 2005, "hits" to our website have more than tripled in 2005. Prior to January 2005, we were receiving perhaps 200 hits per month. In January and February of 2005, we received over 1,000 hits per month! After February, the traffic decreased a bit, but we continued to average over 600 hits per month through the end of 2005. Traffic increased during the summer months (perhaps as other universities were preparing their own ADVANCE awards), and we received another "bump" in early fall of 2005 after the *Science* Policy Forum was published. Our web counter

shows over 14,450 hits as of the end of 2005.

- ***WISELI Library.*** An important element of our website, our online "library" includes hundreds of annotated references to the social science literature underpinning our approach to gender equity. This library has become an important resource for both UW-Madison researchers, and others. We produced a major revision to this library in fall of 2005, enhancing the ability of those with access to journal databases such as ProQuest or JSTOR to immediately link to articles in the library.
- ***WISELI Listserv.*** The WISELI listserv has become a reliable way to communicate with our affiliates. Other organizations (e.g., the Provost's Office, the Wisconsin Women in Higher Education Leadership, CIRTL/DELTA, and others) have been asking us to post notices to our listserv to further inform our affiliates of events and opportunities. At the end of December, 2005, we have 287 affiliates on our listserv.
- ***Working Web Site (WWS).*** We compile resources, post working documents, provide links to sites and resources of interest, and more on our Working Web Site. This site is password protected. We give access to the WWS to persons on a case-by-case basis, and try to limit access especially to off-site persons. It has become an effective way to share our working documents and research with interested parties before the documents are ready to go "public."
- ***Outreach to campus/national groups.*** We have presented to many groups about WISELI and our activities. A list of our publications and presentations is attached (see section VIII.) In 2005, we made 23 presentations to groups outside of the UW-Madison, and 30 presentations within the UW-Madison community (both formal and informal.)

  In addition to these activities, we consult with numerous campuses about our ADVANCE project and about gender equity in the sciences and engineering more generally.

  (1) After Harvard President Lawrence Summers made his now-infamous remarks about the lack of women in academic science and engineering, WISELI co-Director Jo Handelsman was invited to meet with President Summers and staff in March 2005, and invited back to lead a discussion on gender equity with the Harvard Deans in July 2005. Harvard Task Force committees used several of WISELI's initiatives (in particular our work with search committee chairs) as a basis for their own recommendations to Summers, released in May 2005.

  (2) Our "Research on Bias and Assumptions" brochure continues to be one of our most popular "products". In 2005, we have distributed over 2,500 copies of this brochure to 19 campuses and organizations throughout the US and Canada, bringing the total number of brochures distributed to over 6,000 since its development in 2004.

  (3) After a request to bring our hiring workshop to UW System campuses around

the state, we created a one-day training workshop entitled "Searching for Excellence & Diversity: Implementing Training for Search Committees." Held on June 14th, 2005 in Madison, WI, all University of Wisconsin System 4-year campuses were invited to send a team of people from their campuses to learn how we approach the training of hiring committees at UW-Madison, introduce them to our materials and discuss how to adjust them for use on their own campuses, participate in discussions of hiring practices, read some literature we cite in our workshops, and receive advice about the pros and cons of different formats for training. We used this intense one-day workshop to not only disseminate our approach across Wisconsin, but also to train new workshop presenters and facilitators for the UW-Madison campus. We trained teams from 11 different campuses in the UW System, as well as 23 new presenters/facilitators from UW-Madison. Evaluation results show that 97% of the respondents to a surey found the training "Very" or "Somewhat" Useful. The greatest self-reported increase in skills was "applying the research about unconscious biases and assumptions in the search process."

(4) WISELI co-PIs Molly Carnes and Jo Handelsman regularly give talks on gender equity around the country. Some of the institutions to which they have spoken in 2005 include: HHMI, Harvard, Colorado State, Oregon State, National Academies, Virginia Commonwealth, AMA, University of Minnesota, and University of Pennsylvania. In addition, other women faculty from UW-Madison have given talks or written essays about women in science issues, including the National Science Foundation MPSAC (Sue Coppersmith), the American Astronomical Society (Ellen Zweibel), and Caucus for Women in Statistics (Mari Palta).

Documentary Video

- We completed our second video, entitled *WISELI: Building on Legacy*. An advance copy of the video was screened in September 2005, and the final video will be released to The Research Channel for widespread distribution in January 2006.
- An issue arose surrounding the music for the first WISELI video, requiring us to remove the music from the video. We took the opportunity to re-title the video, and will-re-release the video at the same time as the second (in January 2006). The first video will now be entitled *WISELI: ADVANCEing Institutional Transformation*.
- The local community access channel run by the Madison Metropolitan School District (MMSD) obtained our video directly from *The Research Channel* and has been airing it quite frequently in Madison since September 2005. This has greatly increased our visibility throughout Madison. We will work directly with the MMSD once the second video is finished so that we can more quickly show it to the Madison market.
- We plan one more video highlighting evaluation and institutionalization of our projects for 2006. Interviews and filming began in fall 2005 for this final video.

Evaluation/Research

- ***Study of Faculty & Academic Staff Worklife at the University of Wisconsin-Madison.***
  - A new website to disseminate results has been created: http://wiseli.engr.wisc.edu/initiatives/survey/results/facultypre/index.htm . Survey sections for the faculty survey will be posted first, and then we will create a similar website to post findings from the academic staff survey.
  - The new survey instrument is prepared, the sample was obtained in October 2005, and funding has been secured. As in 2003, the Provost's Office will contribute 33% in order to survey faculty in all divisions. WISELI will pay for only the Biological and Physical Science faculty, while the Provost's Office pays for the Social Studies and Humanities faculty. The College of Letters & Sciences, and the College of Engineering, are both contributing $5,000 each towards the survey as well.
    - Some new items were added to the 2006 instrument. Some are taken from other surveys in order to compare results with other campuses. Others are evaluation items that will allow us to gauge change in knowledge and skills of faculty related to climate.
    - After meetings with the Provost's Office and communicating with leaders of the Academic Staff Executive Committee, we decided to not survey academic staff in 2006. We will make the 2003 results public and will investigate surveying staff in 2007 (in collaboration with the Provost's Office).
    - Data from the 2003 *Study of Faculty Worklife* continue to be used for evaluating existing programs (e.g., childcare, sexual harassment, pay equity). They have also been used in the preparation of two manuscripts currently under review (one on the tenure process; one on department chairs and climate.) Data from the academic staff survey will be included in the third issue study on tenure-track conversions.

- ***Interviews with UW-Madison women in science & engineering.***
  - Data continue to be used to evaluate existing campus programs. In addition, the interview data have been combined with climate survey data to produce two manuscripts currently under review (see above.)
  - Development of the interview protocol for follow-ups will begin in January 2006, and the interviews themselves will begin in late January/early February.

- ***Issue Studies.***
  - Issue Study #1, "The Department Chair and Climate: Contradicting Perceptions" manuscript is complete and waiting identification of an appropriate venue for publication.
  - Issue Study #2, "Why Women Leave": Our second study will identify the reasons why women faculty in the sciences and engineering leave UW-Madison. Based on interviews with nine women who recently left the UW-Madison, we hope to discover novel ways to retain more women. These interview data are analyzed and a final report will be issued in early 2006.

- Issue Study #3 will combine institutional data, survey data from the academic staff survey, and interview data from WISELI co-PIs and four women who attempted a change from the academic staff to the tenure track faculty. Department chairs of the women may also be interviewed. This report will be available by the end of 2006.

- ***Ethnographic Study.***
  - "Differences in Men and Women Scientists Perceptions of Workplace Climate" published in the *Journal of Women in Minorities in Science & Engineering* in 2005.
  - Ramona Gunter received a fellowship from the American Women in Science to write her dissertation using the interview and observational data gathered as a result of this study.

- ***Discourse Analysis of the "Ignoring-my-ideas" Phenomenon.***
  - Analysis of videotaped meetings is underway. This analysis will be supplemented with interview data of some meeting participants.
  - Two working papers in development include:
    - Ford, Cecilia E. and Teddy Kardash. 2005. "Combining Frameworks for Understanding Women's Participation in Meetings: Expanding Expectation States Theory through Conversation Analysis.
    - Ford, Cecilia E. and Barbara A. Fox. 2005. "'Can I Make a Brief Comment on That': Reference and Social Organization In and Around an Extended Turn."
  - Three presentations at professional meetings resulted from this research in 2005:
    - Ford, Cecilia. June 11-16, 2005. "'Can I Make a Brief Comment on That': Reference and Social Organization In and Around an Extended Turn." Invited lecture for a symposium on Reference and Referential Form in Interactional Linguistics. Organized by the Nordic Research Board. Helsinki, Finland.
    - Ford, Cecilia. July 6-9, 2005. "Interactional Grammar and Managing a Meeting Contribution." Plenary address for the 15th Annual Meeting of the Society for Text & Discourse. Amsterdam, Netherlands.
    - Ford, Cecilia. July 25, 2005. "Women's agency and participation: Feminist research for institutional change." Presented for the *Symposium on Gender in Public Settings: Approaches to Third Wave Feminist Analysis* at the 14th World Congress of Applied Linguistics Conference. Madison, WI.
  - A book contract for *Women's Talk in the Professional Workplace: Talking Change* has been secured from Palgrave/Macmillan.

- ***Study of Career Choices in Engineering.***
  - Several interviews have been transcribed, with the remaining interviews to be completed in Spring 2006. A first draft of the report is expected by early 2007.

- ***Examine the patterns of assigning institutional resources for uneven distribution by gender.***
    - A detailed analysis of four major awards given by the Graduate School was done in summer 2005. Results were presented to the Graduate School deans in August 2005, and to the wider University community at the November WISELI seminar.
    - A Vilas Professor questioned whether her salary was comparable to other Vilas Professors (there are 9). A careful analysis by WISELI staff that included time at institution, discipline and gender showed that her salary was not significantly different from her peers.

- ***Evaluation of Existing Gender Equity Programs.*** We proposed to evaluate nine campus programs related to gender equity. Data from the Faculty and Academic Staff Worklife surveys will be the primary source of information about these programs. These data were released to us in Summer 2003, and thus evaluation of these programs began after the preliminary analyses of the data. The programs we will evaluate, with an expected completion date, include:

    1. *Gender Pay Equity Study*. We plan to use survey results to assess perceptions of the gender pay equity exercise of 2001/02. Expected completion 2006.
    2. *Sexual Harassment Information Sessions*. We plan to use survey results to assess perceptions of the effectiveness of the training. Combined with reported rates of sexual harassment on campus, we will do a more in-depth analysis if warranted. Expected completion 2006.
    3. *Provost's Climate Initiative*. This initiative will not be evaluated formally.
    4. *Dual Career Couples*. We are collaborating with researchers from Virginia Tech on an inter-institutional study of Dual Career Couples. We provided Virginia Tech with the names of 15 faculty members who participated on our program. We received the transcripts from these interviews in 2005, and will combine them with interview and survey data to complete our review of the Dual Career Couples program at UW-Madison. Expected completion 2006.
    5. *Tenure Clock Extensions*. We used survey and interview data to assess the success of this policy. Completed October 2004. These data were also used to prepare the manuscript entitled, "Extending the Tenure Clock: The Experiences of Faculty at One University," which is under review for publication.
    6. *Campus Childcare*. We used survey and interview data to assess the success of this policy. Completed and presented to the broader UW-Madison community in March 2005.
    7. *Split Appointments*. This initiative will not be evaluated formally.
    8. *WISE Residential Program*. Administrators at WISE conducted their own evaluation in 2003. Therefore, we no longer plan to evaluate the Women in Science and Engineering Residential Program.
    9. *Women Faculty Mentoring Program*. We used survey and interview data to assess the success of this program, and reported the results back to the

executive committee of the Women Faculty Mentoring Program. Completed July 2004.

These programs are not under the control of WISELI, and any issues we uncover or recommendations we make are purely advisory. We have been cultivating relationships with the units that implement these programs, in order to increase the chances that recommendations will be implemented because they are received in the spirit of collaboration and not criticism.

Workshops for Faculty and Staff

- We have successfully created a workshop to train new facilitators for our Workshops for Hiring Committee Chairs (see ***Outreach to Campus/National Groups***, item #3, pages 12-13).
- We continue to offer UW-Madison women faculty and academic staff in STEM the opportunity to attend workshops of interest when they occur both on campus and off. Some of the workshops to which we sent faculty and staff in 2005:
  - Ethics, Law, and Postsecondary Education: A Primer for College and University Administrators
  - Demystifying the Budget Process
  - Advancing Your Career in Campus Leadership
  - Something Ventured, Something Gained: Negotiation for Women
- WISELI provided support for one department chair in Engineering to attend the National Leadership Workshop for SEM Department Chairs offered by the University of Washington ADVANCE program.
- Through our Celebrating Women in Science & Engineering grant program, we offered two workshops to women faculty and academic staff in 2005, and a panel to all women faculty:
  - "How to feel as bright and capable as everyone seems to think you are," led by Valerie Young. In partnership with GWIS.
  - "Communication Techniques for Strategic Negotiation and Leadership" led by Nancy Houfek (COACh). In partnership with Graduate Women in Chemistry.
  - "Mentoring Women for Leadership," a panel including all of the women deans at UW-Madison (Robin Douthitt, Luoluo Hong, Katharine May, Jeanette Roberts, and Frances Westley). In partnership with the Women Faculty Mentoring Program.
- WISELI assisted in a campus effort to provide inclusivity training for deans and other high-level leaders, by attending pilot sessions and providing feedback to Bernice Durand, Associate Vice Chancellor for Diversity and Climate.

III. Findings: Value Added

Tangible outputs

- Vilas Life Cycle Professorships. In 2005, WISELI successfully secured funding from the Estate of William F. Vilas for the pilot Life Cycle Research Grant program. The Vilas Estate has given $310,000 per year for these awards, to be made available to all faculty and academic staff with permanent PI status at the UW-Madison. The funds will be renewable each spring with continued positive evaluations of the program. WISELI continues to administer the program, and receives positive feedback each time a call for proposals is sent out. Data from the 2006 climate survey will further inform us of the value of this program to faculty.

- Permanent Workshops. WISELI directly contributes two campus-wide training workshops (training for chairs of hiring committees, and a workshop on departmental climate for department chairs). To date, we have trained over 160 hiring committee chairs and members, and 27 department chairs. The training of search committee chairs in particular is so important to campus that it is specifically mentioned in the 4th year progress report of the University of Wisconsin-Madison's strategic plan (http://www.chancellor.wisc.edu/strategicplan/progress.html).

- Local and National Dissemination. Through our collaboration with the WiscAMP project, we offered a one-day workshop to export our training for chairs of search committees to eleven 4-year campuses in the University of Wisconsin System. We anticipate that this one-day workshop will become a model for disseminating our hiring workshops nationally. In addition, the materials from the hiring effort, as well as our many other products (essays, papers, brochures, etc.), are available on the WISELI website and have reached a broad national and international audience.

- Research. WISELI continues to provide *data* to faculty, staff, and administrators regarding the experience of women in the sciences and engineering on campus. Furthermore, WISELI is flexible enough and has access to different kinds of campus data (e.g., data from WARF or from the Graduate School) so that analyses of possible gender disparities can be done quickly in response to situations as they arise. Other research studies (the work of Profs. Ford and Stambach) are additional value-added products of ADVANCE funding.

- Publications. WISELI has published four papers in 2005, with several more under review for 2006. The most visible of these was a *Science* Policy Forum, which led to numerous interviews for newspaper, radio, and newsletter articles by lead author Jo Handelsman. Our paper analyzing the selection of all men for the first NIH Director's Pioneer Awards may have had an influence on the award process at NIH. Several changes were made to the process for 2005, and in its second year six of the thirteen recipients are women.

In addition to our traditional publications, WISELI has produced two high-quality documentary videos, available to the public through *The Research Channel*, and also to the Madison audience via the Madison Metropolitan School District's public access channel.

- Evaluation of existing programs. Existing gender equity programs on campus (Women Faculty Mentoring Program, Tenure Clock Extensions, and Campus Childcare) have been evaluated using WISELI data, and three others (sexual harassment workshops, gender pay equity studies, and dual career hiring) will be finished in 2006. The campus will have an outside evaluation of many of these programs for the first time.

- Resource for women in science/women in academia. As campus women become involved in the women's sections and caucuses of their own professional organizations, they have found WISELI to be a great resource for getting information for newsletters and presentations. Our website, in particular, has been cited as a wonderful resource for women on campus. The library page, the Summers page, the hiring page, and the department chair resources pages are the spots most frequently mentioned by women faculty and staff as providing useful information. As the large increase in website traffic indicates, we are also a good resource for people outside of UW-Madison. About twenty percent of our web hits come from outside of the United States (about 11% from Europe, 2% from Asia, 2% from Canada, 2% from Australia, and 3% from 66 other countries around the world.)

- Professional Development. WISELI continues to offer women faculty and academic staff in the sciences and engineering access to training and professional development opportunities when they arise. The value-added to WISELI's approach is that we screen programs, selecting only those of interest to women in the sciences; we increase the awareness of these opportunities through our listservs and our direct communication of the events to women in STEM who might be interested, and we make it easy to attend because we complete the registration for the interested scientist and if necessary, pay their registration fee as well. We eliminate almost all barriers, and therefore increase the attendance of women scientists and engineers at these events.

- New Interdisciplinary Tenure and Promotion Guidelines. Following our November 10th WISELI seminar discussing honors and awards for women, WISELI Leadership Team member Nancy Mathews brought the "Advancing Your Career Through Awards and Recognitions" brochure to her Director, to discuss possible nomination biases in the Nelson Institute for Environmental Studies. Prof. Mathews and Director Westley noted that interdisciplinary research is not rewarded in the existing awards structure at UW-Madison, and furthermore, the talents and achievements of faculty who do interdisciplinary work are not recognized in the current tenure and promotion criteria. They are currently working on creating new T&P guidelines for interdisciplinary research.

Elevation of gender equity as a "real" problem (increased respect for those working on the issues)

- Visibility of gender equity issues. In addition to the increased the visibility of gender issues in relation to *campus climate* and *hiring*, the successful addition of the Vilas Life Cycle Professorships to the environment for all faculty has raised awareness of the difficulties that sometimes arise when combining a demanding faculty career with a fulfilling family life. The availability of these awards to all faculty has helped the community recognize that these events affect everybody, not just women, and increases the openness of the community to other programs designed to ease the conflicts between work and family.

  Gender equity issues were also brought to the fore in 2005 when Harvard President Lawrence Summers made his remarks about women in academic science in January. WISELI was at the center of a campus conversation sparked by Summers's comments, and in April 2005 we held a well-attended public forum entitled "Women in Science & Engineering: What the Research *Really* Says."

- Ability to work on issues openly. The visibility of WISELI, and the size and prestige of the ADVANCE award, has removed some of the social stigma associated with working on gender issues and allowed those who are committed to the subject the "permission" to work on these issues on campus openly. Through the ADVANCE grant, people are now getting paid to work on these issues—they no longer have to do it on their own time, in a subversive or sneaky way. The resulting validation of the work has allowed more people, who might not otherwise have done so, to become involved in issues of gender equity. In 2005, at least three senior women not formally affiliated with WISELI gave presentations in their own scientific communities on either general women in science issues, or specific WISELI program elements.

- Legitimacy of complaints. WISELI has also given increased legitimacy to women who raise issues of gender equity. In many examples (that we cannot describe in detail due to confidentiality requirements) we or others have raised issues to top administrators of the University who have responded with aggressive action. There is an aspect to such discussions that was lacking before. It appears to us that top administrators are increasingly taking women's concerns about gender issues more seriously. They more frequently believe that women are voicing genuine complaints, and are less likely to suggest that women acquire "a thicker skin" or to require data or corroboration from a man. While this is not a tangible, quantifiable change, it certainly increases the willingness of women to raise issues and contributes to an overall level of awareness and concern about gender issues that exceeds anything we have previously observed on our campus.

- Increased accountability on gender equity issues. Because of the visibility of WISELI, and the work we are doing on issues of gender in hiring and climate especially, it is our impression that campus administrators have come to understand that they are being "watched" on these issues, though this is admittedly hard to assess empirically. However, note that within WISELI's tenure, several high-level campus

administrators have been or will be replaced, and WISELI has had an impact on many of these searches (through our training of search committees, presence of WISELI leaders on the committees, and/or personal communications to the committees and/or chairs). Since 2002, the new deans of Pharmacy, CALS, Education and the Nelson Institute for Environmental Sciences are all women and the new dean of Letters & Sciences is an American Indian man. The searches for a dean of the Medical School and Provost are still underway, but there is a woman on the short list for each of these searches. WISELI leaders have played active roles in many of these searches, either serving directly on the search committee, training the committee, recruiting candidates, or advising the Chancellor about the search and hiring process. A change in attitude is that it seems as if administrators *expect* WISELI to weigh in on searches now and we are often asked for advice if we don't volunteer it.

Increased awareness of gender equity issues among women scientists and engineers

- Increased networking of women scientists & engineers. Through our seminars, grant programs, Senior Women meetings, Town Hall meetings, listserv, website, and our general outreach to the community on an individual basis, WISELI has created a network of women scientists and engineers on campus that is gaining strength. WISELI is often tapped as a place to go to for information (campus or national statistics; research on gender equity issues), advice (how to get nominated for awards; preparing an effective tenure packet; what to do when you get an outside offer), and even advocacy for individual problems (moving to a different department; mediating a faculty governance dispute; facilitating a discussion between a chair and women faculty in a department). As we have been cataloging the different types of networking functions WISELI provides, we have been looking for ways to institutionalize this idiosyncratic, yet important, service we provide the campus.

- Increased leadership roles of WISELI senior personnel. WISELI's presence helped demonstrate the contributions of key women and under-represented minorities, and helped secure appointment or election to key university administrative bodies by serving as a public example of their leadership, contributions, and qualities.
  - Dean of Letters & Sciences, Gary Sandefur.
  - Associate Vice Chancellor for Diversity & Climate, Bernice Durand.
  - University Committee Chair, Patti Brennan.
  - Biological Sciences Divisional Chair, Caitilyn Allen.
  - University Committee member, Molly Carnes.
  - Electrical & Computer Engineering co-Chair, Amy Wendt.
  - Committee on Honorary Degrees Chair, Jo Handelsman.
  - Committee on Faculty Rights and Responsibilities member, Vicki Bier.
  - Campus Diversity Plan Oversight Committee member, Douglass Henderson.

Contributions to gender equity programs nationally

- Survey. Many campuses continue to use our survey of faculty as a model for their own climate survey efforts. In 2005, nine different universities, including Howard

University, Harvard University, the University of British Columbia, and the University of Chicago requested our survey instrument and asked for advice on survey administration.

- Hiring Brochure. Our brochure entitled "Reviewing Applicants: Research on Bias and Assumptions" continues to be a popular product of the WISELI effort to train search committee chairs. At least 19 different universities (or organizations such as HHMI) received brochures in 2005, and six of them ordered significant quantities (200 or more) from us at cost.

- National Service.
  - Jo Handelsman is serving on the committee for the National Academies' new study, "*Maximizing the Potential of Women in Academic Science and Engineering."*
  - Jo Handelsman has also been working intensively with the two Task Forces created at Harvard University following the controversy surrounding remarks made by President Lawrence Summers in January 2005. She visited Harvard twice, providing WISELI materials and advice in initiating institutional change.
  - Jennifer Sheridan has been working with Lisa Frehill (NMSU/UC-Irvine) and others on a Supplement to the ADVANCE grants that will provide advice and guidance to sites collecting gender equity indicator data (Toolkit #1) and other data such as climate surveys, interviews, and other evaluation data (Toolkit #2). She is a co-author on two resulting documents.
  - Jennifer Sheridan is also participating in a national/international effort to standardize a set of climate survey items for use on all climate surveys at major universities, through a working group of the Association of American Universities Data Exchange (AAUDE). The final set of questions should be available in late 2006.

- Advice. We continue to provide advice and information to ADVANCE sites as they organize their projects. We provide access to campus policies (such as our tenure clock extension policy, our dual career couples program, or our Ombuds program), advice on climate survey implementation, recommendations on administrative matters such as hiring a program coordinator or creating cost-share reports, and copies of our training materials (especially our two brochures).

- Leadership. WISELI co-PIs Molly Carnes and Jo Handelsman regularly give talks on gender equity around the country. Some of the institutions to which they have spoken in 2005 include: Harvard University, Colorado State University, Howard Hughes Medical Institute, Oregon State University, National Academies Summer Institute, Virginia Commonwealth University, American Medical Association, University of Minnesota, and the University of Pennsylvania.

IV. Findings: Difficulties & Solutions

Administration and structure

- Reduction in time of Evaluation Director. In Fall 2004, our Evaluation Director, Dr. Christine Maidl Pribbenow, had her third child. She returned from her maternity leave in late January 2005, but only at a 50% appointment. By summer 2005 it became clear that even 50% was too much, and Christine made the decision to leave WISELI by the end of summer. We lobbied to retain Christine at a very small percentage. Rather than hire an entirely new Evaluation Director, we wanted instead to hire a well-qualified Researcher to perform the interviews and analyses needed in 2006, under Christine's direction. We are delighted to report that this arrangement is working out well, and that our new interviewer should be on board as planned in January 2006. Further, Deveny Benting continues in her third year as a Research Specialist on the evaluation team and we will be hiring (with support from The Graduate School) a doctoral student in Political Science to support evaluation data collection and analysis.

- Future funding of WISELI. As WISELI looks beyond its final year, we are strategizing on ways to continue funding our programs and the excellent staff we have on board. We are negotiating with the Provost's Office on ways the University can fund Jennifer Sheridan's position directly in WISELI rather than moving it to an office in central administration and we are looking at outside funding for Eve Fine's position (Eve is instrumental at running the two workshop programs of WISELI). Funding our evaluators—Deveny Benting and Christine Pribbenow—will be our biggest challenge. Finally, WISELI is committed to funding the faculty who work on the issues of women in academia and as we look for funding we are including faculty salary in our budgets so that women will not be required to "donate" their time spent working on WISELI initiatives.

  The UW-Madison campus has committed over $400,000 per year towards programming (Vilas Life Cycle Professorships) and personnel (Executive Director Jennifer Sheridan's salary and benefits); however, to keep WISELI operating at its current capacity (including current grant programs, workshops, and research and evaluation projects) would require at least an additional $400,000 investment per year.

- Changes in major campus administrators. Provost Peter Spear announced his retirement in 2005, and we anticipate having a new Provost as early as March 2006. While two of the three finalists for the position are likely to be friendly to WISELI (Pat Farrell is on the WISELI Leadership Team, and Sue Rosser is not only an ADVANCE co-PI, but is also on WISELI's External Advisory Team), it is unclear whether any new Provost will immediately be able to help WISELI in his or her first few months on the job. WISELI has 12 months to find new funding and a change of

Provost at this critical time could pose problems to locating that funding within the UW-Madison, particularly in this time of tight budgets.

Difficulties with initiative implementation and institutionalization (specific and general)

- Vilas Life Cycle Professorships. After solving 2004's challenge of funding this program in full, we ran into problems administering the program under the constraints imposed by the new funding source. The biggest hurdle was making these awards as flexible as possible. In the past Vilas has funded programs on a strict fiscal-year schedule. Yet the Life Cycle program necessarily requires flexibility on the start and end of the grant, as we are trying to help faculty at vulnerable junctures and the timetable may not fit the University's accounting system. We have worked with the Vilas attorney and Research and Sponsored Programs to allow awards to span fiscal years, although we had to compromise on the issue of keeping the awards to only one year, and we cannot allow recipients to spend funds over more than 12 months.

- Training for Chairs of Hiring Committees. As WISELI is training ever more people in search and screen procedures, it is becoming necessary to find more people to help us run the various workshops—facilitators, presenters, and organizers. We trained a number of potential workshop facilitators and presenters at our June 14th facilitator workshop, which has greatly helped alleviate the time demands on the WISELI co-Directors and staff who had previously been running the workshops alone. We are still looking for ways to entice the Deans to take more responsibility for scheduling workshops and attracting faculty to the workshops from their own schools.

- Climate Workshops for Department Chairs. Jo Handelsman is an excellent facilitator for the climate workshops for chairs, and as yet we have found no replacement for her. Staff, even experienced staff, cannot substitute for a well-respected, experienced member of the UW-Madison faculty for facilitating these workshops. In 2006, we will spend a great deal of time and energy looking for others who can continue to run these workshops in partnership with Dr. Handelsman. We have begun to train other faculty for this role.

- Individual advocacy. WISELI co-Directors continue to spend a great deal of time on cases of individual advocacy. Although often invisible and resistant to normal "status reporting" mechanisms, this work might in fact be some of the most important that WISELI does in its five years. We have assisted women faculty in crisis—health, relationship, tenure, grant-writing, climate, and other crises that come along. We are beginning to understand that the value of advocacy from well-respected active women faculty cannot be duplicated by an official university program, but at the same time, the same women faculty cannot continue to handle every case that comes to them. An idea for a "SWAT Team" of carefully chosen personal advocates is being discussed and formulated, as a possible solution to the high time demands of personal advocacy for women.

Overall campus perceptions and attitudes

- Continued pockets of discontent. We have a sense that climate is improving across the science and engineering departments, and will know whether that sense is true when the results from our 2006 survey arrive. But particular departments continue to remain resistant to any efforts to improve the situation for women. Intense interventions into several departments by the WISELI co-Directors are not (yet) having the intended effect. Women are being denied tenure; senior women are leaving the University; women are not being nominated for awards or interviewed for important leadership positions. WISELI might succeed at improving campus climate overall, at the mean level, but having even one department, unit or school that is toxic for women is too many.

Evaluation difficulties

- Finding publication outlets for evaluation reports. WISELI has produced two scholarly papers resulting from our evaluation efforts. One is under review, but the other was not even considered for review because the data and findings were based on one institution. Consequently, we are having a difficult time finding an appropriate place to publish this work. This could be an issue for all of the ADVANCE programs looking to publish information about their interventions and the resulting evaluation results of those initiatives. Many scholarly journals will not publish papers reporting results from just one site. Perhaps more efforts at edited volumes, such as that being produced at the University of Michigan, will be needed to bring the results of the ADVANCE experiment to the institutions that need them.
- Over-evaluation of faculty and staff. Due to the number of initiatives on campus, faculty and staff are beginning to be over-evaluated, typically through surveys. We will be primarily conducting interviews to complete the evaluation work in 2006, but this is an issue of which we will be cognizant when all of the faculty complete the climate survey in early 2006.

V. WISELI Management and Infrastructure

Directors

Co-Director: Molly Carnes
Co-Director: Jo Handelsman
Research & Executive Director: Jennifer Sheridan

Staff

Researcher: Eve Fine
Research Specialist: Deveny Benting
Webmaster: Stephen Montagna
University Grants & Contracts Specialist: Carol Sobek

Leadership Team

Vicki Bier, Patti Brennan, Wendy Crone, Bernice Durand, Pat Farrell, Cecilia Ford, Linda Greene, Douglass Henderson, Nancy Mathews, Cathy Middlecamp, Paul Peercy, Manuela Romero, Gary Sandefur, Gloria Sarto, Lillian Tong, Amy Wendt

Evaluation Team

Evaluation Director: Christine Maidl Pribbenow

Deveny Benting, Cecilia Ford, Ramona Gunter, Margaret Harrigan, Jennifer Sheridan, Amy Stambach, John Stevenson

Administrative Partners

Chancellor John Wiley	Interim Provost Virginia Sapiro	Dean Martin Cadwallader, Graduate School
Sr. Vice President Cora Marrett, UW System	Dean Jeanette Roberts, Pharmacy	Dean Daryl Buss, Veterinary Medicine
Dean Phil Farrell, Medical School	Interim Dean David Hogg, College of Agricultural & Life Sciences	Assoc Dean Donna Paulnock, Graduate School
Assoc Dean Terry Millar, Graduate School	Dean Robin Douthitt, School of Human Ecology	Dean Katharyn May, School of Nursing
Assoc. Dean Mariamne Whatley, School of Education	Don Schutt, Human Resources	Director Luis Pinero, Equity & Diversity Resource Center

Campus Affiliates

Women in Science and Engineering and other supporters, through WISELI Listserv

External Advisory Team

Denice Denton, Joan King, Sally Kohlstedt, Charlotte Kuh, Sue Rosser

VI. Financial Reports

2005 Financial Report

	2002	2003	2004	2005*	Total
Income					
NSF	$750,000	$750,000	$750,000	$749,903	$2,999,903
Celebrating Grants	$6,000	$13,365	$4,000	$10,000	$33,365
College of Engineering	$10,000	$20,000	$10,000	$10,000	$50,000
Provost's Office	$0	$0	$0	$16,072	$16,072
Salaries and Fringes					
Directors	$145,180	$115,306	$103,088	$124,317	$487,891
WISELI Staff	$98,419	$128,547	$156,006	$192,857	$575,829
Leadership Team	$69,725	$143,700	$61,618	$35,980	$311,023
Evaluators	$88,261	$72,110	$57,076	$53,537	$270,984
Travel	$9,758	$9,637	$15,291	$10,345	$45,031
Supplies and Equipment	$17,972	$12,348	$12,757	$12,112	$55,189
Initiatives					
Celebrating Grants	$0	$9,037	$11,170	$12,182	$32,389
Life Cycle Research Grants	$0	$81,817	$86,342	$30,162	$198,322
Video	$12,169	$5,160	$7,079	$20,292	$44,700
Survey	$0	$33,381	$0	$0	$33,381
Book Giveaways	$1,756	$395	$0	$0	$2,151
WISELI Seminar	$273	$537	$875	$3,153	$4,838
Senior Women Development	$172	$114	$0	$0	$286
Workshops	$2,015	$1,085	$1,377	$1,360	$5,837
Chairs' Climate Workshops	$0	$174	$1,132	$151	$1,457
Search Committee Chairs' Workshops	$0	$382	$1,142	$2,414	$3,938
Awards Brochure	$0	$0	$305	$10	$315
Dissemination Activities	$0	$0	$0	$1,901	$1,901
Overhead	$198,942	$251,851	$200,416	$228,238	$879,447
Total Income	$766,000	$783,365	$764,000	$785,975	$3,099,340
Total Expenditures	$644,642	$841,412	$682,240	$729,011	$2,897,305

* 2005 Expenditures are projected, this report was prepared 12/22/05

2006 Proposed Budget

prepared 12/22/05

		Estimated 2002-05 Total	2006 Proposed	Estimated Total
Income				
	NSF	$3,000,000	$750,000	$3,750,000
	Celebrating Grants	$33,365	$10,000	$43,365
	College of Engineering	$50,000	$18,000	$68,000
	Provost (Carol & survey)	$16,072	$34,072	$50,144
	Graduate School (PA - salary & benefits)	$0	$18,717	$18,717
	College of L & S (survey)	$0	$5,000	$5,000
Salaries and Fringes				
	Directors	$487,891	$124,568	$612,459
	WISELI Staff	$575,829	$206,674	$782,503
	Leadership Team	$311,023	$69,730	$380,753
	Evaluators	$270,984	$107,570	$378,554
Travel		$45,031	$15,000	$60,031
Supplies & Equipment		$55,189	$15,000	$70,189
Initiatives				
	Celebrating Grants	$32,389	$10,000	$42,389
	Life Cycle Research Grants	$198,322	$0	$198,322
	Video	$44,700	$16,300	$61,000
	Survey	$33,381	$41,272	$74,653
	Book Giveaways	$2,151	$0	$2,151
	WISELI Seminar	$4,838	$875	$5,713
	Senior Women Development	$286	$0	$286
	Workshops	$5,837	$1,500	$7,337
	Chairs' Climate Workshops	$1,457	$500	$1,957
	Search Committee Chair' Workshops	$3,938	$2,500	$6,438
	Awards Brochure	$315	$500	$815
	Dissemination Activities	$1,901	$1,500	$3,401
Overhead		$879,447	$228,994	$1,108,441
Total Income		$3,099,437	$835,789	$3,935,226
Total Expenditures		$2,954,909	$842,483	$3,797,392

Cost Sharing Summary (January 1, 2002 - December 31, 2005)
WISELI

	Certified Year 1 + 2 + 3 Total	Uncertified Year 4 (2005)	TOTAL Year 1 - Year 4	Estimate Year 5 (2006)
1 Salareis & Fringe Benefits	$100,707	$81,910	$182,617	$30,000
2 Graduate Student support	$65,658	$0	$65,658	$17,000
3 Symposium support	$23,215	$11,182	$34,397	$10,000
4 WISE Program support	$27,762	$4,071	$31,833	$5,000
5 Other Program support	$101,765	$11,960	$113,725	$42,000
Indirect Costs	$139,989	$49,651	$189,640	$46,000
Total Costs	$459,096	$158,774	**$617,870**	$150,000

1- Includes faculty and staff salaries and fringe benefits for 2002, 2003, 2004, and 2005.
2- Graduate student support is for: 1 Research Assistant at 50% beginning 9/1/02 through 12/31/04; 1 Project Assistant at 50% beginning 9/1/03 through 1/31/04.
3- Funds for Celebrating Women in Science & Engineering Grant program.
4- Includes program support and undergraduate support for the Women in Science and Engineering Residential Program.
5- Includes funds for documentary video project, suvery of faculty and academic staff, the Life Cycle Research Grant programs, and contributions towards equipment and supplies from the College of Engineering.

VII. P.I.s' Current and Pending Support

Jo Handelsman
Current and Pending Support
December 2005

CURRENT

NSF: SBE-0123666; ADVANCE Institutional Transformation Award; Co-PIs: J. Handelsman and Mary Carnes; 1/1/02-12/31/06; $3,748,973; 30% effort
NSF: MCB-0132085; A cold microbial observatory: Collaborative research in an Alaskan boreal forest soil; Co-PIs J. Handelsman, R. Ruess, J. Banfield, and W. Metcalf; 2/1/02-1/31/06; $512,484 (UW portion); 5% effort
Howard Hughes Medical Institute: 52003908; Howard Hughes Medical Institute 2002 HHMI Professors award; PI: J. Handelsman; 8/31/02-8/31/06; $1,000,000; 20% effort
Howard Hughes Medical Institute: HHMI52005214; Summer Institute for Undergraduate Biology Education; PI: J. Handelsman; 5/1/04-4/28/06; $400,000; 5% effort
USDA NRICGP (post-doctoral fellowship**):** 2003-35107-13856; Identification of estrogen biodegradation pathways and their microbial origin using soil metagenomics and phylogenetics anchors; P. Schloss; 8/15/03-8/14/06; $90,000; 0.5% effort
Valent Biosciences: Enterotoxin-deficient mutants of Bacillus; Co-PIs J. Handelsman and K. Raffa; 4/1/05-3/31/06; $60,994; 2% effort
Biotechnology and Research Development Corporation: Microbial resources in Alaskan soils: New fields for biotechnology; PI: J. Handelsman; 5/1/03-4/30/06; $428,586; 2% effort
NIH Ruth L. Kirschstein NRSA (predoctoral fellowship): 1 F31 AI056675-02; The Role of Sigma Factors in Heterologous Gene Expression; Z. Sabree; 9/1/03-8/31/08; $57,366; 0.5% effort
Hatch Multiple Investigator Interdisciplinary: Small molecule synergists of *Bacillus thuringiensis* for control of insect pests; PIs: J. Handelsman, H. Blackwell, K. Raffa; 10/1/05-9/30/07; $~44,430 (actual amount pending); 2% effort
NSF SGER: MCB-0454823; Profile of Signal Molecules in a Soil Microbial Community; PI: J. Handelsman; 11/1/04-10/31/05; $147,214; 1% effort
NIH Ruth L. Kirschstein NRSA (postdoctoral fellowship): 1F32AI065067-01; The Genetic Basis of the Signaling Network in a Model Gut Microbial Community; T. Isenbarger; 1/1/05-12/31/07; $151,968; 0.5% effort
USDA HEC: Undergraduate Cohort Program: Attracting and Retaining Minority Students to Agricultural Research; PI: J. Handelsman; 7/15/05-7/14/08; $149,404; 2% effort
NIH: Intracellular screens for discovery of natural products in metagenomic libraries; Co-PIs: J. Handelsman, M. Thomas; 9/15/05-9/14/08; $866,564; 2% effort
NIH Ruth L. Kirschstein NSRA (predoctoral fellowship): 5 F 31 GM072429-02; The indigenous microbial community and disease in the lipidopteran gut; K. Butler; 9/1/05-8/31/06; $74,928; 0.5% effort

Jo Handelsman (Continued)
Current and Pending Support
December 2005

PENDING

NSF MIP: Role of signal molecules in robustness of the microbial community of the lepidopteran gut; PIs: J. Handelsman, K. Raffa, M. Fluotowicz; 8/1/06-7/31/10; $499,195; 4% effort
NIH Ruth L. Kirschstein NRSA (postdoctoral fellowship): Community microbial communication: Marked for death; K. Cloud-Hansen; 12/1/05-11/30/08; $142,200; 0.5% effort
NSF MO: A microbial observatory to study the impact of antibiotic use in apple production on antibiotic resistance in soil; PIs: J. Handelsman, P. McManus; 8/1/06-7/31/10; $1,798,479; 4% effort
Office of Naval Research: Exploiting bacterial quorum sensing: A metagenomic approach to antibiotic discovery; PI: J. Handelsman; 5/1/06-4/30/09; $2,860,840; 8% effort
USDA NRI (postdoctoral fellowship): Enemies from within: Harnessing the indigenous microflora for gypsy moth control; K. Cloud-Hansen; 6/1/06-5/31/08; $125,000; 0.5% effort

CARNES, MARY L. (MOLLY)

Project Number: 0123666
Type: Cooperative agreement
P.I.: M. Carnes, 40% effort
Title: ADVANCE, Institutional Transformation Award
Source: National Science Foundation
Dates of Project: 1/1/02 – 12/31/06
Annual Direct Costs: $515,347
Goals: This grant proposes to use UW-Madison as a living laboratory to study why we have been relatively unsuccessful and how we can become more successful in recruiting, retaining, and advancing women in academic science and engineering.

Project Number: 213-98-0017
Type: Contract
P.I.: Carnes, 8% effort (3% salary)
Source: US PHS, Office on Women's Health
Title: University of Wisconsin national Center of Excellence in Women's Health
Dates of Project: 10/1/98 – 9/30/06
Annual Direct Costs: $19,841
Goals: This contract designates the UW as having one of 18 National Centers of Excellence in Women's Health. The goals are to educate women to be knowledgeable consumers of health care; to advocate for models of clinical care model that promote optimal health of all women; to develop women leaders in academic health sciences; to develop a national multidisciplinary agenda for women's health research; and to educate providers to provide culturally sensitive care to diverse populations of women.

Project Number: T32 AG00265
Type: NRSA Institutional Training Grant
P.I.: M.Carnes, 5% effort (no salary)
Source: National Institute on Aging
Title: Women's Health and Aging: Research and Leadership Training Grant
Dates of Project: 7/99 – 6/09
Annual Direct Costs: $273,390
Goals: This grant provides post-doctoral salary and research support for four MD or PhD fellows per year. The goals are to develop academic leaders in older women's health by supporting them to do progressively independent research in the laboratories of established scientists. Effort devoted to this grant integrates with the goal of the DHHS Center of Excellence contract.

CARNES, MARY L. (MOLLY) (Continued)

Project Number: K12AG19247
Type: Institutional Mentored Scientist Award
P.I.: M. Carnes, 5% effort (no salary)
Source: National Institute on Aging
Title: Women's Health and Aging: Clinical Scientist Development Program
Dates: 9/01/02 – 8/31/07
Annual Direct Costs: $339,300
Goals: This grant provides salary support for clinical scientists to do research in women's health and aging. The goal is to develop a cadre of researchers in the area of older women's health who are excellent scientists imbued with an interdisciplinary perspective, effective communicators, and managers of independent research programs. Effort devoted to this grant integrates with the goal of the DHHS Center of Excellence.

Project Number: 0402549
Type: Louis Stokes AMP
PI: P. Spear; co-PI: M. Carnes, 10% effort (no salary)
Source: National Science Foundation
Title: Wisconsin Alliance for Minority Participation
Dates: 11/1/04 – 10/31/09
Annual Direct Costs: $250,000
Goals: This grant will support efforts to enrich the pipeline of academic science and engineering with diverse trainees by drawing together 21 institutions of higher education in the State of Wisconsin to commit to doubling the number of underrepresented minority students awarded baccalaureate degrees in science and engineering with an eye toward graduate education. Efforts devoted to this cooperative agreement are congruent with Dr. Carnes' service as a faculty member to the State and University of Wisconsin.

Project Number: K12 HD049112
Type: K12 Roadmap
PI: M. Carnes 20%
Source: National Institutes of Health (NIH), NICHD
Title: The Training and Education to Advance Multidisciplinary-Clinical-Research (TEAM) Program
Dates: 10/01/04 – 7/30/09
Current Year Direct Costs: $2,210,673
Goals: This 5 year grant will expand the nation's capacity to conduct clinical research by multidisciplinary teams. The program will emphasize research in one of 10 multidisciplinary areas of clinical research. This program will establish and validate methods for training a work force to carry out the nation's clinical agenda, as put forth in the NIH Roadmap. It involves over 72 VA and UW-Madison faculty as primary mentors and an additional 100 as secondary mentors. At capacity this will train up to 25 scholars at one time in programs ranging from 2-5 years.

Jennifer Shridan
Current and Pending Support
December 2005

CURRENT

Project Number: 0123666
Type: Cooperative agreement
P.I.: Molly Carnes (40% effort)
CoPI: Jo Handelsman (30% effort)
CoPI: Jennifer Sheridan (100% effort)
Title: ADVANCE, Institutional Transformation Award
Source: National Science Foundation
Dates of Project: 1/1/02 – 12/31/06
Annual Direct Costs: $515,347
Total Award: $3,748,973
Goals: This grant proposes to use UW-Madison as a living laboratory to study why we have been relatively unsuccessful and how we can become more successful in recruiting, retaining, and advancing women in academic science and engineering.

VIII. WISELI Publications and Presentations

Papers Published:

Bakken, Lori L.; Jennifer Sheridan; and Molly Carnes. 2003. "Gender Differences Among Physician-Scientists in Self-Assessed Abilities to Perform Clinical Research." *Academic Medicine*. 78(12):1281-6.

Gunter, Ramona and Amy Stambach. 2003. "As Balancing Act and As Game: How Women and Men Science Faculty Experience the Promotion Process." *Gender Issues*. 21(1):24-42.

Gunter, Ramona and Amy Stambach. 2005. "Differences in Men and Women Scientists' Perceptions of Workplace Climate." *Journal of Women in Minorities in Science & Engineering*. 11(1):97-116.

Handelsman, Jo, Nancy Cantor, Molly Carnes, Denice Denton, Eve Fine, Barbara Grosz, Virginia Hinshaw, Cora Marrett, Sue Rosser, Donna Shalala, and Jennifer Sheridan. 2005. "More Women in Science." *Science*. 309(5738):1190-1191.

Carnes, Molly; Jo Handelsman; Jennifer Sheridan; Eve Fine. 2005. "Diversity in Academic Medicine: The Stages of Change Model." *Journal of Women's Health*. 14(6):471-475.

Carnes, Molly; Stacie Geller, Jo Handelsman and Jennifer Sheridan. 2005. "NIH Pioneer Awards: Could the Selection Process Be Biased Against Women? " *Journal of Women's Health*. 14(8): 684-691.

Sheridan, Jennifer; Patricia Flately Brennan; Molly Carnes; and Jo Handelsman. 2006. "Discovering Directions for Change in Higher Education Through the Experiences of Senior Women Faculty." *Journal of Technology Transfer*. Accepted for publication.

Working Papers:

Carnes, Molly; Stacie Geller; Eve Fine; Jennifer Sheridan; and Jo Handelsman. 2005. "NIH Director's Pioneer Awards: What a Difference a Year Makes." Under review.

Pribbenow, Christine Maidl; Jennifer Sheridan; and Deveny Benting. 2005. "Extending One's Tenure Clock: The Experiences of Faculty at One University." Under review.

Pribbenow, Christine Maidl and Jennifer Sheridan. 2005. "The Department Chair and Climate: Contradicting Perceptions." To be submitted.

Sheridan, Jennifer; Jo Handelsman; Molly Carnes. 2004. "Assessing "Readiness to Embrace Diversity": An Application of the Trans-Theoretical Model of Behavioral Change." In progress.

Pribbenow, Christine Maidl and Deveny Benting. 2004. "Why Women Leave." In progress.

Frehill, Lisa; Cecily Jeser-Cannavale, Priscilla Kehoe, Ellen Meader, Jennifer Sheridan, Abby Stewart, and Helena Sviglin. January 2005. "Proposed Toolkit for Reporting Progress Toward NSF ADVANCE: Institutional Transformation Goals." Draft available online at: http://www.nmsu.edu/%7Eadvprog/Indicators.htm .

Frehill, Lisa; Elena Batista, Sheila Edwards-Lange; Cecily Jeser-Cannavale, Jan Malley, Jennifer Sheridan, Kim Sullivan, and Helena Sviglin. September 2005. "Using Program Evaluation To Ensure the Success of Your Advance Program." In progress.

Ford, Cecilia E. and Teddy Kardash. 2005. "Combining Frameworks for Understanding Women's Participation in Meetings: Expanding Expectation States Theory through Conversation Analysis. In progress.

Ford, Cecilia E. and Barbara A. Fox. 2005. "'Can I Make a Brief Comment on That': Reference and Social Organization In and Around an Extended Turn." In progress.

Ford, Cecilia E. 2006. *Women's Talk in the Professional Workplace: Talking Change.* Palgrave/Macmillan.

Presentations:

Carnes, Molly and Jo Handelsman. October, 2002. "The NSF ADVANCE Program at the University of Wisconsin-Madison: An Interdisciplinary Effort to Increase the Recruitment, Retention, and Advancement of Women in Academic Departmetns in the Biological and Physical Sciences." Presented at the *Retaining Women in Early Academic Science, Mathematics, Engineering, and Technology Careers* conference. Ames, Iowa.

Handelsman, Jo and Molly Carnes. December, 2002. "University of Wisconsin-Madison Women in Science and Engineering Leadership Institute." Presented at the Plant Pathology research seminar series. Madison, Wisconsin.

Murphy, Regina. November, 2002. "The Women in Science & Engineering Leadership Institute at UW-Madison." Presented at the American Institute of Chemical Engineers (AIChE) Annual Meeting. Indianapolis, Indiana.

Ford, Cecilia. July, 2003. "Gender and Language in/as/on Academic Science: Combining Research with a Commitment to Institutional Change." Presented at the Perception and Realization in Language and Gender Research conference, Michigan State University, East Lansing, Michigan.

Stambach, Amy and Ramona Gunter. May, 2003. "As Balancing Act and As Game: How Women and Men Science Faculty Experience the Promotion Process." Presented at the Gender, Science, and Technology International Conference, Norway.

Sheridan, Jennifer; Molly Carnes; and Jo Handelsman. June, 2003. "The University of Wisconsin-Madison ADVANCE Program: Progress to Date." Presented at the WEPAN meetings. Chicago, IL.

Wendt, Amy. September 2003. "NSF ADVANCE at UW-Madison: WISELI Activities." Presented at the 25th anniversary of the Women in Computer Science and Engineering organization. Berkeley, CA.

Ford, Cecilia. September 16, 2003. "Gender and Talk: Looking back and looking forward." Presented at the Women's Health Forum of the UW-Madison Center for Women's Health and Women's Health Research. Madison, WI.

Gunter, Ramona. October 20, 2003. "Science Faculty Talk about Self, Home, and Career." Presented at the WISELI Seminar. Madison, WI.
Sheridan, Jennifer. November 17, 2003. "Faculty Worklife at the University of Wisconsin-Madison: Preliminary Findings." Presented at the WISELI Seminar. Madison, WI.

Sheridan, Jennifer. January 12, 2004. Panelist at Virginia Tech's AdvanceVT Inaugural Workshop, "ADVANCEing Women in Academe: Voices of Experience." Roanoke, VA.

Carnes, Molly. February 13, 2004. Discussant on the "Status of STEM Female Faculty Recruitment, Retention and Advancement" panel for the "Systemic Transformations in the Role of Women in Science and Engineering" Symposium for the Annual Meeting of the American Association for the Advancement of Science meetings. Seattle, WA.

Ford, Cecilia. February 16, 2004. "Getting our Voices Heard: Patterns of Participation in University Meetings." Presented at the WISELI Seminar. Madison, WI.

Sheridan, Jennifer. February 17, 2004. "Implementing a campus climate survey: logistical notes and preliminary findings." Presented to the Center for Demography & Ecology Training Seminar. Madison, WI.

Pribbenow, Christine Maidl. March 22, 2004. "The Climate for Women Faculty in the Sciences and Engineering: Their Stories, Successes, and Suggestions." Presented at the WISELI Seminar. Madison, WI.

Sheridan, Jennifer. April 13, 2004. "Study of Academic Staff Work Life at UW-Madison: Preliminary Results." Presented at the Wisconsin Center for the Advancement of Postsecondary Education Academic Staff Institute 2004. Madison, WI.

Sheridan, Jennifer. April 20, 2004. Session Coordinator, "ADVANCE Institutional Data" panel. NSF ADVANCE National Conference. Atlanta, GA.

Carnes, Molly. April 20, 2004. Presenter, "Women from Underrepresented Groups" panel. NSF ADVANCE National Conference. Atlanta, GA.

Durand, Bernice. April 20, 2004. Session Coordinator, "Senior Women and Advancement—A Facilitated Discussion" panel. NSF ADVANCE National Conference. Atlanta, GA.

Sheridan, Jennifer. April 21, 2004. Presenter, "Campus Climate Surveys" panel. NSF ADVANCE National Conference. Atlanta, GA.

Spear, Peter. April 21, 2004. Presenter, "Sustainability of ADVANCE Programs" panel. NSF ADVANCE National Conference. Atlanta, GA.

Ford, Cecilia. May 3, 2004. ""Having our ideas ignored": CA and a Feminist Project." Presented at the American Association for Applied Linguistics Annual Conference, colloquium entitled " CA as Applied Linguistics: Crossing Boundaries of Discipline and Practice." Portland, OR.

Sheridan, Jennifer; Jo Handelsman; Molly Carnes. August 14, 2004. "Assessing "Readiness to Embrace Diversity": An Application of the Trans-Theoretical Model of Behavioral Change." Presented at the American Sociological Association meetings, session entitled "Workplace Diversity." San Francisco, CA.

Carnes, Molly. October 13, 2004. "Searching for Excellence, Equity & Diversity: Unconscious assumptions and lessons from smoking cessation." Virginia Commonwealth University. Richmond, VA.

Sheridan, Jennifer. October 14, 2004. "WISELI's Life Cycle Research Grant Program." Presented at the Society of Women Engineers National Conference, Milwaukee, WI.

Carnes, Molly. October 20, 2004. "Women in Academic Leadership: The Issues, the Goals, the Process." [to over 50 women faculty from STEM departments at UIC]; NSF ADVANCE Program at UW-Madison [approx 30 faculty, chairs, and deans from STEM departments.], Chicago, IL.

Brennan, Patricia; Molly Carnes, Bernice Durand, Jo Handelsman, and Jennifer Sheridan. November 10, 2004. "Discovering the Experiences of Senior Women in Academic Science & Engineering." Presented at the WISELI Seminar. Madison, WI.

Carnes, Molly. November 17, 2004. "The Impact of Unconscious Biases on Evaluation: Relevance to the NIH Director's Pioneer Awards." Invited presenter, Office of Research on Women's Health Roundtable discussion, NIH, Bethesda, MD.

Carnes, Molly; Jo Handelsman, Lillian Tong, and Amy Wendt. December 8, 2004. "WISELI Update—Status of Our Efforts to Promote the Advancement of Women in Science and Engineering." Presented at the WISELI Seminar. Madison, WI.

Peercy, Paul. December 13, 2004. "NSF ADVANCE Institutional Transformation Award at UW-Madison." Presented at the NSF ADVANCE Engineering Workshop, Washington DC.

Handelsman, Jo. March 2, 2005. Informal workshop on bias and prejudice in academic evaluation. Oregon State University. Corvallis, OR.

Carnes, Molly. March 4, 2005. "Women in the World of Medicine: What's Holding Us Back?" Presented at the *Leadership Skills and Equity in the Workplace: Lessons Learned* conference, Virginia Commonwealth University. Richmond, VA.

Carnes, Molly. March 12, 2005. "Women Physicians and Leadership: The Issues, The Goals, The Process." Keynote speaker, Women's Physician Council of the American Medical Association. Washington, DC.

Coppersmith, Sue. April 8, 2005. "NSF ADVANCE Institutional Transformation Award at UW-Madison." Mathematical and Physical Sciences Advisory Committee Meeting, National Science Foundation, Washington, DC.

Carnes, Molly. April 26, 2005. "Women in Academic Leadership: Institutional Transformation Required." Grand Rounds and Merritt Lecture, Indiana University School of Medicine. Indianapolis, IN.

Carnes, Molly. May 9-10, 2005. "Incorporating Research on Biases and Assumptions into Search Committee Training;" "Women in the World of Academic Health Sciences: What's Holding Us Back?" "Women in Academic Leadership: Has There Been Progress?" University of Minnesota. Minneapolis, MN.

Carnes, Molly. May 13, 2005. "Women in Academic Leadership: Has There Been Progress?" Keynote address at the Women Against Lung Cancer meeting. Orlando, FL.

Sheridan, Jennifer. May 19, 2005. "WISELI's Life Cycle Research Grant Program." NSF ADVANCE P.I. Meeting, National Science Foundation. Washington, D.C.

Sheridan, Jennifer. May 19, 2005. "Indicators and Dissemination: Question 2. What are the Outcomes of Institutional Processes of Recruitment and Advancement for Men and Women?" NSF ADVANCE P.I. Meeting, National Science Foundation. Washington, D.C.

Carnes, Molly. May 19, 2005. "Insights from Social Science Research on Achieving Academic Awards and Honors: A Local and a National Example." NSF ADVANCE P.I. Meeting, National Science Foundation. Washington, D.C.

Carnes, Molly. May 19, 2005. "Converting Academic Staff to the Tenure Track at the UW-Madison: A Viable Strategy?" NSF ADVANCE P.I. Meeting, National Science Foundation. Washington, D.C.

Handelsman, Jo. May 20, 2005. "Affecting Climate/Culture Change — Using Multiple Points of Entry in the Department of Kumquat Science." NSF ADVANCE P.I. Meeting, National Science Foundation. Washington, D.C.

Fine, Eve. May 20, 2005. "Working with Department Chairs: Enhancing Department Climate." NSF ADVANCE P.I. Meeting, National Science Foundation. Washington, D.C.

Zweibel, Ellen. June 2, 2005. "Dual Career Initiatives at U. Wisconsin ." Presented at the American Astronomical Society's annual meeting (session entitled "Institutional Solutions to the 'Two-Body Problem'"), Minneapolis, MN.

Handelsman, Jo. June 9-10, 2005. "Sex and Science." Howard Hughes Medical Institute New Investigator Training. Chevy Chase, MD.

Ford, Cecilia. June 11-16, 2005. "'Can I Make a Brief Comment on That': Reference and Social Organization In and Around an Extended Turn." Invited lecture for a symposium on Reference and Referential Form in Interactional Linguistics. Organized by the Nordic Research Board. Helsinki, Finland.

Ford, Cecilia. July 6-9, 2005. "Interactional Grammar and Managing a Meeting Contribution." Plenary address for the 15th Annual Meeting of the Society for Text & Discourse. Amsterdam, Netherlands.

Handelsman, Jo. July 11, 2005. "Diversity, Bias, and Change." Presentation to Harvard Deans' Retreat. Cambridge, MA.

Ford, Cecilia. July 25, 2005. "Women's agency and participation: Feminist research for institutional change." Presented for the *Symposium on Gender in Public Settings: Approaches to Third Wave Feminist Analysis* at the 14th World Congress of Applied Linguistics Conference. Madison, WI.

Carnes, Molly. October 17, 2005. "Women in Academic Leadership: Institutional Transformation Required" and "Advice From a Few Mistakes I've Made & Some Things I've Done Right (workshop)." 8th Annual Professional Development Conference Focus on Health & Leadership for Women. University of Pennsylvania School of Medicine. Philadelphia, PA.

Carnes, Molly. October 21, 2005. "Women and Leadership: When Working Hard is Not Enough." Wisconsin Women's Health Foundation Rural Women's Health. Madison, WI.

Handelsman, Jo. November 29, 2005. Roundtable discussion with faculty and administrators on women in science. Colorado State University. Ft. Collins, CO.

Handelsman, Jo; Molly Carnes; Jennifer Sheridan; Eve Fine; and Christine Pribbenow. Dec. 9, 2005. "NSF ADVANCE at the UW-Madison: Three Success Stories." Poster presentation at the National Academies' "Convocation on Maximizing the Potential of Women in Academic Science and Engineering," Washington, DC.

WISELI in the Press:

"Women in Science Get a Major Boost From NSF, UW-Madison." *Wisconsin Week*. October 19, 2001. http://www.news.wisc.edu/6687.html .

"Institute plans effort to boost women in science." *Wisconsin Week*. March 26, 2002. **http://www.news.wisc.edu/7231.html .**

"Documentary Depicts Women in Science." *Wisconsin Week*. February 24, 2004. http://www.news.wisc.edu/9465.html .

"NSF Program Working to Help Women Attain Leadership in Science and Engineering." *UW-Madison College of Engineering Perspective*. Spring 2004. http://www.engr.wisc.edu/alumni/perspective/30.3/PerspectiveSpr2004.pdf .

"Working for Women." *Wisconsin State Journal*. May 23, 2004. http://www.madison.com/archives/read.php?ref=wsj:2004:05:23:373339:DAYBREAK .

"Women in Medicine Said to Face Widespread Bias." *Richmond Times Dispatch*. March 6, 2005.

"Gender, Attitude, Aptitude and UW: In the Wake of the Harvard President's Comments, UW Women Take a Look at Their Own Campus." *Wisconsin State Journal*. March 27, 2005. http://www.madison.com/archives/read.php?ref=wsj:2005:03:27:410257:FRONT .

"For Women in Sciences, Slow Progress in Academia." *The New York Times*. April 15, 2005. http://select.nytimes.com/gst/abstract.html?res=FA0912FE3A5A0C768DDDAD0894DD404482 .

"A Woman's Place in the Lab: Harvard Studies Efforts to Boost Female Faculty at U-Wisconsin." *The Boston Globe*. May 1, 2005.

http://www.boston.com/news/local/articles/2005/05/01/campus_strives_to_boost_female_faculty/ .

"Women still face bias in science." *Financial Times*. August 19, 2005.

"Women in Science: Climbing the Career Ladder." Talk of the Nation, *National Public Radio*. August 26, 2005.
http://www.npr.org/templates/story/story.php?storyId=4817270.

"The gender gap in science is shrinking at universities." *St. Louis Post-Dispatch*. October 23, 2005.

Products Available to the Public:

"Study of Faculty Worklife at the University of Wisconsin-Madison." Climate survey instrument and results.
http://wiseli.engr.wisc.edu/initiatives/survey/results/facultypre/index.htm .

"Study of Faculty and Academic Staff Worklife at the University of Wisconsin-Madison." Climate survey instrument.
http://wiseli.engr.wisc.edu/Products/academicstaffversion.pdf .

"Enhancing Department Climate: A Chair's Role. Resources." Available online at:
http://wiseli.engr.wisc.edu/initiatives/climate/ALSWorkshop_Resources.doc .

"Searching for Excellence and Diversity: A Guide for Faculty Search Committee Chairs." Available in PDF format online at:
http://wiseli.engr.wisc.edu/initiatives/hiring/SearchBook.pdf , and also available for purchase for $4.00 per book plus mailing costs by contacting wiseli@engr.wisc.edu.

"Reviewing Applicants: Research on Bias and Assumptions." Brochure available online at: http://wiseli.engr.wisc.edu/initiatives/hiring/Bias.pdf , and also available in large quantities for 25¢/brochure plus mailing costs by contacting wiseli@engr.wisc.edu.

"Advancing Your Career through Awards and Recognitions: A Guide for Women Faculty in the Sciences & Engineering." Brochure available in large quantities for 50¢/brochure plus mailing costs by contacting wiseli@engr.wisc.edu.

"WISELI: ADVANCEing Institutional Transformation." Documentary Video, first in series of three. Available online through The Research Channel:
http://www.researchchannel.com/program/displayevent.asp?rid=2217 .

"Benefits and Challenges of Diversity." Essay available online at:
http://wiseli.engr.wisc.edu/initiatives/climate/Benefits_Challenges.pdf .

"Advice to the Top: Top 10 Tips for Academic Leaders to Accelerate the Advancement of Women in Science and Engineering." Essay available online at: http://wiseli.engr.wisc.edu/Products/top_10_tips.pdf .

"Sex and Science: Tips for Faculty." Essay available online at: http://wiseli.engr.wisc.edu/Products/Sex_and_Science.pdf .

Evaluation Reports:

Sheridan, Jennifer; Jo Handelsman; and Molly Carnes. 2002. "Current Perspectives of Women in Science & Engineering at UW-Madison: WISELI Town Hall Meeting Report." Available online at: http://wiseli.engr.wisc.edu/reports/TownHallReports/WISELI_Town_Hall_Report.pdf

Benting, Deveny and Christine Maidl Pribbenow. July 24, 2003. "Meetings with Senior Women Faculty: Summary of Notes."

Pribbenow, Christine Maidl and Deveny Benting. August 14, 2003. "Interviews with WISELI Leadership Team Members (2002-2003): Summary Report."

Benting, Deveny and Christine Maidl Pribbenow. November 14, 2003. "Survey of the Virginia Valian Luncheon: Final Report."

Pribbenow, Christine Maidl. November 14, 2003. "WISELI Department Climate Workshops: Formative Evaluation Report."

Pribbenow, Christine Maidl and Deveny Benting. June 9, 2004 (revised September 23, 2004.) "WISELI's Life Cycle Research Grant Program: Formative and Summative Evaluation."

Sheridan, Jennifer; Deveny Benting; and Christine Maidl Pribbenow. July 27, 2004. "Evaluation of the Women Faculty Mentoring Program at the University of Wisconsin-Madison."

Sheridan, Jennifer and Deveny Benting. October 29, 2004. "Evaluation of the Tenure Clock Extension Policy at the University of Wisconsin-Madison."

Winchell, Jessica. October 2004. "Celebrating Women in Science & Engineering Grant Program, 2002-2004. Interim Evaluation Report."

Benting, Deveny and Christine Maidl Pribbenow. July 5, 2005. "Survey Results of WISELI's 'Implementing Training for Search Committees' Workshop." Evaluation report.

Pribbenow, Christine Maidl. July 14, 2005. "WISELI's Climate Workshops for Department Chairs: Evaluation Report."

Sheridan, Jennifer; Deveny Benting; and Christine Maidl Pribbenow. December 2005. "Evaluation of Childcare Needs and Practices at the University of Wisconsin-Madison."

Pribbenow, Christine Maidl and Jessica Winchell. December 2005. "WISELI's Workshops for Search Chairs: Evaluation Report."

Presentations of WISELI Activities to Campus Groups

Deans' Council—9/4/2002, 12/10/2003, 4/27/2005, 10/26/2005
CALS Department Chairs/Deans—10/28/2002, 1/26/2004, 12/1/2005, 1/23/2006
ENGR Department Chairs and Deans—11/6/2002, 2/4/2004, 1/4/2006
Medical School Clinical Science Chairs—10/14/2002, 3/9/2004, 1/10/2006
Medical School Basic Science Chairs—10/8/2002, 1/9/2006
Medical School Retreat—3/12/2005
Pharmacy Division Heads and Deans—4/12/2004, 12/15/2005
SVM Department Chairs and Deans—12/17/2002, 2/5/2004, 11/15/2005
L&S Natural Science Chairs—11/18/2002, 9/20/2004, 12/19/2005
L&S (All) Department Chairs—12/19/2005
SoHE Department Chairs and Deans—2/23/2004
Education Department Chairs and Deans—3/3/2004
Biological Science Deans—12/16/2003
Graduate School Deans—9/30/2004, 8/31/2005
University Committee—2/14/2005
UW System AA/EEO Program Directors—2/21/2005
Wisconsin Technical Colleges AA/EEO Officers—10/14/2005

Other Groups:

Department of Plant Pathology—12/4/2002
Women in Physical Sciences—5/2003, 2/23/2004
Women in Engineering—3/18/2004
University League—11/24/2003
College of Engineering (CoE) Academic Affairs—11/21/2003
CoE Equity & Diversity Committee—4/14/2004
CoE Committee on Academic Staff Issues—4/28/2004
Committee on Women in the University—2/18/2004, 1/12/2005, 11/9/2005
Women Faculty Mentoring Program—9/19/2003
Plan 2008 Campus Resource Fair—5/7/2002
Showcase—4/3/2002, 4/5/2004
Women Faculty in Medical School—3/11/2005
Academic Staff Executive Council—3/6/2003, 3/5/2004, 2/25/2005
Office of Human Resources—2/16/2005
WEMPEC—2/11/2005
UW System EEO Officers—4/13/2005

William S. Middleton Memorial VA Hospital—3/17/2005, 4/26/2005
CIRTL/DELTA—2/2/2005, 9/20/2005
UW Teaching & Learning Symposium—5/24/2005
UW Foundation—8/23/2005, 11/10/2005, 12/7/2005
WISELI Seminar—10/20/2003, 11/17/2003, 2/16/2004, 3/22/2004, 11/10/2004, 12/8/2004, 3/9/2005, 9/22/2005, 11/10/2005

IX. WISELI Overview, 2005

WISELI
Women in Science & Engineering Leadership Institute
University of Wisconsin-Madison

Program: **ADVANCE Institutional Transformation**
Funding Agency: National Science Foundation
NSF Program Officer: Alice Hogan (ahogan@nsf.gov)

Objective NSF ADVANCE at the University of Wisconsin-Madison is a five-year project to promote institutional transformation in science and engineering fields by increasing the participation, success and leadership of women faculty in academic science and engineering. The grant is administered through the **Women in Science & Engineering Leadership Institute (WISELI)**.

Constituents Science and engineering faculty and staff in the **six schools** with the largest science and engineering faculty: College of Engineering, College of Letters & Sciences, College of Agricultural and Life Sciences, the School of Veterinary Medicine, the School of Pharmacy, and the Medical School. In total, we target **over 50 departments and 1,200 faculty** in the biological and physical sciences.

Activities With a strong evaluation component in all that we do, our research and initiatives feed back to each other, improving our activities with each iteration

Grant Programs
- Vilas Life Cycle Professorship Program
- Celebrating Women in Science & Engineering Grants

Workshops
- Workshops for Search Committee Chairs
- Climate Workshops for Department Chairs
- Workshops on Building Effective Research Teams (in development)

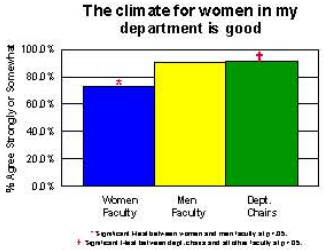
Other Initiatives
- Conversion of staff to tenure track
- Awards and honors for women faculty
- Leadership development for academic staff
- Conversations with senior women faculty
- Documentary video
- WISELI Seminar series
- WISELI website, listserv

Evaluative Research
- Interviews with women faculty and staff
- Study of Faculty and Academic Staff Worklife (climate survey)
- Resource studies
- Issue Studies
- Evaluation of existing programs at UW-Madison

Other Research
- Discourse analysis of women's communication strategies
- Ethnographic study of gendered interactions in the laboratory setting
- Study of Career Choices in Engineering
- Expanding Entrepreneurial Activity for Senior Women

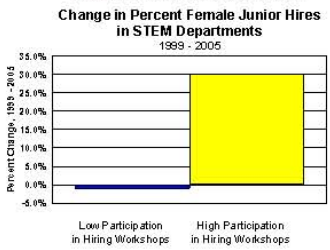
Selected Results

Climate:



- Climate survey and interviews with women faculty identify DEPARTMENT CHAIRS as key influences on the experiences of women faculty.
- To date, 27 department chairs have participated in our Climate Workshops; the improvements made as a result of this will affect thousands of faculty and staff in those departments.
- Climate will be re-assessed in select departments to evaluate the overall effects of the Climate Workshops.

Hiring:



- New faculty hires in STEM have increased overall, from 18% women in 2002, to 21% in the 2005 hiring cycle.
- Departments who participate in WISELI workshops (2003-2005) show more gains in hiring women (30% increase) than those departments who have not participated (no change).
- Approximately 70 hiring committee chairs have participated in our training workshops in 2004, and 92 participated in 2005.
- Evaluation of composition of hiring pools is underway.

Products (see http://wiseli.engr.wisc.edu/products.htm):

Climate:
- *Benefits and Challenges of Diversity*
- *Enhancing Department Climate: A Chair's Role: Resources*
- *Advice to the Top: Top 10 Tips for Academic Leaders to Accelerate the Advancement of Women in Science and Engineering*
- *Sex and Science: Tips for Faculty*
- *Study of Faculty Worklife at the University of Wisconsin-Madison* (survey instrument and results)

Recruiting:
- *Recruiting Applicants: Research on Bias and Assumptions*
- *Searching for Excellence and Diversity: A Guide for Faculty Search Committee Chairs*

Papers:
- Handelsman et al. 2005. "More Women in Science." *Science.* 309(5738):1190-1191.
- Carnes et al. 2005. "Diversity in Academic Medicine: The Stages of Change Model." *Journal of Women's Health.* 14(6):471-475.
- Carnes et al. 2005. "NIH Director's Pioneer Awards: Could the Selection Process be Biased Against Women?" Journal of Women's Health. 14(8):684-691.
- Sheridan et al. 2006. "Discovering Directions for Change in Higher Education Through the Experiences of Senior Women Faculty. *Journal of Technology Transfer.* 31(1).

Awards & Honors:
- *Advancing Your Career through Awards and Recognitions: A Guide for Women Faculty in the Sciences & Engineering*

Documentary Videos:
- *WISELI: ADVANCEing Institutional Transformation*
- *WISELI: Building on a Legacy*

Principal Investigators

Molly Carnes, Jean Manchester Biddick Professor of Medicine
Email: mlcarnes@wisc.edu
Phone: (608) 267-5566

Jo Handelsman, Howard Hughes Medical Institute Professor of Plant Pathology
Email: joh@plantpath.wisc.edu
Phone: (608)263-8783

Jennifer Sheridan, Executive & Research Director, WISELI
Email: sheridan@engr.wisc.edu
Phone: (608)263-1445

Evaluation Director

Christine Maidl Pribbenow (cmpribbenow@wisc.edu)

Program Staff

Researcher and Workshop Developer: Eve Fine (efine@wisc.edu)
Research and Evaluation Specialist: Deveny Benting (dbenting@wisc.edu)
Grants Specialist: Carol Sobek (csobek@engr.wisc.edu)

Contact Information

Website:	http://wiseli.engr.wisc.edu
Email:	wiseli@engr.wisc.edu
Phone:	(608) 263-1445
Fax:	(608) 265-5290
Mailing Address:	WISELI 2640 Engineering Hall 1415 Engineering Drive Madison, WI 53706

ADVANCE institutions will serve as exemplars for other colleges and universities aiming to increase the participation and status of women in science and engineering faculty.

X. Quantitative Indicators of Activity and Progress

(Available March, 2006.)

WISELI Publications 2005:

Handelsman, Jo, Nancy Cantor, Molly Carnes, Denice Denton, Eve Fine, Barbara Grosz, Virginia Hinshaw, Cora Marrett, Sue Rosser, Donna Shalala, and Jennifer Sheridan. 2005. "More Women in Science." *Science*. 309(5738):1190-1191.

More Women in Science

Jo Handelsman,[1,2]* Nancy Cantor,[3] Molly Carnes,[2,4] Denice Denton,[5] Eve Fine,[2] Barbara Grosz,[6] Virginia Hinshaw,[7] Cora Marrett,[8] Sue Rosser,[9] Donna Shalala,[10] Jennifer Sheridan[2]

It has been 25 years since Congress passed the Women in Science and Technology Equal Opportunity Act, which declares it "the policy of the United States that men and women have equal opportunity in education, training, and employment in scientific and technical fields (*1*)." Although there have been major advances, academic institutions are still not fully utilizing the pool of women scientists they have produced. The difference between the proportions of women who earn Ph.D.'s and those who are in faculty positions at top universities is clear in the biological and physical sciences, as well as in engineering (see table at right).

Enhanced online at www.sciencemag.org/cgi/content/full/309/5738/1190

Recently, much has been made of biological differences between men and women that might affect their representation in science. Although there is a substantive body of evidence indicating that overall intelligence does not differ between men and women, controversy persists as to whether specific aspects of cognitive ability differ (*2*, *3*). A recent debate by experts illuminates the issues and provides a summary of the literature in the field (*4*). We chose not to discuss these possible differences here for a number of reasons. First, there is no ideal constellation of cognitive abilities required to be a scientist. To be successful, scientists need deductive reasoning abilities, verbal skills, quantitative reasoning, intuition, and social skills. Men and women may differ, on average, in some of these abilities, but that is not a basis on which we can predict success because different mixtures lead to diverse, yet successful, approaches and styles in science. Second, there is no convincing evidence that women's representation in science is limited by innate ability. Between 1970 and 2003 (a time too brief for observable changes in innate ability), there was a 30-fold increase in the proportion of Ph.D.'s granted to women in engineering. This was a time in which attitudes and laws pertaining to gender changed dramatically, which provides strong evidence of the cultural and structural impediments to women. In this Policy Forum, we focus on the cultural issues that manifest in the behaviors of individuals and the policies of institutions because these factors make a difference and can be changed.

Moral and legal imperatives to ensure equal opportunity provide sufficient reasons to examine the causes of the disparities and to attempt to rectify them. Equally compelling is the impact that equity will have on the quality of our universities and the competitiveness of our nation. Heterogeneity among students, faculty, and staff strengthens universities in fundamental ways (*5*, *6*). Heterogeneous groups design more innovative solutions to problems than do homogeneous ones (*6*, *7*) and bring a higher level of critical analysis to decisions (*6*, *8*). Furthermore, institutions that welcome women foster more favorable working environments for all community members (*9*).

The National Science Foundation (NSF) founded the ADVANCE Institutional Transformation Program (*10*) to analyze the impact of interventions on advancement of women in science. Many universities have launched initiatives to enhance hiring, promotion, and productivity of women scientists, including Harvard University, which recently committed $50 million to this effort (*11*). Initial results from the NSF ADVANCE sites and other universities suggest several strategies that appear to work (*6*). Detailed documentation can be found in the supporting online material.

Barriers and Strategies to Overcome Them

The pipeline. The low number of women trained in certain fields is partially to blame for the paucity of women on the faculty. Nevertheless, many fields continue to suffer a faculty gender imbalance even though women compose from one-quarter to almost half of their graduating doctoral candidates (see table). Superb women scientists may not pursue academic careers simply because they are not encouraged to do so, question whether they have what it takes to be successful, or lack female role models who would help them envision themselves as faculty. Well-meaning advisers may interpret women's hesitation and concerns as disinclination and may fail to press their women students to consider academic careers. Explicit encouragement of outstanding doctoral candidates to enter the professoriate will help close the gap. Programs designed to prepare students to be faculty, such as those offered by many professional societies, universities, and

WOMEN Ph.D.'s AND FACULTY, TOP 50 DEPARTMENTS IN SELECTED DISCIPLINES*

Discipline	Career level (% women)			
	Ph.D.	Asst. Prof.	Assoc. Prof.	Full Prof.
Biology	45.89	30.20	24.87	14.79
Physical Science	24.68	16.13	14.18	6.36
Astronomy	22.88	20.18	15.69	9.75
Chemistry	33.42	21.47	20.50	7.62
Computer Science	15.27	10.82	14.41	8.33
Math & Statistics	26.90	19.60	13.19	4.56
Physics	14.78	11.15	9.41	5.24
Engineering	15.34	16.94	11.17	3.68
Electrical	12.13	10.86	9.84	3.85
Civil	17.90	22.26	11.50	3.52
Mechanical	10.93	15.65	8.89	3.17
Chemical	24.98	21.38	19.19	4.37

*Data on Ph.D.'s and faculty come from the same "Top 50" departments for each discipline; departments are ranked by NSF according to research expenditures in that discipline. Top 50 departments detailed at (*23*). Ph.D. data (*24*) are from 2001 to 2003; faculty data (*23*) are from 2002 except Astronomy (2004) and Chemistry (2003).

[1]Howard Hughes Medical Institute, professor, Department of Plant Pathology, University of Wisconsin–Madison; [2]Women in Science and Engineering Leadership Institute, University of Wisconsin–Madison; [3]Chancellor and president, Syracuse University; [4]Department of Medicine and Center for Women's Health Research, University of Wisconsin–Madison; [5]Chancellor, University of California, Santa Cruz; [6]Higgins Professor of Natural Sciences, Harvard University; [7]Provost and executive vice chancellor, University of California, Davis; [8]Senior vice president and deputy president, University of Wisconsin System; [9]Dean of the Ivan Allen College of Liberal Arts, Georgia Institute of Technology; [10]President, University of Miami. [For complete addresses, see the supporting online material.]

*Author for correspondence. E-mail: joh@plantpath.wisc.edu

Published by AAAS

private organizations (*6*), can provide access to role models and may inspire confidence and commitment (*12*).

To keep women moving through the pipeline to the senior ranks, they need sound advice about how best to invest their time as junior faculty. Women, more often than men, are asked to provide campus service on committees, as speakers, and as advisers to students (*13*). To assist junior faculty in managing pretenure activities, Georgia Tech ADVANCE Professor Jane Ammons developed a "speed mentoring" workshop in which junior faculty members consult for 15 to 20 minutes with each of four experienced tenure case reviewers who identify gaps and offer suggestions for strengthening the tenure case.

Climate. Many women attribute their exit from the academy to hostility from colleagues and a chilly campus climate (*14*). This atmosphere is invisible to many men, who typically describe a better climate for women than women report experiencing, as indicated by faculty surveys at MIT, Princeton, the University of Michigan, and the University of Wisconsin (*6*). Campus-wide programs to educate members of the community can identify and help eliminate discrimination in hiring and promotion, sexual harassment, and other illegal behaviors (*6*, *15*). Faculty members can assist by becoming educated about these behaviors and then taking steps to discourage them, including supporting women who voice concerns about illegal behavior.

Far more pervasive are the subtle effects of exclusion from the department community and its decision-making processes and the slights, ridicule, and attention to women's sexuality in professional settings. Although these behaviors may seem innocuous in isolation, the cumulative effect can be devastating (*6*, *16*). University administrators can set a campus standard in fostering inclusivity. Programs to train department chairs to recognize and combat the isolation experienced by women may transform local environments. The University of Michigan's ADVANCE program developed an interactive theater program that portrays typical academic situations and engages academic audiences in discussion that helps them recognize interpersonal behaviors that affect climate (*6*).

Unconscious bias. People who are committed to egalitarian principles and believe that they are not biased may nevertheless unconsciously or inadvertently behave in discriminatory ways (*6*, *17–19)*. When evaluators rated writing skills, resumes, journal articles, and career paths, they gave lower ratings on average if they were told that the subject of evaluation was a woman (*6*). A study of postdoctoral fellowships awarded by the Medical Research Council of Sweden found that women candidates needed substantially more publications to achieve the same competency rating as men (*18*). On the basis of results in other fields, it might be wise for scientists to consider ways to mask applicant gender. For example, introducing a screen to obscure the gender of musicians auditioning for symphony orchestra positions increased the likelihood that a woman was selected by 30 to 60% (*20*).

A number of interventions undertaken through the ADVANCE programs are predicated on the supposition that unconscious bias can be redressed by awareness. The University of Wisconsin–Madison has designed workshops to train search committees in good search methods and to sensitize them to bias (*6*). In these workshops, faculty members are encouraged to recruit women by deliberate action to overcome unconscious biases and to cultivate professional relationships with promising women scholars at professional meetings. Martell (*21*) showed that sex bias emerged when evaluators were under time pressure and distracted. Consequently, the search committee training includes reminding participants of the time required to conduct a thorough review and encouraging them to devote sufficient time to the evaluation of each individual to prevent assumptions from substituting for data. Georgia Tech has developed a Web-based computer instrument, Awareness of Decisions in Evaluating Promotion and Tenure (ADEPT), to aid promotion and tenure committee members, chairs, and deans to understand biases related to gender, race and/or ethnicity, disability, and interdisciplinarity. It consists of a downloadable application that contains case studies and summaries of scholarly research on bias and other materials to provoke discussion (*6*).

Balancing family and work. The responsibilities for family caretaking (for children and aging parents) continue to fall disproportionately on women (*6*). Young women can be encouraged by meeting or reading about prominent women scientists who have families and by learning about academic programs designed to reduce the conflicts between personal and professional life, including dual-career hiring programs, tenure clock extensions for childbirth and adoption, and on-campus lactation rooms and child care facilities. All members of the university community can advocate for such programs and can provide flexibility for colleagues with family responsibilities.

Conclusion

Institutional transformation necessitates collective examination of attitudes and the behaviors they spawn, which can be disquieting, because it requires engagement with issues of life-style, reproduction, hiring, and academic customs. Most uncomfortable is the discovery that we all harbor unconscious biases that can shape our behavior. Essential to the process is individual ownership of the blueprint for change. Strategies for this blueprint exist and are being tested, but systemic change can only be fostered if propelled by a vigilant and widespread campaign launched by tenacious women and men at all levels (*6*), and advocated by prominent leaders of our universities (*22*). Only such a campaign will fulfill the promise of the Science and Technology Equal Opportunities Act and will create a scientific community reflective of the pluralist society that supports it.

References and Notes

1. Bill S. 568 in the 96th Congress (http://thomas.loc.gov/).
2. American Sociological Association Council, 28 February 2005 (www.asanet.org/public/summers.html).
3. E. S. Spelke, "Sex differences in intrinsic aptitude for mathematics and science: A critical review," draft, 20 April 2005 (www.wjh.harvard.edu/~lds/sexsci/).
4. "The science of gender and science: Pinker vs. Spelke, a debate," 10 May 2005 (www.edge.org/documents/archive/edge160.html#d).
5. J. F. Milem, in *Compelling Interest: Examining the Evidence on Racial Dynamics in Colleges and Universities*, M. Chang, D. Witt, J. Jones, K. Hakuta, Eds. (Stanford Univ. Press, Stanford, CA, 2003), pp. 126–169.
6. Related resources, see http://wiseli.engr.wisc.edu/Products/MoreWomen.htm.
7. P. L. McLeod *et al.*, *Small Group Res.* **27**, 248 (1996).
8. C. J. Nemeth, *Adv. Group Process.* **2**, 57 (1985).
9. K. Miner-Rubino, L. M. Cortina, *J. Occup. Health Psychol.* **9**,107 (2004).
10. For information on ADVANCE, see www.nsf.gov/funding/pgm_summ.jsp?pims_id=5383.
11. L. H. Summers, S. E. Hyman, 16 May 2005 (www.president.harvard.edu/speeches/2005/0516_womensci.html).
12. M. F. Fox, in *Equal Rites, Unequal Outcomes: Women in American Research Universities*, L. S. Hornig, Ed. (Kluwer Academic, New York, 2003), pp. 91–109.
13. S. Park, *J. Higher Educ.* **67**, 46 (1996).
14. E. Seymour, N. Hewitt, *Talking About Leaving: Why Undergraduates Leave the Sciences* (Westview Press, Boulder, CO, 1997).
15. S.V. Rosser, *The Science Glass Ceiling: Academic Women Scientists and the Struggle to Succeed* (Routledge, New York, 2004).
16. V. Valian, *Why So Slow: Advancement of Women* (MIT Press, Boston, MA, 1999).
17. J. F. Dovidio, S. L. Gaertner, *Psychol. Sci.* **11**, 315 (2000).
18. C. Wenneras, A. Wold, *Nature* **387**, 341 (1997).
19. F. Trix, C. Psenka, *Discourse Soc.* **14**. 191 (2003).
20. C. Goldin, C. Rouse, *Am. Econ. Rev.* **90**, 715 (2000).
21. R. F. Martell, *J. Appl. Soc. Psychol.* **21**, 23 (1991).
22. J. Handelsman, J. Sheridan, E. Fine, M. Carnes, 4 April 2005 (http://wiseli.engr.wisc.edu/Products/top_10_tips.pdf).
23. D. J. Nelson, "Nelson diversity surveys" (Diversity in Science, Norman, OK, 2004) (http://cheminfo.chem.ou.edu/~djn/diversity/top50.html).
24. NSF survey of earned doctorates/doctorate records file, WebCASPAR (http://webcaspar.nsf.gov).

Supporting Online Material

www.sciencemag.org/cgi/content/full/309/5738/1190/DC1

10.1126/1113252

WISELI Publications 2005:

Carnes, Molly; Jo Handelsman; Jennifer Sheridan. 2005. "Diversity in Academic Medicine: The Stages of Change Model." *Journal of Women's Health*. 14(6):471-475.

JOURNAL OF WOMEN'S HEALTH
Volume 14, Number 6, 2005

Commentary

Diversity in Academic Medicine: The Stages of Change Model

MOLLY CARNES, M.D., M.S.,[1,2,3,5] JO HANDELSMAN, Ph.D.,[3,4] and JENNIFER SHERIDAN, Ph.D.[3]

INTRODUCTION

THE BENEFITS OF INCREASING the diversity of leadership in academic medicine have been reviewed and confirmed by a number of expert groups,[1–6] yet women and underrepresented minorities are not rising through faculty ranks or entering leadership in academic medicine at rates predicted by their proportions in medical school over the past 30 years.[7,8] This is an issue that must engage all stakeholders in academic medicine in order to ensure a healthy future for academic medicine as well as a healthy future for our nations.

We have found that smoking provides a useful metaphor for diversity. No one contests the profound change in cultural norms for smoking over the past 30 years. Smoking is an issue to which nearly everyone has some personal connection either as a current or former smoker, the friend or relative of a smoker, or as a witness to the remarkable transformation of institutions—even bars—from smoking to nonsmoking. Many middle-aged physicians, for example, went to medical school at a time when professors lit up cigarettes in the classroom, nurses and doctors smoked in hospitals, and airlines handed candy cigarettes to child passengers. Such behaviors would be unthinkable today because they violate current cultural norms. We submit that the goal in academic medicine is to achieve a similar transformation in cultural norms so that a lack of institutional gender and ethnic/racial diversity, particularly among decision makers, engenders the same response as smoking in a classroom—it is undesirable and unhealthy both for the individual and for the institution.

With liberal interpretation, the stages of change model applied to smoking cessation[9] pertains equally well to diversity. The five stages of change are (1) precontemplation (unaware that a problem exists), (2) contemplation (aware that a problem exists and thinking about making a behavioral change in the future), (3) preparation (feeling confident that making a change is possible and planning to make a change in the immediate future), (4) action (making a change), and (5) maintenance (continuing to engage in the new, desirable behavior and avoiding relapse). The smoking metaphor for diversity can be scaled down to refer to an individual (e.g., Harvard President Lawrence Summers being perhaps in precontemplation) or scaled up to the discussion of whole institutions (e.g., Harvard being perhaps

[1]Department of Medicine, [2]Center for Women's Health Research, [3]Women in Science and Engineering Leadership Institute (WISELI), and [4]Department of Plant Pathology, University of Wisconsin, Madison, Wisconsin.
[5]Geriatric Research Education and Clinical Center (GRECC), William S. Middleton Memorial Veterans Hospital, Madison, Wisconsin.
This work was supported in part by the National Science Foundation grant No. NSF A190240 and the Department of Veterans Affairs through the Madison GRECC.

in contemplation moving toward preparation).[10] We wanted to share with the broader academic community the utility of this simple metric in promoting discussions of diversity.

STAGE 1: PRECONTEMPLATION

In precontemplation, smokers do not perceive smoking as a problem. Regarding diversity, members of an academic community do not see the lack of diversity in their institution as a problem needing to change, nor do they recognize the contribution of their own behavior to maintaining the status quo. They are blind to the benefits—to themselves or to the institution—of increasing the number of women and ethnic/racial minorities on the faculty and in leadership positions. Statements such as those in Table 1 are characteristic of individuals in precontemplation. The behavior of institutions in precontemplation is also identifiable. Despite a lack of diversity, institutions in precontemplation would have no forums sponsored by top level administration for discussing diversity, no working groups charged with gathering and presenting relevant data, and no institutional plan or resources committed to change.

Forty years ago when institutions "smoked," a person asking someone to extinguish a cigarette was not uncommonly met with scorn or derision because ambient cultural norms supported smokers. A person raising diversity issues in an institution in precontemplation might evoke a similar response from colleagues. Interventions to move smokers beyond precontemplation relate to providing data on the issue (e.g., health hazards of smoking) and encouraging a personal connection to the disadvantages of continuing to smoke (e.g., death of loved ones from smoking-related illness, high cost of cigarettes, and stained teeth). In a similar strategy for diversity, data on the issue from respected scientific and professional organizations as well as from the local institution can be cited. A personal connection can be sought by appealing to institutional pride (e.g., not wanting to be outcompeted for the best recruits due to lack of available child care) or to individual beliefs, such as the undisputed value of diversity in a broader sense, including diversity in ideas, disciplines, or faculty from more than one institution.

STAGE 2: CONTEMPLATION

In contemplation, smokers recognize that their behavior is a problem and begin to think about quitting. In academic medicine, administrators, faculty, and staff recognize the lack of diversity as a problem. Attitudinal shifts at the individual and institutional levels are apparent. Statements from deans and chairs acknowledge that existing policies and practices need to be evaluated in terms of their effectiveness in attracting and nurturing the careers of women and minority faculty. Individuals become open to discussing strategies to change their own behavior (e.g., willing to listen when the subject of diversity is raised) and that of the institution (e.g., recognizing the need for and value of a strategic plan related to increasing faculty diversity).

STAGE 3: PREPARATION

In preparation, smokers are ready to take action in the immediate future or have taken small steps toward quitting. For example, they may have set a quit date, purchased a nicotine patch kit, or cut down on the number of cigarettes they smoke. In academic medicine, individuals and institutions in the preparation stage describe specific actions they are planning to take to foster diversity. Such actions at the individual level might include attending a diversity training program or making plans to search aggressively for women and minority candidates when their department has an opening in the future. At the institutional level, preparation might include writing a departmental strategic plan for hiring women and underrepresented minority faculty[12] or developing workshops to train search committees how to attract a broad and diverse pool of applicants.

STAGE 4: ACTION

In the action stage, smokers engage in the desired action of quitting. In academic medicine, individuals make specific conscious behavioral changes that increase diversity on a small scale (e.g., invite a woman to give Medical Grand Rounds), and institutions take actions on a larger scale (e.g., a woman chair is hired; faculty and

TABLE 1. EXAMPLES INDICATIVE OF CURRENT STAGE

Stages of change	*Smoking: Individual statements*	*Diversity*	
		Individual statements	*Institutional behaviors*
Precontemplation	"Smoking is not a problem and I enjoy it [cough, cough]."	"We've always done it this way, and it seems to work just fine." "Women or minority faculty don't fit into the culture of this department." "We can't afford to lower our standards just to be politically correct." "It's a waste of resources to hire underrepresented minority faculty because they just leave after a few years."	No forums for dialogue promoted despite visible absence of diversity among faculty and institutional leaders. No resources committed to solutions. Individuals feel ucomfortable raising issues of diversity. Decision-making committees continue to be established without women or minority faculty members.
Contemplation	"I am worried that smoking is bad for my health and I want to quit."	"If we want to keep the best and brightest physicians in academic medicine, we must figure out a way to keep the women from leaving." "Diversity *is* excellence, and we want our institution to be a leader in this area of social change." "We need more women role models for the growing number of women medical students."	Workshops convened to stimulate discussion and development of written plans for increasing diversity. Task force charged with reviewing data (e.g., on local recruitment and promotion) and issues (e.g., survey).
Preparation	"I am going to buy a nicotine patch and quit on my birthday."	"I am attending a national workshop on diversity." "I am calling the Dean of a school that has been successful at hiring and retaining women to learn what works so I can adapt it to our school."	Institutional resources committed to the issues (e.g., invited speakers, conferences sponsored, consultant hired). Workshops developed to train search committees on strategies to increase the diversity of the applicant pool.
Action	"I quit!"	"I hired my first woman postdoctoral fellow." "I called the chair and complained that there were no women speakers at the last conference and offered to invite several this year."	Research programs on minority health and sex/gender differences are developed as a means to attract women and minority researchers.[11] Woman chair hired. Number of minority faculty reaches targeted goal.
Maintenance	"Whenever I feel like a smoke, I take a walk instead."	"I find an opportunity to discuss strategies to increase the participation and advancement of women and minority students and faculty whenever I am invited to speak on my research." "I am always in the recruiting mode, reaching out to potential women and minority applicants wherever I go." "I am proud of the advances our school has made in diversity."	Annual examination of diversity of student body, faculty, and staff reviewed by high level committees and made public to all stakeholders. Search committees must provide a convincing explanation if there are no women or minority candidates in the final pool of applicants for any leadership position.

student exchanges with a minority serving institution occur). Although institution-specific actions will vary, the ultimate goal of academic medical centers is to build a faculty that reflects the diversity of the students (approximately 50% women in the United States)[13] and both a faculty and student body that reflect the diversity of the country (30% nonwhite in the United States).[14]

STAGE 5: MAINTENANCE

Just as previous smokers can relapse, so can institutions that sustained gains in increasing gender and ethnic/racial diversity relapse.[15] Efforts in the maintenance stage are aimed at preventing recidivism. With smoking, individuals are given continued positive reinforcement and encouraged to substitute other behaviors, such as exercise, for smoking. In academic medicine, individuals as well as institutions can adopt similar strategies. Successes can be repeatedly and publicly praised and tangibly rewarded (e.g., additional funds to invide conference speakers or new faculty positions). Continued monitoring is also necessary. Institutions need to collect, analyze, and make public data on diversity of faculty hires, retention rates, invited speakers, and the composition of key committees. In former smokers, the experience of improved health and well-being after cessation encourages successful maintenance. In academic medicine, observed institutional benefits similarly will help maintain new practices (e.g., a more diverse faculty facilitates recruitment of diverse students, enrollment of minority populations in clinical research, and development of cultural competence curricula). As with smoking, the goal is to change cultural norms so that reinforcement for desired behaviors surrounds us, and undesirable behavior, whether it be smoking or relapse of an institution to majority-only leaders, becomes socially unacceptable.[16]

CONCLUSIONS

Nicotine is powerfully addicting. Nevertheless, thousands of individuals have quit smoking, and smoke-free workplaces are the norm in many places. Through biological, behavioral, and health policy research, academic medicine led this change.[17] If academic medicine can effect such profound transformation regarding an addictive substance, it should be able to move individuals and institutions through similar stages of change to actions that will ensure gender equity and cultural diversity.

Although the ultimate goal of a smoking cessation program is to convert patients from smokers to nonsmokers, success is also ascribed if participants move through progressive stages of change toward quitting.[18] Similarly, even before a noticeable change in the number of women and minority faculty is realized, a stages of change view of diversity in academic medicine enables those working toward this goal to document the harbingers of actual change. How will we know when academic medicine has achieved the desired transformation? We will have arrived when the sight of a room full of institutional leaders who are all white men elicits the same reaction from all members of the academic community as if these men were in that room smoking cigarettes.

REFERENCES

1. Smedley BD, Butler AS, Bristow LR, eds. Institute of Medicine. In the nation's compelling interest: Ensuring diversity in the health-care workforce. Washington, DC: The National Academics Press, 2004.
2. Bickel J, Wara D, Atkinson BF, et al. Increasing women's leadership in academic medicine: Report of the AAMC Project Implementation Committee. Acad Med 2002;77:1043.
3. Women in biomedical careers: Dynamics of change, strategies for the 21st century. NIH ORWH. NIH Publication No. 95-3565, 1992.
4. Council on Graduate Medical Education (COGME). Twelfth report: Minorities in medicine. US DHHS Public Health Service, HRSA, 1998.
5. National Institutes of Health strategic research plan to reduce and ultimately eliminate health disparities, fiscal years 2002–2006. U.S. DHHS. Draft, October 6, 2000.
6. Council on Graduate Medical Education Fifth Report: Women and medicine. U.S. Department of Health and Human Services, Public Health Service Health Resources and Services Administration, 1995.
7. Cohen JJ. Time to shatter the glass ceiling for minority faculty. JAMA 1998;280:821.
8. Nonnemaker L. Women physicians in academic medicine. N Engl J Med 2000;342:399.
9. Prochaska JO, DiClemente CC. Stages and processes of self-change of smoking: Toward an integrative model of change. J Consult Clin Psychol 1983;51:390.
10. Prochaska JM, Prochaska JO, Levesque DA. A transtheoretical approach to changing organizations. Admin Policy Mental Health 2001;28:247.

11. Carnes M, Vandenbosche G, Agatista PK, et al. Using women's health research to develop women leaders in academic health sciences: The National Centers of Excellence in Women's Health. J Wom Health Gender-Based Med 2001;10:39.
12. Turner CSV. Diversifying the faculty: A guidebook for search committees. Washington, DC: Association of American Colleges and Universities, 2002.
13. Clark V, Yamagata H, Chapman W. Women in U.S. academic medicine statistics, 2002–2003. Association of American Medical Colleges, 2003, Washington, DC.
14. Evans DL, Price JL, Barron WG. Profiles of general demographic characteristics 2000 census of population and housing, United States. U.S. Census Bureau, Census 2000. *http://www.census.gov/prod/cen2000/dpl/2khus.pdf*
15. Swingle AB, Denison B. Poised for power. Hopkins Med News Spring/summer, 2002.
16. Fiore MC, Baker TB. Smoking cessation treatment and the good doctor club. Am J Public Health 1995;85: 161.
17. Reducing the health consequences of smoking: 25 years of progress. A Report of the Surgeon General. USDHHS, PHS, CDC, Office on Smoking and Health. DHHS (CDC) 89-8411.
18. Zimmerman GL, Olsen CG, Bosworth MF. A Stages of Change approach to helping patients change behavior. Am Fam Physician 2000;61:1409.

Address reprint requests to:
Molly Carnes, M.D., M.S.
Professor of Medicine, Psychiatry, and Industrial Engineering
Director, UW Center for Women's Health Research
Meriter Hospital 6 West
202 South Park Street
Madison, WI 53715

E-mail: mlcarnes@wisc.edu

WISELI Publications 2005:

Carnes, Molly; Stacie Geller; Eve Fine; Jennifer Sheridan; and Jo Handelsman. 2005. "NIH Director's Pioneer Awards: Could the Selection Process Be Biased Against Women?" *Journal of Women's Health*. 14(8):684-691.

JOURNAL OF WOMEN'S HEALTH
Volume 14, Number 8, 2005

Commentary

NIH Director's Pioneer Awards: Could the Selection Process Be Biased against Women?

MOLLY CARNES, M.D., M.S.,[1,2,3] STACIE GELLER, Ph.D.,[4] EVE FINE, M.A.,[2,5] JENNIFER SHERIDAN, Ph.D.,[2] and JO HANDELSMAN, Ph.D.[2,6]

ABSTRACT

One of the first National Institutes of Health (NIH) Roadmap initiatives to be launched was the Director's Pioneer Award. This award was established to "identify and fund investigators of exceptionally creative abilities and diligence, for a sufficient term (five years) to allow them to develop and test far-ranging ideas." Nine excellent scientists were chosen as NIH Pioneers, but the selection of all men is at odds with the percentage of women receiving doctoral degrees for the past three decades, serving as principal investigators on NIH research grants, and achieving recognition as scientific innovators in non-NIH award competitions. The absence of women Pioneers provokes the following question: In the context of extant research on the impact of gender-based assumptions on evaluation of men and women in traditionally male fields, such as science, were there aspects about the process of nomination, evaluation, and selection that inadvertently favored men? We present evidence to suggest that women scientists would be disadvantaged by the following components of the NIH Director's Pioneer Award initiative: (1) time pressure placed on evaluators, (2) absence of face-to-face discussion about applicants, (3) ambiguity of performance criteria, given the novelty of the award, combined with an emphasis on subjective assessment of leadership, potential achievements rather than actual accomplishments, and risk taking, (4) emphasis on self-promotion, (5) weight given to letters of recommendation, and (6) the need for finalists to make a formal, in-person presentation in which the individual and not his or her science was the focus of evaluation. We offer an analysis of this process to encourage the NIH to embark on self-study and to educate all reviewers regarding an evidence-based approach to gender and evaluation.

[1]Department of Medicine and Center for Women's Health Research, Medical School, and [2]Women in Science and Engineering Leadership Institute (WISELI), College of Engineering, University of Wisconsin-Madison, Madison, Wisconsin.
[3]Geriatric Research Education and Clinical Center and Women Veterans Health Program, William S. Middleton Veterans Hospital, Madison, Wisconsin.
[4]Center for Research on Women and Gender and Department of Obstetrics and Gynecology University of Illinois, Chicago, Illinois.
[5]Department of Medical Ethics and History, Medical School, University of Wisconsin-Madison, Madison, Wisconsin.
[6]Department of Plant Pathology, College of Agricultural and Life Sciences, University of Wisconsin-Madison, Madison, Wisconsin.
This work was supported by National Science Foundation grant 0123666.

INTRODUCTION

The National Institutes of Health (NIH) is firmly committed to advancing women in biomedical careers.[1] As one visible example, the National Library of Medicine's current exhibition, "Changing the Face of Medicine," sincerely "honors the lives and achievements of women in medicine" and aims to "inspire a new generation of medical pioneers."[2] One of the first NIH Roadmap initiatives to be launched was the Director's Pioneer Award.[3,4] This award was established to "identify and fund investigators of exceptionally creative abilities and diligence, for a sufficient term (five years) to allow them to develop and test far-ranging ideas." NIH officials estimate that women comprised 20% of approximately 1300 initial Pioneer applicants (phase 1) and about 13% of the 240 who underwent external scientific review (phase 2). Two of the 21 finalists invited for interviews and none of the final 9 selected were women.[5] Given the unambiguous commitment of the NIH to increasing the participation and advancement of women scientists, their absence among the recipients of the NIH Director's Pioneer Award is striking.

Women currently receive 45% of doctoral degrees in biological sciences,[6,7] comprise 30% of full-time faculty at U.S. academic medical centers,[8] account for 20% of the Howard Hughes Medical Investigator Awards[9] and 50% of the MacArthur Fellows Program awards (the "genius awards"),[10] and successfully compete for 23% of NIH grants.[11] If we assume the pool of eligible applicants for the NIH Pioneer Award resembled the pool of NIH R01 applicants,[5] 25% of the applicant pool would be women. The probability of 20% women in the Pioneer pool vs. the expected 25% occurring by chance alone is $p < 0.001$ (binomial test). The probability of 13% women progressing to phase 2 vs. either the expected 25% or the actual 20% is $p < 0.01$ (binomial test). The probability of selecting 1, 2, 3, or ≥ 4 women exceeds that of selecting no women although the small numbers in the final pool, 10% of those interviewed and 0% of those awarded are not statistically different from either the expected 25% or the proportion of women at any other level in the review process. The nine NIH Pioneers are undoubtedly qualified for recognition. However, given the gender distribution of active scientists and acknowledged innovators, it seems unlikely that none of the nine awardees would be a woman unless some aspect of the solicitation, evaluation, or selection process was carried out in such a way that advantaged men.

Considerable research documents how unconscious assumptions about gendered traits and behaviors lead to more favorable evaluations of men and the work performed by men than women and the work performed by women even if the work is identical and even if those involved are committed to objectivity and equity.[12] To understand this phenomenon, numerous scholars[13–16] contend that widely shared, culturally ingrained assumptions about the nature of men and women contribute to unintentional discriminatory treatment of women. These assumptions are based on behaviors that can be descriptive, in that they describe actual differences in the way men and women usually behave (e.g., women predominantly occupy supportive staff jobs, whereas men predominate in top leadership positions), or prescriptive. Prescriptive behaviors, based on descriptive behaviors, underpin unconscious beliefs about the way men and women in the abstract should and should not act. For women, prescriptive characteristics are typically in the realm of being supportive, communal, and nurturing, whereas for men, they are typically in the realm of being independent, decisive, and strong. Despite multiple examples of individual men and women whose behavior is not constrained to these gendered assumptions, the unconscious application of such assumptions to men and women as abstract groups is nearly universal.

Two important points emerge from this body of work: (1) the unconscious assumptions about the way leaders, scientists, and innovators behave align with prescriptive attributes ascribed to men far more than those ascribed to women, giving men an advantage at the outset in evaluation in these domains, and (2) both men and women pay social penalties for exhibiting behaviors that violate gender prescriptions. The latter becomes clear when we examine the pejorative descriptors that exist in our language for both men (e.g., "wimpy," "effeminate") and women (e.g., "butch," "domineering") whose behavior violates prescriptive gender norms. More relevant to the selection of NIH Pioneers is the potential for social penalties for women who may violate prescriptive gender norms in their success as excellent scientists and strong leaders.

Controlled experimental studies reveal that certain conditions can promote the activation of unconscious, gender-based assumptions in the evaluation of individuals and their work leading to more positive evaluations of men than women, particularly in positions traditionally held by men. The process of recruiting and evaluating candidates for the NIH Director's Pioneer Award[4] includes several elements that would be predicted to infuse positive bias toward evaluation and selection of men. These include (1) time pressure placed on evaluators, (2) absence of face-to-face discussion about applicants, (3) ambiguity of performance criteria given the novelty of the award combined with an emphasis on subjective assessment of leadership, potential achievements rather than actual accomplishments, and risk taking, (4) emphasis on self-promotion, (5) weight given to letters of recommendation, and (6) the need for finalists to make a formal in-person presentation in which the individual and not his or her science was the focus of evaluation. We review each of these in the context of research on gender and evaluation, highlighting several particularly salient studies that support the existence of unintentional, unconscious bias favoring selection of men. A consistent finding in this body of research is that the gender of the evaluator has little if any impact; that is, both men and women equally provide lower evaluations of women and the work performed by women than of men and the work performed by men. Therefore, we note here that in the NIH Pioneer Award, 60 of 64 (94%) of the reviewers were men, and 7 of 8 of those on the panel who interviewed the finalists were men,[5] but we do not find research to support that this overrepresentation of men among the evaluators would be responsible for additional disadvantage to women.

TIME PRESSURE

The NIH website notes that for the Director's Pioneer initiative, "the application form is highly abbreviated and turnaround is accelerated."[4] NIH staff who screened applications added this initiative on to their existing institute responsibilities. Relevant to this issue is a controlled study performed by Martell[17] investigating the impact of time pressure and heightened attentional demand on evaluation of men and women performing identical work as police officers, a traditionally male job. In this study, 77 male and 125 female participants were asked to evaluate the performance of male or female police officers in descriptive vignettes containing pretested ineffective and effective behaviors. In the absence of time pressure or cognitive distraction (i.e., multitasking), the police officer's gender had no influence on performance evaluations. However, when time pressure and heightened attentional demand were added, male officers were consistently evaluated more favorably than female officers. Martell notes that the ability of the human brain to organize information around assumptions enables cognitive efficiency and is adaptive to successful functioning in a complex environment. It is efficient, for example, to be able to assume that because previous chairs have not collapsed, it is unnecessary to test the stability of each chair every time we sit down: we apply group assumptions about chairs to individual chairs without any conscious thought. Similarly, because most police officers are men, past experiences with police officers combined with prescriptive gendered behavioral assumptions lead to an unconscious tendency, by both male and female evaluators, to assume that men will be more competent police officers than women. The addition of time pressure and the need to multitask reduced the ability of evaluators to focus carefully on the performance of each individual police officer. The requirement for cognitive efficiency appears to have been achieved by relying on unconscious assumptions that men would be more competent police officers. This conclusion is strengthened by the finding that evaluators under time pressure and heightened attentional demand not only evaluated male police officers more favorably than women but also evaluated male police officers more favorably under these conditions than the same male police officers evaluated in the absence of distraction or time pressure.

Martell's study[17] is directly relevant to the NIH Director's Pioneer review process. As with police officers, the large majority of senior scientists still are men, and men occupy nearly all the publicly visible leadership positions in science. Despite the tremendous change in social roles of women over the past several decades, in 1990, elementary school students asked to draw a scientist overwhelmingly drew men.[18] In 2000, Rudman and Kilianski[14] found that both men and women in an ethnically diverse group of evaluators held implicit assumptions that men make better scientists

and other high authority figures than women. Martell[17] notes that when the cognitive demands are high, relying on such assumptions is efficient but will invariably favor men over women in the evaluation of work that is historically or predominantly performed by men.

ABSENCE OF FACE-TO-FACE DISCUSSION OF CANDIDATES

Unlike most grant proposal reviews performed at NIH, the Director's Pioneer Awards did not convene a study section-type format.[4] Following screening by NIH staff, each application was assigned to three outside reviewers, who performed and submitted their assessments electronically without a group discussion. The findings of Wenneras and Wold[19] are particularly relevant to this aspect of the review process. They examined 114 applications for prestigious postdoctoral research fellowships awarded by the Medical Research Council of Sweden. The applications were evaluated by a review group comprising top Swedish scientists who presumably consider themselves objective. The authors assigned impact points to each applicant by deriving a standardized productivity metric based on the number of publications, number of first-authored publications, prestige of the journal, and number of times the paper was cited. Wenneras and Wold[19] found that gender was a significant predictor of the evaluators' ratings of an applicant's competence. To even the score, women needed to have 2.5 times the number of publications as their male colleagues. Furthermore, although the relationship between publications and competence was clearly linear for men, the slope of this association was flat for women, such that women with 20 impact points received the same competence score as women with 99 impact points. In multivariate regression models, the investigators examined the influence of the following factors on reviewers' assessment of competence: gender, nationality, education, scientific field, university affiliation, review committee assignment, postdoctoral experience abroad, presence of a letter of recommendation, and whether the applicant was affiliated with any member of the review committee. The most potent modifying variable in raising the evaluation of competence for women scientists in this Swedish study was whether they were affiliated with a member of the committee. Knowing someone on the committee provided the same magnitude of advantage as being male. Such affiliation was known because it was recorded on the evaluation protocols, and this precluded that reviewer from scoring the affiliated applicant. Therefore, it was the impact of the presence of a committee member affiliated with an applicant on members who did not know this applicant that overcame the gender disadvantage in the evaluation of competence. Extrapolating the findings of Wenneras and Wold[19] to the NIH Pioneer Award review process, the lack of a face-to-face meeting to discuss nominees may have constituted an unintentional yet insurmountable disadvantage to women in the review process.

AMBIGUITY OF PERFORMANCE CRITERIA

Multiple studies, largely from cognitive and social psychology, find that whenever ambiguity or uncertainty exists in evaluating performance in a traditionally male gendered job, men are consistently evaluated as being more competent and possessing more achievement-related characteristics than women performing the same work.[13–16] The NIH Pioneer Awards were proclaimed as "novel" and "separate and completely different," and rather than the typical grant for a detailed research proposal, the Pioneer award was described as an "idea award" in which the "procedure for assessing applicants . . . will be distinct from the traditional NIH peer review." In contrast to the usual NIH application, the Pioneer Award did not use the PHS 398 form, no scientific plan was requested from the applicants, the focus was on the individual scientist rather than proposed research, the review process varied from the standard study section format, and the program was administered directly through the Director's office.[4] Although this process may well have fostered the flexibility needed to identify innovative and creative researchers, the unfamiliarity of such conditions for review and award undoubtedly created ambiguities and uncertainties throughout the selection process.

The recent work of Heilman et al.[20] is particularly relevant because in a series of studies they reaffirm this male advantage when performance in a leadership role (assistant vice president) is ambiguous but find that the gender difference in

assessment of competence disappears when clear evidence of high performance is provided (rated "stellar" and in the "top 5%" on annual evaluations). Also relevant to the Director's Pioneer selection process, Biernat and Fuegen[21] found that when reviewers of applicants for a male gendered job (mechanical engineer) were told that they would need to provide justification for their selection, women were even less likely than men to be selected. The authors speculate that this is due to the tacit assumption that more justification would be required to hire a woman than a man for such a position. A similar justification was required by nominators for the Pioneer Awards, who were instructed that their "letter will explain why the nominee should be considered exceptional," and caution was issued that "because of the experimental nature of the program, systematic evaluation will be a critical element [in] . . . making new awards. . . . "

Neither Heilman et al.[20] nor Biernat and Fuegen[21] studied evaluation in an academic setting where it might be conjectured that scientists steeped in objectivity would adopt a more gender-blind assessment of competence. Steinpreis et al.,[22] however, confirmed that academia is not immune to gender bias in evaluation of work. These researchers sent identical curricula vitae with a gendered male or female name of a junior or more senior job applicant to a national sample of academic psychologists. Despite identical records, both men (n = 118) and women (n = 120) were more likely to vote to hire a male applicant than a female applicant and gave more positive evaluations to the research, teaching, and service achievements of a male applicant than the same accomplishments of a female applicant.

Because men continue to occupy top leadership positions in nearly every field, male advantage in performance expectation occurs for leadership in general. However, as Eagly and Karau[13] discuss in their review, research in controlled settings confirms that women are particularly disadvantaged when the description of leadership emphasizes prescriptive male leadership traits (e.g., strong, independent, action oriented, risk taking) over prescriptive female traits (e.g., collaborative, consensus building, relationship nurturing).[13,16] The need to be a risk taker is repeatedly stressed in the description of eligibility for the Director's Pioneer Award. Although all innovative scientists consistently take calculated risks, being described as a risk taker would generally align with male rather than female or gender-neutral descriptive and prescriptive behaviors. Specific emphasis on risk taking includes the following statements in the description of the program or the ideal Pioneer: "support for more aggressive risk taking and innovation," "willing and able to explore ideas that were considered risky," "foster high-risk research," "an inclination to challenge paradigms and take intellectual risks," "encouraging of high-risk/high-impact research."[4] The URL itself for the website includes the word "highrisk." Thus, the case could be made that the NIH placed great value on prescriptive male traits for its first group of Pioneers. The term "pioneer" itself alludes to strong, male frontiersmen.

Ideal NIH Pioneers were to have "exceptional promise," and selection was "based on review of the individual's potential, to make seminal contributions." The emphasis on promise, potential and future work rather than past achievements in the absence of objective evaluation criteria would be predicted to advantage men in two ways: (1) the positive performance expectation afforded men through the unconscious assumption of greater competence consistently enhances evaluation of men over women,[14–16] and (2) because women scientists have historically faced additional barriers to career advancement,[12,23,24] men actually have had greater opportunity to become scientific leaders.

EMPHASIS ON SELF-PROMOTION

Self-nomination for the NIH Director's Pioneer Awards was welcome, and all applicants were required to submit a 3–5-page personal essay promoting themselves. Summarizing research on gender differences in self-promotion, Babcock and Laschever[25] conclude that girls and women are socialized from an early age not to self-promote. The recurrent admonition to girls not to brag or show off is so deeply embedded in gender norms of behavior, they posit, that not only is it difficult for women to engage in self-promotion, but self-promoting women are viewed negatively and susceptible to social penalties. Miller et al.,[26] for example, found that when students were given a written "boasting" statement, their assessment of likability of the author was much lower if they thought it was written by a woman

than if they thought the author was a man. Other research has shown that likability is an independent predictor of recommendation for advancement.[20] Rudman[27] performed a series of experiments with simulated job interviews in which students interviewed scripted actors who were self-promoting or self-effacing about their expertise at a computer game. The purpose was to select a partner, with the goal of receiving a fifty dollar prize if together they won the game. Self-promoting men were favored for hiring over self-promoting women even at the risk of losing the prize. In light of existing research, therefore, the requirement to self-promote for 3–5 pages would be predicted to be an easier task for men than for women. It is also plausible that because self-promotion violates prescriptive behavioral norms, women applicants who did so effectively would actually be put at a disadvantage in the review process.

WEIGHT GIVEN TO LETTERS OF RECOMMENDATION

Each applicant for the Director's Pioneer Award needed three letters of recommendation. Because the applications themselves were short, the letters presumably carried considerable weight in the review. Trix and Psenka[28] found significant differences in letters of recommendation written for men and for women. They evaluated 312 letters written for 103 faculty members hired at an academic medical center. Based on their evidence, if this gender difference is pervasive in academic settings, the letters for female compared with male applicants for NIH Pioneer Awards would be expected to be significantly shorter, have more references to personal life or family despite their shorter length, include more gender terms, such as "extremely intelligent and insightful woman," contain fewer standout adjectives, such as "excellent," "outstanding," or "superb," have more statements that were neutral but raised doubt (e.g., "Although I can't specifically comment on . . . "), and have more gender stereotypic adjectives (e.g., "compassionate" for women, "risk taker" for men). Any of these differences would be enough to disadvantage women competing for top leadership positions, such as the Pioneer Awards, which were specifically to target the "most competitive nominees."

FORMAL PRESENTATION TO JUDGE THE INDIVIDUAL AND NOT HIS OR HER SCIENCE

There is evidence to suggest that making a presentation in person to the reviewers who were constrained to judge the individual and not a specific scientific proposal would favor male applicants for the Director's Pioneer Award. As emphasized by the Institute of Medicine, the three major traits that immediately provoke unconscious assumptions, biases, or stereotypes are gender, race/ethnicity, and age because they are so visible.[29] Male scientists would be more likely to match the unconscious assumptions of evaluators about what a scientist, risk taker, and pioneer would look like and, thus, be afforded an immediate advantage. Evidence in support of this includes a study by Butler and Geis[30] that found that men and women performing as leaders from an identical script received the same competency ratings from observers, but women were more likely to evoke nonverbal indicators of negative affect (e.g., frowning, furrowed brow) and have negative adjectives attributed to their personalities. The importance of women's physical appearance in performance evaluations is supported by Heilman and Stopeck,[31] who found that evaluators of corporate leaders were more likely to attribute the success of attractive women to luck and unattractive women to ability. Valian[12] concludes that women who strive to be seen as effective leaders are afforded a narrow range of behaviors because if they appear too feminine, they risk triggering gender-based assumptions of lesser competence, and if they appear too masculine, they risk the social penalties that accompany violation of prescriptive gender norms of behavior. It stands to reason that women nominees for the NIH Pioneer Awards, compared with their male counterparts, would similarly be afforded a narrower range of behaviors to be seen as viable candidates for such a top leadership award.

CONCLUSIONS

The NIH is the premier research institution in the world and is comprised of individuals at all levels who value science and the use of scientific methods to find truth. Applying the results of

clinical research is increasingly emphasized as a goal in evidence-based practice.[32] In its definition of clinical research, the NIH includes "research conducted with human subjects . . . for which an investigator (or colleague) directly interacts with human subjects" and specifically includes "behavioral studies."[33] Thus, research on the impact of unconscious assumptions on the outcome of scientific review falls within the domain of clinical research. It follows logically that the NIH would strive to make its own grant review and award process evidence based. We offer the above analysis of the NIH Director's Pioneer Award evaluation and selection process to encourage the NIH to embark on self-study of its own review processes and consider earmarking competitive funding for research proposals that would undertake controlled and blinded investigations of scientific review. At the very least, in the spirit of evidence-based practice, the NIH should insist that the best available evidence be applied to the review process for the next round of NIH Director's Pioneer Awards. Specifically, this could involve educating all reviewers about the existing research on gender and evaluation, emphasizing both female and male gendered prescriptive behaviors for leadership (perhaps including examples or pictures of a diverse group of men and women scientists), encouraging NIH staff and scientific reviewers to dedicate sufficient time to studying each application thoroughly, and meeting as a committee to discuss applicants. It is in the best interests of our nation to strive to assure that the most innovative science, regardless of the gender of the scientist, will receive unbiased review in the next round of the Director's Pioneer Awards.

ACKNOWLEDGMENTS

We thank Dr. Vivian Pinn, Director of the NIH Office on Research in Women's Health, and Dr. Wanda Jones, DHHS Deputy Assistant Secretary for Health (Women's Health) and Director of the Office on Women's Health, for their encouragement and especially for their tenacity in promoting women's leadership as a way to improve the health of all women. For statistical consultation, we thank Marci Goldstein Adams, M.P.H., Research Specialist, University of Illinois, Chicago.

REFERENCES

1. Women in biomedical careers: Dynamics of change, strategies for the 21st century. NIH ORWH. NIH Publication No. 95-3565, 1992.
2. *www.nlm.nih.gov/changingthefaceofmedicine/* Accessed December 14, 2004.
3. Zerhouni E. The NIH Roadmap. Science 2003;302:63.
4. *nihroadmap.nih.gov/highrisk/initiatives/pioneer/index.aspx* Accessed November 10, 2004.
5. Mervis J. Male sweep of new award raises questions of bias. Science 2004;306:595
6. National Science Foundation, Division of Science Resources Statistics. Science and engineering doctorate awards: 2002, NSF 04-303. Project officer, Susan T. Hill. Arlington, VA, 2003.
7. National Science Foundation, Division of Science Resources Statistics. Women, minorities, and persons with disabilities in science and engineering: 2004, NSF 04-317. Arlington, VA, 2004.
8. Association of American Medical Colleges. Women in U.S. academic medicine: Statistics and medical school benchmarking, 2003–2004.
9. *www.hhmi.org/cgi-bin/scientist_search/search.pl?kw=&it=INVESTIGATOR&x=48&y=12* Accessed December 14, 2004.
10. *www.macfdn.org/programs/fel/winners_overview.htm* Accessed December 14, 2004.
11. Evaluation of ORWH's first ten years. Carlyn Consulting, December 2003.
12. Valian V. Why so slow? The advancement of women. Cambridge, MA: MIT Press, 2000.
13. Eagly AH, Karau SJ. Role congruity theory of prejudice toward female leaders. Psychol Rev 2002;109:573.
14. Rudman LA, Kilianski SE. Implicit and explicit attitudes toward female authority. Pers Soc Psychol Bull 2000;26:1315.
15. Heilman ME. Description and prescription: How gender stereotypes prevent women's ascent up the organizational ladder. J Soc Issues 2001;57:657.
16. Ridgeway CL. Gender, status, and leadership. J Soc Issues 2001;57:637.
17. Martell RF. Sex bias at work: The effects of attentional and memory demands on performance ratings of men and women. J Appl Soc Psychol 1991;21:1939.
18. Flick F. Scientist in residence program: Improving children's image of science and scientists. School Sci Math 1990;90:204.
19. Wenneras C, Wold A. Nepotism and sexism in peer review. Nature 1997;387:341.
20. Heilman ME, Wallen AS, Fuchs D, Tamkins MM. Penalties for success: Reactions to women who succeed at male gender-typed tasks. J Appl Psychol 2004;89:416.
21. Biernat M, Fuegen K. Shifting standards and the evaluation of competence: Complexity in gender-based judgment and decision making. J Soc Issues 2001;57:707.
22. Steinpreis RE, Anders KA, Ritzke D. The impact of

gender on the review of the curricula vitae of job applicants and tenure candidates: A national empirical study. Sex Roles 1999;41:509.
23. A study on the status of women faculty in science at MIT. MIT Faculty Newsletter. March, 1999;XI(4).
24. McGrayne, SB. Nobel Prize women in science: Their lives, struggles, and momentous discoveries. Secaucus, NJ: Carol Publishing Group, 1998.
25. Babcock L, Laschever S. Women don't ask: Negotiation and the gender divide. Princeton, NJ: Princeton University Press, 2003.
26. Miller LC, Cooke LL, Tsang J, Morgan F. Should I brag? Nature and impact of positive and boastful disclosures for woman and men. Hum Commun Res 1992;18:364.
27. Rudman LA. Self-promotion as a risk factor for women: The costs and benefits of counterstereotypical impression management. J Pers Soc Psychol 1998;74:629.
28. Trix F, Psenka C. Exploring the color of glass: Letters of recommendation for female and male medical faculty. Discourse Soc 2003;14:191.
29. Smedley BD, Butler AS, Bristw LR, eds. Institute of Medicine. In the nation's compelling interest: Ensuring diversity in the health-care workforce. Washington, DC: National Academics Press, 2004.
30. Butler D, Geis FL. Nonverbal affect responses to male and female leaders: Implications for leadership evaluations. J Pers Soc Psychol 1990;58:48.
31. Heilman ME, Stopeck MH. Attractiveness and corporate success: Different causal attributions for males and females. J Appl Psychol 1985;70:379.
32. Whitcomb ME. Why we must teach evidence-based medicine. Acad Med 2005;80:1.
33. The NIH Director's panel on clinical research report to the advisory committee to the NIH Director, December 1997. *www.nih.gov/news/crp/97report/*

Address reprint requests to:
Molly Carnes, M.D., M.S.
Department of Medicine, Psychiatry, and
Industrial and Systems Engineering
University of Wisconsin-Madison
Meriter Hospital, 6 West
202 South Park Street
Madison, WI 53715

E-mail: mlcarnes@wisc.edu

WISELI Publications 2005:

Gunter, Ramona and Amy Stambach. 2005. "Differences in Men and Women Scientists' Perceptions of Workplace Climate." *Journal of Women and Minorities in Science & Engineering*. 11(1):97-116.

Journal of Women and Minorities in Science and Engineering, vol. 11, pp. 97–116, 2005

DIFFERENCES IN MEN AND WOMEN SCIENTISTS' PERCEPTIONS OF WORKPLACE CLIMATE

Ramona Gunter and Amy Stambach*
University of Wisconsin–Madison

The climate of science is often described as "chilly" toward women and is blamed for women's underrepresentation and slow advancement within science fields. However, evidence of a chilly climate is often indirect. In this study of male and female science faculty members at a major research university, the authors found direct evidence for a chilly climate: A smaller percentage of women than men described their workplace environments in positive terms, and a larger percentage of women than men described uncomfortable, tense, or hostile interactions. Some men and many women said that gender bias might explain women's negative experiences; at the same time, these men and women stated that they could not say for certain that gender bias existed in their departments. Reasons for interviewees' difficulties in identifying and labeling gender bias are discussed.

INTRODUCTION

This article examines university science faculty members' perceptions of departmental communication. A focus on gender and communication within science workplaces is important in that it provides needed information regarding what is generally referred to as the "gender climate" in science. The environment (or climate) of science, often described as "chilly" and "unfriendly" toward women (Eisenhart & Finkel, 1998; Seymour & Hewitt, 1997), is blamed for women's underrepresentation and slow advancement within scientific fields (Arianrhod, 1992; Eisenhart & Finkel, 1998). However, evidence of the chilly and unfriendly climate is often indirect (e.g., Eisenhart & Finkel, 1998; Mervis, 2000). Given that large amounts of money are spent on programs intended to fix the climate of science (for examples, see Darke, Clewell, & Sevo, 2002, and Rosser & Daniels, 2004), direct evidence of the chilly climate and detail regarding what the climate feels like are all the more important.

We take the viewpoint that communication in the workplace reflects the interpersonal climate. As such, in this study, we consider whether men and women faculty members say that they experience communication problems; how they describe these problems; and whether they attribute these problems to gender bias, gendered communication styles, or the nature of the work itself. We provide direct evidence of the chilly climate in science by showing that women tend to describe uncomfortable and unfriendly work environments, whereas men tend to describe comfortable and friendly work environments. And we offer a description of these climates in terms of gender-biased acts and in terms of communication styles alternately described as "masculine" or as adhering to the norms of science.

*Correspondence concerning this article should be addressed to Ramona Gunter, Department of Educational Policy Studies, 1000 Bascom Mall, Madison, WI 53706; e-mail: rlgunter@wisc.edu. Funding for this study was provided by a National Science Foundation ADVANCE grant (0123666). Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation.

ISSN 1072-8325/05$35.00
Document #JWM1101/97–116/225

LITERATURE

The Gendered Climate of Science

Many scholars argue that the climate of science is gendered because, they say, its practices treat women unfairly and make women feel uncomfortable, unappreciated, and/or unwanted (Eisenhart & Finkel, 1998; Seymour & Hewitt, 1997). Efforts to bring more women into the sciences, and keep them there, are focused on fixing the climate (Dietz, Anderson, & Katzenmeyer, 2002; Mervis, 2000). However, not all scholars agree that women's underrepresentation in the sciences today can be explained by an unfriendly climate toward women. These scholars argue that men and women have different interests and values, and it is for this reason that women tend to choose nonscience occupations (Mervis, 2000; Xie & Shauman, 2003).

One possible reason some scholars argue that climate issues do not adequately explain women's underrepresentation in science is that much of the reported evidence for unfriendly climates is indirect. For example, Eisenhart and Finkel (1998) wrote, "[Most of the women we studied] celebrated their work sites as 'good places' for women and steadfastly maintained that women were 'equal to men' in the world of their work" (p. 183). Yet they went on to argue that the "processes that relegate women to subordinate status were still present" (p. 183), and "women had to behave as if they were prototypical men" (p. 183). In her essay, Rose (1987) referred to women scientists who "become essentially honorary men, denying that being a woman creates any problems at all" (p. 278). In a footnote, Rose wrote that this view was held by most of the women scientists who contributed to symposia at two different conferences but that it was her impression that "in private discussion, distinguished women scientists often have another interpretation" (p. 278). Some scholars refer to the lack of gender parity in the sciences and argue that evidence of unfriendly climates rests in the fact that gender parity has not yet been achieved in many fields of science (see Mervis, 2000). In these examples, evidence for the unfriendly climate toward women comes not through women scientists' own words but through the authors' interpretations and impressions.

These examples suggest that the gendered climate of science, to the extent that it exists, is difficult to document. We suggest two reasons why this might be the case. First, climates that are biased against women may be difficult to document because people assume that differential treatment is based on differences in men's and women's job performances. Thus, differential treatment (e.g., in terms of awards and promotions) is expected. Second, unfriendly climates—in which women experience uncomfortable and/or ineffective communication with colleagues, for example—may be attributed to the norms of the science workplace, not to individual acts of rudeness, insensitivity, or aggression. Rather than concluding that the climate is unfriendly toward women, women might conclude that they have not yet adjusted to the communicative requirements of the workplace.

Gender Bias

Even when it is noticeable that men and women are treated differently in the workplace, it is not necessarily easy to name the disparity as gender bias. This is because people tend to expect different levels of performance from men and women: Men are expected to excel in some types of tasks; women are expected to excel in other types (Valian, 1999; Wagner & Berger, 1997). For example, men have historically been considered to have

the intellectual capacity to do science, and women have not. This view survives today, as evidenced by Harvard president Lawrence H. Summers's recent speech stating that women's lesser capacity to do high-level mathematics might explain their underrepresentation in high-level science posts (Bombardieri, 2005). When we expect men to perform better than women, we are not surprised when men receive more promotions and other job-related awards than women.

In fact, performance expectations inform evaluative judgments, because performance expectations influence the standards of proof we require for determining competence and incompetence (see "Status Characteristics Theory" in Wagner & Berger, 1997). In a so-called masculine task such as science, standards of proof for determining competence are higher for women than for men. This means that in science, people tend to require more evidence of competence for a woman than for a man before concluding that the woman is competent. Likewise, people tend to require more evidence of incompetence for a man than for a woman before concluding that a man is incompetent (Biernat & Kobrynowicz, 1997; Valian, 1999; Wagner & Berger, 1997).

The differential treatment of men and women might not be interpreted as gender bias when it is inconsistent (Valian, 1999). Although many women do not rise to the highest ranks in science, some do. And although individual women's contributions will sometimes be undervalued, at other times, they will be valued. Despite incidents of unfair treatment, the incidents of fair treatment may be viewed as evidence that gender bias does not exist.

In summary, gender bias can be difficult to detect for two reasons. First, the differential treatment of men and women might not be interpreted as gender bias when people expect men and women to perform at different levels. Second, the differential treatment of men and women might not be interpreted as gender bias when it is inconsistent; that is, incidents of fair treatment are taken as evidence that the workplace is not biased.

Gender and Communication

Women scientists might experience unfriendly work environments, characterized by communication that is uncomfortable, rude, and/or ineffective. Indeed, the literature on gender differences in communication style suggests that women would have such experiences in workplaces in which men are the majority. A wealth of research on gender and communication has produced findings suggesting that men and women communicate in distinctly different ways. This research has found that men are more "direct" than women, whereas women tend to "hedge" and use "tag questions" (Edwards, 1998; Lakoff, 1975; Spender, 1980; Tannen, 1992). Men interrupt more often than women (Coates, 1986; Spender, 1980; West & Zimmerman, 1983), whereas women tend to play "supportive" roles (Coates, 1986; Edwards, 1998; Lakoff, 1975). Women tend to use utterances (such as *ah* and *uh-huh*) that convey to speakers that they are listening, and they tend to ask questions that encourage speakers to say more (Coates, 1986; Edwards, 1998; Lakoff, 1975). Such findings suggest that compared with women, men are more confident when they speak, an interpretation consistent with the finding that men tend to speak more often in public settings than women (Kramarae, 1981).

These findings have been used to explain apparent power differences between men and women, particularly in public domains (e.g., Lakoff, 1975). Men, with their use of direct communication styles, tend to be evaluated as knowledgeable and confident; women, with their use of hedges and tag questions, tend to be evaluated as unsure and

lacking confidence. Men's more aggressive styles help them gain the floor, whereas women's more passive styles clear the way for men to take the floor. Compared with women, men speak their opinions more often and receive more positive evaluations of their opinions when they speak.

Despite the vast literature, both scholarly and popular, reporting gender differences in communication styles, gender differences in communication styles are not supported by the whole of gender and communication research. Many studies have produced contradictory and ambiguous results with respect to many of the so-called gender differences in language use (Connell, 2002; Mills, 2003; Romaine, 1999). Several meta-analyses of the gender and communication research conclude that men and women are actually more similar than different with respect to communication (Connell, 2002). It may be that gender differences in communication styles do occur, but only in certain contexts (Connell, 2002; Mills, 2003), including contexts that already have a gender association, such as the masculine domain of science (Harraway, 1991; Keller, 1995; Rose, 1987).

The literature on gender and communication suggests that women scientists might experience unfriendly work environments, characterized by uncomfortable, rude, and/or ineffective communication. But if they believe that these communication experiences are a result of the communicative norms of a science workplace, they might not view the experiences as unacceptable. Women might accept that men (who generally constitute the majority in the science workplace) will set the communication norms.

Gender and Science

Science is argued to be masculine in that the assumptions underlying the practice of science are said to reflect a masculine bias. The "objective" and "detached" stance of the scientist and the tendency to explain phenomena through controls, manipulations, and predictions are sometimes said to represent a masculine way of interacting with the world (Harraway, 1991; Keller, 1995; Rose, 1987; Schiebinger, 1987; Shank, 2000). In contrast, many suggest that a feminist science would be more holistic and would emphasize intuition, feeling, connection, and relatedness (Arianrhod, 1992; Eisenhart & Finkel, 1998; Harraway, 1991; Keller, 1995; Maher & Tetreault, 1996; Rose, 1987). Note that the attributes of masculine science are similar to the attributes of masculine communication styles: detached, "rational," and task oriented (to the exclusion of social considerations) (Tannen, 1992). In addition, the attributes of "feminine" science and feminine communication styles emphasize the same values: connection, relatedness, and subjective knowing (Belenky, Clinchy, Goldberger, & Tarule, 1997).

Given these parallels, we might expect gendered aspects of communication to be heightened in science domains. That is, we might expect masculine communication styles to resonate with the norms of science communication and feminine styles to fall on deaf ears (if not produce discord). Even if men and women are more alike than different with respect to communication (Connell, 2002), we might expect gender differences in communication to occur in the science workplace.

In this section, we draw a strong parallel between masculine norms and science norms, and we suggest that women might believe that workplace communication is governed by the norms of science. Given this, we arrive at essentially the same conclusion as before: Women may view their experiences in terms of a lack of fit between their communication style and the communication norms of their workplace.

Summary

We suggest that evidence for the chilly climate in science is lacking for two reasons: (a) Women might expect there to be differences in men's and women's performances and therefore might expect differential treatment of men and women, and (b) women might view their experiences in terms of a lack of fit. In either case, even if women describe what might be considered a chilly climate in their workplaces, we would not necessarily expect them to talk about gender bias or unacceptable treatment. Given this, we looked for evidence of the chilly climate by comparing men's and women's descriptions of their workplace environments. That is, we asked whether women tend to experience less friendly, less comfortable climates than men.

STUDY AND METHODS

This study is part of a larger project funded by a National Science Foundation ADVANCE institutional grant to study and improve the climate of academic science, particularly with respect to issues that may impede women's participation. To this end, we interviewed men and women faculty members in the sciences at a major research university about their work experiences. Interviews explored faculty members' perceptions regarding overall work environment and experiences and perceptions regarding departmental communication issues in particular.

This article is based on two related but separate studies. Women were interviewed in the first study to establish a baseline. These women will be interviewed 5 years later to learn whether their work experiences have changed. (We worked with other ADVANCE researchers during this study to develop the interview protocol and conduct interviews.) Men were interviewed in the second study to explore possible locations for a future ethnographic study. (We modified the original interview protocol to be used in these interviews and conducted all of these interviews. The ethnographic study is ongoing.)

In the first study, all female faculty members in the biological and physical science divisions (n = 184) received e-mails describing the study and requesting their permission to be considered on a list of possible interviewees. One woman refused. ADVANCE researchers randomly selected 27 women from the six largest schools and colleges. These women received e-mails requesting their participation in interviews. Twenty-six women agreed to participate. Four women requested that their interviews not be taped. In this article, we include the 22 women whose interviews were taped and 2 women who agreed to extensive note-taking during the interview.

In the second study, we selected 25 men in the life sciences through purposeful sampling. We limited our selection to the life sciences because we would be locating the ethnographic study in the life sciences. The departments we chose represented a large subset of the departments from the first study. Department and faculty members' Web sites were used to select a group of men who occupied various positions (e.g., assistant, associate, and full professors; research, extension, and clinical appointments; department chairs). E-mail messages were sent to the 25 men explaining our study and requesting their participation in an interview. Twenty-two men agreed to participate. (For a more detailed description of selection procedures, see Gunter & Stambach, 2003.)

As described above, men were selected nonrandomly from a subset of the departments from which women were selected. This limits the strength of the comparisons we make between men and women. Having said this, we note that 83% of women were located in the life sciences; thus, the majority of women worked in the same departments as the men. We also note that although men and women, as groups, differed in terms of length of employment and title, the differences were consistent with recent efforts of departments and colleges to hire more women. A greater percentage of women than men were assistant professors (50% vs. 18%) and reported less than 10 years of employment (58% vs. 18%). A greater percentage of men than women were full professors (64% vs. 38%) and reported more than 20 years of employment (45% vs. 17%). Thirty-six percent of men and 21% of women were serving as department chairs or deans.

The interview protocol for the first study was designed to elicit descriptions of workplace climate. Questions were included that addressed issues relevant to women in academic science, including issues related to communication. In addition to general questions regarding their work environments, we asked women to talk about the following: interactions with colleagues, problems or conflicts that come up in their departments and how these are dealt with, departmental meetings, how departmental decisions are made and whether they feel they have a voice in these decisions, and perceived gender differences with respect to specific issues (including communication) listed in the literature.

In interviewing men, we used a modified form of the initial interview protocol. With the exception of perceived gender differences regarding specific issues listed in the literature, all of the issues listed above were included in the protocol. In addition, we asked men to comment on their perceptions of whether women had a "voice" in their departments and on their observations and thoughts regarding the progress of women's careers in their departments. (For a broader description of the interview protocols, see Gunter & Stambach, 2003.)

Interview protocols were designed so general, open-ended questions were asked at the beginning and questions about specific issues (such as gender) were asked near the end of the interview. For example, toward the beginning, interviewees were asked to describe their work environments, departmental meetings, and what it was like to work in their departments. Toward the middle of the interviews, interviewees were asked whether gender had played a role in their work experiences, and if so, in what ways. At the end of the interviews, women (but not men) were asked whether they noticed gender differences with respect to specific issues, including communication styles. Men were asked to comment on the career progress of women in their departments, whether they felt that there were gender differences with respect to participation in departmental meetings, and whether they felt that there were gender differences with respect to participation in departmental decision making.

For the most part, the gender differences with respect to communication styles that we discuss in this article were raised by interviewees without being specifically prompted to do so: No men were asked to talk about these gender differences, and most women talked about these differences early in the interview, before being asked. (See Table 1 for details.) Therefore, although the differences in interview protocols introduced limitations to our ability to compare men's and women's perceptions regarding gender differences in communication, the majority of men's and women's comments regarding gendered communication styles were comparable because the comments were unsolicited.

Table 1. Men's and Women's Comments About Gender Differences in Communication Style

	Commented without being asked to talk about gender differences in communication.	Commented when asked to talk about gender differences in communication.	Did not say there were or were not gender differences.	Total
Said there are gender differences in communication styles.	Women: 42%; men: 18%	Women: 17%; men: N/A[a]		Women: 59%; men: 18%
Said there are no gender differences in communication styles.	Women: 13%; men: 9%	Women: 0%; men: N/A[a]		Women: 13%; men: 9%
Did not say there were or were not gender differences.			Women: 29%; men: 73%[a]	Women: 29%; men: 73%
Total	Women: 55%; men: 27%	Women: 17%; men: N/A[a]	Women: 29%; men: 73%[a]	Women: 101%; men: 100%

Note. Percentages for women do not add up to 100% because of rounding.

[a] Men were not specifically asked to talk about gender differences in communication styles.

FINDINGS[1]

Neither men nor women tended to characterize their departments in negative terms. In fact, a general reading through the interviews leaves one with the impression that most men and most women viewed their departments as good, if not great, places to work. However, after coding for specific types of comments and looking at how these comments were distributed by gender, one notices that fewer women than men characterized their departments in overall positive terms, and more women than men mentioned instances of uncomfortable, tense, or even hostile interactions. Many of the women suggested that these negative interactions might have to do with gender.

Perceptions of Departmental Communication: Gender Differences

When asked if it was his sense that people in departmental meetings tended to speak up, and if there's any possibility that some people don't feel free to participate, one man explained that from his perspective, meetings were "fair." He went on,

> It's quite possible that what you're talking about is in the minds of women who are in those meetings, but you would need to poll their opinions to understand that, cause I don't know. Um, but I do know in conversations with our women colleagues, that this can be...it can be a concern even if it isn't a reality. (M10)

This man's response was reflective of the general pattern of responses to our questions regarding interviewees' perceptions of departmental communication in general and gender differences with respect to participation in department meetings in particular. For the most part, men (87%) described communication in their departments as "fair." Men told us that there was a "free exchange of ideas," that people felt "empowered" and "free to speak" independent of gender, and that women had an "absolutely equal voice." They described their departments as "friendly" and "collegial." Half of the women also described departmental communication in generally positive terms, saying that people were "free to speak" and characterizing their departments as "fair," "collegial," and "friendly."

In contrast, half the women and only 14% of the men described their departments in generally negative terms. They characterized their departments as "lonely" and "isolating." They said that people did not get along. And they said that there were power struggles within their departments.

Table 2 shows gendered patterns in how interviewees described departmental communication. As noted above, a greater percentage of men than women (87% vs. 50%) described communication in their departments in generally positive terms. Some men and

[1]We used the following conventions in editing interview excerpts: (a) We removed most repetitive words, stutters, and fillers (such as *uh*) to make excerpts more readable. (b) Words enclosed in brackets indicate that we have changed the exact wording. In some cases, we changed details to protect identity. In some cases, we substituted shortened versions of what was said for ease of readability. (c) Ellipses indicate pauses, or trailing off from incomplete statements. (d) Ellipses enclosed by parentheses indicate that a portion of a speaker's statement has been edited out. This was done when a portion did not add to the point being made and did not change the meaning of the statement when left off. (d) In excerpts, interviewees' statements are indicated by an *M* or an *F* (for "male" or "female"), followed by a number. (An interviewee identifier followed by an *R* (e.g., F24R) indicates that this interviewee replaced one of the original interviewees.) Interviewers' statements are indicated by an *I*.

Table 2. Men's and Women's Descriptions of Departmental Communication

	Describe Departmental Communication in Generally Positive Terms (e.g., "collegial," "supportive," "friendly")		
	Yes	No	Total
Say there are some communication issues in their departments.			
Yes	Women: 33%; men: 14%	Women: 50%; men: 14%	Women: 83%; men: 28%
No	Women: 17%; men: 73%		Women: 17%; men: 73%
Total	Women: 50%; men: 87%	Women: 50%; men: 14%	Women: 100%; men: 101%

Note. Percentages for men do not add up to 100% because of rounding.

women in this group also stated that their departments had some communication issues. However, 73% of men and only 17% of women described communication in their departments in generally positive terms and did not mention any negative issues. In contrast, 50% of women and only 14% of men did not generalize department communication in positive terms and did describe negative aspects of communication in their departments. In summary, compared with women, men spoke in more positive terms about communication in their departments.

Another point of departure for men and women in our sample was their expressed beliefs regarding whether gender was an issue with respect to communication in their departments. Although 21% of women and 36% of men said that women were not at a disadvantage when it comes to "having a voice" and "being heard," 75% of women and only 23% of men said that women were or may be at a disadvantage.[2] Women mentioned the following categories of concern: women's ideas are ignored, talk in departmental meetings is dominated by men, women are treated differently than men (sometimes in patronizing ways), and an "old boys' network" exists that makes it difficult for women to take part in decision making. The men said that their female colleagues had their ideas ignored and were treated differently because they were women. In addition, many women (58%) expressed beliefs that men and women tended to communicate in different ways and that women would communicate more effectively in their departments, and at science gatherings such as conferences and national meetings, if they would adopt masculine communication styles.

Friendly, collegial, and supportive communication among colleagues can have important consequences for a faculty member's career. Below, one woman and one man shared anecdotes regarding the importance of communication in their workplaces. They told us how communication provided needed social support and important information and how communication could make or break a faculty member's tenure bid. The woman told us,

> F13: There are some faculty who have strived to sort of include me, and others have not. (...) Now it's interesting that I was talking to the chair the other month, I guess, and he knows. I've complained to him about all of this and he says, "I know, I know." Other

[2]Percentages do not add to 100% because some interviewees did not make comments either way on these issues.

> people complain about this, too. Isolation. And not a lot of mentoring, not a lot of support. (...) So I had mentioned this to him, and the assistant male professor came in to talk with the chair. Just, I mean it was all perfectly appropriate, but he came in and he said, "What about this?" You know, and so they chatted for a minute or two and it was somewhat jocular, but also [about his] research.
>
> I: This happened while you were in the room?
>
> F13: Yeah. Oh, yeah. And it was really appropriate. It sounds totally wrong, but it was—it was fine. It was a very casual kind of talk I was having with the chair. But anyhow when the assistant professor left I said to the chair, "See now? That's what I'm missing. I don't have anybody just to joke around with who even has a clue what I'm doing in terms of research."
>
> I: Oh. What a wonderful moment.
>
> F13: It was. It was perfect because it was so minor. And the chair said, "Oh, well, that's nothing," and I said, "That's what I need." You know?

The man (M23) told us about an assistant male professor who had a joint appointment and who almost did not receive tenure. M23 was chair of one of the assistant professor's departments. The tenure bid was supported by M23's department but denied by the other department. M23 explained that socializing in the department, something the assistant professor did in his department and not in the other department, made it easier to get a "yes" vote on tenure:

> So I think that's a serious problem for assistant professors if they have, um, more than one department, more than one tenure home. It's hard enough to satisfy one department. It's very hard to satisfy two. And the one he satisfied—he had his lab with us and he hung out in the hallways with us, and so—I think it's much easier to satisfy the department you live in rather than the one that you're—you're not there all the time.

We note that in both anecdotes, it is men who are benefiting from friendly, collegial interactions.

The Elusiveness of Gender Bias

A few men and many women stated that they believed that there was or suspected that there might be bias against women in their departments. However, they had difficulty identifying specific gender-biased acts. The men said that they could not "see" gender-biased acts. The women said that factors other than gender might explain the interactions that appeared to be biased against women.

Of the five men who expressed beliefs that bias against women existed in their departments, only one claimed to have actually seen such bias in action. He told us,

> There's a stereotype that women who come across as aggressive are seen as bitchy. And I've certainly experienced that in faculty meetings, say, evaluating candidates. It doesn't come out as "bitchy," but it's like, you know: "That's a pretty aggressive person, and how are they gonna fit in?" (M14)

The other four men who said that they believe that gender bias was an issue in their departments said that they did not, and perhaps could not, detect its presence. Each of the following men told us that his female colleagues told him that they experienced gender bias in their departments. And each of these men said that they did not see the bias and could not confirm it:

> I don't feel it, I don't perceive it, but that's just probably cause I'm not capable of perceiving it. It's not overt, but it may be a subtext for many...for women in those situations. (M10)

> I can't validate it or negate it...I can't tell you if it's true or not. I mean, I trust what they're saying. It's real...it's real in their experience. So I think that there are probably many things that are unequal in that sense. (M12)

> I have heard from my female colleagues that they feel they're treated differently, and there may be some patronizing things going on. You know, nothing very explicit, but very subtle...and I believe them. (M15)

These men said that they could not detect gender bias in their departments because it was subtle. This was consistent with the ways in which women talked about gender bias. Most of the women who talked about gender bias in their departments did not speak of it as a "fact" but rather as something they felt or thought existed. For example, women told us the following,

> I've had moments during my time here where I thought: "You know what? I'm a woman and all these guys are sitting around me and not listening." (F1)

> I think that I have experienced the boy's club. (F24R)

> I think I'm treated differently because I'm a woman. (F6)

> Honestly, I've given the impression [during this interview] that I never felt that gender was an issue. I do in subtle ways feel that it's an issue. (...) I do feel that there is some attitude toward me as a female instructor. Comments that my chair had given about family life, (...) and that sort of thing. (F19)

Many women stated that it was difficult to say for certain whether gender was an issue in their departments because factors other than gender might also have explained their experiences. For example, several women told us that their junior faculty status, not their gender, might explain those times when they felt their opinions were ignored. And a few women said that perhaps their ideas had been ignored because the ideas were not good, not because they were women. One woman explained,

> It's all very interpersonally complicated, and it's hard to know if you're being treated the way you are because you're a woman or because you're new and different or....But there are just certain situations where I feel like, you know, you would not talk to me this way [if I were a man]. (F21)

The man quoted below also stated that it was difficult to tell whether a woman's ideas were "dismissed" because she was a woman or because the idea was not good. At the same time, he told us that men's ideas were generally not dismissed:

> I: So, you've said: "I've detected it in subtle ways." I'm interested in what the cues are. For example, if I was observing faculty meetings, what sorts of things might I be aware of that...
>
> M12: Dismissive attitudes towards women's opinions, or less credibility, or less weight given to them or...or just sort of, um, perfunctory sort of: "Oh yeah, you said what you wanted to say, but what I'm saying now is [what's important]."
>
> I: And you said you've actually...those are some of the things you've seen?
>
> M12: I've seen that from time to time. And, you know, you can't always separate. You can't always say it's because they're a woman. It could be because of the opinion. But I think that what my [women] colleagues tell me is that this is real. This is real and this is important and you need to pay attention to this, because it's happening actually a lot.
>
> I: Do you notice that happening with men?
>
> M12: Well, um, there are certain individuals that it happens to....But no. In general, you know, men...it's...it seems to be different. It seems to be different in these kinds of settings.

Subtle forms of gender bias may be difficult to discuss because they are not easy to "see," as the men quoted above stated. Gender bias may be difficult to discuss because variables other than gender might also explain an interaction, as many women told us. In addition, gender bias may be difficult to discuss because it is not consistent; that is, a person may experience discriminatory acts on occasion, but not all the time. When a person believes that he or she has been treated fairly on certain occasions, that person may question his or her judgment on those occasions when he or she thinks that he or she might not have been treated fairly. One woman (F19) told us of an experience that suggests this last possibility. In the following, we describe her experience and how she interpreted it. We also describe the views on gender of one man who was a key player in the experience she described. We intend to illustrate how various actors can participate in an apparently biased system without labeling it as such and perhaps without perceiving it as such.

A Case Study of Possible Gender Discrimination[3]

Shortly before F19 came up for tenure, she learned that her salary was substantially lower than that of a male colleague (Jim) who had received tenure 2 years earlier. After receiving tenure (by a unanimous vote) but not receiving a substantial raise, F19 approached the chair of her department's committee for merit raises (M5). She explained that she had expected to receive a raise that would bring her salary up to a level comparable with Jim's.

[3]Some details have been changed for confidentiality reasons.

M5 told F19 that Jim needed the very large raise he had received on tenure because, as the man of the house, he was the breadwinner. "He also said [the department] didn't want to lose [Jim] because [he] might leave and find another job. [The department] values [Jim] as a teacher and as a scientist" (F19). She said that M5 told her that his recommendation stood: She should receive the university-mandated raise and "not a penny more" (F19).

F19 said that she was not sure how to understand M5's explanation for not recommending a raise. She explained,

> When I asked [M5] about that comment later [about being the breadwinner]...when I mentioned it again, he said "Oh you just took me too seriously" or "I was just sort of kidding. I didn't mean that." Well, I don't know where it came from otherwise. (F19)

Although she struggled with the "breadwinner" comment, F19 suggested that the decision not to recommend a raise might have been based on merit, not on gender. She told us,

> I think [Jim] deserves what he's got. I'm not saying that he's not deserving, but I think that I am equally deserving...which then brings us back to the [grants]. Okay, and so, yeah, although M5 never came out and said it, it's possible that I wasn't worthy of [a substantial raise] because I wasn't bringing in very much money. I wasn't pulling my weight in the department in terms of grants. (F19)

F19 explained that after she started to bring in grant money (sometime after the above incident had occurred), the committee on merit raises recommended that she receive a raise.

In discussing her experience, F19 expressed conflicting thoughts. Note that she stated (above) that she deserved the raise, right before offering an explanation for why she may not have deserved the raise. And although she first suggested, during her interview, that the decision not to give her a raise may have been merit based, toward the end of her interview, F19 argued that gender bias was the most rational explanation she could think of for what had happened, even though she had a hard time believing that gender was an issue. She told us,

> I really asked myself if the things that [M5] was saying were real, was I imagining these, or was I just not getting the context right. Did they really have to do with my scientific ability? Or was there a gender issue? *I couldn't believe there was a gender issue* [emphasis added], but I couldn't believe that...I just didn't know why they came up. Or the way in which they were said, or the examples that were given were so much more like gender issues than they were scientific issues. I didn't have much of an explanation there. It wasn't that he said your science stinks. He couldn't say that, I had just had tenure. And I said: "I'm a female that just got tenure. Aren't women dropping out like flies, you know, pretenure? And here we've got a woman who actually had a vote of confidence." How can it be that I shouldn't have a raise when my male colleague has a raise? Why? What's the difference? He got tenure. I got tenure.

Although both explanations (the merit-based explanation and the gender bias explanation) F19 offered are plausible, we argue that the evidence points more strongly to gender bias as the reason F19 did not receive the raise. First, we note that M5's own words (as reported by F19) support the gender bias explanation. M5 said that Jim received the raise because, in short, he was a man; he did not say that Jim received the raise because of his success at bringing in grant money. Second, during his interview, M5 expressed a negative attitude regarding

gender equity policies. He stated that it was wrong to look for evidence of gender discrimination, and he expressed no concern regarding discrimination against women.

During his interview, M5 said that his department liked to hire "strong women." He explained,

> M5: [Strong women] are [women] we know are gonna make it.
>
> I: [Who] come in with good records?
>
> M5: Yeah. Yeah. Yeah. Yeah. But also, I think a strong woman also is, um, for me, a strong woman is, like, okay, [this woman I know]. (...) And [this woman], she would never use an excuse of her gender to, you know....If she didn't make something, she wouldn't say, "Well I was a woman." You know? You know, that's what I call a strong woman. (...) What I don't like is...somebody'll say, "Well, you know, I didn't make it 'cause I'm a woman." You know what I mean?
>
> I: Yeah, I do.
>
> M5: So I consider a strong woman somebody who just does the best they can.

M5 explained that for political reasons, "it would be horrible to hire a woman and then have her not make it."

> M5: If a guy doesn't make it, it's one thing. If a woman doesn't make it, it's worse.
>
> I: Because?
>
> M5: Because there's a spotlight on you. I mean, how many merit exercises are there that are gender-related for men? Okay, the [university] has a pot of money. And they say, we want to compare a woman's salary with a man in your department. And so what they do is they look for a woman who's lower paid and a guy of comparable thing. (...) And they come along and they say, "Well, give [her] another 20,000," and, you know, but they never, they don't do it the other way.

As if to elaborate, M5 then told of a female lab technician who had pointed out to him that he treated the women in his lab differently than the men, to the men's benefit. He did not deny that he treated the women differently, and he did not deny that the differential treatment benefited the men. Instead, M5 said that he was shocked that someone was paying attention to and keeping track of how he was treating men and women.

We emphasize that the types of interactions F19 described were not representative of our interviews. Also, the views regarding gender equity expressed by M5 were not typical of our interviewees. We tell this story because it illustrates the difficulty of identifying and naming gender discrimination even in the face of apparently blatant discriminatory remarks and actions. If blatant sexist remarks, such as stating that a man needs a raise because he is the breadwinner of his home, are difficult to label, then how much more difficult is it to label subtle acts of discrimination?

F19 oscillated between arguing that women were discriminated against in her department and arguing that they were not. In addition to the example discussed above, in which

she was denied a raise for reasons that were apparently gender based, F19 described a few other occasions in which men were given opportunities over women in her department. She also described times in which she had been treated well: given both support and recognition. In the end, F19 did not conclude that having been denied a raise at tenure was an act of gender discrimination, nor did she conclude that any of the other examples of possible gender discrimination she told us about were in fact discriminatory acts. F19's difficulty in making a conclusive statement regarding gender discrimination appeared to lie in the fact that she could come up with evidence for, as well as against, acts that discriminated against women.

Perceptions Regarding Gender Differences in Communication Styles

Some women may believe that the system (not the individuals within the system) is "biased." That is, people do not discriminate against women; rather, the work environment, as it is structured, benefits men. We are suggesting that communication norms represent one aspect of the work environment's structure. Many women told us that to avoid negative communication experiences and to effectively communicate in their departments, they needed to communicate more like men. We suggest that these women might believe their negative communication experiences occur because they do not fit the workplace culture, not because they have been treated improperly.

Many women attributed the uncomfortable or tense interactions discussed during our interviews to the belief that men and women communicate in different ways. These women explained that men are more successful than women at having their ideas taken up in discussions, and at developing collegial networks, because men are more "assertive," more "direct," and more "aggressive" than women. Men "interrupt" more and push their ideas. These women said the following:

> Sometimes the women are...again this is another male/female difference: I think that [being direct and assertive] does not come naturally to women. Being humble or shy or something is a good female thing. For the men it's like, "Okay, let's fight. Let's go for this." And I've seen it. (F4)

> I do think as a whole, as a group, women could use some assertiveness training. I think we operate differently than men. (F19)

> I think [inclusion in professional collegial relationships] is harder for women in general cause I think, again, it requires more aggression then probably most women are used to. (...) I tend to think that women tend to be more shy [than men] in general. (F10)

Women told us that to be successful in getting their ideas heard and discussed, they needed to change their communication styles to communicate more like men. Women said,

> You know it could be that maybe we don't assert our ideas so they're not listened to in the right way...the way a man would listen if a man were saying them. (F19)

> I frequently tell myself to act like a man...if I was a man, what would I do? Because I just think there are certain behaviors that men will tell themselves they are an authority, and they'll act certain ways. And so I think they're just subtle differences that women need to recognize, that there are behaviors that they can do that will help themselves. (F20)

> [Men interrupt more than women.] And I had to learn not to wait until there were polite breaks in conversation, when you were in committees. (...) And if you don't interrupt you don't have an opportunity to be heard. So, and I had to get over being fearful of raising my hand in front of groups and speaking up, and just make myself do it. But, yeah, so I always hope that I haven't gone too far over to the other side. (F15)

None of the women we interviewed argued that women should not have to be more aggressive or more assertive, "act like men," or interrupt other speakers to present and have their ideas taken up in discussion or to gain access to collegial networks.

A few men also said that women and men communicate in different ways. These men used general descriptors, saying women are more "sensitive," more "civil," and more intuitive than are men. They explained that these gender differences affect communication by influencing how men communicate with women and by influencing how women perceive and evaluate interactions. One man, for example, explained that he did not feel free to be blunt and upfront with a woman, especially "with all the equity [initiatives]," because "women are different," "women are more sensitive" (M5). Two men said that women perceive interactions differently than men. One explained,

> I think males and females do pay attention to different things and can...in the same context [can have different] perceptions of what actually transpired. And I think women are much more in tune with personality issues, interpersonal relations. Um, I've never been in tune to interpersonal relations. I focus on my work basically. That's the way I've always been. I think a lot of the males resemble me. So I think there truly are male and female differences in the central nervous system and um, so that could be part of the explanation. (M2)

One man—speaking of women in his department, not necessarily of women in general—stated that women "bring a level of civility" (M23) to faculty meetings.

Only seven interviewees (four men and three women) told us that there were no gender differences in how men and women in their departments communicated, although two of these men (M5 and M2) told us that in general, men and women communicated differently. These interviewees described the women in their departments as "competitive," "aggressive," and "assertive," much the same as the women above described men. For example, interviewees told us,

> Women have a strong presence [in my department]. I'm thinking of our very best women scientists here. (...) They don't ask questions. They just tell you what they found, and so forth. (M7)

> F14: In science you tend to be pretty aggressive, and they have a different style in the humanities.

> I: So the women you meet in science, you would also describe as pretty aggressive?

> F14: Yes, for the most part.

Our data suggest that those men and women who talked about gender and communication styles viewed science as a masculine domain. The connections many women made

between what they considered to be masculine styles of communication and effectiveness in their departments (and in science communities in general) seem to imply that they viewed science as an environment more suited to men than to women. Many women did say, either directly or indirectly, that they needed to act like men to increase their own effectiveness with respect to having a voice in their departments and in science meetings in general. The few men and women who stated that there were no gender differences with respect to communication in their departments characterized women in their departments (and in one case, characterized all scientists) as "competitive," "aggressive," and "assertive," all characteristics that the majority of women described as masculine. Two of the men who characterized women in their departments in this way also characterized women in general as different from men, suggesting, in our view, that they believed that men and women communicate differently but that women in science communicate like men.

DISCUSSION AND CONCLUDING STATEMENTS

Like others (Eisenhart & Finkel, 1998; Rose, 1987), we find that the climate of science tends to be chilly for women. And like others (Eisenhart & Finkel, 1998; Rose, 1987), we find that women do not label the climate as such. Even so, our evidence for a chilly climate comes from women's descriptions of their work environments. Compared with men in our sample, smaller percentages of women characterized their departments in positive terms, and larger percentages described uncomfortable, tense, or hostile interactions.

According to the men and women in our sample who talked about less than friendly climates for women in their departments, a chilly climate is not easily recognizable, or at least not easily labeled. We find that gender bias is difficult to identify and label for the following reasons. First, gender bias is often "subtle" and therefore not easy to "see." Second, variables other than gender (such as rank or the quality or value of the idea being presented) may explain the interaction. Third, gender bias may not be consistent: Women's ideas may sometimes be ignored, but at other times, their ideas may be successfully taken up for discussion. (Valian, 1999, argued just this and stated that the so-called small injustices that occur during such occasional acts of discrimination have accumulating effects.) Fourth, women may believe that men have more successful interactions in the science workplace, not because men and women are treated differently (to the benefit of men) but because the social norms of science benefit men but not women.

Our data suggest that although men and women might see the signs of a chilly climate, they may be uncertain as to whether a chilly climate actually exists. We argue that it is important for all faculty members and administrators to continually be aware of the signs and to find ways to address them when they arise. From our data, indications that a chilly climate may exist include the following: Women's ideas and opinions are dismissed or ignored, women are treated in patronizing ways by male colleagues, women report having uncomfortable (e.g., tense, unfriendly, hostile) interactions, and women report feeling "lonely" and "isolated."

As the anecdotes we presented suggest, comfortable, friendly, collegial interactions can provide needed social support. They can be the means for gaining important information, and they can even give a faculty member an edge when it comes to promotion decisions. It follows that uncomfortable interactions, loneliness, and isolation can impede a faculty member's career. Our findings are consistent with data showing women's underrepresentation and slower advancement in the sciences. Half of the women in our

sample and only 14% of the men talked about departmental communication in exclusively negative terms.

As discussed in the "Methods" section of this article, our ability to compare men's and women's perceptions, particularly with respect to gendered communication styles, is limited. However, we note that our finding that women experience a different, "chillier" environment than men is consistent with Bronstein and Farnsworth's (1998) findings. As in our study, Bronstein and Farnsworth found that most faculty members reported satisfaction with their jobs, but greater percentages of women than men reported "demeaning, harassing, intimidating, and excluding behaviors within the work environment" (p. 572). Some differences between our study and Bronstein and Farnsworth's study should be noted. Ours was based on 46 interviews with science faculty members at a research university, whereas theirs was based on 556 questionnaires from full- and part-time faculty members and postdoctoral research appointees across all schools and colleges at a research university. It is possible that our findings are less a statement of the science workplace than of the university workplace in general. However, keeping in mind that methodology and sample selection for the two studies are not comparable, we note that as many as 60% of women and 38% of men in Bronstein and Farnsworth's study reported negative interactions, whereas 83% of women and 28% of men in our study reported negative interactions. It might be that men tend to have more positive experiences in academic work environments in general, and this difference might be greater in science environments in particular.

In summary, we note that although women were less positive than men regarding their work environments, they had a difficult time explaining their negative experiences. They said that gender bias might explain their negative experiences but did not conclude that gender was an issue in their experiences. In the end, many women connected their negative experiences to the "fact" that men and women communicate in different ways and that science, as a masculine domain, is more suited to masculine communication styles. These women suggested that they needed to change their communication styles, to act more like men, to be more effective in their work environments.

We also note that men had a difficult time explaining women's negative experiences. Most men did not mention that women in their departments had any negative experiences. Some men stated that their female colleagues experienced discrimination but said that they could not "see" gender discrimination.

As long as women, such as those in our study, connect their discomfort (with respect to departmental communication) to science as an institution rather than to individuals who work in the institution, and as long as men and women have difficulty "seeing" and naming gender-biased acts, it will be difficult to promote changes for a more inclusive, less chilly environment. And if, as our data suggest, men have a more difficult time than women identifying gender discrimination, men's majority status might make it more difficult for women to raise the issue of possible gender bias in their departments: If the majority of the faculty members (as men are in most science departments) do not see bias, what will it take to convince them that it exists?

One man suggested that it might be necessary to organize workshops designed to make gender bias more "visible" so that faculty members might become aware of and address gender bias in their departments:

> I mean, you've got to lay this on the table for people. They'll be shocked. The men who will participate in these meetings won't even know what you're talking about when you

> start talking about it. They'll just deny it or they'll say: "That doesn't happen." But it's part of our sensitivity training that has to happen. (M12)

We agree. Our findings strongly suggest that programs designed to facilitate discussion regarding gender discrimination, particularly the subtle biased acts that are difficult to "see" and name, are needed. Such programs should have as a goal to help men and women recognize and name discriminatory remarks and acts.

REFERENCES

Arianrhod, R. (1992). Physics and mathematics, reality and language: Dilemmas for feminists. In C. Kramarae & D. Spender (Eds.), *The knowledge explosion: Generations of feminist scholarship* (pp. 41-53). New York: Teachers College Press.

Belenky, M. F., Clinchy, B. M., Goldberger, N. R., & Tarule, J. M. (1997). *Women's ways of knowing: The development of self, voice, and mind.* New York: Basic Books.

Biernat, M., & Kobrynowicz, D. (1997). Gender- and race-based standards of competence: Lower minimum standards but higher ability standards for devalued groups. *Journal of Personality and Social Psychology, 72,* 544-557.

Bombardieri, M. (2005, January 17). Summers' remarks on women draw fire. *The Boston Globe* [On-line]. Available: http://www.boston.com/news/education/higher/articles/2005/01/17/summers_remarks_on_wom

Bronstein, P., & Farnsworth, L. (1998). Gender differences in faculty experiences of interpersonal climate and processes for advancement. *Research in Higher Education, 39,* 557-585.

Coates, J. (1986). *Women, men and language.* New York: Longman.

Connell, R. W. (2002). *Gender.* Cambridge, MA: Polity.

Darke, K., Clewell, B., & Sevo, R. (2002). Meeting the challenge: The impact of the National Science Foundation's Program for Women and Girls. *Journal of Women and Minorities in Science and Engineering, 8,* 285-303.

Dietz, J. S., Anderson, B., & Katzenmeyer, C. (2002). Women and the crossroads of science: Thoughts on policy, research, and evaluation. *Journal of Women and Minorities in Science and Engineering, 8,* 395-408.

Edwards, R. (1998). The effects of gender, gender role, and values on the interpretation of messages. *Journal of Language and Social Psychology, 17,* 52-71.

Eisenhart, M. A., & Finkel, E. (1998). *Women's science: Learning and succeeding from the margins.* Chicago: University of Chicago Press.

Gunter, R., & Stambach, A. (2003). As balancing act and as game: How women and men science faculty experience the promotion process. *Gender Issues, 21,* 24-42.

Haraway, D. J. (1991). Situated knowledges: The science question in feminism and the privilege of partial perspective. In D. J. Haraway, *Simians, cyborgs, and women: The reinvention of nature* (pp. 183-201). New York: Routledge.

Keller, E. F. (1995). *Reflections on gender and science* (10th anniv. ed.). New Haven, CT: Yale University Press.

Kramarae, C. (1981). *Women and men speaking: Frameworks for analysis.* Rowley, MA: Newbury House.

Lakoff, R. (1975). *Language and women's place.* New York: Harper & Row.

Maher, F. A., & Tetreault, M. K. (1996). Women's ways of knowing in women's studies, feminist pedagogies, and feminist theory. In N. Goldberger, J. Tarule, B. M. Clinchy, & M. Belenky (Eds.), *Knowledge, difference, and power: Essays inspired by women's ways of knowing* (pp. 148-170). New York: Basic Books.

Mervis, J. (2000). NSF searches for right way to help women. *Science,* 289, 379-381.

Mills, S. (2003). *Gender and politeness*. Cambridge, UK: Cambridge University Press.
Romaine, S. (1999). *Communicating gender*. Mahwah, NJ: Lawrence Erlbaum.
Rose, H. (1987). Hand, brain, and heart: A feminist epistemology for the natural sciences. In S. Harding & J. F. O'Barr (Eds.), *Sex and scientific inquiry* (pp. 265-282). Chicago: University of Chicago Press.
Rosser, S. V., & Daniels, J. Z. (2004). Widening paths to success, improving the environment, and moving toward lessons learned from the experiences of POWRE and CBL awardees. *Journal of Women and Minorities in Science and Engineering, 10*, 131-148.
Schiebinger, L. (1987). The history and philosophy of women in science: A review essay. In S. Harding & J. F. O'Barr (Eds.), *Sex and scientific inquiry* (pp. 7-34). Chicago: University of Chicago Press.
Seymour, E., & Hewitt, N. M. (1997). *Talking about leaving: Why undergraduates leave the sciences*. Boulder, CO: Westview.
Shank, M. J. (2000). Striving for educational rigor: Acceptance of masculine privilege. In N. Lesko (Ed.), *Masculinities at school* (pp. 213-230). Thousand Oaks, CA: Sage Publications.
Spender, D. (1980). *Man made language*. Boston: Pandora.
Tannen, D. (1992). *You just don't understand: Women and men in conversation*. London: Virago.
Valian, V. (1999). *Why so slow? The advancement of women*. Cambridge, MA: MIT Press.
Wagner, D. G., & Berger, J. (1997). Gender and interpersonal task behaviors: Status expectation accounts. *Sociological Perspectives, 40*, 1-32.
West, C., & Zimmerman, D. H. (1983). Small insults: A study of interruptions in cross-sex conversations between unacquainted persons. In B. Thorne, C. Kramarae, & N. Henley (Eds.), *Language, gender and society* (pp. 102-117). Rowley, MA: Newbury House.
Xie, Y., & Shauman, K. A. (2003). *Women in science: Career processes and outcomes*. Cambridge, MA: Harvard University Press.

WISELI In the Press

Gender, attitude, aptitude and UW

In the wake of the Harvard president's comments, UW women take a look at their own campus.

By Karen Rivedal
Wisconsin State Journal

If you want to get a rise out of Louise Root-Robbins, just ask what she thinks of Harvard University President Larry Summers' theory of why few women are among the nation's top academic scientists, mathematicians and engineers.

In now-infamous remarks at a diversity conference in January, Summers speculated that men may have more "intrinsic aptitude" for those fields — in other words, that women, due to biologically based brain differences, can't handle the analytical thinking demanded by the hard sciences.

Poppycock, says Root-Robbins, who coordinates the University of Wisconsin System's Status of Women Initiative and also has taught and conducted research in the medical and nursing schools of UW-Madison.

"It certainly isn't because we're not capable," she said. "That's ridiculous."

"Madame Curie got two Nobel prizes," agreed Molly

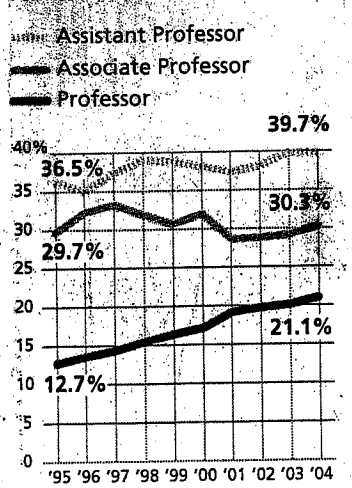
Please see **GENDER**, Page A4

Louise Root-Robbins, an advocate for women's advancement in the System, said all higher education institutions need to be more flexible to keep and recruit more female professors.

"I don't think there's any overt discrimination against women or minorities. But when you're asking the system or organization to adapt or change, that's a problem. We're really hurting ourselves."

Women as a percent of faculty at UW-Madison

The percentage of UW-Madison professors who are women has grown since the mid-1990s, but remains well below men:



SOURCE: UW-Madison Office of Academic Planning and Analysis

State Journal

Julie Mitchell, an untenured math faculty member at UW-Madison, said the university was a good place for women to work, adding that she expected the gender-equity situation to continue to improve. But she noted that being one of the few women in a department has its advantages.

"Everyone tends to know who you are."

Jo Handelsman, a professor of plant pathology, said UW-Madison had a lot of work to do in making the campus more welcoming to female professors, but she noted much progress and a genuine desire for change.

"There is a deep and widespread awareness of the issues, and the conversation is pretty rigorous compared to most academic environments."

Gender

Continued from Page A1

Carnes, a physician specializing in geriatrics and one of the few tenured female professors in UW-Madison's department of internal medicine. "I think the days are over when we have to prove that women can be excellent scientists."

It's not that biology doesn't matter, they said. It's just not the only thing that matters, not by a long shot.

Summers' critics — including Harvard's own Arts and Sciences faculty members, who approved an unprecedented no-confidence vote on their chief on March 15 — instead point to a circular mix of external factors that help keep high-achieving women down, from a lack of female role models to pernicious social biases held by both men and women.

UW-Madison's own record on female advancement in the hard sciences is mixed, with some "islands of fabulous climate and great support," Carnes said, and other areas where it's "just caustic."

Sheer numbers in the biological and physical sciences generally are up in the past five years — from 4.7 percent of female professors with full tenure to 8.6 percent. And some bright spots are cited, such as plant pathology, where women make up a third of the faculty, and the school of engineering, where advocates say leaders are working hard to improve.

But tenure rates and leadership positions for women still trail men by a lot — for instance, only two department chairs for women in the biological sciences compared to 45 for men, and only one female dean in the physical sciences versus six such jobs for men.

And there are anomalies, such as the school of veterinary medicine, with 71 percent female students and no women department chairs, though the assistant dean is female. In the medical school, 58 percent of the students are women, but less than 10 percent of the tenured physician faculty is female.

Rivedal, Karen. "Gender, Attitude, Aptitude and UW." *Wisconsin State Journal* (26 March 2005): A1-A5.

Some scientific basis

Such disparities suggest that far more than gender differences in "intrinsic aptitude" are at work. But most experts agree that Summers had at least some scientific basis for his comments.

New brain-imaging studies show that men's and women's brains do differ in size, function and rate of development. A man's brain is about 10 percent larger, for example, while a woman's brain appears to be more interconnected — giving women the ability to use more parts of their brain for certain tasks. That may explain, researchers say, why women often survive strokes better than men, who tend to perform the same tasks in distinct regions of their brain.

Studies also show that male and female brains mature on a different timetable. A 1999 study by Virginia Tech

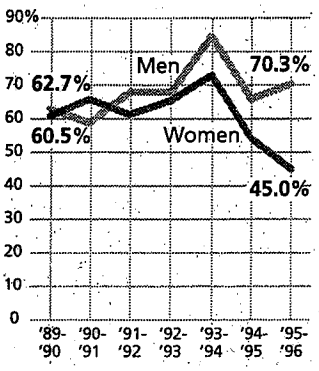
Please see **GENDER**, Page A5

Molly Carnes, a physician and professor in the department of internal medicine, said she expected UW-Madison to take the lead on gender-equity issues, the same way it has on other national issues, such as Social Security. Carnes, with Handelsman, is co-director of UW-Madison's Women in Science and Engineering Leadership Institute.

"Every time we've had a major social reform, UW-Madison has been at the forefront. Why not this one?"

Who gets tenure

The percentage of male and female tenure-track faculty who received tenure within nine years of their hire:



SOURCE: 2004-05 Data Digest, UW-Madison

State Journal

Gender

Continued from Page A4

scientist Harriet Hanlon, cited in a March 7 Time magazine story, showed that girls developed the verbal processing parts of their brains sooner, while in boys it was the areas for spatial and mechanical thinking.

"If we're honest, we have to admit there are differences," said UW-Madison journalism professor Deborah Blum, a Pulitzer prize-winning science writer, noting that the findings make a good case for teaching boys and girls differently.

Beyond that, there's no solid conclusion to be drawn about the intelligence or innate ability of men vs. women based on the different ways that boys and girls think, experts said.

"We may problem-solve differently," Blum said. "There's good evidence of that, but the fact is that we end up at about the same place. Eventually we reach some kind of reasonable parity as adults."

Biology not destiny

No one really knows to what extent childhood differences occur because of pure genetics or the environment in which a boy or girl grows up; some blurring of effects is likely. But nothing in early development means that people can't catch up later or expressly train their thinking to learn certain skills, a behavior that science now recognizes can re-shape brain structure and function in and of itself.

And that's where Summers got into trouble, by appearing to confuse biology for destiny, said Blum, author of the 1997 book, "Sex on the Brain: The Biological Differences Between Men and Women."

"There are some small and possibly important structural differences in the brains of men and women," she said. "But for that to be the be-all and end-all of the explanation, and (for Summers) to put it in such a way that makes one way of thinking seem superior to another, that's a crock."

According to studies and anecdotal evidence, other factors leading to the underrepresentation of women in math and science include the lack of female role models, hostile or isolating work environments, pipeline issues — or too few female students in certain fields to begin with — and a lack of flexibility in working conditions that hurts both men and women.

Perhaps most damaging, many observers said, are widespread cultural expectations of women that may work against a time-consuming, high-pressure career along with subtle but persistent social biases that tend to value men's work higher. And the research shows both men and women subscribe to those biases, if only subconsciously.

"There is a mountain of literature showing that for the identical work, if you put a man's name on it, people will think it's better," Carnes said. "That research is so overpowering compared to the minute differences that may be measured in men's and women's brains."

Jo Handelsman, a UW-Madison professor of plant pathology for the past 20 years, said simple fatigue from all of those factors takes a toll.

"Not many women can survive in science without being acutely aware of the fact that they are women," said Handelsman. "There's always the day-to-day prejudices and the small slights. It adds up. It can just be very tiring."

Students sound off

Female students at UW-Madison, where about 18 percent of tenured professors are women, said they would welcome more role models at the lectern and more company in class. Especially in the hard sciences, where percentages of both female students and professors tend to slip into the single digits, it can be lonely.

Women students said they recognized a form of the subtle slights cited by some professors.

Joseph W. Jackson III – State Journal

Dr. Molly Carnes, left, would like to recruit Heather Matthews, an internal medicine resident at UW Hospital, into Carnes' training program for academic researchers. UW-Madison is working to increase its ranks of female faculty members, and Matthews will need the training to pursue such a career. Carnes also is co-director of UW-Madison's Women in Science and Engineering Leadership Institute.

Lt. Gov. Barbara Lawton said the UW System had a "huge problem" with gender equity.

"There's been plenty of time (for university officials) to move more women into tenured faculty positions, and it hasn't happened."

Deborah Blum, a UW-Madison professor and science writer, said people shouldn't come down too hard on Harvard President Larry Summers for suggesting that biology is part of the reason there are few women scientists. In the same speech, Summers also said discrimination against women and women having less interest in hard sciences could be other reasons for the under-representation.

"He put his foot in his mouth, but I don't think he had evil intent. What we really need to do is take some of the politics out of this issue. His point that we need to consider big-picture things is a fair one."

UW System President Kevin Reilly said it was "surprising and unsettling" that only two of the System's 13 four-year campuses are led by women, noting he and other leaders need to do a better job of recruiting women for high-level jobs.

If you go

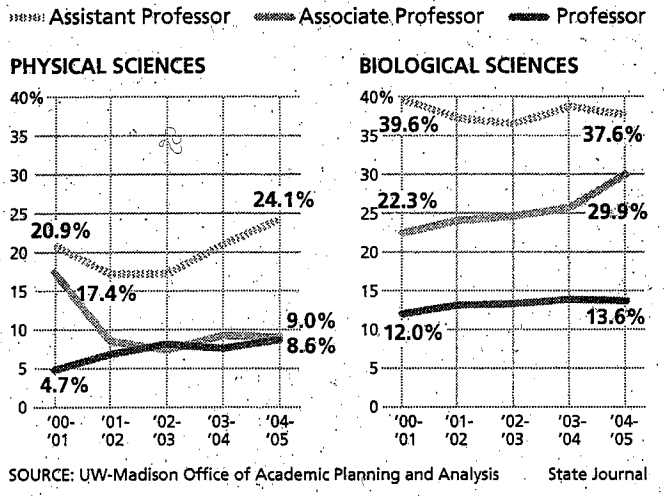
Two upcoming events will highlight gender-equity issues and women in science.

- **What:** "Gender Equity in Higher Education: What the President of Harvard Doesn't Know," a speech by Louise Root-Robbins, coordinator of the University of Wisconsin System's Status of Women Initiative.
- **When:** 4 to 5 p.m. Thursday.
- **Where:** UW-Madison's Pyle Center, 702 Langdon St.
- **Admission:** Free.
- **What:** "Celebrating Women of Science," a daylong event with talks by prominent researchers followed by hands-on science activities for teenagers and young adults. Scientists include Laura Kiessling and Wendy Crone, speaking on topics ranging from cancer to carbohydrates. Activities include peering through a scanning electron microscope and handling live microbes.
- **When:** 9 a.m. to 3:30 p.m. April 9.
- **Where:** Room 1315, UW-Madison's Chemistry Building, 1101 University Ave.
- **Admission:** Free, but registration required by Friday for hands-on sessions. Registration form at *www.scifun.org* or call 608-263-2424.

Julie Schmid, who staffs a committee on women in academia for the American Association of University Professors, said UW-Madison's tenure-clock interruption policy was a "national model." The policy is designed to let men or women take an extra year for a new child or family emergency with no consequences. University insiders, though, say many employees are afraid to use the policy because they don't believe it really won't count against them.

Female faculty in the sciences

While women make up nearly 27 percent of all faculty at UW-Madison, their numbers lag for a variety of reasons in the hard sciences. Women faculty in those fields who have tenure — those in the professor and associate professor categories — often are even scarcer.



SOURCE: UW-Madison Office of Academic Planning and Analysis — State Journal

"You're working in a group and you put forward an idea, and the guys roll over it," said Jessie Palmer, a senior industrial engineering major. "Five minutes later one of them will say the same idea and everyone will listen. That happens, and I don't know if they just don't realize they're doing it."

Kim Luke, a graduate student in medical microbiology, said there can be communication issues "when primarily all your mentors are male," and a habit of misinterpreting behaviors.

"Our favorite is how women tend to cry when they're frustrated, not because they're sad or incompetent, as opposed to yelling at somebody," said Luke, who leads a group called Graduate Women in Science. "It's just a different response."

But that pales in comparison to the practical problems faced by some women in very male-dominated areas, such as engineering and computer science, Luke said, "where there aren't even women's bathrooms on their floors and where the only other woman is the administrative assistant."

Still, both Luke and Palmer said they were mostly happy with the way they were treated and felt no overt hostility because of their gender.

Julie Mitchell, an assistant math professor — which means she doesn't yet have tenure — also was mostly positive.

"You have to be willing to roll with the punches sometimes," said Mitchell, 35, and one of 3.5 female faculty in a department of more than 50.

"It's hard to differentiate who's a jerk to you because you're a woman and who's just a jerk. Unless it's really persistent or obviously gender-related, I think it's best to decide the person is a jerk and just plow right through them."

But at UW-Madison, where progress in hiring and promoting women faculty is still measured in baby steps, there's pressure for a more supportive and pro-active approach.

Provost Peter Spear said big changes would take time, because faculty turnover is low. But he said search committees should recruit a deeper and more diverse pool of candidates, and tenure committees shouldn't penalize candidates who take time out for a new baby or family emergency.

"This isn't pandering to people who can't hack it," Spear said. "This is a matter of recognizing there are different life events, different challenges for different people, and trying to help people succeed through those challenges."

Contact Karen Rivedal at krivedal@madison.com or 252-6106.

Return to Full

LexisNexis™ Academic

The New York Times

April 15, 2005 Friday
Late Edition - Final

SECTION: Section A; Column 1; National Desk; Pg. 15

LENGTH: 1657 words

HEADLINE: For **Women in the Sciences,** the Pace of Progress at Top Universities Is Slow

BYLINE: By SARA RIMER

BODY:

It has been 12 years since Nancy Hopkins, a senior professor of molecular biology at the Massachusetts Institute of Technology, was crawling around the floor of her laboratory with a tape measure, intent on proving to a male administrator that she had 1,500 square feet less laboratory space than her male counterparts.

But the administrator ignored her data and refused to provide the 200 square feet she needed to expand her cancer research.

Since then, **women in the sciences** and in mathematics have made some highly visible gains. At M.I.T., Professor Hopkins, now 61, says that she and other senior female scientists have laboratories and salaries equivalent to those of their male colleagues. Female scientists now also lead M.I.T., the University of Michigan, Princeton, Rensselaer Polytechnic Institute and four campuses of the University of California.

And yet, as was made clear after remarks by Harvard's president, Lawrence H. Summers, about whether women lag in science and engineering because of "intrinsic aptitude," their overall progress at many of the country's top research universities has been slow, the gains uneven and fragile.

Even as the number of women earning Ph.D.'s in science has substantially increased -- women now account for 45 percent to 50 percent of the biology doctorates, and 33 percent of those in chemistry -- the science and engineering faculties of elite research universities remain overwhelmingly male. And the majority of the women are clustered at the junior faculty rank.

At Harvard, for example, there are 149 men with tenure in the natural sciences and just 13 women. Cynthia Friend, the chairwoman of the chemistry department, remains the only woman who has ever received tenure in chemistry at Harvard. (By comparison, women have done better in the humanities

departments at Harvard, where 39 women and 98 men have tenure.)

Nor is Harvard's record unusual. The faculties of most elite institutions are not only mostly male, they are also overwhelmingly white. According to a 2004 survey by Donna Nelson, a chemistry professor at the University of Oklahoma, there are 13,235 professors on physical sciences and engineering faculties of the 50 top research universities, and only 468 are black or Hispanic.

Given the pipeline problems in some fields, as well as the glacial rate of faculty turnover in academia -- tenured professors routinely hold their jobs for more than 30 years -- the slow increase in the numbers of women is in part understandable, many experts say.

But there are also vast differences in the efforts that some universities have made to move women along.

Female scientists, and senior female professors in general, have been particularly concerned about Harvard's record in the past decade, including the last four years under Dr. Summers, with the number of tenure offers to women on the faculty of arts and sciences dropping to 4 out of 32 last year from 14 out of 41 in the 1999-2000 academic year.

After the firestorm surrounding his remarks, Dr. Summers appointed two study groups to advise Harvard on how to recruit and retain more women. When the panels announce their findings next month, their recommendations will draw heavily from the handful of universities that already have such programs in place, including the Universities of Michigan, Wisconsin and Washington; Princeton; Stanford; and M.I.T.

Those campuses have instituted an array of programs, including workshops on unconscious bias, coaching women on how to negotiate for things like salaries, research funds and child-care money. (Such help is also available to men on faculties, but they generally bear much less of these domestic burdens.)

Three years ago, the University of Michigan had 55 departments in the sciences and engineering, only one of them headed by a woman. Today, eight are headed by women. In that time, the university has also tripled the number of tenure track offers to women in science and engineering to 41 percent.

Mel Hochster, a mathematics professor at Michigan, belongs to a committee of senior science professors that gives workshops for heads of departments and search committees highlighting the findings of numerous studies on sex bias in hiring. For example, men are given longer letters of recommendation than women, and their letters are more focused on relevant credentials. Men and women are more likely to vote to hire a male job applicant than a woman with an identical record. Women applying for a postdoctoral fellowship had to be 2.5 times as productive to receive the same competence score as the average male applicant. When orchestras hold blind auditions, in which they cannot see the musician, 30 percent to 55 percent more women are hired.

Professor Hochster said he was not inclined to join the committee until Abigail Stewart, a professor of psychology and women's studies who is leading Michigan's effort, made a presentation on sex bias to his department.

"I vastly underestimated the problem," Professor Hochster said. "People tend to think that if there's a problem, it's with a few old-fashioned people with old-fashioned ideas. That's not true. Everybody has

unconscious gender bias. It shows up in every study."

In the last three years, the mathematics department, regarded as one of the best in the country, has hired two women with tenure and promoted one associate professor to tenure, Professor Hochster said, bringing the number of tenured women to 6, out of a total of 64 tenured and tenure-track professors. Two more women are on a tenure track.

Some universities have put pressure on their search committees to broaden their pools of qualified candidates, especially when it comes to graduate students who could apply for junior faculty positions.

Jo Handelsman, a professor of plant pathology who is leading Wisconsin's effort to recruit and retain more female science and engineering professors, said that at Wisconsin each member of a search committee was encouraged to come up with a list of 10 respected colleagues and graduate students around the country who would nominate qualified candidates, specifically qualified women and minorities. "If you have a committee of eight people and each one calls 10 colleagues, now you've got 80 people brainstorming," Professor Handelsman said.

With widespread concern that only about half the pool of women earning Ph.D.'s in biology and chemistry are even applying for junior faculty jobs at elite research universities, M.I.T. and other institutions are going out of their way to find outstanding young women in unusual places and encourage them to apply.

Catherine Drennan, 41, an associate chemistry professor at M.I.T., said she might still be teaching high school chemistry in Iowa, as she used to, were it not for JoAnne Stubbe, a prominent molecular biologist at M.I.T.

Professor Drennan was a Ph.D. candidate at the University of Michigan when she first met Professor Stubbe at a chemistry conference. She was stunned, Professor Drennan said, when Professor Stubbe later asked if she would be interested in applying to M.I.T. for a faculty job.

"I had never thought of myself as someone that a school like that would be interested in," said Professor Drennan, who arrived at M.I.T. five and a half years ago. She is now being reviewed for tenure, and is expected to receive it.

Some universities have also taken note of the disadvantage that women face in negotiating salaries, laboratory space and money for research, as well as the importance of building a reputation by publishing in high-profile academic journals and getting invitations to speak at prestigious conferences. Men have naturally picked up such crucial information, as well as speaking invitations, from male colleagues and mentors because of their greater numbers and influence. For example, Columbia University is now bringing in retired senior academics to coach women on its faculty in such areas.

Professor Hopkins, who in January walked out of the academic conference where Mr. Summers made his controversial remarks about women in science, said she nearly lost out on a large grant years ago because she had been left out of the information loop by some of her male colleagues. After reading in a newspaper that a biotech company was awarding grants to M.I.T. scientists, she asked a colleague if he knew how to apply for the money, she said. He told her he knew nothing about the grant, she said, though she later learned that he was urging another man in their department to apply for the money.

Professor Hopkins said she then went to her dean, who submitted her application to the company,

asking for $30,000, The company gave her $8 million, which allowed her to expand her cancer research and led to the discovery of a pair of cancer genes.

Experts say they believe one reason women may not be applying for junior faculty positions at elite research universities is that they believe -- mistakenly, senior female scientists say -- that these jobs are incompatible with having children.

In a widely praised speech at Columbia three weeks ago, Princeton's president, Shirley M. Tilghman, a molecular biologist and mother of two, said that universities should do a great deal more to create an environment that "legitimizes the choice" to be a scientist and have a family. The first step, she said, "to paraphrase the political strategist James Carville, is to recognize, 'It's day care, stupid!'"

Princeton, like many other universities, offers one-year tenure extensions for each child and workload relief to new parents, men and women. But Princeton found that men were more likely to take advantage of the tenure extension than women, who were afraid that requesting the extra year would be interpreted as a sign of weakness or lack of confidence. Princeton has recently made the tenure extension automatic so that it will have no value judgment attached to it, Dr. Tilghman said.

URL: http://www.nytimes.com

GRAPHIC: Photos: Cynthia Friend, the chairwoman of Harvard's chemistry department, in her university lab. (Photo by Jodi Hilton for The New York Times)
Nancy Hopkins, professor of biology at the Massachusetts Institute of Technology, in her laboratory. (Photo by Jodi Hilton for The New York Times)
Jo Handelsman, a professor at the Howard Hughes Medical Institute at the University of Wisconsin. (Photo by Andy Manis for The New York Times)

LOAD-DATE: April 15, 2005

Boston Sunday Globe

MAY 1, 2005

A woman's place in the lab

Harvard studies efforts to boost female faculty at U-Wisconsin

By Marcella Bombardieri
GLOBE STAFF

MADISON, Wisconsin — The electrical and computer engineering department at the University of Wisconsin at Madison had a lackluster record on gender equality for many years.

In the late 1980s, a curmudgeonly male colleague locked the department's only female professor out of her lab, and no one in the department intervened until she appealed to senior campus administrators. Over the next dozen years, the department of 40 to 50 people hired only four more women, and two of them left before tenure.

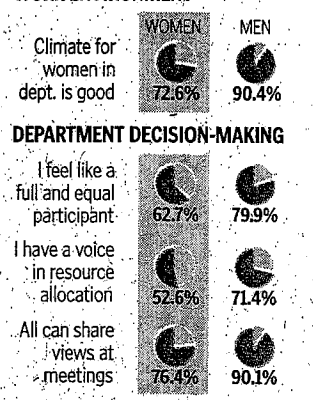
Then, two years ago, department chairman Christopher DeMarco attended a workshop designed to improve the campus climate for women, offered by the university's three-year-old Women in Science & Engineering Leadership Institute. After hearing a litany of evidence that women were generally judged more harshly than men, he responded like the engineer he is, by setting out to solve the problem. He gave copies of the research on bias to his faculty search committee, as well as a national list compiled annually of women and minorities earning doctorates in engineering.

In the last two years, DeMarco's department has hired three women.

DeMarco said he had always wanted "to believe we are a meritocracy." But he found the evidence to the contrary persuasive. "What really wins over

WISCONSIN, Page B8

More than 1,300 University of Wisconsin-Madison professors responded to a 2003 survey. Below are the percentages of men and women who said they strongly or somewhat agreed with statements about their department.



SOURCE: Women in Science & Engineering Leadership Institute at University of Wisconsin-Madison

GLOBE STAFF GRAPHIC/CHRIS KIRKMAN

Bombardieri, Marcella. "A Woman's Place in the Lab: Harvard Studies Efforts to Boost Female Faculty at U-Wisconsin." *Boston Sunday Globe* (1 May 2005): A1, B8.

Campus strives to boost female faculty

► WISCONSIN
Continued from Page A1

academics is citing research," he said, pointing out that the workshop even provided a bibliography.

The workshop DeMarco attended is one innovation that officials at Harvard University have been studying as the university's task forces on women prepare to make recommendations this month to President Lawrence H. Summers on how to improve Harvard's record of hiring and promoting women.

Summers appointed the task forces in February in response to an outcry over his comments that differences between men and women in "intrinsic aptitude" may help explain why so few women make it to the top of academia in science and engineering. He was already under fire for a drastic drop in the number of tenured jobs offered to women in the Faculty of Arts and Sciences, the university's main undergraduate and doctoral division, during the first three years of his presidency.

The task forces have looked at the experiences of several other universities, from private institutions, like the Massachusetts Institute of Technology and Princeton University that have intensively studied discrimination on campus, to a group of mostly public universities, including the University of Michigan and the University of Wisconsin at Madison, where the National Science Foundation has funded a broad range of experiments to boost representation of women in science and engineering.

"We've identified two essential leverage points for increasing the number of women on the faculty," said Barbara J. Grosz, chairwoman of Harvard's task force on women in science and engineering.

One is those who chair departments, because they "influence the overall department environment and thus the whole pipeline" of women in academia, she said. The other is those who chair search committees, she said.

"The intensive training programs developed at Wisconsin and Michigan are of interest to us in addressing these leverage points," Grosz said.

Since the Women in Science & Engineering Leadership Institute is so new, officials at the Madison campus are reluctant to make statements about its overall impact, especially because the number of people hired each year is so small.

But they do point to some signs of success. In the College of Engineering, only two of the 36 junior professors hired between 1999 and 2002 were women, or 6 percent. In the last two years, six of engineering's 14 hires, or 43 percent, were women, according to the institute's data.

GLOBE PHOTOS/JOE KOSHOLLEK

Jo Handelsman, codirector of the Women in Science & Engineering Leadership Institute at the University of Wisconsin at Madison, led a lab meeting in the plant pathology department.

Professor Amy Wendt (left) lectured on antennae at the University of Wisconsin at Madison. Christopher DeMarco has worked to add women faculty in electrical and computer engineering.

Results have been mixed in other sciences, where some of the leaders have not been as aggressive as the engineering dean in making gender equity a priority. Of 11 natural science departments, five will have female chairwomen next year, up from just two this year. In the physical sciences, 29 percent (4 out of 14) of junior hires in the last two years were women, up only modestly from the 21 percent of hires between 1999 and 2002.

The Wisconsin institute has used the five-year, $3.75 million grant from the National Science Foundation to fund a variety of efforts, including in-depth research on women's status on campus, lecture series, and grants that keep women's labs operating when a family crisis interrupts their science work. But the institute's centerpiece is the voluntary workshops for department heads and search committee members. Since they started two years ago, about 20 department heads and 75 search committee members have attended.

The workshops for department heads, a series of three sessions, focus on two main issues. One is the climate, the atmosphere experienced by members of the department. The institute's research indicated that female professors at the Madison campus were more likely to feel excluded from decision-making and less likely to feel that their work was valued by their colleagues. They were also more likely to leave the university.

As part of each workshop, the institute conducts a confidential, anonymous survey of each head's department. The heads are often shocked to see how much unhappiness exists around them, said Jo Handelsman, codirector of the institute.

The survey is "very sobering for them, because they can't dismiss it anymore," said Handelsman, a microbiologist and Howard Hughes Medical Institute professor.

The second key ingredient to the workshops is a crash course in the research on unconscious bias. In one study, both men and women evaluated the same resume more favorably when a man's name was attached than when the resume carried a woman's name. Recommendation letters for women tend to be shorter, raise more doubts, and portray women as students and teachers, rather than in roles that are more highly valued, as researchers and professionals.

Being confronted with this kind of research leaves many scientists "shocked and, frankly, annoyed," said Handelsman, but ultimately leads many of them to acknowledge that "we can't assume we are unprejudiced people."

Armed with ideas he learned at the workshop, DeMarco and others in the department made changes to the way they went about hiring. They advertised in new places, such as a website for female electrical engineers and a magazine for women and minority-group members in the field.

They also made the job descriptions as broad as possible, to attract a bigger pool of applicants. In fact, one of the women they hired had originally applied for a job in a different department altogether. (Along with the three recent female hires, the department has hired eight men.)

Amy Wendt, a professor in electrical and computer engineering since 1990, marvels at the changes she's seen in the last few years, for which she credits the institute, as well as other campus policies like the extra time to earn tenure granted to new parents and mentoring programs for female professors.

In the last couple years, "I've heard my colleagues gush about female candidates in ways I had never heard before," said Wendt, who currently chairs the search committee and will cochair the department next year, something she had never been asked to do before.

Handelsman said that one of the things that drove her to cofound the institute was the wish that other women could experience a workplace as normal as hers. In her department, plant pathology, one-third of the professors are women. Gone are the days when she felt patronized or passed over for opportunities she believed she deserved. Having a critical mass, she said, "takes the spotlight off gender and lets women just be scientists."

Still, advocates for women at the Madison campus say they don't see a totally rosy picture, because it is so difficult to win over faculty members who are not particularly interested in gender issues and aren't aware of the research on bias or who, in some cases, blatantly discriminate against women.

The cochairwoman of the university's committee on women, ecologist Nancy Mathews, said she recently switched departments because her male colleagues didn't respect her research, saddled her with extra responsibilities, and paid her less.

Mathews, Handelsman, and others say that substantial change takes many years, great visibility, and a lot of vocal support from leaders.

Harvard has already had a chance to learn this, having made progress hiring women in the 1990s, only to see some of the gains erode. It is a problem Harvard will struggle with once again, as the university tries to turn the task force recommendations into meaningful change.

"We have a lot of people committed to fairness, and we have fabulous leadership, but we still have a large segment of faculty who in their hearts aren't convinced there's a problem," Handelsman said. Of the last group, she said, "I am not sure how to reach them."

Bombardieri can be reached at bombardieri@globe.com.

WISELI Essays 2005:

"Advice to the Top: Top 10 Tips for Academic Leaders to Accelerate the Advancement of Women in Science and Engineering"

WISELI
Women in Science & Engineering Leadership Institute
University of Wisconsin-Madison

ADVICE TO THE TOP

Top 10 Tips for Academic Leaders to Accelerate the Advancement of Women in Science and Engineering

The power in a leader's office is one of the most essential tools to influence the campus agenda. Rarely can that power of itself be used to dictate policy or actions, but a great leader can part the way for other community members to develop and advance specific actions and policies. The environment into which the change agents introduce their agenda will determine success or failure. A campus leader can ensure success by carefully laying the groundwork. The following recommended actions are intended to create a receptive environment so that the work of committees, task forces, and other bodies of faculty and staff take hold.

TIP #1 LEARN ABOUT OUTSTANDING WOMEN ON YOUR CAMPUS
Meet with women students, scientific staff, and faculty members in diverse venues. Have monthly luncheons with small groups of women faculty, visit the labs and classrooms of women scientists, consult women who may be left out of informal networks on issues of importance to the campus. Create your own opportunities for interaction by initiating new informal networks that are more likely to include women. Seek out women of color who may be even more isolated than white women.

TIP #2 LEARN FROM THE LOCAL EXPERTS ABOUT GENDER ISSUES
Identify the 10 women on your campus whose science you most respect. Ask them for their insights into the most prevalent challenges facing women scientists on your campus. Ask them what is needed to redress the issues. Attempt to hear from a diversity of women, including those of different viewpoints, disciplines, age, or race.

TIP #3 REVIEW CAMPUS DATA ON EQUITY
Have your campus collect data on equity and study it. Ensure that pay, space, teaching assignments, desirable appointments, and other critical resources are fairly distributed. Make it well-known that you conduct such reviews and hold units accountable for addressing inequities.

TIP #4 STUDY WORK/LIFE ISSUES
Once women have identified ways in which the campus could accommodate the interface between professional and personal life, champion one or more of the solutions. These might include:

- Personally oversee the design of campus child care facilities, lactation rooms, or housing for students who are single mothers.

- Make a personal donation to a fund to support a new child care facility on campus.
- Visibly support the right of women to have careers and children in the same lifetime by advocating policies for tenure clock extensions and parental leave.
- Ensure that mandatory meetings are not held outside of the hours during which child care is available.
- Provide child care at campus events.
- Make clear to your campus community that policies designed to alleviate the pressures differentially shouldered by women are not "special treatment," and create a better workplace for men as well as women.
- Assert that child-bearing and caring for young children only last a few years and you invest in a lifelong career.
- Point out that women are not the only ones to take time away from work for personal commitments – most of us suffer some loss of time at work at some point in our careers due to death of family members, accidental injury, prostate cancer, heart disease and many other causes.

TIP #5 MAKE GENDER ISSUES VISIBLE

Insert issues of social justice into discussions of other topics; make it clear to your campus community that gender issues affect everything that happens on campus. Be prepared to deliver certain strong messages that are appropriate to the campus. In the right context, some of the messages that may need to be stated repeatedly, especially by men, might include:

- the current status of women is not acceptable
- it is the responsibility of the entire campus community to solve the problem
- the problem is not the women, it is the institution
- the climate for women on campus is not good
- poor climate reduces productivity and creativity
- men are typically poor judges of the climate experienced by women
- diversity enhances the value of any institution by increasing creativity and problem-solving
- hiring more women does not mean sacrificing quality
- society and our universities need women who combine outstanding science and family life
- unconscious biases and assumptions are universal and need to be countered in all evaluations of women
- the campus has a zero tolerance for illegal actions such as sexual harassment, discrimination, and retaliation against those who raise these issues

Study the research that supports each of these assertions and use the data to convince colleagues that in an evidence-driven decision-making environment, you must address areas in which the evidence indicates that the university could improve to better serve all members of the community.

TIP #6 INCREASE THE VISIBILITY OF OUTSTANDING WOMEN SCIENTISTS

Use opportunities in speeches, interactions with the press, and discussions with other faculty to highlight the accomplishments of women scientists. Appoint women to important committees and positions. Ensure that women's accomplishments are covered by your campus press. Research shows that people respond more negatively to self-promotion by women than by men, so you may need to work harder to find out about women's accomplishments. Keep a list of the women faculty handy with notes about their specialties so that you are ready with suggestions when asked about nominations or appointments. Be vigilant about placing women in positions of true power and not stereotyping them, thereby further embedding prejudice. Be sure that women are presented as leaders, scientists, researchers, powerful intellects and not exclusively as students, followers, teachers, nurturers, and nice people.

TIP #7 SUPPORT COMMITTEES AND TASK FORCES

Most of the institutional change on your campus is likely to be driven by committees or task forces charged with addressing gender equity. Maximize their effectiveness by staying in close contact with them, providing them resources, supporting proposed initiatives, and taking ownership of their recommendations. Use these bodies to generate strategies and solutions, but don't expect them to take the lead on implementation. Give credit to the task forces for the ideas to show the community that the recommendations are from the community, not top-down mandates, and give credit broadly (reinforce groups and committees, not just their chairs) to enfranchise all contributors in the process. But then take full ownership of implementing the recommended changes, while continuing to remind the community that these are not your ideas, but that you are fully supportive of them. For initiatives that are centrally managed, provide leadership from the highest offices of the university to signal to the community that you consider these initiatives important.

TIP #8 ASK HARD QUESTIONS AND TAKE TOUGH STANDS

Regularly question the people who report to you, and expect them to provide concrete answers. These include:

- Which women in your unit are most likely to be recruited elsewhere?
- What are you doing to preempt such losses?
- What mechanisms do you use to ensure equitable distribution of resources?
- How do you ensure that searches to fill new positions are broad and inclusive?
- What have you done to recruit more women to your faculty?

Be ready to take hard positions if the answers are unacceptable. Get the community's attention and let them know that gender equity is a priority by terminating searches that do not generate short lists that reflect the composition of the national pool, or refuse positions or resources to departments that have poor climates and retention records for women.

TIP #9 EMBED GENDER EQUITY IN CAMPUS PROCESS

Explicitly make gender equity issues a basis on which to evaluate those who report to you. Hold your subordinates accountable for decisions that affect gender equity. Make gender equity part of the value statement and strategic plan for your university. Ensure that those who participate in gender equity efforts receive recognition and reinforcement for their work.

TIP #10 BE RECEPTIVE WHEN PRESENTED WITH GENDER ISSUES

Make it known that you are open to hearing directly from people concerned about gender issues. Respond and take action, if necessary. Even if you don't believe an allegation or agree with a conclusion about bias, show respect for the person and concern for the situation. Protect those who raise concerns about gender from retaliation for their actions. You can't create an entirely equitable campus, but you can create a climate that supports open debate without retribution to those of a minority view or class.

T^3 by Jo Handelsman, Jennifer Sheridan, Eve Fine, and Molly Carnes 4/4/05

WISELI Essays 2005:
"Sex and Science: Tips for Faculty"

WISELI
Women in Science & Engineering Leadership Institute
University of Wisconsin-Madison

Sex and Science: Tips for Faculty

Introduction

Responsibility of faculty.
Faculty are the fulcrum of change in the research university. Their values and behavior permeate everything a university does and stands for, and therefore it is essential that all faculty consider their own impact on women in science. From the subtle to the blatant, faculty behaviors often shape women's careers. Most faculty want to be a positive influence on women in science, so it is important to understand the types of behavior that can make a difference.

If you are a new professor, you may soon confront new issues associated with gender – either your own or that of your students, staff, or colleagues. You will also experience a dichotomy of authority: you will wield more power over students and staff than you did as a graduate student or postdoc, but your status as an untenured faculty member will also leave you vulnerable to the power of more senior faculty, who will be making both objective and subjective judgments about your performance. If you are a woman, you may find that colleagues take advantage of your professional vulnerability. If you are a man, you may find that you need to adjust your behavior with women colleagues or women who work in your lab. They are not just your lab mates anymore. Similar, but differently nuanced issues may arise for those who are lesbian or gay or who supervise students and staff who are lesbian or gay; however, our express emphasis here will be on women, because – as a class, and with little other plausible cause besides gender – women are grossly underrepresented in academic science. Gender issues are complex and influential, so it is worth spending some time thinking about them and periodically examining your own behavior and that of people around you.

If you are a senior faculty member, you have a position of immunity and influence from which to stimulate change in your institution and members of your scientific community. You can provide support for younger men and women who would like to see change, but are timid about inciting it because of their vulnerable status. You may have a respected voice and you can use it to induce the changes in behavior, and the climate it generates, in those around you.

Women are not as well represented in the leadership of science as might be expected from their representation among PhDs in many fields of science. Even in fields such as biology, in which women have been receiving almost half of the PhDs granted for years, women represent only 30% of assistant professors and 15% of full professors. This imbalance cripples the vitality of the scientific community by artificially constraining its diversity, limiting the scale of ideas in

proportion to those given the opportunity to express them. Moreover, women are legally and morally entitled to the same opportunities in science enjoyed by men; the search for knowledge unimpeded by false borders provides a parallel mandate.

Underrepresentation of women in science.
The underrepresentation of women in science faculties stems from a number of issues that are firmly rooted in our society's traditions and culture. Thus, to accelerate the rate at which women take their places as leaders in science, it is essential that each of us - men and women alike - reflect on our own values, beliefs, and behavior to ensure that we are not furthering stereotypes, prejudices, policies, practices, or climates that discourage or exclude women from academic science.

There are four factors thought to be responsible for the relatively low representation of women in academic science leadership. They are:

- **Discrimination and harassment.** Women continue to suffer as targets of illegal behaviors, including sexual harassment and discrimination (which includes withholding a professional position, benefit, or advantage based on a personal characteristic such as gender, race, sexual preference, marital status, or age). Some studies indicate that one experience with sexual harassment can affect a woman's professional success and psychological health even a decade after the event. Likewise, witnessing or being the target of discrimination can discourage and demoralize all members of a community, but can be especially debilitating to women.

- **Lack of role models and encouragement.** Success depends heavily on the belief that a goal can be obtained. A number of factors converge to make this belief more difficult for women, in general, than for most men. Women are less likely to receive explicit encouragement to advance in science or to pursue an academic career, making it less likely that they will do so. Women in most fields of science have fewer role models. This makes it more difficult for them to believe that they can succeed as leaders in academic science. There are prominent men in all fields of science, so even if men don't consciously recognize the power of role models, they have always been privileged with successful examples to follow. The need for role models presents another challenge for women – those who serve as role models often become overloaded with responsibilities because their time is in demand by junior women who need guidance and advice about their professional choices.

- **Subtle bias.** In addition to all of the obvious negative behaviors directed toward women in science, there are also subtle, unconscious attitudes that creep into our evaluation of and responses to women and their work. Copious research shows, for example, that the same work is considered of less value if it is done by a woman than by a man. Moreover, people are less comfortable with women in leadership positions in traditionally male-dominated fields. These attitudes are held by both men and women, indicating that simply having women present in the community will not necessarily reduce bias against other women.

- **Work-life balance.** Women in science typically carry a larger share of family responsibilities than do men. This places women in a particularly challenging position during their early careers, when their careers are likely to be stressful and demanding and they are most likely to be caring for young children. The prospect of combining a demanding career with family life often discourages women from pursuing academic positions in science; those who do take up the challenge experience more stress and have more time constraints than many of their male colleagues. Men are faced less often with stark choices between parenthood and a high level career because they are – on average – more likely to have a spouse who shoulders most of the child care responsibilities. If women are to have families and exercise their right to succeed in science, then universities and the people in them need to develop more flexible attitudes, policies, and programs to accommodate both roles.

The guidelines presented here are intended to prepare you for some of the challenges you may face and make you aware of issues of power, discrimination, opportunity, and facilitation. The assertions made are based on decades of research about women in the workplace. See the bibliography for examples of these studies.

DISCRIMINATION AND HARASSMENT

Protect yourself and your colleagues and students.
It is imperative that every member of an academic community be educated about the laws and policies that pertain to discrimination and harassment. Be sure you know the definition of sexual harassment and your university's policy on consensual relationships between supervisors and the people they supervise. This knowledge will help you deal with a situation if you become romantically involved with a colleague or someone you supervise, or if you are harassed, accused of harassment, or approached by someone who thinks they have been harassed. Understanding the nature of discrimination will help you avoid making unlawful mistakes and help you spot mistakes made by others. Be sure you know what offices in your university deal with harassment and discrimination complaints and offer training about university policies and procedures.

Keep your lab members physically safe. Develop and discuss recommended practices about working in the lab alone, leaving doors unlocked, and sharing keys to the building or lab. Make sure that women know of campus services that can help them get to their cars or homes safely after a late night in the lab.

Enable others to speak out.
When you see discrimination, harassment, or unsafe working conditions, speak out against them and support others who speak out. Federal law prohibits retaliation against those who make accusations of sexual harassment, but retaliation is common and many victims of sexual harassment do not report it out of fear of retribution.

Discuss sexual harassment with your research group. Make sure your students and employees understand the sorts of behavior that are proscribed by discrimination laws and provide safe

avenues for them to report behavior. Let them know that you want to know if they are made uncomfortable by others' behavior, and provide them with an alternative route for reporting (a department administrator, a colleague, a member of your lab) in case they do not feel comfortable talking to you about an incident.

ROLE MODELS, ENCOURAGEMENT, AND WORKLOAD

Provide encouragement.
Give your graduate students positive feedback as well as constructive criticism to ensure that they know their strengths and develop confidence in their abilities. Don't assume that students or employees know what you appreciate about them or their work. Provide support, encouragement, and constructive criticism in group settings – lab meeting, journal club, practice seminars – so that everyone in the group can learn from your comments, but save your harshest comments for private settings. Do not humiliate or embarrass students. Respectful practices are important for all students and employees, but are likely to be more important for women, who may have received less encouragement and therefore may be more easily discouraged by negative feedback.

Reinforce your women colleagues. Women often report that they find little support for their ideas in faculty meetings or committee meetings. If you experience this, talk to your department chair or a colleague and ask them to be aware of this tendency and find ways to show their support. When you agree with something said by a woman, be explicit about it. When you disagree, do so respectfully in a way that acknowledges the validity of alternative viewpoints.

Make connections.
Women often feel isolated from informal communication networks in their work environments. Help women students, postdocs, staff, and faculty members to feel included in your lab, department, and university by making sure that women have access to all of the same networks and opportunities to which male students have access. Be especially inviting to women of color, as they are even more isolated than white women in most institutions. Share important policies, requirements, or opportunities broadly. If you feel excluded from a network, seek out ways to be included by talking to your chair, serving on key committees, or finding out how your colleagues obtain their information.

Recognize the unique contributions of women.
Women often do quite different work from men. Many women bring unique perspectives to old problems, new interdisciplinary work to a field, and different styles of leadership to a department, and many women attract new students from diverse backgrounds just by their presence. They act as role models to junior women who are eager for guidance and advice and often serve on more committees than men as committees begin to place greater emphasis on a diverse membership. Even women graduate students may be called on to provide advice and mentoring for junior students. If you are a woman, you will want to be very careful about protecting your time. For many women, it is a challenge to balance the desire to be a visible role model and voice in governance with the need to get your own work done. Whether you are a

man or a woman, reinforce women's contributions by nominating them for awards and by recognizing their extra work in mentoring and committee assignments at tenure, promotion, and salary adjustment evaluations.

Share the load.
If you are a male faculty member, you can provide support for your female colleagues by making your commitment to gender issues visible and by sharing the workload. Participate on diversity committees, lobby in faculty meetings for the hiring and promotion of women candidates, look for instances in which women have become invisible and become a voice for inclusion, put a diversity sticker on your office door—these are all ways to create a welcoming climate and let women and minorities know that you are an advocate. If you are a woman, feel free to say "no" when asked to serve on committees or participate in non-research activities. Have an answer ready, so that when you are called to serve in some way that you feel taxes your time too much, you can politely explain your overcommitment and need to do your own work. Most people will be supportive of your decision if you explain it. Many women have to keep reminding themselves that it's okay to say "no," so they put a note on their phone or computer that says, "JUST SAY NO!!!" or they make a policy of always asking for a day to think about a request for their time before accepting the task.

Use inclusive teaching methods.
Make your classroom inclusive of different types of students and learning styles. The traditional ways of teaching (e.g. lecturing, passive learning, cookbook labs) have been shown to be less effective for all students, but women and students of color especially benefit from a switch to active learning and cooperative approaches.

Provide access to role models.
If you are a man, make sure that your women students have female role models. If you have few women faculty in your department, invite prominent women in your field to visit your department and your lab. Their visits will enrich your career and your research group and can provide women students with examples of the different women who populate academic science.

SUBTLE BIAS AND PREJUDICE

Educate yourself and your colleagues.
Educate yourself about how unconscious biases and assumptions might affect the evaluation, mentoring, advising, coaching, and encouragement of your female students and colleagues. This advice is for women as well as men, because we all internalize the same gender assumptions. Discuss the results of research on unconscious bias and prejudice with your lab group and faculty colleagues and consider how these prejudices might affect decisions and evaluations.

Reflect, question, and challenge.
As you evaluate people for positions in your lab or department and for award nominations or promotions, reflect on your evaluations. Ask yourself and your colleagues whether you are

holding all candidates to the same standards. Explicitly ask whether there has been any gender bias in the process. As you read papers and grants, ask yourself whether you would have come to the same conclusion if the paper or proposal had had a name of the other gender on it. Review letters of recommendation that you write for men and women to ensure that you are not falling into linguistic patterns that disadvantage women. Challenge your own decisions to ensure that you are being fair and equitable and that you are evaluating people on their merit as scientists, and not basing your assessments upon some cultural bias that has nothing to do with quality science.

Examine resource access.
Make sure that men and women have equal access to resources. Ensure that space, salary, and responsibilities are allocated fairly within your lab. If you find that your male students are asking for, and receiving, more of your time than your female students, help your women students to demand more time or simply offer to meet with them more often. If you are a woman, make sure you have the resources to do your job. If you are a woman and find that you are not provided the same support that is provided to men of similar positions, ask your department chair or a trusted mentor how to achieve equity.

Understand and be aware of climate.
Try to understand how the local climate affects your women students, staff, and colleagues. Read the attached set of experiences that describe climate issues and examine your environment for behaviors or policies that might make women feel less safe, valued, or respected than they should. If you are a woman and experience an inhospitable climate, seek out women or men who are sensitive to climate issues and discuss how to approach the problem. This is a tough topic to raise, but you may find that your colleagues are unaware of the behaviors that make you uncomfortable and they may be eager to change them. If you are a man, try to help women address climate issues. You have the advantage that you are not asking for a change that benefits you, which diffuses the request for behavior change. For example, it may be easier for a man to pull aside a male colleague and say, "I know you don't realize you are doing it, but it probably makes Sue feel uncomfortable when you stare at her breasts when she's talking to you" than it would be for a woman to ask a colleague to stop staring at her breasts (this, incidentally, is a common complaint among professional women).

WORK-LIFE BALANCE

Family responsibilities fall more often to women.
Family commitments have a differential impact on women's and men's careers because women more often have primary responsibility for care of young children or aging parents. If you are a woman, take advantage of the policies designed to alleviate the pressures differentially shouldered by women (e.g., tenure clock extensions, part-time appointments, parental leave, flexible work hours). If you are a man, recognize that these policies are not "special treatment," but in fact make for a better workplace for men as well as women. Remind colleagues that having children, extending the tenure clock, and/or taking a parental leave do not indicate a lesser commitment to science, but reflect the desire of scientists to be human beings in the full

sense of the word. An academic scientist's career lasts 30+ years, and the time taken early in a career for family responsibilities is a speck in the face of a lifelong commitment to science.

Consider family issues, whether you have a family or not.
Avoid scheduling important or mandatory meetings before or after the hours when child care is typically available. Provide support for colleagues with children so they can stay home with a sick child, attend a parent-teacher conference, or take a child to a medical appointment. Offer to fill in for them at meetings or in class in case they ever have family emergencies and need some help covering their responsibilities. You can be sure that the favor will be returned and you will earn a grateful and loyal colleague. Offer maximum flexibility to members of your lab who have children. If they are good students or employees, you will earn their trust, loyalty, and gratitude by making it easy for them to take parental leave, work odd hours, work part-time, or occasionally work from home. They will probably do better work if they feel at peace about their family commitments. They are certainly likely to remain in your lab longer if you provide them flexibility than if you don't. Remember that losing good personnel is far more costly to a lab's productivity than a lab member reducing their time commitment for a few months or years.

Advocate for family-friendly policies.
Be vocal about the need for on-campus child care facilities, lactation rooms, or sick child care, whether or not you will personally take advantage of these facilities. If you are a man or a woman without children, raise family issues when appropriate so that women with children do not have to advocate for themselves.

by Jennifer Sheridan, Jo Handelsman, Eve Fine, and Molly Carnes
WISELI
at the University of Wisconsin-Madison

What is bad climate all about anyway?

Compiled by the Committee on Women in the University
The University of Wisconsin-Madison

Our working and learning environment is composed of innumerable day-to-day communications and interactions. Subtle aspects of these experiences can isolate and cause suffering but can also nurture and liberate. A better understanding of how these subtleties can and do affect us will help us to make conscious and deliberate choices about the kind of community we create. To help members of university communities understand the environment that is experienced by many women, we have collected stories from men and women that illustrate different workplace climates. These are all true stories. We hope these vignettes will help to provide insight into the small, daily events that contribute to making climate alienating or welcoming. We have included examples of situations that cause pain and isolation and also anecdotes that illustrate how every member of the community can contribute to a positive climate by asking questions or intervening when potentially hurtful behaviors occur.

I am a female staff member in a male-dominated field. My job requires that I work intensively with my supervisor, often on nights and weekends. People I work with have spread a rumor that I am having an affair with my supervisor and that I am receiving preferential treatment in promotions, raises, and job responsibilities because of the relationship, and not based on the quality of my work. I am not having an affair with my supervisor and I am very good at my job. My professional advancement seems appropriate to my performance, which I am told by many people is stellar. I am extremely uncomfortable in my work environment knowing that people are discrediting both my integrity and the quality of my work behind my back, and I am angered that many of the people spreading the rumor are other women who should know how hard it is for a woman to get proper credit for good work in a field where women in positions of influence are still rare. The attitudes of these people seem like something out of the 1950's when successful women were often accused of "sleeping their way to the top."

As a young faculty member thinking about how I am going to fit my plans for a family into my career, I am often discouraged by comments that my male colleagues make. Recently, one of my senior colleagues said of a colleague, “She has been successful even though she had kids.” I find this disheartening in several ways – it seems that the expectation is that if a woman has children she will not be successful and that counter examples are looked on a special cases and not the norm. These comments are never made about men with children.

I am the second female tenure-track faculty member in my department. The first woman in the department left after her third year review, years before I arrived. I have been told several times, “Don’t make the same mistakes Jane made.” After I received my first external grant, a male colleague congratulated me and said, “This gives you some credibility.” Jane had never gotten external funding. When a male colleague was hired, I was curious about whether he would have the same experience of always being cautioned away from Jane’s mistakes. When I asked him, he did not know who Jane was.

I find that women students naturally gravitate to my office and ask me for advice and guidance on a number of topics – perhaps because I am a woman professor. I end up doing significantly more formal and informal advising than my male colleagues but am always willing to give my time. What is a bit troubling is that now my male colleagues are redirecting women students to me even though the students initially approached them. One of my male colleagues consistently redirects women students who cry to my office. These students tell me that as soon as they started crying my male colleague asked them to

leave and see me instead. In one instance a student had wanted to talk about a grade in the class she was taking from him. As I have nothing to do with that class, it was unclear why he sent her to talk to me.

One day a female colleague pulled me aside and told me that I would get further if I didn't wear so much "ethnic jewelry" and flowing skirts and if I didn't sound "so much like a woman." First I was humiliated at her criticism of my personal style. Then I got really angry because I wondered how much "further" could I get considering I have an endowed professorship in the top department of my field, two NIH grants, a paper in Science last year, prestigious research awards, and frequent job offers from other top universities. Then I got really sad. Sad that a woman would want to crush another woman's individuality instead of celebrating it. Sad that we still live in a society where women's personal styles are thought to determine their success. And sad that anyone besides my mother would have the audacity to tell me how to dress and talk. Can you imagine her saying those things to a male colleague?

A male colleague commented to me he thought it unfair to the men that there was a couch in one of the women's restrooms. I pointed out that although having a couch in one restroom in the building may be an added perk for the women, the fact is that there are over three times as many men's restrooms as women's. Women's restrooms can only be found on every 4th floor.

Before awarding our department's teaching excellence award to me, our chair read some comments from my student evaluations. One student had commented on some advice I had given throughout the semester. After sharing this comment, the chair laughed, lamenting that he also gives his students this piece of advice, but never receives such high evaluations. One of my "mentors" responded to the chair by saying, "That's because you are not wearing a dress!" On the surface, the response was meant to be funny; in fact, it generated much laughter. Below the surface, though, the response obviously suggests that a woman's success is based in part on her appearance.

As the only woman participating in a weekly lunch meeting of faculty with similar teaching and research interests, I learned very early on that to contribute to the discussions I would have to be just as aggressive as my male colleagues, speaking my mind and occasionally interrupting another person. One day, after a meeting, a group member asked me if I thought he had talked too much during the meeting. I told him that I thought he had been rather quiet. He said, "Well, you cut me off three times!" I'm convinced that he was disturbed because a woman had interrupted him; it's most likely he has never called any of his male colleagues on this.

A female faculty member brought her 4-month old baby to a department gathering. I was holding the baby, and one of my "mentors" said, "Oh, you don't have time for one of those!" This mentor has two children of his own. What a double standard!

In my department, newer faculty often accompany a few of the senior distinguished faculty on a canoe trip in the Boundary Waters. This is obviously a chance to get to know these famous guys pretty well in a very informal setting. Many times I have mentioned my prior experience with and enjoyment of winter camping, canoeing, etc., but I have never been invited to go along.

A male colleague in my department mentioned to my husband that he was afraid to ask me to go to lunch or for coffee, because it might get back to his wife.

A senior male professor insists on referring to the faculty spouses as "the faculty wives" or just "the wives."

As a member of a faculty search committee, I suggested that we identify promising women and candidates of color. The answer came back quickly, "We look for the best candidates, no matter what."

End of discussion. Twenty-five percent of the PhDs in my discipline are women, and we have had a very large turnover in faculty, but we haven't hired another woman in the past 11 years.

A dean contacted me to schedule a meeting. When I told him I was on maternity leave, he and his assistant offered to come to my home instead of having me come to campus. I still recall with great appreciation his willingness to accommodate my situation.

I work in a department where sexual harassment is rampant, and many women have shared painful personal accounts with me. Though they would not officially come forward for fear of retribution, I decided something must be done. I approached an administrator and asked to speak in confidence. He listened to the stories I recounted, believed in their validity in spite of the fact that I could not name names, and vowed to do something about it. I was impressed with his willingness to listen and with the depth of his distress. And, most importantly, he kept his word and made efforts to change the situation.

A colleague of mine, who is also a friend, returned from a vacation. In greeting me, she gave me a peck on the cheek. A couple of colleagues saw our greeting and, unbeknownst to us, circulated an erroneous rumor that we were lesbians and were having an affair. It was several months before either of us found out what was common knowledge to everyone else in the building. I was absolutely astounded that people felt so free to make assumptions about my sexuality and my personal life, especially based on such paltry evidence. It was even more amazing to me that this was considered interesting enough to warrant so much speculation.

The professor I work for, unlike many past employers, is always careful to acknowledge the contributions that I make and to thank me for the work that I do. It is amazing how these small comments make a difference in my day.

As a man, I've noticed that when a woman approaches a group, some or all of the men do a once-up/once-down – almost as if it's a requirement for conversation. I don't know if the men are aware they do it; it seems like it's an unconscious response. I'm sure the women are aware of it, though.

A committee was formed to fill a major administrative position. At the first meeting the chair announced that there was no need for to look for minority or women candidates because no qualified ones were available. No one said anything. Later, when I, the sole black member of the committee, tried to get faculty colleagues concerned about this statement, I was told that it was not important. The chair of the committee later became dean of the college.

While playing a pick-up basketball game on campus, I was punched by one of the players. He yelled at me, saying that women should not be allowed to play basketball. Eight other men (faculty and staff) witnessed this but said and did nothing.

A male student came to my office and started yelling at me about a grade he had received from a male professor. I had no connection to the class. He blocked my exit and stood over me in a threatening manner. After he left I locked the door and called the department chair who told me it was nothing. Later, the student returned and again was verbally abusive and threatening. This time the department chair responded and intervened.

My colleague, who has since left the university, was told by members of her department that she should not participate in campus activities for women (e.g., women's luncheons, Women Faculty Mentoring Program). As a result, she felt intimidated and unsupported in her department. I think her sense of isolation was a factor in her decision to leave.

Imagine my surprise when I attempted to join a Faculty and Staff Bowling League and discovered that "faculty and staff" meant men only. Bowling may seem trivial, but I think the men got a kind of mentoring from league participation that enhanced their working relationships. I eventually convinced them to gender-integrate the league, but not everyone was happy about it. Once someone brought in a birthday cake decorated with the nude torso of a woman. A male full professor in my department made a point of cutting a specific piece of the cake and eating it in front of me, laughing and gloating about how he "got a breast." His comment was pretty clearly aimed at me. I felt that I couldn't protest because then I'd be proving that it was a mistake to let women into the league.

Once I (male) told a female colleague I thought she looked nice that day. I meant it as a compliment, but it was obvious I had made her uncomfortable. I was frustrated that she misinterpreted my remark, but I talked about it with another female colleague, who is also a friend, and she said my comment may have made her feel like her appearance was somehow a factor in my level of respect for her, like I valued her more because she looked a certain way. That wasn't my intention, but I can see how she might have felt that way. I'm a lot more aware of my comments now.

I am a woman and a full professor. A male colleague, also a full professor, submitted a grant proposal using my name. He did not ask my permission (and I would not have granted it had I been asked). When I found out, I approached an associate dean who asked me not to complain because it would make the college look bad. Later, when I protested a similar misuse of my name, the same associate dean announced that I have a neurotic need to control the use of my name and that this need wastes college resources. He said he would tell our colleagues not to work with me because I don't know how to work with people.

A male professor was interviewing for a senior position here. Individual interviews with the candidate were scheduled for all of the male faculty in my division. There are only two women in my division (I am one) and we were scheduled to meet with him together. At the time, I was the only faculty member in the division with tenure. My junior colleague was one of only two people in the division with a tenure-track appointment. The situation was denigrating: somehow it took two of us to earn a slot on the schedule that one man could fill! It also proved confusing to the candidate, who thought that we were working together when we were not.

When I was negotiating to do some consulting work, the organization's president called to ask me whether I had seen a letter sent to him by my department's associate chair. I was embarrassed to say that I had not. He faxed a copy of the letter and I was horrified to read that the department had informed him I was too busy to be consulting. No one had even bothered to talk to me about it. I believe this kind of patronizing behavior and blatant lack of professional courtesy, let alone good manners, would never have occurred to a senior professor of my stature who was a man. As a result, I went ahead and gave my time as a consultant away. The department missed out on the generous remuneration the company was willing to give for my time.

On a number of occasions a senior male has responded to comments made by women in my department by saying, "You are thinking just like a woman."

When my former boss had to leave his position for ethical reasons, I was told by a senior male faculty member that I "was like an adolescent who had lost her daddy." Never mind that I was about 45 at the time, chair of an NIH study section, and had about 50 publications to my credit.

In one secretarial position I held, my boss, a female full professor, often covered her own missteps on the phone by making comments such as, "My secretary must have forgotten to give me the message." I was

furious that she would abuse my credibility so casually. When I finally mustered the courage to bring it to her attention, she couldn't see why it was a "big deal" because I would never meet the people she was talking to anyway.

My husband and I were hired as part of a "two-body problem" – we both joined the same department. One day I was waiting in the associate dean's outer office while his secretary took in a form to be signed for me, and I heard him say to her, "Oh yes, this was the case where we hired X, and to get him we had to hire his girlfriend, too." I told several people in my department, including the chair, about the dean's comment. Ultimately, I was reassured that his statement was untrue; however, it was still disturbing. That's not the kind of thing a dean should say.

In meetings where I am the only woman, or one of very few women, I have noticed that sometimes after I speak there is a small pause and the conversation just picks up again as if I had not said anything. I don't notice this happening to the men in the meetings.

I have been at meetings where a topic is being discussed at length, and without interruption, by men. Then a woman faculty says something, and the committee chair says, "Well, I think we've talked about this long enough; let's move on." I think this sends a clear message to the woman that her opinion is not considered important.

In a recent meeting I expressed an opinion that I thought was in keeping with the discussion. One of the male committee members turned to me and said, "Did you forget to take your Prozac today?" I was so offended that I stopped going to those meetings after that.

As a support staff person I participated in a group project with graduate students and faculty. At one point I made what I considered to be a significant suggestion. The group talked about it, then dismissed my idea. Later, a draft of the project was given to a senior male professor for his comments. He made the same suggestion that I had made weeks earlier. The project was revised according to his comments, and his viewpoint was termed "brilliant." When the final version of the project was completed, all the graduate students and faculty involved were mentioned in the acknowledgements section. My name was omitted, although I had contributed more extensively than many of the others.

One day a colleague asked me to go out to lunch. After some perfunctory talk about science, he asked me if I wanted to go to his place for a "nooner." After I figured out what he was talking about (never having heard the word before) and recovered my composure, I said no that I was married and not interested. He seemed embarrassed and didn't talk to me for months afterward. I fretted a lot about the incident partly because it was so unpleasant to have that kind of interaction enter my work world, but also because he was to vote on my tenure a few months later.

I recently attended a reception and ran into the university's president, who is an avid carpenter and builder in his spare time. We were talking about the use of a stud detector to find studs in a wall when another man joined the conversation, pointed at me and said to my president, "She sure needs a stud detector," followed by a lascivious laugh. While I was left speechless and blushing, my kind-hearted president quickly retorted, "She wouldn't be where she is if she didn't have a pretty good stud avoider." I was grateful for my president's supportive quip, since it gave me a moment to regain my dignity and composure.

One day a male full professor asked me if my husband and I were planning on having any more children. I said, "Probably." He then told me that I should wait until I got tenure. What I didn't tell him was that I had learned that very morning that I was, unexpectedly, pregnant with my second child. I felt his comment was a threat, but it was too late to do anything about having another baby!

A male full professor came into my office minutes before an important review was scheduled to begin. After asking if I was nervous he asked, "By the way, are you pregnant?" I tried to let him know his question was out of line, but he was oblivious and claimed someone had told him I was pregnant. When I asked who, he said, "Oh, some girl at a party." A year earlier he had told me that the woman who used to have my job, but left for another university, never would have gotten tenure because nobody knew who she was: "She was on leave. She had babies." Later, I learned that he had asked a tenured female colleague the same question about a month after her third year review. He again claimed that "someone" had told him they had seen her in loose clothes and wondered if she was pregnant.

Recently, someone brought in a birthday cake for a faculty member. When I took a slice, someone jokingly said, "Now make sure and leave some for everyone else." I am a large person, but that's my business. Everyone was having a slice of cake. I was furious to be singled out in this way but couldn't think of anything to say.

In a discussion with a more senior male graduate student and two male professors, I was following and learning, but not contributing a lot. One of the professors finally said to me, "Your eyes are so blue today!" I think he meant to be kind, but it felt like he was saying, "I know you can't understand this hard stuff that we guys are talking about, but I don't want you to feel left out, so I'll make you feel good by saying something nice about your appearance."

Recently, a male graduate student standing next to me on the elevator said, "You're wearing a dress!" I said, "Uh, yes." He continued, "You never wore dresses last semester." I replied, "Yes, I did." He actually argued with me. Mercifully, we arrived at our floor and I was able to terminate the conversation. I felt so angry: I knew he would never comment on a male professor's clothing. Who did he think he was to tell me he knew better than I did what I had worn the previous semester? I was a professor speaking to a graduate student, yet he still felt free to do this.

WISELI Evaluation and Research Status Report:
Implementing Training for Search Committees Workshop

Survey Results of WISELI's "Implementing Training for Search Committees" Workshop

Submitted to:

Molly Carnes
Eve Fine
Jo Handelsman
Jenn Sheridan
WISELI Staff

Submitted by:

Deveny Benting
Christine Maidl Pribbenow
WISELI Evaluators

July 5, 2005

Table of Contents

Section I: General Information

Background

In late 2004 and early 2005, Jeff Jensen, Special Assistant for EEO & Diversity Programs, and Jennifer Sheridan discussed implementing WISELI's Search Chair training for various individuals and groups throughout UW System. The WISELI staff agreed to this proposal and planned a day-long workshop at the Pyle Center for a large group of participants from various institutions. The training was scheduled for June 14, 2005 and an agenda and publicity were created. On the day of the event, approximately 70 people attended, with 55 of those being actual participants in the workshop (i.e., not presenters, facilitators, staff).

Methods

A survey, made up of both closed and open-ended questions, was sent to the workshop participants on June 15, the day immediately following the training. On June 22, a reminder was sent to the participants were had yet to complete the survey. As of July 1, 39 people completed the survey for a response rate of 71%.

In the following report, the data are categorized into four sections: Value of the Workshop; Increase in Skills; Plans for Institutional Application; and Expectations, General Comments and Ideas for Improvement. In each section, relevant questions and responses are reported in various formats, using tables or bulleted items. The bulleted items are the EXACT wording from the surveys; only minor editing and categorizing occurred with the open-ended comments. In this way, the reader knows how many comments about a particular topic were said, and the exact way in which the comments were provided.

Demographics of the Survey Participants

The respondents represented eleven institutions and identified themselves in one of five title or position categories:

Institution	
Eau Claire	4
Extension	2
Green Bay	1
LaCrosse	3
Madison	9
Milwaukee	4
Oshkosh	2
Parkside	1
River Falls	2
Stevens Point	5
System	5
Total	**38**

Title or Position	
Asst/Assoc/Full Professor	6
Asst/Assoc/Vice Chancellor or President	7
Asst/Assoc Director or Manager	8
Asst/Assoc Dean	8
Specialist or Special Assistant	9
Total	**38**

The participants identified the following ways in which they heard about the event, with most identifying Jeff Jensen from UWSA:

Heard about the workshop?	
Jeff Jensen/System EEO office	11
Email announcement	9
Request or invite of Dean	7
Request or invite of Provost	4
Request or invite of Chancellor	3
Co-worker	3
Total	**37**

Section II: Value of the Workshop

A. Overall Rating of the Workshop

Very Useful	27 (69%)
Somewhat Useful	11 (28%)
Not at all Useful	1 (3%)
Total	**39**

B. Would you recommend others to attend this workshop?

Yes	35 (97%)
No	1 (3%)
Total	**36**

C. Open-ended Comments about Recommending the Workshop

1. YES:

- It was top notch. Presenters were excellent. Information was relevant and grounded in research.
- They will learn new, interesting, and useful material.
- But even more so if compressed to a half-day session.
- Very useful in many ways.
- You could just dump all the literature on someone's desk and tell them to read it, but of course, they wouldn't. It helps to be spoon-fed the info and the interaction with others from all over campus makes it seem so relevant to our entire campus.

- Useful to understand issues. Some good ideas.
- The interactivity was useful.
- Excellent Workshop—very well done!!
- I think the materials are very clear and effective. Based on comments from my colleagues who attend, I believe it was effective in educating potential Search Chairs and committee members, particularly on the issue of bias.
- It is a good program with very relevant and persuasive information. The peer-to-peer discussion format leads to useful discussions and participant self-reflection!
- I think there are many who would value from the material presented.
- It was still valuable and no one teaches this stuff at all at this campus. People really are just winging it. Especially those with less experience than me.
- Well run—good amount of group time...short but effective presentations by speakers...time managed well.
- If involved in administration, yes.
- I can think of about 2-3 people I'd like to see attend if repeated in the fall.
- Speaking for our department, we absolutely need a consistent template for searches and hiring decisions, perhaps it would be better understood why this was necessary if more people attended this workshop.
- Depends how long they have been running searches.
- I believe it would be better being trained directly by the experts than those of us who got trained in one session.
- I think just spending a day thinking about how to increase a candidate pool and various methods in recruitment were useable.
- It's always good to have contact with our colleagues from the different campuses.
- Information you can use to do a better job and improve our pools and staff and faculty diversity.

2. MAYBE or NO:

- Too much group discussion. Easier and faster to get the information from the website and handouts.
- I have to think about this because of the inappropriate humor and lack of understanding that the language examples used do not apply to the GLBTG communities.

D. Value of the Workshop Components

Component	Not at all valuable	Somewhat valuable	Extremely valuable
The presenters	0 (0%)	10 (26%)	29 (74%)
Your table facilitator	0 (0%)	11 (28%)	27 (72%)
Small group/table discussions	2 (5%)	15 (39%)	21 (55%)
"Searching for Excellence & Diversity" guide book	0 (0%)	7 (18%)	32 (82%)
Research article activity	1 (3%)	17 (44%)	21 (54%)
Case study activity	4 (11%)	17 (45%)	17 (45%)
Large group discussions	0 (0%)	18 (46%)	21 (54%)

E. Open-ended Comments about the Value of the Workshop Components

1. The presenters:

- I thought Dr. Durand provided some confusing information during the open records section/confidentiality portion of the program.
- I would add that PowerPoint presentations are more effectively done if the presenter does not simply read—for all practical purposes—what appears on the slide. The PowerPoint should supplement the oral comments, not just reiterate them.
- I really liked Bernice's tips.

2. The discussions:

- Small group discussions are a total waste of time.
- Generally needed a little more time for the discussions.
- I would suggest you do fewer small group discussions. Some are good but I felt like there were one or two too many.
- I found the presentations and large group discussions to be valuable because there were more viewpoints to be heard. The small group was also valuable but the very small groups of 2 or 3 was not because sometimes we were not able to talk about a topic since we had no experience on the topic.
- It was a small enough conference group that large group discussions would have been a good opportunity to share and learn.
- Luis Pinero did a fine job at our table. Conversation was moderately productive as some of the participants at table arrived late, left early, and others participated little.

3. **The guidebook:**
   - There were some typos in the guidebook. This kind of thing, while perhaps not substantive, is nevertheless worth taking the time to fix.

4. **The research article activity:**
   - The results of research were most interesting and useful. We could have used more time on such studies covering more areas of diversity. Good solid research that gave me new information that can be used with search committees and chairs.
   - The most valuable and useful information for me is the exposure to the research on assumptions and bias, which I was not aware of.
   - The research activity required more time, particularly getting through the longer articles.
   - I'm a slow reader/digester. I couldn't really absorb the literature that quickly.
   - Would have liked to receive all research articles.

5. **The case study activity:**
   - The case studies seem valuable; I did note, though, that they would have benefited from proofreading—a great many typos in evidence. This would make me unlikely to copy them for use on campus, unless I were willing to re-key the entire thing.
   - More case studies would have been good.
   - Some case studies tended to be a bit extreme and not so realistic.

6. **Content of the workshop:**
   - The language about white men was offensive. At least two jokes about this from presenters were very inappropriate. The language and role model examples apply to straight white men and women; not to gay people. I am always surprised when conferences on diversity make these gaffs.
   - There was a lot of good information about effective searches and screens, but the emphasis on minorities could have been greater...and sometimes more specific, e.g., how does a department go about establishing ties with minority caucuses at professional meetings? And of course the difficulty with that otherwise excellent idea is that it requires often serious monetary commitments which many public comprehensives don't have these days.
   - The level of information was not as sophisticated as I had hoped. We are doing most of the things recommended in this workshop already.
   - Expected more attention to diversity hiring in general—with less focus on women and more on ethnic, racial, and sexual orientation issues (among others). Appreciated the workshop overall but there was a bit of "preaching to the choir" about the need for diversity...and not as much information on strategies, issues, etc. for hiring and retaining diverse employees.
   - The topic is worthwhile, and the discussion good.
   - This was among the very best workshops I have been in.

7. **Structure of the workshop:**
   - The bell, while probably necessary, was frustrating at times.
   - It was not clear how to stay on track.

- The grouping by institution was useful for helping us think about what to do next but we had less variation in experiences (based on discussion summaries). Perhaps try part of the day mixed?
- At times the directions for small group weren't clear and participants didn't have examples to draw from that were relevant. Units have been doing a lot of the same kind of stuff rather than there being a lot of difference. Some of the questions that were raised in the large group were much more useful.
- It did seem at times though that the facilitators weren't on the same page about what should happen next and the 'you figure it out for yourself' approach wasn't very useful.

Section III: Increase in Skills

A. Increase in Skills Due to the Workshop

Skill areas	This skill remained unchanged	This skill increased somewhat	This skill increased to a great extent
Running an effective search committee	6 (15%)	22 (56%)	11 (28%)
Teaching others to run an effective search committee	3 (8%)	22 (56%)	14 (36%)
Recruiting a diverse pool of candidates	9 (23%)	19 (49%)	11 (28%)
Teaching others how to recruit a diverse pool of candidates	7 (18%)	20 (51%)	12 (31%)
Using the Open Meetings & Records Laws	11 (28%)	16 (41%)	12 (31%)
Teaching others about the Open Meetings & Records Laws	12 (31%)	19 (49%)	8 (21%)
Applying the research about unconscious biases and assumptions in the search process	4 (11%)	8 (21%)	26 (68%)
Teaching others about social science research to improve a search process	5 (13%)	13 (33%)	21 (54%)
Thoroughly reviewing candidates	13 (33%)	18 (46%)	8 (21%)
Teaching others how to thoroughly review candidates	8 (21%)	21 (54%)	10 (26%)
Implementing an effective interview process	13 (35%)	15 (41%)	9 (24%)
Teaching others to implement an effective interview process	10 (26%)	18 (47%)	10 (26%)

B. Open-ended Comments about Increase in Skills

1. Applying research:

- The research was the primary new information—grounding your presentation in the research was excellent.
- I was already really very familiar with Dovidio and Gaertner's research and I have used some of it in my masters thesis so that part of it was not new but it was good to see some of the other research and to talk about it's implications in the group. It helped explain some of the dynamics that women administrators in our unit have faced and continue to face in their work.
- Would have loved to spend more time on unconscious bias and assumptions.

2. Open Meetings & Records Laws:

- In retrospect, I don't know that I heard a lot that would help me to teach my colleagues about the Open Meetings & Records Laws—but the importance of those laws was brought home very well.
- The open meetings law info was a real eye-opener!
- I thought the information about open meeting laws was unclear.

3. Interview process:

- I learned how easy it is to make mistakes during the interview process, especially during the dangerous "social" time.

4. About diversity:

- The element of diversity needs more development in the workshop.

5. General comments:

- I found that the search and screen procedures in place on my campus comply quite closely with the recommendations provided in the WISELI conference. The one thing that might have the greatest impact on our ability to increase diversity in our applicant pools would be to regularly send representatives to diversity meetings of our various academic programs. However, this not only represents a long-term commitment of time, but also a huge financial investment.
- I don't have experience in hiring faculty which is what this workshop was based on. I hire classified staff. I did find the unconscious biases and being aggressive about getting a larger pool of candidates very interesting.
- My responses indicate a baseline issue: I'm pretty skilled in most of these things to start with, so a workshop would be unlikely to add a lot.
- It's hard to evaluate my skills in these areas until I get a chance to put them into practice. I learned just how powerful a committee chair is. Although I've chaired various committees, it's never really occurred to me how influential one can be as chair.
- Less useful than I had hoped for some of the specific issues that I have (recruitment, campus climate). Research information was very useful, as was the issue of how to advise search committees. I got some good ideas on that!

- Frequently where I indicated only "somewhat" it is because I am already reasonably familiar with effective searches and with some of the literature on searching for more diverse candidate pools.
- My responses are probably not representative—I have spent many years studying recruitment/selection processes and research.
- I'm not sure we really worked on skill building. What has had an impact is that I realized the importance of making personal contact with candidates. My knowledge areas around this stuff increased a great deal.
- Information provided about reasons for failed Engineering faculty searches at UW-Madison was useful.
- I thought many aspects of the presentation were very helpful and yet the mechanics of the search and screen, and the action steps to recruit were not addressed as much as I would have liked.
- The material was excellent and confirmed or enhanced how we do things today.

C. Were academic staff searches addressed comparably to faculty searches in this workshop?

Yes	24 (65%)
No	13 (35%)
Total	**37**

D. Open-ended Comments about Coverage of Faculty and Staff Searches:

1. Yes, Both Were Considered:

- People did refer to academic staff searches during the workshop.
- Both were well considered.
- Overall, yes.

2. Somewhat, But I Could Transfer the Information:

- I could appropriately translate/transfer the information.
- Emphasis on faculty searches but all discussions are easily transferable to academic staff search and selection processes.
- Yes and No. Not sure everyone understands the difference but it was an okay balance.
- Hard to say. People talked about different things. Often seemed to speak generically although wouldn't apply the same way. Sometimes, in discussion of faculty searches, the points would be variously relevant because differences in process, culture, position.
- Really, I'm not sure. I wasn't thinking along those lines. In the grand scheme, the same principles apply to both types of searches, no?
- Hard to say. Some material has equal applicability. We talked about some issues related to each at our table.

- I believe the techniques discussed would apply equally well to both groups.
- In my opinion, there are many similarities between the two. As such, the many lessons and suggested pertain to both faculty and academic staff searches.
- I felt the format was flexible enough to be understood in both contexts. If more details of processes were identified as I had suggested, then more differences might have been evident and would need to be addressed.
- I don't recall academic staff searches being mentioned. However, we'd apply the same technique.
- They were addressed fairly comparably. The structure of a good search and screen are key in any search.

3. No, It was Slanted:

- I think the presentation was slanted to faculty but it was certainly applicable to academic staff.
- There were comments from the larger group on the topic of academic staff searches and on internal candidates for faculty positions. I do not recall discussion of academic staff searches.
- Campuses may not search for academic staff members but use a pool of staff from which to hire.
- I believed more discussions about academic staff searches especially administrative searches would have enhanced the workshop.
- The focus was on faculty recruitment, as I saw it.

Section IV: Plans for Institutional Application

A. Participants' Plans for Application at their Institutions

1. Present the information to search committee participants in workshops:

- Planning and offering workshops for department chairs (initially) then search committee chairs and members, this fall.
- Will be working on designing an enhanced recruitment training process, likely as one part of a more extensive recruitment/retention/networking initiative.
- Will be working with our Affirmative Action Officer to do training for chairs. Also, will use it in my workshops with new chairs.
- Work with our affirmative action office to tweak the information that is presented to each search and screen committee on campus.
- We will use the results of the studies to assist search committees in recognizing biases.
- Will meet with college deans and others in my college who attended this workshop to develop a strategy for educating search committees. I will urge the dean to make the training a requirement before a search can commence. I will distribute the brochure on assumptions/biases to all members of the search committee. I think it is a fascinating, thought-provoking document.
- We would like to invite some/many of the presenters to do this same workshop on our campus—to ALL of our chairs and Deans. Is that something that would interest you?

- With the assistance and counsel of my colleagues in attendance, I plan to incorporate select aspects of this training into our training for our search committees.
- We will do more to address attitudes, in addition to the focus we already have on proper policies/procedures.
- Most of your tips we already incorporate in our searches. I will use the information about bias when giving Search and Screen committee chairs their EAA overview.
- Revise orientation of search committees.
- Share with staff and implement comprehensive training for my entire division.
- We will use them for training on our campus.

2. Pass on the materials and information to others within their institution:

- I have left the materials in the provost's office for use by the incoming assistant. I would be willing to assist the Affirmative Action officer and our college dean in training.
- Share with Chair of Appointment Committee and Associate Dean for Research and Faculty Development. These are the key persons involved in faculty searches in the Law School.
- I am going to update and expand our handbook for search chairs and revise our training materials.
- (1) When I suggest to others that they take workshops based on your work, I can say I've done it myself and know how useful it is. (2) I will make some suggestions about some of the materials (3) I am thinking a lot about how this went in relation to how I run professional development workshops for colleagues, and what I would suggest to others. (4) Will incorporate elements in my work that I didn't know before or hadn't thought of.
- Will share with deans and department chairs, though the exact venue has yet to be determined.
- To introduce the materials to our human resources office, campus climate coordinator, deans and department chairpersons.
- I plan to share it with all Search Committee Chairs and encourage them to give me an opportunity to meet with each Search Committee to discuss the information and answer questions.
- I have used them personally in a search that I am responsible for and I have already worked with a director that I supervise using some of the materials.
- I need to review the materials and put together a packet for our search committee chairs. I will offer to sit down with each of these individuals to provide an overview of the materials.
- Copy and paste as much as I can. The training agenda is very well done.
- Make copies of the handbook available, there were some very good handouts. Also, advocate that they are distributed and reviewed to each search committee chair.
- Distribute materials to each search committee and also relay to the members what I learned.

3. Brainstorm ideas for implementing what they learned:

- The dean of my college (Arts & Sciences) and I began brainstorming on our way back home after the workshop; we'll continue to do so this summer. We plan to do some kind of campus education right away this fall. I'm sure we'll be brainstorming for a good deal of the summer, and certainly drawing on the WISELI web site resources.
- Work with search committees in my area; help Provost Office plan wider use of ideas.
- Advice/instruction to search committee chairs.

4. **Create discussion surrounding the information:**
   - Use of the research material is a non-threatening, non-accusatory way to initiate a discussion of the issues of unconscious bias.
   - Speak with others about issues that came up during the workshop.

5. **No plan yet:**
   - I need to read through the information before developing a plan.
   - We are going to meet in the near future to develop a plan to enhance areas of the search and screen process. We need work on the SEARCH aspect.

5. **Other:**
   - I found the checklists to be extremely helpful in making sure all the needed materials are received and/or sent.
   - I seldom (virtually never) participate in search committees. Most of the hiring I do is of classified staff within my own unit. The primary message I take away from the session is the need for active recruitment to broaden candidate pools.
   - Use the guidebook as a reference.
   - Reference letter article already used when writing references for students. Just finished a search committee, and session reminded me to post session 24 hours in advance.

B. Implementation Plans and Target Audience

1. **Target all searches:**
   - Probably tie my approval of searches to participation in the workshops.
   - What plan will come will be directed at all searches in my college.
   - Discussions with search committees and hiring authorities.
   - We'll use it when we orient search committees.
   - Most immediately, department chairs and any search committees authorized to proceed this fall.
   - Meet with search committee chairs and members using either the 3-meeting (of few individuals) or 1-2 longer meetings.
   - We will probably do it in the orientation of search committees.
   - Will target search chairs, potential committee members, and unit directors.
   - Deans, Chairs, Search Committee members.

2. **Target decision-makers within the institution:**
   - I will share the materials with the President and work it into his charging materials for Chancellor Search Committees. I will also build it into the materials for the Special Regent Selection Committee.
   - I will talk with the Deans in each School/College to ask them to support the plan and initiate the conversation with Search Chairs.

- I will discuss what I learned with the Dean of my school regarding implementation. The Dean has indicated an interest to meet with search committees as well and perhaps a good strategy would be to do a collaborative orientation.
- Debrief with the Provost and deans, then develop agenda specific to our training needs to train search committee members.
- Work with HR person in my department.
- Will work on a committee to decide.

3. Target searches in specific areas:

- Will share this information with screening panels and interview teams working on recruitments within my department.
- I hope to target our entire division.
- Target faculty search committees.
- Faculty searches (as a target).

4. Target search committee chairs/leaders:

- Perhaps ask the dean to make it part of the college's 2008 plan. The target audience will be chairs of search committees as soon as they are assigned but before the PVL goes out.
- We're working on how to implement. All faculty/staff who head search committees will be targeted.
- We haven't developed our plan yet, but we will be targeting our search and screen chairs and position supervisors.

5. Other:

- I can actually use some of the methods with higher level classified staff.
- Form a group to train initially and create college liaisons to begin training search and screen committees or chairpersons.
- General awareness kind of thing.

C. Potential Challenges

1. Resistance to change/new ideas:

- There will be much resistance to admitting bias.
- I am replacing someone who has been in the job for 15 years, so there are a lot of attitudes built up on my campus around the issue of affirmative action. I think helping my colleagues to see that it is not the LAW as law that is the point, but the law as a means to an end which we should all, as educated citizens, want to see achieved.
- Dean might not want to make this training a requirement. If "strongly encouraged" some people will always have something else "more important" to do and not attend.
- Resistance to spending time; resistance to broadening credential/experience expectations.
- Resistance from decentralized administrators who value their autonomy.
- I am not an academic, so I anticipate skepticism when presenting research information. Also, people have been doing the same things for many years and may not want to change.
- Resistance from staff who already think they "get it."

- I expect some faculty skepticism.
- We have to prove the value. Otherwise, we are perceived as a roadblock and time waster.
- Some might not believe the data on bias. Some might want to do their own procedure in spite of the data.

2. Time/timing:

- Faculty and chair complaints about time demands.
- Timing of the training—just in time approach, etc. Identifying the audience(s).
- Time.
- Time.
- The same as now—time commitment and a tendency to operate in crisis mode.
- Time. Different views of how to do professional development for faculty and staff.
- Timing of different disciplines processes.
- Time and prioritizing the project over other key issues which will occur.
- Time constraints depending on the number of searches initiated.
- People not having enough time to read through all the materials.
- Time.

3. Money:

- Budget. Networking costs money. There is no money in the current budget to develop relationships with diversity members by attending conferences.
- Money to attend conferences, recruiting cost.....this was the biggest issue...good ideas at workshop but often require finances that are not available

4. Time *and* money:

- Many search committees do not seem to have sufficient time and resources to complete the hard work necessary to recruit a deeper, more diverse applicant pool. Finding ways to help them improve their active efforts will be critical!
- Time, resources.

5. None:

- Not sure. I am a senior faculty member and am very well acquainted with my colleagues. I am optimistic that the information I would share with them would be well-received.
- None—people are aware and sensitive to this issue. Increase the pool; and then hire the best qualified.

6. Other:

- Narrowing it down to the essentials so that it will be read and followed.
- Limited opportunities for hiring.
- Commitment from Chairs of departments.

D. Resources and Follow-up Needed

1. Support/encouragement:

- I wonder, off the top of my head, whether some sort of listserv or on-line discussion group would be helpful. I suppose it could present difficulties in terms of confidentiality. But if there were a way to, through other media, continue the kind of exchange of ideas across campuses that happened at the workshop, that would be great.
- During the training I might get asked questions (especially about legal matters) for which I don't know the answers. It would help if search chairs were held accountable for actually taking extra measures to achieve a diverse pool. I think they already have to explain what they did at each step of the search, but maybe this should be taken more seriously. In general, I will need the support of the college administration.
- Internal support from leadership.
- We need some successes.
- Human resources department, UWM.
- Other than the materials we already have, I do not know what else. We will ask the Dean to endorse.

2. Updates/more information on related research:

- Periodic updates on new studies would be very helpful.
- Materials from the website to include as readings for the search and screen committees.
- Resources on teaching search committee members on how to network effectively with colleagues regarding potential candidates for positions.
- Is there any data on how running a search using these guidelines results in a higher number of diverse hires?

3. Easy-to-disseminate information:

- It would be nice to have some of the key points of research available as power point or video.
- I think the brochure and copies of the manual would be valuable.
- I would like to be able to reproduce and use the hand-out materials.

4. Other:

- Assessment of influence on search committee or search committee chair satisfaction with outcome of search process and comfort with the process.
- I would like to see a half day compressed session for [people to learn the workshop information].
- Budget.
- Campus-specific resource information.
- May need a co-facilitator from another campus.

Section V: Expectations, General Comments and Ideas for Improvement

A. Were your expectations for this workshop met?

Yes	32 (82%)
No	7 (18%)
Total	**39**

B. Open-ended Comments about Expectations

1. Expectations were met:

- This was an excellent workshop. I learned a lot, and benefited both from the content and the format of the workshop. Nice job!
- I was very pleased to read the research and hear about studies related to effective searches as well as how our hidden biases play such a role in the process. Unaware of much of this information prior to the workshop.
- I learned new, interesting, and useful material.
- We were looking for tips and information we could use to better our training and education of search committees—and we left the workshop with a number of very valuable ideas—especially research to substantiate points we routinely try to make about hidden bias.
- I attend these type of workshops to do what I do a little bit better. That was certainly achieved.
- More than met—very useful information, specific items to use and points to make. Such workshops (on any topic) seem often to provide more context and general ideas than particularly helpful things. This one was differed markedly in the pertinence of what it gave participants.
- I came away with information that I can use right now and will.
- My expectations were exceeded.
- I came away with a better understanding of the challenges in recruiting a diverse workforce as well as concrete ideas on how to address those challenges.
- I believe the WISELI resources and expertise were showcased to an interested group of system-wide officials. I hope many of them are able to incorporate aspects of what they learned at their institution.
- You all exceeded my expectations, thank you.
- Worthwhile activity.
- Wasn't sure what to expect, so I guess they were met! I was not disappointed.
- I didn't much about it but was more than I expected.
- Exceeded. I learned a lot more about bias in searches than I thought was there. The data/studies helped a lot!

2. Expectations were somewhat met:

- The search info was good but the problem of increasing diversity was under-developed.

- Yes, although I would've liked a few more specific Dos and Don'ts about training. Which literature has really proved persuasive? Which approaches have been less effective?
- Generally yes in that the workshop was quite supportive for anyone who worries about this issue, the materials we received, and most activities. However there were some critical points that I really need more information about.
- It was a little more loose in terms of information than I was expecting.
- An effective workshop overall...but expected a broader definition of diversity and would have appreciated a bit more of a realistic discussion about how to recruit and retain diverse candidates in Wisconsin given the current lack of financial resources for both recruitment and retention.
- Was expecting more on the cultural biases.
- Yes and No—I was hoping for it to be more than what was in the book because I had seen that already. Liked tips that were given by speakers. Would like more.

C. Ideas for Other Workshop Topics

1. Training advice:

- Specific tips on effective training. You briefly described 3 models, but were vague on which way has proven most effective.
- It might be helpful to bring in faculty from the UW who implemented these programs to find out what worked and what didn't work.

2. Increasing diversity, in general:

- How to network to increase diversity,
- Possibly a list of some examples of caucuses or organizations within different disciplines that might provide good contacts for the creation of the pool of candidates.
- The emphasis seemed to be on gender, whereas race is more of problem at UW-Madison, from what I can see.
- More real specifics on recruiting diverse pools.
- Discussed women and persons of color but not a great deal was discussed about GLBTQ individuals or individuals with disabilities.
- I would have like more sophisticated discussion of recruitment ideas—how do you build a culture that will reach faculty of color?
- Broad definition of diversity....retention (not just recruiting).
- Diversity is difficult to attain in certain fields and how do you overcome that.
- More suggestions for recruiting diverse candidates.

3. Financial constraints:

- How to do more on a limited budget.

4. Closing the deal:

- Closing the deal, making them want to come here. Following through once they are here.

D. Open-ended Comments about Improving the Workshop

1. CONTENT of Workshop:

- The workshop was more about running a good search and less about increasing diversity, which is a more difficult problem to solve. The element of gender bias and racism in the humor was shocking.
- Spend more time on the research findings.
- How to make the offer and make someone come here would be a good addition. This format made it sound like the interview is the last thing. It's not at all. Considering all the evidence is, then making a good offer.
- Improve appropriateness of case studies; Have presenters discuss (more) interview experiences.
- Recruitment and climate need improvement.
- I think the language of the workshop titles and the framework need to be more congruent with the actual content. I think if you are going to have diversity in the title then it must attempt to be inclusive of all dimensions of diversity, or at least acknowledge the limitations of the workshop to address actual diversity. Also, the comments that white men have access to a world of role models, in my opinion, were disrespectful in their tone, not to mention inaccurate. I don't think white men with disabilities, a Jewish white man, or white gay men would ever agree, for example. Also, it's important to demonstrate that everyone has multiple identities, all of which impact our abilities to recruit women and people of color. I think the audience was thinking about this, but the response from the presenters did not lend an impression that they had thought about it. All of this actually made the presenters appear less prepared than I know that they were. Some mindfulness in thinking about these details would go a long way in supporting the credibility and authority you deserve to address your subject.

2. STRUCTURE of Workshop:

- Eliminate a few small group discussions. I'd try to end a bit earlier than you did. Long day.
- I would like to see 1 1/2 hours for lunch so we could eat on State Street. I would have enjoyed eating on my own and having a few minutes in the University bookstore.
- Compress to half day to get more faculty attendees.
- One bell tone for warning (higher pitch), a different tone for "stop now."
- Hard to say. It was really good. Might be able to tighten a little, but conversation is good.
- The small group literature discussion was not all that useful because we didn't have time to really read the papers. Therefore, the discussion was simply a rehash of what Molly Carnes presented earlier. Definitely have Molly or someone present the highlights, and then perhaps hand out the PowerPoint slides along with the papers. So much to cover in one day, yet attendance would plummet if you made it longer. I think you should focus on the search process and less on the screen and interview. The search is where we most often fail, at least at UW-Madison.
- Make sure the tables are far enough apart so you will not get distracted. More time to discuss.

E. Email Comments Sent to WISELI Staff

There were at least two jokes about white men at the beginning of the day and I was both shocked and surprised. In my mind I wondered what the response would have been if one would have made the same comments with a different race and gender. In a day when we talked about subtle racism and the power of language, it was even more troubling. Also on two occasions language and examples were used about white men. One was that white men did not need role models because history is full of them. A gay white man does not have these role models. Also, in the example used about language used to describe men and women -- again this applies to generalizations about straight people.

I know we will be filling out evaluations, but I wanted to let you know "in person" that that was a really good session yesterday. Very useful, great resources, nice approach. Above all, I liked that it was pitched to help people help people do their jobs better in very specific, practical ways. Of course I really like the evidence-driven approach, and the push to draw practical implications from that research. I like that you are sharing some primary sources as well as the more general sources.

I want to mahalo and malama the two of you and your WISELI staff for the EXCELLENT workshop this afternoon. It was so worth my time to attend. As we struggle with the mission to co-create a more inclusive campus community, the search and screen committee process plays a most critical gate-keeping role. In my three years on the UW-Madison campus, it was the first time I have seen this process addressed in a substantive manner. Pule ho'opomaikai: You brought a profound blessing to us…Technically, I really appreciated and admired how the workshop was organized and driven. As presenters the two of you rock: You both are excellent public speakers and unquestionably informed. The resources offered to us are awesome. And I loved the pedagogical flow of the dyad-small group-large group, etc interactions. On my end, I know much will flow out of today in terms of my own work in and with the search and screen process. It is rare that I come off a full-day workshop on a high but I am definitely on one right now. Epiphanies are flashing in my head like a Midwest summer thunderstorm...

WISELI Evaluation and Research Status Report:
WISELI's Climate Workshops for Department Chairs

WISELI'S CLIMATE WORKSHOPS FOR DEPARTMENT CHAIRS: EVALUATION REPORT

Submitted to:

Jo Handelsman, Molly Carnes, Jenn Sheridan and Eve Fine
WISELI Investigators and Staff

Submitted by:

Christine Maidl Pribbenow
WISELI Evaluation Director

July 14, 2005

Table of Contents

[Appendices available upon request: wiseli@engr.wisc.edu]

Section I: Introduction and Methods

WISELI's series of *Climate Workshops for Department Chairs* are the culmination of efforts by many faculty and staff at UW-Madison during the past three years. In the original proposal to the NSF, these workshops were proposed as the following:

> UW-Madison has a successful workshop series on leadership designed for department chairs. In the series, chairs meet weekly with presenters who each address an aspect of being a chair. The purpose is not only information transfer but also building relationships that help them do their jobs more effectively. We will introduce a workshop on climate into this forum. This workshop will address the nature of climate, including real experiences of respected women scientists, strategies to address each of the manifestations of climate described above or discovered in our evaluation, and approaches to successful implementation of strategies.[1]

Initially, the topic of department climate was to be introduced within the Academic Leadership Series (ALS), which is a sequence of programmatic offerings for faculty and staff at UW-Madison. Since that time, WISELI's workshops have evolved into a 3-meeting series for current department chairs, which are designed and implemented by WISELI staff, and have only been affiliated with the ALS once. This report chronicles the evolution of the workshops and evaluates them as they are currently being offered.

Participant Observation

A variety of methods were used to evaluate the climate workshops. First and foremost, I used participant observation as a primary evaluation technique. Using this method assumes that "understanding the evaluand will be enhanced by an insider or empathetic view, one that requires assuming at least marginally a position of being in the context."[2] Accordingly, I attended all of the planning committee meetings (Fall 2002-Spring 2003), most of the workshop meetings (Fall 2003-Spring 2005),[3] and was the primary contact for the chairs and respondents when completing the department climate surveys. During these observations, I noted interactions and events, and interviewed participants both formally and informally.

Surveys

One of the key components of the workshops was the "department climate survey." This survey was based on the literature about climate and developed with input from the workshop planning committee. Further, it was pilot tested and revised with a group of three chairs in Fall 2003. The final survey, which had been in use since 2003, is found in Appendix A.

---

[1] UW-Madison proposal to the NSF, 2001, pp.12-13.
[2] Mathison, S. (2005). *Encyclopedia of evaluation*. Thousand Oaks, CA: Sage Publications, Inc.
[3] I was unable to attend two meetings due to a prior commitment and maternity leave. In these cases, I relied on WISELI staff for their observations and notes.

As a means to understand their experience in the workshops, I also surveyed all of the participants in May of 2005. Nineteen out of 20 completed this survey for a response rate of 95%. The results from this survey are interwoven throughout the report. (A copy of the survey is found in Appendix B.)

Formative Evaluation and Ongoing Feedback

After the first series of meetings with three chairs who served as the "pilot" group in Fall 2003, I interviewed this group and wrote a report of my observations and recommendations. This report is found in Appendix C. WISELI staff enacted the suggestions and recommendations during the subsequent sessions. Further, through informal interactions after meetings and through email and phone discussions, I provided feedback to both Eve Fine and Jo Handelsman as they implemented the workshops.

Section II: The Department Climate Workshops

According to WISELI publicity materials, the following describes the *Climate Workshops for Department Chairs:*

> Based on the concepts of active learning, a series of three workshops will engage small groups of department chairs in discussions about climate in their own departments, and will provide chairs with the opportunity to learn from each others' experiences and ideas. A brief departmental climate survey administered between the first and second workshops will allow chairs to identify specific issues of concern for their departments and develop a plan to address these issues.

The Workshop Participants

Chairs were invited to participate in the "climate workshops" by the Deans of their respective Colleges and Schools at UW-Madison. They also received email announcements and publicity about the upcoming workshops directly from WISELI staff. In the follow-up survey of the chairs, 58% indicated that they participated due to WISELI's promotional material and 42% said they heard about it from their respective Deans. Two respondents attended the Academic Leadership Series and continued with the workshop after that event. One respondent said they heard about it from someone who previously participated. The following table indicates which School or College the participants ultimately came from.

UW School or College	
School/College 1	9
School/College 2	7
School/College 3	2
School/College 4	1
School/College 5	1
School/College 6	1
Total	**21**

Table 1: Participant's school or college affiliation

Including the pilot group, 21 faculty members, who were department chairs at the time, began the workshops. Of these, one withdrew after the initial meeting, leaving 20 who attended the full workshop series of three, and occasionally four, meetings.

Nineteen of the participants are men and one is a woman. Most of the participants indicated that their position as chair is an "elected" position (79%). On average, the participants have been chair of their departments for seven years. The length of time that a chair serves in the department is typically eight years. Ranges for these data are found in tables 2 and 3.

0-4 years	8
5-10 years	7
11-14 years	2
15+ years	2
Total	**19**

Table 2: Length of time that the participant is or will be department chair

0-4 years	8
5-10 years	7
11-14 years	1
15+ years	2
Total	**18**

Table 3: Typical length of time an individual serves as chair in their departments

Workshop Sessions and Goals

According to the WISELI website,[4] the following are listed as goals of the workshops:

- To increase awareness of climate and its influence on the research and teaching missions of a department;
- To identify various issues that can influence climate in a department;
- To present research on how unconscious assumptions and biases may influence climate;
- To enable chairs to assess climate in their own departments;
- To provide chairs with opportunities to enhance climate in their departments by learning from each others' experiences and ideas; and
- To provide chairs with advice and resources they can use to enhance climate in their departments.

The following description is provided about each session of the series:

Session 1:

- Department chairs will engage in a general discussion of climate and the importance of fostering positive climates.
- Introduction to web-based departmental climate survey.

[4] http://wiseli.engr.wisc.edu/initiatives/climate/workshops_deptchairs.html

- Presentation of resources to assist chairs in their efforts to enhance departmental climate.

Session 2:
Chairs will receive survey results for their individual departments, spend some time reviewing these results and have the opportunity to discuss survey findings. The main objective of this session will be to share experiences and expertise with other chairs and to learn from each other. Chairs will discuss and develop an action plan to address issues revealed by the survey. Chairs will also learn about resources and people on campus who can help them in their efforts to enhance climate.

Session 3:
Chairs will meet to discuss how they shared survey findings with their departments, what activities they engaged in to enhance the climate in their departments, and how successful they were. Chairs will also address specific topics such as the influence of leadership styles, organizational structure, and decision-making styles on departmental climate.

When asked to identify the value of each of the workshop components, they indicated that the facilitator (Jo Handelsman), interaction with other chairs, and the department surveys and results/report of the department survey were the most valuable components (see table 4).

	Extremely valuable	Somewhat valuable	Not at all valuable
The facilitator (Jo Handelsman)	17 (89%)	2 (11%)	0
Interaction with other chairs	15 (79%)	4 (21%)	0
Campus resources	3 (17%)	12 (67%)	3 (17%)
Reading resources and bibliography	3 (17%)	13 (72%)	2 (11%)
The department survey	16 (84%)	2 (11%)	1 (5%)
The results and report of responses from the survey	15 (79%)	4 (21%)	0
Meeting in a series of three sessions	10 (56%)	8 (44%)	0

Table 4: Responses to "How valuable was each of the components of the workshop series?"

When the workshop participants were asked to identify the level to which each of the workshop goals were met, they provided the responses found in table 5.

	This goal was definitely met	This goal was somewhat met	This goal was not at all met
Increased awareness of climate and its influence on the research and teaching missions	14 (74%)	5 (26%)	0
Identification of various issues that can influence climate in a department	15 (79%)	3 (16%)	1 (5%)
Understanding of research on how unconscious biases and assumptions may influence climate	8 (42%)	10 (53%)	1 (5%)
Assessing climate in your department	16 (84%)	3 (16%)	0
Enhanced climate in your department	7 (37%)	9 (47%)	3 (16%)
Learning from the other participants and the facilitator	16 (84%)	3 (16%)	0
Access to advice and resources to improve climate	7 (39%)	10 (56%)	1 (6%)

Table 5: Responses to the statement, "Please indicate the level to which each of the following goals was met:"

Clearly, identifying climate issues, assessing their department's climate and learning from the other participants and the facilitator were goals that were achieved, as indicated by most chairs.

Almost all of the respondents (95%) said that they would recommend others to attend the workshops. When asked *if* and *how* their expectations of the workshop were met, a sampling of the responses they provided included:

- I expected to (and did) obtain better understanding of climate-related issues and how to deal with them constructively.
- To be confident I was not missing something in my attempts to provide a good work climate.
- I had no expectations going in. I have had so much exposure to this area from various sources that I did not expect to learn much that I didn't already know.
- Basic ways to identify problems and formulate solutions.
- Better understanding of climate issues and departmental climate
- Understanding of how departments in other schools were organized and did or did not work.
- I simply felt this was an important activity and the workshops made the survey doable.
- I really wanted to know whether the climate in my dept was as positive and supportive as I perceived it to be. The workshop reinforced this idea but also pointed out a couple of problem areas that we are addressing.
- No pre-existing goals or expectations other than a general interest in fostering a nurturing climate.

- I hoped to gain input from other units on campus and this was achieved.
- I didn't have expectations but was pleased with what I learned.
- I hoped to get a validation of my assessment of our climate. This expectation was met.
- Information on experiences in other departments regarding issues affecting work environment climate, and means to improve it.

Most of the chairs indicated that after participating the workshops, the climate in their department has improved positively (see table 6).

The climate is:	
Significantly more positive	2 (11%)
Somewhat more positive	12 (63%)
The same as it was before	5 (26%)
Somewhat more negative	0
Significantly more negative	0

Table 6: Reponses to the question, "Since attending the workshops and doing the survey, how has the climate in your department changed?"

When asked what the WISELI staff could do to improve the workshops, the following responses from some of the participants included:

- The coordinators of the workshop should not require department chairs to do the survey. They should first discuss literature showing that surveys without follow up can do damage. I learned this AFTER the survey was distributed. I felt pressured to respond to the survey in ways that did not feel right. In the end I ignored the workshop coordinators and did what felt right for me.
- Better insight into interpreting survey results. Better advice on including or excluding academic and classified (or separate surveys from survey professors).
- Learn the environment of medical school department, understand the culture, interview chairs and directors, plan a process that looks at the complex issues of clinical work/education/scholarship.
- More information about what other departments at UW or elsewhere have done to enhance work climate.
- One thing that would help chairs of large departments would be to provide as additional service of summarizing the individual comments using social science analysis tools. I would even pay for it.
- It might be useful to add a follow-up session 6-9 months after the workshop.
- Get them to make time to attend. Suggest strong support from Dean.
- Possibly have departments present case studies of how units have improved climate. Examples are very powerful to illustrate the impact of relatively small changes. Sharing is very important as departments vary so much across campus.
- Greater structure to portions for sharing of experience between departments.

Section III: The Department Climate Survey

In this next section, aggregated data from the surveys of departments are described. When appropriate, quantitative data are portrayed using descriptive measures or statistical tests. Qualitative data are shown using bulleted items and lists.

The Departments and Participants

One of the key components of the workshop series was the surveying of the participating chairs' departments. Twenty-one UW-Madison departments were surveyed, which included approximately 2260 individuals, of which 1121 responded (see table 7).

Departments Surveyed	Survey Population	Final n=	Response Rate
Department 1	26	13	50%
Department 2	101	30	30%
Department 3	Listserv	39	N/A
Department 4	415	126	30%
Department 5	16	9	56%
Department 6	45	24	53%
Department 7	~60	41	~68%
Department 8	88	61	69%
Department 9	25	15	60%
Department 10	~650	182	~30%
Department 11	46	34	74%
Department 12	95/?	63/30	66%/?
Department 13	Listserv	28	N/A
Department 14	89/82	54/51	61%/62%
Department 15	?/39	28/31	N/A
Department 16	240	107	45%
Department 17	92	60	65%
Department 18	25	13	52%
Department 19	42	25	60%
Department 20	19	15	79%
Department 21	62	36	58%
TOTALS	**~2260**	**1121**	

Table 7: Departments, number of individuals surveyed and responded, and response rates

The department chairs were able to identify the groups that they wished to survey. Most elected to survey faculty, unclassified staff (including scientists, post-docs, etc), and classified staff. One chose to survey faculty only and a few chose to include graduate students. Most of the respondents were faculty, followed by graduate students, unclassified staff and classified staff (see table 8).

Title	N	%
Classified Staff	168	15%
Unclassified Staff	218	19%
Faculty Member	357	32%
Scientist	34	3%
Instructor/Adjunct	22	2%
Post-doc	59	5%
Graduate Student	232	21%
No response/blank	31	3%
Total	**1121**	**100%**

Table 8:Title of respondents, number responding, and percentage of survey population

Results of the Department Climate Surveys

All of the respondents were asked to indicate the climate in their departments by responding to the following:

On a scale from 1 (very negative) to 5 (very positive), please rate the climate in your department:

Very Negative	Negative	Mediocre	Positive	Very Positive
1	2	3	4	5

When all responses are averaged, the mean score is 3.72, which falls on the "positive" side. Breaking these data down even further, post-docs indicated the highest perceived climate. Faculty, classified and unclassified staff averages were almost identical (see table 9).

Title	N	Mean
Classified Staff	168	3.64
Unclassified Staff	218	3.65
Faculty Member	357	3.66
Scientist	34	3.76
Instructor/Adjunct	22	4.05
Post-doc	59	4.07
Graduate Student	232	3.88
Total	**1090**	

Table 9: Mean overall department climate score by title

The respondents were also asked to identify their level of agreement with statements about their department using the following scale. Averages to each statement are found in table 10.

Strongly Disagree 1 | Disagree 2 | Neutral 3 | Agree 4 | Strongly Agree 5

Average	
3.96	My department is a welcoming place to work.
4.19	I understand my role and responsibilities as a member of the department.
3.76	I have the resources I need to be productive in my job.
3.58	I feel appreciated for the work I do in the department.
4.01	The Chair of the department or my supervisor respects my opinions and contributions.
3.82	Others in the department respect my opinions.
3.50	I trust the people who make decisions that affect me.
3.10	I am able to influence the decisions that are made in the department.
3.68	The Chair of the department appropriately consults or delegates decisions to a group or committee.
3.53	I feel safe voicing my feelings in front of others.
4.28	My work contributes to the mission or purpose of my department.
3.74	Others recognize how my work contributes to the mission or purpose of my department.
3.92	I am happy with the professional relationships I've formed with others in the department.
3.15	I have had a thorough performance review in the last year.
3.26	There is somebody in the department who promotes my professional development.
3.38	Resources and other benefits are allocated fairly within the department.
2.42	Even though other people are around, I feel isolated.
3.88	My work is commensurate with my training and experience.
3.57	I have the same level of responsibility and recognition as those whom I consider my peers.
1.68	I experience subtle or overt forms of harassment or discrimination due to my gender, race or other personal attributes.
3.87	I feel reasonably accommodated when personal and professional responsibilities are in conflict.
3.74	I am aware of places or people to go to if I am faced with a problem or issue in the department.
3.54	Differences among people are valued in the department.

Table 10: Average responses to statements, N=1121

In general, the statements fell on the "positive" side, with the ones in red found to be particularly good. Statistical between-group differences in response rates were found with only three statements:[5]

- Others in the department respect my opinions.

[5] ANOVA test of between-subject effects, $p<.05$

- There is somebody in the department who promotes my professional development.
- Differences among people are valued in the department.

The survey participants were also asked a series of open-ended questions about their departments. The following common themes emerged from these questions:

- Please list up to five aspects of your department that contribute to a positive climate:
  - Collegial, professional, good teamwork, good conflict resolution process
  - Quality scholarship, research, highly skilled people, good reputation
  - Good supervisor
  - Care for the work being done, passion for the work
  - Ethical behaviors
  - Social opportunities and activities
  - Reasonable workload
  - Welcoming, friendly
  - Common goals, mission
  - Respect for others
  - Helpful faculty, staff, mentoring resources, grants assistance
  - Diversity
  - "Open doors," Open-mindedness, open discussion encouraged, information readily available
  - Supportive atmosphere, positive environment
  - Stability
  - Professional development, career advancement opportunities
  - Included in decision-making, representation on committees
  - Sufficient monetary resources
  - Variety, flexibility, autonomy
  - Good work space, good location

- Please list up to five aspects of your department that contribute to a negative climate:
  - External pressures from College, Univ. administrators, Dean
  - Gossip
  - Negative feelings, unenthusiastic workers, low morale, feeling underappreciated
  - Unethical, unprofessional behaviors, lack of accountability or responsibility, cutting corners, quality concerns
  - Budget/financial issues, lack of raises
  - Lack of unified vision, goals, lack of direction, self-interest
  - Politics
  - Inequitable allocation of resources, inequitable treatment of department members
  - Lack of polite behaviors (smile, acknowledging a person)
  - Harassment, discrimination, lack of respect

- Individuals who single-handedly affect the climate
- Inflexibility
- Feeling left out, isolated, lack of communication, lack of teamwork
- Hierarchy, people acting as if they are "better" than others, poor leadership structure
- Turf wars within departments
- Lack of interest in teaching
- Graduate student issues, funding
- Lack of trust
- Left out of decision-making process, lack of participation in meetings by everyone
- Poor conflict resolution process
- Short-staffed
- Inefficiency, disorganization, ineffective leadership, poor leadership style (punitive, unsupportive), poor management style
- Lack of performance evaluations
- Few opportunities for career advancement, difficult to find out about advancement opportunities
- Department not "evolving" or moving forward
- Overworked, workload too large, time constraints
- Space is too small, overcrowding

- What are the expectations you have for the Chair as the leader of your department?
  - Building community, fostering relationships, connect with faculty and staff
  - Be a leader
  - Hire competent faculty and staff
  - Candid, honest
  - Well-informed
  - Fair, treats others equally, support for all regardless of differences, allow all to contribute to decision-making process
  - Distribute power and responsibilities fairly, hold people accountable
  - Provide goals and directions to the department, visionary, inspiration, lead by example, advance the department, be proactive
  - Lobby University, schools and colleges for money
  - Be the department representative, department advocate, especially to outsiders
  - Communicate clearly, listen, be open-minded, be visible, be approachable
  - Foster positive climate
  - Resolve conflicts
  - Be organized, efficient, be a good businessperson
  - Increase diversity
  - Mentoring, promoting career development
  - Supportive, appreciative of people's work
  - Promote merit compensation, job security

- Please identify one thing the Chair could do to improve the climate in your department:
  - Communicate better, listen more
  - Be present, visible, know everyone
  - Be proactive, lead by example, be positive
  - Be organized
  - Foster respectful behavior
  - Bring people together, initiate events
  - Model professional behavior
  - Recognize good work, hold people accountable
  - Get more resources
  - Delegate
  - Treat everyone equally, respect and value everyone
  - Encourage participation in committees from staff, grad students
  - Include everyone in decision-making process
  - Foster career development
  - Create an effective leadership structure
  - Address "micro-climate"—e.g., lab climate, area/discipline climate
  - Encourage collaboration
  - Communicate common goals, mission of the department
  - Represent, support all people in the department, not just faculty

Section IV: Re-surveying Departments

When the workshop participants were asked if they would like their departments resurveyed, 10 (56%) said "yes," while eight (44%) indicated "no." Open-ended responses included:

- This would depend on timing. To date, I haven't taken any action as a result of the meetings and survey, primarily because I only completed this recently.
- It is likely that my tenure as chair will be up in 3-6 months. It is too soon to see major change. The new chair will need tome to "get on her/his feet" before another survey.
- The results of the survey were very positive. It would be useful to survey again after more time has elapsed.
- Overall I did not find it to be a useful exercise. The response rate especially for faculty and staff was terrible (<30%). The big climate issue right now is that grant funding is down and people are losing their funding and people are going to be laid off. I don't need a survey to tell me how they feel about this issue.
- Always helps to use the yardstick from time to time to see how things measure up.
- This does not seem needed.
- After some time has passed, perhaps 2-3 years, it would be interesting and re-energizing.
- Same problems would exist as did in the initial survey - the SURVEY problems, not the climate problems.
- I think these should be done about every three years.

- I would like to do this at a longer interval, say 3 years, to assess systematic, long-term changes in climate. Right now, I am aware of communication issues among a few faculty, which for now have made the dept a less pleasant place to be, but am working toward resolution. I am hopeful that this is a very temporary situation.
- This would need to be discussed with our new Dept Chair, [NAME]. I would be in favor or another survey but [NAME] needs to be consulted first.
- This would be welcome. I believe that departmental climate is somewhat improved, but only a survey could determine this objectively.
- Not sure - I've thought about it. Do not like to impose upon people's time with the survey, although information is useful.
- Our climate is quite good and I expect it to continue to improve based on what we are already doing.
- Good benchmark for new chair incoming.
- Next year would be the appropriate time.

One chair requested that we re-survey his department. The first climate survey for this department was sent out on April 30, 2004 and 23 people responded. The second survey was sent on May 9, 2005 and 55 people responded. For this department, the average climate score increased in a positive direction—from 3.21 to 3.71. We have to be cautious when attributing this change to the workshop itself, as the Chair was new in 2004 and some of the respondents may have been evaluating the former chair. The change may also be due to an increase in respondents overall, and who the respondents were for each survey. Further study of the use of pre/post tests to evaluate the workshops is needed and will be possible when other chairs volunteer to have their departments re-surveyed.

Section V: Recommendations

The data reported herein suggest that the participants find value in the workshops, that many of the goals are being met, and that the survey allows the chairs to understand climate in their department at one point in time. Based on the data provided in this report and from my observations, the following suggestions are provided regarding the structure and content of the workshops, and the department climate survey.

Structure and Content of the Workshop

- ***Maintain the 3-meeting series.***
  Despite scheduling difficulties, it appears as though the participants appreciated meeting in a series, and occasionally asked for a fourth session. Rarely did a participant miss a meeting and from their evaluation of the workshop, 56% of the chairs noted that the 3-meeting series was "very valuable."
- ***Further develop session 3 to meet the goals of the workshop.***
  When asked, the chairs indicated that the following three goals were met:
  - Learning from other participants and the facilitator;
  - Assessing climate in their department; and
  - Identifying issues that influence climate.

They were less likely to feel that the following two goals were met:
- Enhancing climate in their department; and
- Gaining access to advice and resources to improve climate.

It is in session 3 that the participants are to discuss specific ways to enhance climate in their department and use various campus resources to improve it. Case studies or action plans may be a way to structure the discussion in session 3 and provide the chairs with resources and specific ideas to implement.

- ***Encourage cross-college/school participation.***
  From my observations, cross-college discussions provide the optimum learning environment. Chairs are more likely to share their experiences and explain the environment in which they work because they cannot assume that a chair from a different college understands this context. They may also feel as if they can be honest about their department without the fear of "gossiping" about a college/school. Further, the traditions or advice that they describe may be completely new to a chair from a different college, which may provide him/her with new ideas to consider.
- ***Ensure skilled facilitation.***
  The sessions appear to be the most effective when the facilitator strikes a balance between allowing discussion and providing information and resources. Jo and Eve were able to do this by moderating the discussion, asking questions to keep it moving, and offering advice when needed. A skilled facilitator, and not necessarily a current or former chair, is needed to maintain the pace and effectiveness of the workshop series. The chairs needed to the facilitator as an "expert" in climate, not in leading a department.

The Department Climate Survey

- ***Discuss limitations of the survey, such as response rates, extensively.***
  Even though we spent some time in session 1 identifying issues with the survey, they still surfaced. We now know that response rates and number of department members surveyed is negatively correlated. That is, "larger" departments had lower response rates. Knowing this can reassure participants about their departments' response rates and explain why they should not discount the findings.
- ***Discuss limitations of the results extensively.***
  Approximately one-third of the participants asked to have their results further broken down by title. Due to the conditions of our IRB/informed consent approval, we were unable to do this. At the same time, the underlying request needs to be addressed. Why do they want to know this? What will this information provide? How can they get the data they need through other means (e.g., focus groups, departmental committees)? All of these questions need to be discussed up front to address misconceptions about the goals of the survey.
- ***Code open-ended responses for larger departments.***
  With larger departments (>50 respondents), coding the open-ended responses appeared to be helpful to the chairs. Unfortunately, this adds a significant amount of time to creating the report but appears to enhance the chairs understanding of the data. Consequently, this may be a beneficial trade-off.

- ***Re-survey a department if requested.***
  For those who would like to re-survey, one to three years appears to be the optimum amount of time. We currently have a group of chairs that now fall into this category. What we do with these results need to be discussed. To date, only one chair has elected to re-do his climate survey. Meeting with him in October will enable us to hear about the value of this activity.

These preceding suggestions stem from the analysis of data collected from fall of 2003 to May of 2005. Hopefully, these ideas will serve to enhance an already successful WISELI program.

WISELI Evaluation and Research Status Report:
Evaluation of Childcare Needs and Practices at the University of Wisconsin-Madison

WISELI'S EVALUATION OF CAMPUS CHILDCARE: A SUMMARY

Having children as a faculty member requires a balance between responsibilities at home and the demands of one's professional life (i.e., the work-life balance). Faculty members make complex personal and professional decisions to raise children. According to the Study of Faculty Worklife Survey and the interviews with 26 faculty women conducted by WISELI's Research and Evaluation Team, faculty members had varying degrees of success at the work-life balance.

Women and the Work-Life Balance

In the Study of Faculty Worklife survey, we asked whether faculty agreed or disagreed with the following statement: *I am usually satisfied with the way in which I balance my professional and personal life.* Overall, 60.2% of faculty agreed that they were balancing the two roles satisfactorily. Women faculty, however, were significantly less likely than men faculty to agree with that statement (49.4% vs. 65.3% of men). We also asked whether *personal responsibilities and commitments have slowed down [your] career progression.* Almost half—42.5%—agreed that this was true (over half of women agreed—51.0% of women compared to 38.8% of men).

ACHIEVING BALANCE

Make children and work the main priorities

Women prioritized their goals so that their family and work were at the top. For many, this meant separating their work and home by setting time limits on their working schedule, and by doing minimal, if any, work when they were at home. It also meant spending little time on anything other than work and family.

The pursuit of science is never finished—it could go on for 24 hours if you let it. So I just have starting and stopping points, and organize my day almost neurotically and finish at a particular time. I go home and I'm with my family 100%.

Use the flexibility of the faculty position

A key factor in women's ability to balance their family and work lives was the flexibility inherent in their faculty position. Many women described creating work arrangements different from the typical "9-5 schedule"—they worked at home some days, began or ended their day at unusual hours, or left in the middle of the day.

I tried to balance the two in ways I could. After the kids were in bed, when I was writing grants I was here until 1 a.m. People saw the effort and really tried very hard to work with me if there was a conflict in schedule. They really always tried.

Have support at home

Women noted that a critical factor in their ability to balance work and family lives was to have support at home, particularly from a spouse or partner.

R: Unless my husband had said that he wanted to keep our son out until he was a year old, we would've had to seek in-home care or something, you know it just would've been very difficult.
I: So does your husband do a lot of the childcare?
R: Yes he does. Starting next week, we decided to keep all of our children at home during the summer so my husband will do that. So I stayed home most of last fall, and my husband's been staying home most of the spring, and he'll stay home this summer.

Don't have children, or don't use child-care

Some people don't see childcare as an option. One interviewee said that she just never felt there was time to have a child, and then was eventually too old to have one anyway (but had no regrets about this). One had a spouse who stayed home.

I: So is it important for you that you have a spouse at home who takes care of things?
R: Yeah that is probably the most important thing in my life.
I: How would your career be different, I'm just asking you because not everybody had that—
R: Oh I know. I think first of all I wouldn't have had children. I wouldn't have ever had a child unless one of us stayed home.

Others chose not to use childcare based on their own philosophy of childrearing.

I don't think providing 50 hours a week of daycare for children is the right answer for women or men who choose to be really involved in their family for balancing family and career. I think what you want is to allow for parents, but women in particular, to have the time that they need with their children, and have enough uninterrupted time for their work that they can still make significant headway.

FINDING CHILDCARE

Knowledge about childcare in Madison

Some interviewees seemed confused about their options for campus childcare.

The (chuckling) childcare has been the worst part of my job move. . . When I came here to interview, because [there is] only [one other] female in the section and she has no children, there was no on who could tell me anything about childcare, because I met only [my colleagues] and all their wives take care of their childcare. And when I did call the places that I was able to get recommendations, you know they were full for the next year or whatever. All the good places are full way, way, way in advance.

On-campus vs. off-campus

Survey respondents showed a strong preference for on-campus care, and the valued high quality of care we do have on campus. Parents of preschool-aged children (under age 6) using UW-Madison childcare centers were more likely to say they are "Very Satisfied" with their current childcare arrangements than parents not using these centers (78.8% vs. 49.5%).

I wish that I had gotten into the childcare on campus. I was hired in May and started in August, so everything was filled up, so I ended up having to go down to [a suburb]. So that's not working so well. I mean it's great childcare, but the commute. . .

Priorities

- SCHOOL-AGED CARE—AFTER SCHOOL AND SUMMERS. By far the biggest priority for faculty with school-aged children—71.7% (81.8% of women, and 65.5% of men) indicated after-school care is a "High" or "Quite" a priority.
- INFANT CARE—NOT ENOUGH SLOTS ON CAMPUS. The biggest priority for faculty with preschool-aged children was more infant care (68.9% rated it "high" or "quite" a priority).
- BACK-UP CARE/SICK CHILD CARE. Childcare for when one's child is sick was "high" or "quite" a priority for 54.1% of faculty with school-aged children, and 59.4% of faculty with preschool-aged children. Back-up or drop-in care when one's usual childcare arrangements do not work is a priority for 51.6% of faculty with school-aged children and 63.2% of faculty with preschool-aged children.
- COSTS OF CHILDCARE—PROBLEMATIC FOR SOME FACULTY. Faculty of color and single parents with children aged 6-17 placed a higher priority on cost assistance with childcare than did their counterparts. Over half of women faculty with children under age 6 as well as untenured faculty rated cost assistance with childcare a high priority. Over 60% of underrepresented minority faculty with young children reported that cost assistance with childcare was a high priority, although this is not statistically different from majority faculty due to the small numbers of faculty of color with small children.

FINAL RECOMMENDATIONS

To increase the satisfaction level of childcare arrangements for faculty with children under age 18, UW-Madison might consider the following:

- Continue to work on improving departmental climate for faculty parents, especially mothers. One relatively simple way to do this is to highlight the flexibility of work time for faculty; perhaps enhancing existing campus policy in this regard. WISELI climate workshops for chairs are a recommended avenue for this effort.
- Make after-school and/or summer care available to parents on campus, or work in cooperation with community programs to provide such care.
- Increase availability of infant/toddler care on campus. Consider developing a campus-wide plan for "reserving" several slots so that new faculty who arrive in August have access to slots that are normally filled by that time.
- Provide a clear pathway to information about campus childcare; reach out to people who don't envision campus childcare as an option for their family; and partner with areas on campus that deal with childcare- and childbirth-related policies (e.g., the Tenure Clock Extension Policy, the Parental Leave Policy, etc.).
- Continue trying to make campus childcare affordable for everyone, but especially for women, single parents, and underrepresented minorities. We usually think of faculty as being in a position to afford good childcare; however, our results show that this is not uniformly the case.
- Finally, our estimates show that faculty in the Biological Sciences departments, in particular, show high rates of child production relative to other departments. Any campus initiatives that begin to address issues of tenure clock extensions and parental leave may want to make sure to have representatives from that division on the planning committees.

WISELI
Women in Science & Engineering Leadership Institute
University of Wisconsin-Madison

For more information about the Women in Science & Engineering Leadership Institute (WISELI), contact us at:
Email: Hwiseli@engr.wisc.eduH
Web: Hhttp://wiseli.engr.wisc.eduH
Phone: (608) 263-1445
Location: 2640 Engineering Hall

EVALUATION OF CAMPUS CHILDCARE AT THE UNIVERSITY OF WISCONSIN-MADISON

Jennifer Sheridan[1], Deveny Benting, & Christine Maidl Pribbenow
WISELI Research and Evaluation Staff

April 10, 2006

This material is based on work supported by the National Science Foundation under Grant No. 0123666. Any opinions, findings and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation.

[1] Direct all questions and correspondence to: Jennifer Sheridan, WISELI Research Director (608) 263-1445, sheridan@engr.wisc.edu.

TABLE OF CONTENTS:

[APPENDICES AVAILABLE UPON REQUEST: WISELI@ENGR.WISC.EDU]

INTRODUCTION

The Women in Science & Engineering Leadership Institute (WISELI) is a research center at the University of Wisconsin-Madison funded by the National Science Foundation (NSF). WISELI's mission is to promote the participation and advancement of women in science and engineering, by transforming the University of Wisconsin-Madison through the creation of new programs and by continuing to support current campus-wide initiatives.

In their initial proposal to the NSF, the Principal Investigators of WISELI, Professors Jo Handelsman (Plant Pathology) and Molly Carnes (Medicine), committed to evaluating a number of campus-wide programs that were supportive of the goals and mission of WISELI. The following reports on campus childcare issues and programs.

EVALUATION DESIGN

We used two sources of data to inform the evaluation of childcare at UW-Madison. First, we interviewed 26 women faculty in the biological and physical sciences to collect baseline data about their experiences at the UW-Madison.[2] We then used the results from these interviews to develop a faculty worklife survey, which was administered to all UW-Madison faculty in 2003. Both the interviewees and survey respondents were asked specific questions about childcare.

In this report, we discuss the results from these two data sources the specifically address the following:

1. *Achieving Balance.* How do faculty members strike a balance between responsibilities at work and home?
2. *Effect of Children on Career*. What is the impact of balancing children and work?
3. *Finding Childcare.* What are faculty members' current and ideal childcare arrangements and priorities?

Finally, we conclude with a summary of our main findings, and suggest areas where future improvements to the campus-wide childcare might be made.

Women Faculty Baseline Interviews

The WISELI Research & Evaluation Team (RET) conducted interviews with 26 women faculty members at the University of Wisconsin-Madison. The purpose of the interviews was threefold: 1) to serve as a baseline from which to measure changes in women's experiences on campus following the completion of the grant; 2) to inform the development of a baseline survey that would be distributed to all faculty on the UW-Madison campus; and, 3) to help the WISELI staff as they made decisions about areas of further study and the development of WISELI-sponsored programs on campus.

The interviewee population was defined as those faculty members who: 1) were not clinical faculty (and thus on the tenure track); 2) who claimed one of the biological and physical sciences

[2] For a further discussion of the methodology of the women faculty interviews conducted by the WISELI Research and Evaluation Team, please see: Maidl Pribbenow, C., Lottridge, S., & Benting, D. (2004). *The climate for women faculty in the sciences and engineering: Their stories, successes, and solutions*. Madison, WI: WISELI.

divisions as their disciplinary home;[3] 3) who had larger than 0% appointments; and 4) who were female.

The sample was generated by first determining the number of women to be selected from each college, and then randomly selecting the women in each college. The numbers in the sample for each college were intended to be roughly proportional to those in the population. Table 1 shows the distribution of the sample across UW-Madison colleges and schools.

Table 1: Distribution of Population, Sample, and Sample Percentage of Population by College or School

UW-Madison College or School	Population	Sample	Percent
College of Agriculture and Life Sciences (CALS)	39	7	18%
College of Engineering	13	2	15%
College of Letters and Science	42	8	19%
Medical School	72	7	10%
Schools of Pharmacy & Veterinary Medicine	13	2	15%
Total	179	26	

Within the numbers of each college, an effort was made to select women from different departments, titles (Assistant, Associate, Full, Distinguished), divisions, and years at UW. A random process was used to select participants; however, when two women from the same department were inadvertently selected, the second one was replaced.

The interviews were semi-structured and open-ended (see Appendix III for interview protocol). The interviewers did not necessarily follow the order of the protocol; rather, they followed the "train of thought" of the participant and referred back to the protocol to ensure that most topics were covered. The interviewers were not able to ask all of the questions that appeared in the interview protocol; no effort was made to follow up with participants to answer unasked questions. While the large-scale findings from the worklife survey (described below) give us a picture of the entire faculty, the interview findings reflect individual experiences and often complement the findings from the survey.

Faculty Worklife Survey

In 2003, WISELI implemented a campus-wide mail survey (the *Study of Faculty Worklife at the University of Wisconsin-Madison*, see Appendix II), developed from the interviews with 26 women faculty in the biological and physical sciences described above. In order to evaluate the impact of campus childcare at UW-Madison, the survey instrument included questions about childcare experiences in general, and about campus childcare in particular. The survey was primarily designed for faculty (male and female) in the biological and physical sciences at UW-Madison, but just before it was to go into the field the survey was expanded to include all faculty at UW-Madison.

[3] All faculty members choose one of the four divisions on campus as their disciplinary home. The divisions that deal with promotion and tenure are: Biological Sciences, Physical Sciences, Social Studies, and Humanities. For those faculty who were hired very recently and had not yet chosen a division, a decision was made based on information found on the Internet about their research.

Survey Response Rates: Overall

The *Study of Faculty Worklife* questionnaires were mailed to a total of 2,254 faculty (including 38 clinical faculty in the School of Veterinary Medicine). Of these, 33 surveys were non-sample cases (undelivered with no forwarding address; away for the duration; or not eligible respondents), leaving a total sample size of 2,221. A total of 1,340 faculty and clinical faculty returned surveys, giving an overall response rate of 60.3%. Faculty and clinical faculty have similar response rates; thus, when clinical faculty are removed from the sample, the response rate of tenure-track faculty remains the same at 60.3%. Women responded at higher rates than men, with 68.4% of women returning their questionnaires compared to 57.3% of men in the full sample (Table 2).

Table 2: Response Rates for Men and Women

Gender	No. of Respondents	Total Sample	Percent
Men	939	1,638	57.3%
Women	399	583	68.4%
Total	1,338*	2,221	60.3%

*Two respondents removed their case IDs and did not report gender.

Although the survey was approved by the UW-Madison Institutional Review Board, several respondents expressed concerns about confidentiality and/or anonymity. Twenty-nine respondents removed their case ID numbers from their surveys before returning them. Consequently, we could not link these cases to the original sample frame and they are not always assigned in the sample analysis that follows. Where information was provided in the questionnaire (for example, the respondent provided his or her gender, race, department, etc.), the case is included in the tables; otherwise, it is left as missing data. Because it is considered a completed case even with the item non-response, it is included in the 1,340 returned surveys.

Survey Response Rates: Women Tenure-Track Faculty

Women faculty's response rate is comparable across the four academic divisions at UW-Madison, ranging from a low of 65.7% in Biological Sciences to 69.3% in Social Studies when academic division is defined by *department* rather than at the individual level (Table 3).[4] Respondents provided departmental information in the *Study of Faculty Worklife* questionnaire, but not individual divisional affiliation (this was not asked on the questionnaire). Therefore, a divisional assignment was made on the basis of departmental membership. A list of departments assigned to each division is found in Appendix IV, as well as a list of which departments are considered "science" departments in these analyses.

[4] Because no results will be reported at the departmental level, and because divisional affiliation is a convenient way to group departments, this departmental definition of "Division" will be used throughout this report.

Table 3: Response Rates by Division (Departmental)

Division	No. of Women Respondents	Total No. of Women Faculty Members	Percent
Biological Sciences	119	181	65.7%
Physical Sciences	32	47	68.1%
Social Studies	142	205	69.3%
Humanities	101	150	67.3%
Total	394	583	67.6%

Response rates are also quite consistent for women faculty across the different schools and colleges at UW-Madison (Table 4). Women faculty in the School of Human Ecology (SOHE) have the highest response rate at 79.2%, and women in the College of Agricultural & Life Sciences (CALS), School of Veterinary Medicine (VETMED), and the School of Nursing also responded at rates higher than 70%. Women faculty in the Medical School have the lowest response rate at 64.9%.

Table 4: Response Rates by School/College

School/College	No. of Women Respondents	Total No. of Women Faculty Members	Percent
Business, Law, Misc.	26	40	65.0%
CALS	39	55	70.9%
Education	34	52	65.4%
Engineering, Pharmacy, VETMED	39	55	70.9%
Letters & Science	170	257	66.1%
Medical School	50	77	64.9%
Nursing	17	23	73.9%
SOHE	19	24	79.2%
Total	394	583	67.6%

The survey was originally intended to target the six schools and colleges containing the majority of biological and physical scientists on campus: Letters & Sciences (L&S, Natural Sciences), Agricultural & Life Sciences (CALS), Engineering, Veterinary Medicine, the Medical School, and Pharmacy. Prior to fielding the survey, the WISELI directors visited the department chairs of all six schools except Pharmacy (which does not have departments) to promote the survey, and asked the department chairs of the Biological and Physical Science departments to encourage their faculty to return the survey. The difference in response between these "science" departments and "non-science" departments[5] was small (Table 5).

Table 5: Response Rates by Type of Department

Type of Department	No. of Women Respondents	Total No. of Women Faculty Members	Percent
Science	145	220	65.9%
Non-Science	249	363	68.6%
Total	394	583	67.6%

[5] With apologies, Kinesiology, Environmental Studies, and the social sciences are not included as "science" departments.

Women assistant and associate professors were more likely to respond than their professor counterparts, although the difference is slight (Table 6). There is also little difference overall in response between untenured and tenured faculty (Table 7).

Table 6: Response Rates by Rank (Title)

Rank	No. of Women Respondents	Total No. of Women Faculty Members	Percent
Assistant Professor	143	210	68.1%
Associate Professor	73	104	70.2%
Professor	177	269	65.8%
Total	393	583	67.4%

Table 7: Response Rates by Rank (Tenure Status)

Rank	No. of Women Respondents	Total No. of Women Faculty Members	Percent
Not Tenured	143	210	68.1%
Tenured	256	373	68.6%
Total	399	583	68.4%

Overall, under-represented minority (URM) women faculty tend to have a slightly higher response rate than majority faculty (Table 8). Although the numbers are too small to report in detail, we find that Blacks, Native Americans, and Hispanic women tend to have higher response rates than majority women faculty, while Asian women faculty have a lower response rate, although the differences are quite small. Finally, women faculty who are U.S. citizens are much more likely to have returned the survey, compared to those who are not U.S. citizens (Table 9).

Table 8: Response Rates by Race/Ethnicity

Race/Ethnicity	No. of Women Respondents	Total No. of Women Faculty Members	Percent
Under-represented Minority	63	90	70.0%
Majority	326	476	68.5%
Total	389	566	68.7%

Table 9: Response Rates by Citizenship

U.S. Citizenship	No. of Women Respondents	Total No. of Women Faculty Members	Percent
Non-citizen	25	540	68.9%
Citizen	372	43	58.1%
Total	397	583	68.0%

With an overall response rate of almost 70%, the data for women faculty is probably quite representative of all women faculty at UW-Madison. Furthermore, faculty of color do not appear to be under-represented in the female-only sample, as they are in the sample combining women and men faculty (not shown). Among science departments, women from the Medical School are slightly under-represented in our sample.

EVALUATION OF CAMPUS CHILDCARE

A faculty position in academia often requires individuals to work more than 40 hours per week, with some disciplines demanding even more. Providing adequate care for children while being part of this type of a work environment causes faculty to devise strategies to maintain their careers and meet all of their responsibilities at home.

Faculty members with children must strike a strict balance between the demands of their professional life and their responsibilities at home: the work-life balance. Faculty make complex personal and professional decisions in order to raise children while having a demanding career. Finding suitable childcare is closely related to how well they feel they achieve a work-life balance. According to the Study of Faculty Worklife Survey (Appendix II) and the interviews with women faculty (Appendix III), people had varying degrees of success at the work-life balance.

Achieving Balance

In the Study of Faculty Worklife Survey, we asked whether faculty agreed or disagreed[6] with the following statement: *I am usually satisfied with the way in which I balance my professional and personal life.* Overall, 60.2% of faculty agreed that they were balancing the two roles satisfactorily (see Appendix I, Table A1 for more detail).

- Women faculty were significantly less likely than men faculty to agree (49.4% vs. 65.3%).
- Untenured faculty were significantly less likely to agree compared to tenured faculty (52.6% vs. 62.6%).
- Science faculty appeared to be more satisfied with the work-life balance than non-science faculty (63.7% vs. 55.9%). This is not an artifact of the greater proportion of men in the sciences, as women faculty in Biological and Physical Science departments are also significantly more likely than women in Social Science and Humanities departments to say they are satisfied with how they balance work and non-work roles.
- Those faculty who self-identify as gay or lesbian were much less likely to agree that they satisfactorily balance their personal and professional lives (34.4% vs. 61.1%).

Many of the women we interviewed said that the addition of children into a household had a significant influence on the balance of their professional and personal lives. In fact, some women felt that the issues women face in their careers are closely related to their parental status. Some felt that it influenced both women and men equally, whereas others felt it influenced women more than men. Alison, Elaine, and Natalie captured this sentiment in their comments below:

> *I don't care if you're a father or a mother. I don't care if you're a father with a stay-at-home wife. Having kids changes things. It takes your mind away when you least expect it. It limits the time you can spend [at work].*

***

[6] We combined "Agree Strongly" and "Agree Somewhat" statements into one general "agree" category for this analysis, and did likewise to arrive at a general "disagree" category.

That's the advent of when all of a sudden you go from just being a professional scientist with no constraints on you that are any different than anybody else, to all of a sudden being a mom. And having to juggle that for a long time, so I think that was the first time where I felt that there was a difference [between men and women faculty], and I have felt that since.

***

I think it is really difficult because typically young faculty people are at a young family stage as well. So I think it's probably very difficult to find two new responsibilities as a young parent—I mean for men and women. . . I['ve] thought . . . many times that some of the barriers for women are barriers for families in general.

In the campus-wide survey, we asked faculty to rate the extent to which they agree or disagree with the following statement: *I often have to forgo professional activities (e.g., sabbaticals, conferences) because of personal responsibilities.* Overall, 39.0% of faculty respondents indicated that they agreed with this statement[7] (see Appendix I, Table A1 for more detail).

- Interestingly, more tenured faculty than untenured faculty agreed (40.4% vs. 34.7%), but they have also had more years of professional activities to "forgo."
- Faculty of color were also significantly less likely to agree with this statement compared to majority faculty (32.1% vs. 39.8%).
- No other significant group differences emerged for this question.

The women we interviewed who had children described strategies to cope with the balance of their children/family and their professional lives. They generally described three supports or coping mechanisms that helped them balance their work and family lives: 1) making children and work their main priorities (often at the expense of their own selves); 2) using the flexibility of the faculty position to work around childcare issues; and 3) having the support at home from a spouse, partner, or paid provider.

1) Making children and work the main priorities. The women faculty interviewees prioritized their goals so that their children/family and work were at the top. This meant, for many of them, separating their work and home by setting time limits on their work schedule, and by doing minimal, if any, work when they were at home. (It also meant spending little time on anything other than work and family.) The work/family separation was necessary in part simply because of the needs of their children, though it was also a reflection of the interviewees' own assessment of what was most important to them. Jodi and Renee, in the excerpts below, described their approaches to drawing boundaries between work and home:

Yeah it's really balanced. . . The pursuit of the science is never finished—it could go on for 24 hours [a day] if you let it. So I just have starting and stopping points, and organize my day almost neurotically and finish at a particular time. I go home and I'm with my family 100%. And I only come back if I'm in the middle of an experiment that needs to be scored that night or there is some paperwork that needs to be done. And I try not to be here on weekends.

[7] Several respondents strongly felt that the statement should have been worded the opposite way; e.g., *I often have to forgo personal responsibilities because of professional activities.*

***

I don't do any work at home, hardly. I'm either too tired, or if I just read a paper when I'm with the kids, and they're doing a puzzle, they write in what I'm doing, and they don't want me to do it. So I'm less flexible about going in and out of it versus when I'm reading a magazine or something. They pick right up on that so I don't even try.

2) Using the flexibility of the faculty position to work around child issues. A key factor in women's ability to balance their family and work lives was the flexibility inherent in their faculty position. Many of the women described creating work arrangements different from the typical "9-to-5 schedule"—they worked at home some days, began or ended their day at unusual hours, or left in the middle of the day. Oftentimes these arrangements centered around a childcare provider's schedule, their spouse/partner's schedule, and school activities. Jaclyn described finding a schedule that worked for her by "trial and error":

After my daughter was born, my husband and I traded off, so I worked at home Tuesdays and Thursdays, and I came in for my faculty meetings because those are on Tuesdays, or if something really critical was going on (but I tried not to). And that's actually been an effective schedule. I've stuck with that. And you know what: you learn that people figure out when you're going to be here, and in fact you can cue up your meetings on Monday, Wednesday, Friday, and you can keep your Tuesdays, Thursdays for your own work. And nothing bad happens, you know. It works. And so part of this is I think you go by trial and error and figure out how things work.

A few of the women who gave birth to children during their career at UW-Madison spoke of flexible childcare arrangements where they did not have to take a leave of absence, but instead worked continuously, though part-time, as an alternative arrangement. Leanne described this arrangement:

I started going back to work a couple weeks after my son was born, you know, I would bring him in with me. I was working about half-time, but I didn't really take a lot of time off, and so I [had] a more extended part-time than solid time off and solid time starting.

These alternative arrangements often meant that the woman faculty members missed some departmental functions, but most described ways they and their department were able to deal effectively with their issues. As mentioned in the quotes above and in the one below, some women made sure that they "pulled their weight" so that their colleagues would not feel that the women with children were getting special treatment. The issue of special consideration around childcare came up in a variety of interviews, and it was clear that this was an issue for the faculty we interviewed, either one they experiences as parents or in their observations of other parents. As Joanne describes below, the women found other ways to help their colleagues and contribute to the department:

Actually, people took it very well because I tried to balance the two in ways I could. After the kids were in bed, when I was writing grants, I was here until 1 a.m. People saw the effort and really tried very hard to work with me if there was a conflict in schedule. They really always tried. Maybe because whenever they need it, I back them up. I don't know. But I did not have any problem, and the department is really terrific [and] has to do with

what you do for other people as well. And so I don't think people should expect [that] just because you have kids [everyone] will always understand that you were too late.

The chairs of other women's departments were not always supportive of the women juggling their work schedule. These same women described departments whose views on working women parents were negative, and thus these women bore a stigma.

3) Having support at home from a spouse, partner, or paid provider. A critical factor the women interviewees described in their ability to balance their work and family lives was to have support at home, particularly from a spouse or partner. These women described the necessity of spousal/partner support in the day-to-day activities of child-rearing and home maintenance, and in the emotional support provided by a spouse or partner. As Edie said, "You can't do it all yourself—you have to be able to share duties with a spouse." While many interviewees felt that sharing childcare duties and coordinating schedules with one's spouse or partner was ideal, this was not a realistic scenario in every case. Pamela and Rebecca also commented on the helpfulness of having a paid provider:

It takes time to raise children. And I think that people think that people can do it, that women can be successful in [academia], but many times there's give somewhere in that situation. Either they're able to have a full-time nanny and that works out, and that's a very difficult situation because childcare as we know it is not a priority in this nation. . . So, many of those people have stay-home spouses and that works great.

***

I talked to several places on campus, and the options [for childcare] were limited, and the wait list was really long. We looked at women [who provided daycare in their homes]—that was another option we thought of. And then basically in-house, and for us we figured we'd save an hour a day in commuting if we have someone come in, and it's worked out fantastically.

Effect of Children on Career

In the Faculty Worklife Survey we asked faculty whether *personal responsibilities and commitments have slowed down [their] career progression.* Almost half of all faculty (42.5%) agreed that this was true (see Appendix I, Table A1 for more detail).

- Over half of women faculty agreed (51.0% compared to 38.8% of men).
- Faculty in the Biological and Physical Science departments were less likely to agree compared to those in Social Science and Humanities departments (37.0% vs. 49.0%). Again, this was true for both women and men faculty, so it is not an artifact of having a higher proportion of male faculty in the science departments.

We also explored to what extent departmental policies and norms and the attitudes of colleagues made it easier or harder to balance work obligations with family life. Here, we asked about some specific issues related to caring for children that departments and the faculty in them do to help and/or hinder the child-rearing process at home.

Overwhelmingly faculty thought their departments were very supportive of family obligations. Over 75% of respondents agreed that 1) *most faculty in [their] department are supportive of colleagues who want to balance their family and career lives;* that 2) *the department knows the*

options available for faculty who have a new baby; and that 3) *the department is supportive of family leave* (see Appendix I, Table A2 for more detail).

- Women faculty were less likely than men faculty to agree with any of those statements, and this difference is statistically significant for "having supportive colleagues" (72.7% vs. 82.0%) and "supporting family leave" (79.4% vs. 85.3%).
- Untenured faculty were less likely than tenured faculty to agree that the department "knows the options available for faculty with new babies" (71.1% vs. 80.6%) and that their departments "support family leave" (77.2% vs. 84.9%). Both men and women untenured faculty feeling this way.
- Faculty in science departments were also less likely to agree that their departments were supportive of new parents compared to faculty in non-science departments (79.3% vs. 87.3%), and again this is true for both men and women faculty.

Two statements addressed some specific actions of departments that some feel contribute to the difficulty of combining a faculty position with parenting. For both statements, a sizeable minority of faculty felt their departments were "guilty" of making things more difficult for parents. First, 40.3% of all faculty agreed that *it is difficult for faculty in my department to adjust their work schedules to care for children or other family members,* and 43.4% of all faculty agreed that *department meetings frequently occur early in the morning or late in the day*. Both of these statements address the scheduling of faculty duties within the department, and the possible effects of those responsibilities on care arrangements (see Appendix I, Table A2 for more detail). Women faculty in particular agreed more often than men that "it is difficult to adjust schedules" (45.6% vs. 38.0%).

Finally, as a way to ascertain the "climate" for parents in the department, we asked faculty if they agreed that *faculty who have children are considered to be less committed to their careers*. Some respondents had difficulty answering the question as we posed it because, as they wrote in the margins of the survey form, their responses are different depending on the gender of the particular faculty member (see Appendix I, Table A2 for more detail).

- Women faculty and untenured faculty were especially likely to agree that faculty with kids are thought to be less committed (32.8% and 27.7% respectively).
- Faculty in Science departments were significantly less likely to agree with this statement (18.7%), probably because very few faculty in Physical Science departments (16.2%) agreed, while almost one-third of faculty in Humanities departments (29.4%) agreed.

Finding Childcare

<u>All Faculty</u>

As Table B1 (Appendix I) shows, most faculty on campus are parents: 67.2% of survey respondents indicated that they have one or more children—35.9% have school-aged children (defined as children ages 6-17), and 12.9% have preschool children (defined as child ages 0-5).

- Those who are less likely than others to have children are: women faculty (53.8%), untenured faculty (54.1%), faculty in Humanities departments (59.0%), faculty of color (55.0%), and non-U.S. citizens (56.9%).
- Faculty in Biological Science departments are more likely to be parents (71.1%).
- Untenured faculty are significantly more likely to be parents of children under age 6 (31.5%, compared to 6.8% of tenured faculty). Similarly, faculty who are non-U.S.

citizens are more likely than other faculty to be parents of preschool-aged children (22.1% vs. 11.7%).

Faculty Parents

Among faculty who are parents, we find that the mean number of children is just over 2. On average, the youngest child was born around 1988, while the oldest was born around 1984 (see Appendix I, Table B1 for more detail).

- In all, 63.2% of faculty with children still have kids living in their home (defined as children under age 18), and 19.4% of faculty parents have a very young child (under age 6).
- Women faculty have fewer children than their male peers (1.8 vs. 2.2), and their children tend to be younger, as women faculty are significantly more likely to have school-aged children compared to men (60.0% of women faculty parents have school-aged children compared to 52.0% of men).
- Untenured faculty tend to have fewer children than do tenure faculty parents (1.9 vs. 2.2). Their children are younger, as untenured faculty are significantly more likely to have both school-aged children (63.2% vs. 51.8%) and young children (58.5% vs. 9.6%) than are tenured faculty.
- Faculty in Biological Science departments have more children on average than do faculty in other departments (2.2 children per Biological Science parent vs. 2.1 for parents in other divisions), while Social Science faculty have fewer children (2.0).
- No difference was found in the number of children between faculty of color and majority faculty (66.1% vs. 52.6%).
- Although faculty who are not U.S. citizens showed no difference in the number of children from faculty who are U.S. citizens, they do tend to have younger children, both very young children (under 6: 39.0% vs. 17.3%) and school-aged children (ages 6-17: 71.4% vs. 52.3%).

Children Born Each Year

In the survey, we asked respondents to provide the years of birth for all of their children. We also asked respondents to indicate the year each child entered the home. This was to account for children who entered the home at older ages (e.g., through adoption, as stepchildren, or other circumstances). One reason for asking such detailed information was so that estimates of how many children are born to faculty each year could be obtained. The results are shown in Appendix I, Table B2. Using only the "year of birth" variable will over-estimate this number because many of those children entered the faculty members' homes through marriage to the children's parents. On the other hand, the number of births will tend to be under-estimated because many respondents were reluctant to provide information about their children.

We estimate the number of children born to faculty on campus using a combination of the "Year of Birth" and "Year Child Entered Home" variables. If only the year of birth was provided, we assumed the child is a biological child of the faculty member, and use that year. If a "Year Child Entered Home" was provided and if this year was within five years of the child's year of birth, then we used the "Year Child Entered Home" as the year that matters—this would be the year a faculty member would be most likely to extend the tenure clock and/or take parental leave. If the child was over five years old when he or she entered the faculty member's home, we did not

count this child in Table B2—these children are more likely to be stepchildren, and it would be non-normative for a faculty member to take a tenure clock extension or parental leave in such circumstances.

Overall, faculty respondents have been producing about 52 children per year since 1991. Given that about 60% of faculty overall responded to our survey, we can estimate that around 85 children are born to or adopted by all faculty per year. These numbers have been decreasing over time: looking only at children born 2000 through 2003, the number is probably around 61 per year, in total.

Parents of School-Aged Children

In order to assist campus childcare experts with their planning for the future, we asked a number of questions about current childcare arrangements, and current childcare needs. These questions were only asked of faculty with children who need care. Many faculty members with children at home (under age 18) responded that they do not "currently use, or need, any day care services or programs to care for a dependent child." This could be because 1) the child is old enough to care for him- or herself; or 2) there is an at-home care-taker for the child. Therefore, faculty with school-aged children who do not consider themselves as "using or needing care" went ahead and answered the questions anyway. In this section we report the responses of all those who answered the questions, whether or not they indicated they "use or need" care (see Appendix I, Tables B3 and B4 for more detail).

- Among all faculty parents with school-aged children, women and untenured faculty were much more likely to say they "use or need care" compared to men (61.9% vs. 32.2%), and to tenured faculty (62.0% vs. 33.3%).
- Those faculty with a spouse or partner who does not work in the labor force full-time were significantly less likely to indicate that they "currently use, or need, any day care services" for their children (23.7% vs. 54.2%).
- Faulty with a partner working part-time or less were significantly more likely to say that a "family member (spouse/partner, grandparent, yourself, etc.)" takes care of their children than are other faculty (52.0% vs. 20.1%), and significantly less likely to indicate that they use "after-school care" for their kids (16.0% vs. 51.8%).
- Women (17.7%), untenured faculty (17.9%), single parents (those parents who say they are single—not married and not partnered) (0.0%), and faculty in Biological Science departments (20.3%) are less likely to indicate that a family member takes care of their children.
- Women faculty are more likely to indicate that they place their children in "after-school care" than are men faculty (55.7% vs. 32.7%).

Returning to Table B3, faculty with children ages 6-17 appeared to be satisfied with their childcare arrangements overall, with 89.8% indicating that they are "Very Satisfied" or "Somewhat Satisfied" with their current arrangements. No significant differences between groups appeared. Because there was not a great deal of variation, we also dichotomized between those who were "Very Satisfied" with their arrangements, and all others. Many fewer faculty were "Very Satisfied" with their current childcare arrangements for their school-aged children (around 48.4% overall); however, no significant differences in being "Very Satisfied" appeared between any of the groups we investigated.

We also looked for differences in satisfaction with current childcare arrangements among faculty using each of the different arrangements used by parents of school-aged children (Appendix I, Table B5). When "satisfaction" is measured simply as Satisfied vs. Dissatisfied, no differences appear among the different arrangements. However, when we look at those who are "Very Satisfied" compared to all others, two striking differences appear.

- First, those parents of school-aged children who use the UW-Madison childcare centers (e.g., Bernie's Place, Eagle's Wing, etc.) were significantly more likely to say they are "Very Satisfied" with their childcare than parents not using these centers (80.0% vs. 44.2%)[8].
- Second, parents who say that their children take care of themselves were significantly less likely to say they are "Very Satisfied" with the arrangement (20.0% vs. 52.5%) compared to faculty using other after-school arrangements.

Finally, we asked survey respondents to indicate which childcare issues are a priority for them (Appendix I, Table B6a). We looked at the issues rated as "High Priority" or "Quite a Priority" for faculty with school-aged children, and found that *Care for school-aged children after school or during the summer* was by far the biggest priority of faculty: 71.7% indicated after-school care is a "High" or "Quite" a priority.

- This was an even higher priority for women faculty, with 81.1% of women faculty reporting after-school care to be a high priority (compared to 65.5% of men).
- Single parents also rated the priority of after-school care very highly (81.8% said it was "High" or "Quite" a priority), although due to the small number of single parents, this is not statistically different from the rest of the faculty.
- Faculty in Physical Science departments thought this was less of a priority, as only 52.6% of Physical Science faculty rated this choice as a high priority (compared to 76.4% of faculty in other departments); still this was the category chosen most often by Physical Science faculty.

Childcare when your child is sick and *back-up or drop-in care when your usual childcare arrangements do not work* are the next highest childcare priorities for faculty with school-aged children, with over half of such faculty rating each arrangement as "High" or "Quite" a priority. Again, women faculty and single parents rated each of these categories as higher priority than male faculty, and faculty in Physical Science departments rated them lower. Faculty parents with a spouse or partner at home were significantly less likely to rate sick childcare or back-up care a high priority. A few of our interviewees also addressed this issue:

> *More childcare on campus I think would be very helpful. And also some provision for kids that are ill—I mean they have a low-grade fever or something.*
>
> ***
>
> *What I'm feeling is that [what] we have in terms of gender issues and department chairs deals mostly around kids. It's anti-family. And it's just not acceptable for me to be out with a sick child.*

[8] This finding remains when parents who have a school-aged child *and* a preschool-aged child are removed from the analysis (not shown).

***

I've heard miserable stories from people where they felt like their department chairs told them, 'You know you can't stop; no, you still have to teach your course; you still have to be here; if you have a sick child that you have to take to the doctor I'm marking that down and you're getting vacation time taken away from you.'

The rest of the arrangements we asked about were high priorities for less than half of the respondents overall (Appendix I, Table B7). They were:

- Availability of campus childcare;
- Availability of infant/toddler care;
- Childcare specifically designed for children with developmental delays or disabilities;
- Childcare when you are away at conferences and special events held elsewhere;
- Extended-hour childcare when you must work evenings, nights, or weekends;
- Assistance in covering childcare costs;
- Assistance with referrals to non-university childcare situations.

However, some specific groups had higher priorities for these choices (see Appendix I, Table B6a for more detail).

- Over half of women faculty also chose campus childcare and conference/event care as high priorities.
- Faculty in Humanities departments prioritized conference/event care, extended-hour care, cost assistance, and childcare referrals as especially high compared to faculty in non-Humanities departments.
- Faculty of color placed high priority on campus childcare, infant/toddler care, and cost assistance with childcare than did their majority counterparts.
- Non-U.S. citizens also put a higher priority on infant-toddler care.
- Single parents rated conference/event care, extended-hour care, and cost assistance as "High" or "Quite" priorities.

<u>Parents of Preschool-Aged Children</u>

Faculty members who have children under age 6 are about twice as likely as faculty with school-aged children (ages 6-17) to indicate that they currently use or need childcare services (Appendix I, Table B3).

- Women faculty and faculty in Humanities departments were significantly more likely to indicate that they need care for their young children (100.0% of women compared to 73.7% of men (100.0% of Humanities faculty compared to 76.9% of all other faculty combined).
- Less likely to need care for their infants and toddlers were faculty in the Physical Sciences (63.6% vs. 85.0%), faculty in Science departments (72.2% vs. 91.4% in non-Science departments), and faculty with a spouse or partner who is not employed full-time in the labor force (51.8% vs. 95.4%).

Women faculty tend to use a family member as a childcare provider less often than men faculty (11.4% vs. 36.0%) as is also the case with untenured faculty versus tenured faculty (19.5% vs. 40.4%), as shown in Appendix I, Table B4. Faculty with a spouse/partner at home at least part-

time were much more likely to indicate that a family member cares for their child(ren) (46.7% vs. 23.1%). Other than these few differences, very little variation in the types of childcare chosen by parents of young children appeared in our data.

Returning to Table B3 (Appendix I), faculty with young children appeared to be even more satisfied with their childcare arrangements that were faculty with older children. Out of all faculty with children under age 6, 92.5% indicated they are "Very" or "Somewhat" satisfied with their arrangements, and this does not vary by demographic group. Again, to see whether more variation appears we looked at the "Very Satisfied" answers compared to all other choices. Over half (57.1%) of infant/toddler/preschooler parents are "Very Satisfied" with their childcare arrangements, and again, this does not vary by demographic group.

Two striking differences appear when we look at satisfaction with childcare arrangement by the type of arrangements utilized by parents with children under age 6 (Appendix I, Table B5):

- First, those parents of young children who use the UW-Madison childcare centers (e.g., Bernie's Place, the Waisman Center, the UW Preschool Labs, etc.) are significantly more likely to say they are "Very Satisfied" with their childcare than parents not using these centers (78.8% vs. 49.5%).
- Second, parents who use an in-home provider, such as a nanny, are significantly less likely to say they are "Very Satisfied" with the arrangement compared to faculty using other arrangements (38.5% vs. 61.3%).

In Table B6b (Appendix I) we turn to childcare priorities for faculty with very young children. *Availability of infant/toddler care* is a high-priority childcare issue, with 68.9% of faculty with children under age 6 rating it a "High Priority" or "Quite a Priority."

- Faculty particularly in Biological Science departments rated this a high priority (80.0%).
- Faculty in Physical Science departments were much less likely to make infant/toddler care a high priority compared to other faculty (42.9%).
- After-school/summer care was rated highly overall by faculty with young children (66.2% gave it a high priority), but this option is in reference to older school-aged children rather than young children.
- Back-up/drop-in care is a high priority for 63.2% of faculty, especially women faculty, untenured faculty, and faculty in Biological Science departments. Faculty in Social Studies departments and faculty with a partner at home at least part-time rated back-up care as less of a priority (44.7% and 36.7% respectively).
- Campus childcare is a high priority for 60.2% of faculty. Again, women rated it as a higher priority than men (72.1% vs. 53.9%) and untenured faculty rated it as a higher priority than tenured faculty (69.7% vs. 47.4%).
- Sick child care was rated a high priority by 59.4% of faculty with young children, and again, women (76.7%) and untenured faculty (66.2%) rated this a higher priority than other faculty.

The other childcare issues we asked about garnered a "High Priority" response for less than 50% of faculty with young children, except for some individual demographic groups (see Appendix I, Table B7 for more detail).

- Over half of women faculty with children under age 6 rated conference/event care, cost assistance with childcare, and childcare referrals as a high priority.
- Untenured faculty and faculty in the Humanities also thought that cost assistance and childcare referrals were high priorities.
- Over 60% of underrepresented minority faculty with young children thought that conference/event care and costs assistance with childcare were high priorities, although this is not statistically different from majority faculty due to the small number of faculty of color with small children.

SUMMARY: CHILDCARE

With approximately 90% of faculty with children under age 18 reporting they are "Very Satisfied" or "Somewhat Satisfied" with their childcare arrangements, it would seem that the current childcare resources available to faculty members are more than adequate. This largely positive report however, does mask some group differences, particularly for faculty who use in-home childcare (such as a nanny) or whose school-aged children care for themselves after school, and in the childcare priorities for women, untenured faculty, faculty of color, and faculty in Humanities departments.

The women faculty with children who we interviewed described a variety of types of childcare they used: in-home babysitters or nannies, childcare providers outside of the home, and/or spouses/partners. They used these resources in a variety of ways, sometimes attempting to minimize childcare by sharing unusual working hours with their spouse. The issues that women reported on were: 1) the expense and few slots for infant care (although many were reluctant to put an infant in childcare); 2) obtaining reliable information about childcare providers because there were few resources besides word-of-mouth (which is difficult to get if one is new to the Madison area); 3) finding childcare close to their home or work, especially on-campus or in-building childcare; and 4) childcare that could deal with emergencies such as sick children or late meetings.

FINAL RECOMMENDATIONS

The University-sponsored childcare centers appear to be very successful. Faculty who use these centers report being "Very Satisfied" with their childcare arrangements significantly more often than faculty who do not use them. This is true whether faculty have school-aged children or children under age 6. To increase the satisfaction level of childcare arrangements for faculty with children under age 18, the UW-Madison childcare committee might consider the following:

1) **Continue to work on improving departmental climate for faculty parents, especially mothers**. One relatively simple way to do this is to highlight the flexibility of work time for faculty; perhaps enhancing existing campus policy in this regard. WISELI climate workshops for chairs are a recommended avenue for this effort.

2) **Make more after-school and/or summer care available to parents on campus, or work in cooperation with community programs to provide such care**. Over 50% of all parents with school-aged children (ages 6-17) said this was a "High Priority," and over 80% of parents whose school-aged children care for themselves (those least satisfied with their childcare arrangements) indicated that this was a high priority.

3) **Increase the availability of infant/toddler care on campus**. For parents with very young children (under age 6), those who were most dissatisfied with their arrangements were those who bring care providers into their own homes. The number one priority of these parents is the *availability of infant/toddler care* (84.6%), followed by *availability of campus childcare* and *back-up or drop-in care when you usual childcare arrangements do not work* (73.1% for both issues). In addition, 50.4% of all parents with children under age 6 said that *availability of infant/toddler care* was a "High Priority," while 46.7% said that *availability of campus childcare* is a "High Priority." A couple interviewees echoed these sentiments:

> *I'm sure male and female faculty would appreciate on-site childcare. It's nice that there are sites in Eagle Heights and on Linden and in the Waisman building. I know there is an infant site on University Avenue that can take maybe six infants. I was on the waiting list from week four of my pregnancy or something like that. I honestly don't know how, I mean the way my son will be able to start this fall where he is is because I have older daughters in the preschool lab and so I have priority. But I mean, how much more priority can you have?*
>
> ***
>
> *I wish that I had gotten into the childcare on campus. I was hired in May and started in August, so everything was filled up. So I ended up having to go down to Fitchburg. So that's not working so well. I mean it's great childcare, but the commute. . .*
>
> ***
>
> *Well, more childcare on campus would be a very good thing.*

Consider developing a campus-wide plan for "reserving" several slots so that new faculty who arrive in August have access to slots that are normally filled by that time.

4) **Provide a clearer pathway to information about childcare; reach out to people who don't envision campus childcare as an option for their family; and partner with areas on campus that deal with childcare- and childbirth-related policies (e.g., the Tenure Clock Extension Policy, the Parental Leave Policy, etc.)**. Some women interviewees seemed confused about their options for campus childcare. Also, partner with areas on campus that deal with childcare and childbirth-related policies:

> *I don't know if it's still a policy, but I was told several years ago that every new building that is to be built has to have a room to accommodate kids. I don't know*

if this policy is still in effect and I never look in the books to see if it's for real or not. But that's what we were taught. And it's not in existence.

***

From interview notes: After achieving tenure she married, and later had a child. She said that she had not delayed marriage or having children because of trying to get tenure—that's just the way it worked out in her life. For the birth, she took one semester off (released the dollars) to buy out. There were three types of faculty policy procedures she could choose from: sick leave, take leave without pay, or have somebody else teach and handle the committees. She reviewed these options and picked the approach she wanted to use and went to her chair to make a plan. She continued to handle her own research during this time. When asked how she knew about these approaches, she had to think back, and then said that she had been on a search committee for a dean, and was at a meeting when a chair from another department mentioned ways to proceed. This person sent her the URL and she looked it up and decided how she wanted to go.

5) **Continue trying to make campus childcare affordable for everyone, but especially for women, single parents, and underrepresented minorities**. We usually think of faculty as being in a position to afford good childcare; however, our results show that this is not uniformly the case.

6) **Focus on specific groups for planning future childcare initiatives**. Our results show that childcare arrangements and priorities are not evenly distributed among faculty. Women faculty rate almost all childcare issues we presented as higher priority than do male faculty; the same is true for untenured faculty vs. tenured faculty with children under age 6. Further efforts to assess campus childcare needs might want to focus on these groups alone, as they seem to have the greatest need. Another interesting finding is that faculty in Humanities departments, single parents, and faculty of color appear to be the most concerned about the costs of childcare. We usually think of faculty as being in a position to afford good childcare; however, our results show that this is not uniformly the case. Our estimates also show that faculty at UW-Madison produce or adopt approximately 61 children per year. The Biological Sciences departments, in particular, show high rates of child production relative to other departments. Faculty in the College of Letters & Science, the School of Veterinary Medicine, and the School of Pharmacy also have rather high rates of reproduction/adoption when considered as a per-faculty-member rate (not shown). Any campus initiatives that begin to address issues of tenure clock extensions and parental leave might want to make sure to have representatives from these Colleges on the planning committee.

WISELI Evaluation and Research Status Report:
WISELI's Workshops for Search Chairs

WISELI'S WORKSHOPS FOR SEARCH COMMITTEE CHAIRS: EVALUATION REPORT

Submitted to:

Molly Carnes, Jo Handelsman, Jennifer Sheridan and Eve Fine
WISELI Principal Investigators and Staff

Submitted by:

Jessica K. Winchell and Christine Maidl Pribbenow
WISELI Evaluation Staff

February 5, 2006

TABLE OF CONTENTS

[Appendices available upon request: wiseli@engr.wisc.edu]

Background

The Women In Science & Engineering Leadership Institute (WISELI), located on the UW-Madison campus, is supported by a five-year ADVANCE grant from the National Science Foundation. In the original proposal application for this grant, the authors described their vision:

> Our *vision* is to transform UW-Madison into an inclusive community where—irrespective of gender, race, or cultural background—all individuals are valued and encouraged to learn, teach, collaborate, explore, and share ideas. In accordance with the goals of ADVANCE, this proposal focuses on gender diversity in science and engineering…the *anticipated impact*…is to transform UW-Madison into an on-going living laboratory which will promote gender equity for women in science and engineering and *provide methods and analyses* to measure *intermediate indicators* of success. A National Women in Science and Engineering Leadership Institute (WISELI) will be established as a visible, campus-wide entity, endorsed by top-level administrators. WISELI itself will be part of the project design and will centralize collected data, monitor the success of the proposed efforts, implement a longitudinal data system, and ensure dissemination of best practices.

Further, they note that WISELI's long-term goal was to have the gender of the faculty, chairs, and deans reflect the gender of the student body.[1]

Although not in the original proposal, WISELI's Principal Investigators, staff and Leadership Team focused on the "search process" as one avenue to achieve both intermediate and long-term goals of the grant. To wit, they created a working group with representatives from various areas on campus to develop a workshop series entitled, "Searching for Excellence and Diversity: A Workshop for Faculty Search Committee Chairs." Through a process of script development, a series of meetings were created to help search committee chairs run effective and efficient search committees, recruit excellent and diverse applicants, and conduct fair and thorough reviews of candidates. This working group hoped that by providing search committee chairs with tools to broaden searches and raise awareness about implicit biases brought to the review process, the diversity of candidate pools for faculty and administration positions would be increased.[2]

Structure of the Workshops for Search Committee Chairs

This workshop series for chairs of search committees was developed in conjunction with the Provost's office, Office of Human Resources, and the Equity and Diversity Resource Center at the University of Wisconsin-Madison. Initially, the three-part workshop was designed to trace the progression of search committee work. In the first meeting, designed to occur before the initial meeting of the search committee, chairs were to be introduced to strategies for running efficient meetings, gaining participation of all committee members, and building a diverse pool. At a second meeting, ideally before the application deadline, chairs are to share their search results and discuss what strategies were successful in their experiences. In this meeting, they are also supposed to discuss methods to ensure that candidate files receive an equitable and through

[1] http://www.wiseli.engr.wisc.edu, original proposal to the NSF, February 2001
[2] http://wiseli.engr.wisc.edu/initiatives/hiring/training_hiring.html

review. Finally, a third meeting is arranged prior to the finalization of candidate interview lists. In this session, the chairs were to consider how to balance efficiency and interviewing broadly, how to recruit during the interview process, and the design of interview questions.

To complement the workshop, WISELI also developed a guidebook entitled, "Searching for Excellence and Diversity: A Guide for Search Committee Chairs." Distributed to all workshop participants, the guide discusses the five essential elements of a successful search. These include: 1) running an effective and efficient search committee, 2) actively recruiting an excellent and diverse pool of candidates, 3) raising awareness of unconscious assumptions and their influence on candidate evaluation, 4) ensuring a fair and thorough review of candidates, and 5) developing and implementing an effective interview process. The guidebook elements reinforce the workshop content and also provide additional resources and suggestions that search chairs can implement in their committees. [3]

To accommodate the varied needs and schedules of different search committees, departments, and institutional units on the University of Wisconsin-Madison campus, WISELI developed several modified workshop formats. Single, two-hour workshops were tailored for the College of Engineering and Medical School search chairs, and were offered at various times and locations on campus. A number of University-wide workshops in the single-session format were also held. A two-session version of the workshop was designed for the College of Letters and Science. The first two-hour session was scheduled to coincide with the early phases of search committee work while the second occurred late in the search process. The first session covered elements one through three, while the second discussed elements four and five along with feedback on best practices. Different WISELI staff and other campus administrators and faculty facilitated these sessions in their various formats.

Workshop Participation

Since the inception of this initiative, 167 faculty, academic staff, and administrators have participated in the WISELI search workshops. Of these, fourteen attended pilot workshops[4] organized in the summer of 2003, while all other participants attended the formal workshop(s) begun in spring 2004. While the workshop series was designed for search committee chairs, participation in the workshop training was open to others involved in the search process including department chairs, search committee members, and administrative support staff. Eighty-two percent of the participants hold faculty appointments, which suggests that the majority have served as search committee chairs or members, or both.

The group of past workshop participants represents at least 69 departments and several administrative units from across the University of Wisconsin-Madison campus. The distribution of faculty participants across institutional units is summarized in Table 1.

[3] http://wiseli.engr.wisc.edu/initiatives/hiring/SearchBook.pdf

[4] Pilot workshop members were not asked to participate in the formal program evaluation reported here, thus pilot participants are excluded from the count of participants elsewhere in this report unless otherwise noted.

Table 1.
Search Workshop faculty participants, by UW-Madison School or College[5]

School or College	Faculty participants	% of faculty
College of Agriculture and Life Sciences	14	5.2
College of Engineering	21	11.6
College of Letters and Science	51	6.3
Medical School	31	8.8
School of Pharmacy	5	17.8
School of Veterinary Medicine	4	7.6
Total	127	7.4

An alternate categorization, by scholarly division, is presented in Table 2. The concentration of faculty participants in the physical and biological sciences and their major institutional units (College of Engineering, Veterinary School, and Schools of Medicine and Pharmacy) reflect WISELI's focus on transforming the institutional culture to advance the participation of women in science and engineering fields.

Table 2.
Search Workshop faculty participants, by division[6]

Division	Faculty participants	% of faculty
Physical Sciences	31	6.7
Biological Sciences	55	7.2
Social Studies	21	3.5
Humanities	19	5.0
Total	126	5.7

The gender of workshop participants is detailed in Table 3. Overall, about 28% of faculty workshop participants were female. This is consistent with the representation of women on the UW-Madison faculty overall (27%) and the expected gender distribution (about 25% female), taking into account the concentration of faculty participants in the physical and biological sciences.

Table 3.
Search Workshop participants, by gender

	Male		Female	
	N	%	N	%
Faculty participants	91	71.7	36	28.3
All participants	97	63.0	57	37.0

[5] School and College faculty data from the *2004-2005 Data Digest*; faculty counts include only pay-rolled employees (i.e., excludes faculty with zero-dollar appointments or who are paid wholly through administrative appointments).
[6] Uses WISELI-defined divisional categories; divisional faculty data from the 2004 *Annual Report of ADVANCE program for University of Wisconsin-Madison* (Institutional data, Table 1). Faculty counts include faculty with zero-dollar appointments or who are paid wholly through administrative appointments.

Workshop participants' faculty and leadership titles are presented in Table 4. The majority of participants have been full professors, who are more frequently involved in hiring decisions and tend to fulfill leadership roles in the hiring process, as compared to junior faculty. About 20% of faculty participants were serving as chair of their department and three participants occupy campus leadership positions.

Table 4.
Search Workshop faculty participants, by title

Title	N	%
Assistant Professor	2	1.6
Associate Professor	29	23.0
Professor	95	75.4
Department Chair	26	20.5
Dean or Chancellor (all ranks)	3	2.4

Overall, participation in the first two years of search workshop tends to suggest WISELI's was successful in reaching its target audience: faculty members involved in hiring decisions, especially those in the biological and physical sciences. Furthermore, the wide representation of faculty members from different departments – at least one individual from 60% of physical and biological science departments went through the training – supports the conclusion that the reach of the workshops was broad.

Evaluation Methods and Results

Method 1: Immediate Evaluations of the Workshops

At the conclusion of the workshop meetings, participants were asked to evaluate their experience by completing a hard-copy survey at the end of the session or online (see Appendix A for a copy of this survey). In particular, we sought feedback on the value of each topic covered, other topics the participants wanted covered, suggestions from the workshop participants, and how WISELI might improve the workshop experience in the future.

Respondents

Sixty-five of the 153 participants who were asked to complete an evaluation survey did so, yielding a response rate of 42%. The demographic characteristics of respondents are summarized in Tables 5 and 6. Comparing the self-reported campus titles of respondents to those of all workshop participants suggests that respondents are reasonably similar to the overall population.[7] About 75% of respondents reported a faculty title, while 82% of workshop participants were identified as faculty members. Similarly, 27% of respondents identified their campus role as including a leadership position (i.e., department chair, section head, dean) as compared to 19% of participants overall who were identified as such. While it is plausible that

[7] Different methods were used to identify the characteristics of workshop participants as compared to survey respondents. Participants' campus titles were identified through a campus directory. Survey respondents were asked to self-identify their campus role in an open-ended response.

some groups might be over or underrepresented amongst survey respondents, the distribution of campus titles suggests that the two groups are similar.

Table 5.
Reported title or campus role, all respondents

	N	%
Faculty member	47	74.6
Administrative	11	17.5
Other	5	7.9
Leadership position	17	27.0

Table 6.
Reported role on search committee, all respondents

	N	%
Search Committee chair	35	54.7
Search Committee member	17	26.6
Administrative	8	12.5
Department chair	5	7.8

Quantitative Results

Respondents were asked to rate the value of each workshop component on a scale from one to three, with one representing *not at all valuable*, two representing *somewhat valuable*, and three representing *highly valuable*. Space was also provided for respondents to detail additional comments for each item, although this was seldom utilized. The distribution of responses to the scaled items are summarized in Tables 7a to 7g.

Table 7a.
Evaluation of "Introduction" workshop component, response distribution[8]

	N	%
1 – Not at all valuable	0	0.0
2 – Somewhat valuable	23.5	36.2
3 – Very valuable	32.5	52.5
Did not respond	5	13.9

Table 7b.
Evaluation of "Run an Effective and Efficient Search Committee" workshop component, response distribution

	N	%
1 – Not at all valuable	2	3.1
2 – Somewhat valuable	21.5	33.1
3 – Very valuable	36.5	56.2
Did not respond	5	7.7

[8] The higher non-response rate for the "Introduction" and "Run an Effective and Efficient Search Committee" components owes to multiple session workshops. Several respondents indicated that they were unable to recall early workshop components and were thus unable to assign a rating.

Table 7c.
Evaluation of "Actively Recruit a Diverse and Excellent Pool" workshop component, response distribution

	N	%
1 – Not at all valuable	1	1.6
2 – Somewhat valuable	23.5	36.2
3 – Very valuable	37.5	57.7
Did not respond	3	4.6

Table 7d.
Evaluation of "Raise Awareness of Unconscious Assumptions and their Influence" workshop component, response distribution

	N	%
1 – Not at all valuable	1	1.6
2 – Somewhat valuable	11.5	17.7
3 – Very valuable	49.5	76.2
Did not respond	3	4.6

Table 7e.
Evaluation of "Ensure a Fair and Through Review of Candidates" workshop component, response distribution

	N	%
1 – Not at all valuable	0	0.0
2 – Somewhat valuable	24.5	33.7
3 – Very valuable	37.5	57.7
Did not respond	3	4.6

Table 7f.
Evaluation of "Develop and Implement an Effective Interview Process" workshop component, response distribution

	N	%
1 – Not at all valuable	2	3.1
2 – Somewhat valuable	23	35.4
3 – Very valuable	38	58.4
Did not respond	2	3.1

Table 7g.
Evaluation of "Close the Deal Successfully" workshop component, response distribution[9]

	N	%
1 – Not at all valuable	1	3.3
2 – Somewhat valuable	10	33.3
3 – Very valuable	17	56.7
Did not respond	2	6.7

[9] This component included in some workshops. Where this component was excluded, respondents were not asked to evaluate it. Thirty respondents are included in the total sample population for this item.

Overall, responses tend to suggest that the vast majority of workshop participants found all workshop elements *somewhat* or *very valuable*. No more than two individuals (about 3% of respondents) assigned any one component the lowest rating of *not at all valuable*. The "Raise Awareness of Unconscious Assumptions and Their Influence" component received the highest overall ratings, with 76.2% of respondents rating it *highly valuable*. For all other workshop components, ratings were quite similar. On average, all other workshop components were assigned a rating of 2.57 to 2.60 (see Table 8).

Table 8.
Average evaluation of workshop components, rank ordered

	Mean
Raise Awareness of Unconscious Assumptions and their Influence	2.78
Ensure a Fair and Thorough Review of Candidates	2.60
Actively Recruit a Diverse and Excellent Pool	2.59
Run an Effective and Efficient Search Committee	2.58
Introduction	2.58
Develop and Implement and Effective Interview Process	2.57
Close the Deal Successfully	2.57

We also asked respondents to provide an overall rating for the workshop, using a one to three scale. In this case one represented *not at all useful*, two represented *somewhat useful*, and three represented *very useful*. Responses to this item are summarized in Table 9. A majority of respondents indicated that the workshop, overall, was very useful and none suggested that it was of no use. The mean response for this item was 2.62.

Table 9.
Overall evaluation of the Search Committee Workshop, response distribution

	N	%
1 – Not at all useful	0	0.0
2 – Somewhat useful	19.5	30.0
3 – Very useful	42.5	65.4
Did not respond	3	4.6

Finally, we also asked respondents whether or not they would recommend the search workshop to others. Responses were recorded as either ***yes*** or ***no*** and space was provided for individuals to comment on their answers. The distribution of binary responses is summarized in Table 10 and open-ended comments have been incorporated into a discussion of qualitative themes, below.

Table 10.
Willingness to recommend the Workshop to others, response distribution

	N	%
Yes, would recommend	58	89.2
No, would not recommend	0	0.0
Did not respond	7	10.8

Again, responses suggest a high perception of the workshop experience. The vast majority of respondents (89.2%) indicated that they would recommend the workshop to others. No individuals said they would not recommend the workshop.

Taken as a whole, responses to this portion of the survey provide evidence to suggest that many or most workshop participants would likely rate their workshop experience as *somewhat* to *very useful or valuable*. These responses also suggest that the "Raise Awareness of Unconscious Assumptions and their Influence" workshop component is generally perceived to be the best aspect of the workshop. Other workshop components are often viewed as similarly useful, but are not viewed as highly as the Assumptions component.

Qualitative Results

In an effort to enrich the scaled portions of the survey, we incorporated multiple open-ended items. These provided respondents an opportunity to comment on any of the workshop components, their overall experience, and how we might improve the workshop in the future. Responses to the various open-ended questions were similar in content and tended to cluster into two types: evaluations of the most valuable aspects of the workshop and suggestions for improving the workshops in the future. For this analysis, open-ended responses have been grouped along these two dimensions and coded into thematic clusters.

Respondents' evaluations of the most valuable aspects of the workshop revealed nine predominant themes:

- *Recognition of unconscious bias and assumptions* – The most common theme in respondents' remarks (35%) was that the workshop raised awareness of unconscious biases and assumptions and how this might affect the search.
    - "Everyone brings a perception/bias to the search committee."
    - "Avoiding bias in looking at applications"
    - "Raised awareness of biases"

- *Ways to improve the search and interview processes* – Many respondents (28%) suggested that the workshop provided useful suggestions and strategies to improve the search and interview processes.
    - "Effective strategies to diversify applicant pool"
    - "Better interviewing strategies"
    - "*Very* helpful advice regarding recruiting strategies"
    - "Having members of search committee ask same set of questions to all applicants"

- *Legal and procedural aspects of the search process* – Many respondents (27%) indicated that the workshop improved their understanding of the legal and procedural aspects of the search process.
    - "Better technical understanding of open meetings law and other formal requirements"
    - "A clearer idea of the legal aspects of the search"
    - "Emphasis on confidentiality"

- *Overview and design of the search process* – Respondents often (20%) noted that the workshop's attention to the 'broad picture' of the search process was valuable and could be applied in their capacity on the Search Committee.
    - "So key to be thoughtful well ahead of time about structure and process"
    - "How to design a search process"

- *Attentiveness to communication* – Some respondents (15%) indicated that the workshop raised their awareness of the importance of communication in the search process.
    - "Be more proactive at comm[unicating]"
    - "Importance of phone interviews/direct contacts"
    - "Communicate frequently and quickly with candidates"

- *Resources for assistance on and off campus* – Some respondents (13%) remarked that the workshop increased their awareness of diversity and recruiting resources available both on and off campus.
    - "Much better awareness of UW resources for recruiting"
    - "Accessing diversity information (need to)"

- *Inter-departmental networking and feedback* – Some respondents (12%) commented that the workshop's small-group discussions provided a venue for networking and receiving feedback on search strategies from faculty in different departments.
    - "It was nice to share experiences with other search committees"
    - "How other departments run their hiring committee (from table disc[ussion])"
    - "Enjoyed discussion[s] with diverse faculty"

- *Workshop guidebook* – A few respondents (10%) remarked that they felt the "Searching for Excellence and Diversity: A Guide for Search Committee Chairs" guidebook was a useful resource.
    - "The red book will be a good resource – thanks"
    - "Thank you for the updated, comprehensive workbook"

- *Better understanding of diversity* – Respondents seldom (7%) noted that the workshop had helped them to better understand and/or explain to others the significance and meaning of diversity in hiring.
    - "New ways to communicate/explain the importance of diversity"
    - "Better awareness of what is meant by searching for diversity and better ways to explain that we do not trade quality for diversity"

Fewer respondents provided feedback on how WISELI might improve the search workshops in the future, than discussed the most valuable aspects of the workshop. Nonetheless, a number of emergent themes can be identified in these responses. Respondents made six primary suggestions on how the workshops might be improved or implemented differently in the future.

1. *More best practices and ways to implement the message* – The most frequent suggestion, made by 12% of respondents, was that the workshop incorporate more "best practices" and focus more on how to actually implement diversity in the search process.

- "Seeking diversity candidates – methods used successfully"
- "More direction in how to solicit best candidates"
- "Where to recruit diverse groups – what's been successful"
- "I think I expected deeper discussion/specific resources on 'diversity'"

2. *Rebalance discussion of search process* – Ten percent of respondents suggested that the discussion of the search process and procedures be rebalanced in future workshops. Suggestions were mixed with regards to the direction of the rebalancing: two respondents suggested that this portion of the workshop be truncated, while four suggested that we expand the discussion.
   - "Stick to diversity, not search in general"
   - "Much focus on search process that I probably would have found more helpful when I was initially asked to chair the committee"
   - "More discussion on how to organize the search process"
   - "[More on] specific 'rules' to legally apply"

3. *Expand participation in the workshops* – Some respondents (10%) remarked that they felt more faculty should participate in the workshops, with one even suggesting that the workshops should become permanently institutionalized.
   - "Members of hiring committees should be encouraged to attend"
   - "Offer [the workshop] to more than just search committee chairs"
   - "I'd definitely recommend that this [workshop] become permanent, standard UW operating procedure"

4. *Allocate more time to the workshop* – Eight percent of respondents suggested that there was not enough time to fully delve into the workshop issues and that this shortage of time hindered discussion. Some suggested that the workshop be extended to a longer time format.
   - "Time was too short for some of the discussions"
   - "Activities [were] so short that [it] reduced effectiveness"
   - "We do need more time to fully cover all of this [material]"
   - "I wonder if a series of 2-3 workshops, each dealing with a stage of the process, might be more productive"

5. *Incorporate more discussions and peer interactions into the workshop* – Many respondents noted that the small-group discussions were a highly valuable aspect of the workshop. Five percent suggested that future workshops incorporate more discussion and peer-interactions.
   - "Keep as much interaction as possible"
   - "More group discussions"

6. *Include more discussion of diversity* – Respondents seldom (3%) suggested that the workshop more explicitly address what diversity means and how it relates to the search process.
   - "[Include a] definition of diversity"

Summary

Taken together, responses to the workshop survey provide useful feedback on participants' experiences. Both the quantitative and qualitative results indicate the workshop's focus on raising awareness of inherent biases and their influence on the evaluation of applicants was found to be the most valuable aspect by many participants. This suggests that the research-based approach WISELI took to the topic was highly successful.

The themes raised in qualitative comments also tend to support several other conclusions. While many respondents asserted that they found the workshop's suggestions on how to revise the search and interview processes to promote diversity to be helpful, others also commented that they would like to see more practical suggestions and best practices for diversifying the applicant pool incorporated into the workshop. A similar contrast was found in respondents' evaluation of the search process and procedures elements. Some indicated that they found the emphasis on the legal procedures and formal aspects of search committee work very useful. Others, however, noted that they were already familiar with this material and suggested it might be better directed at new search committee chairs.

Several comments regarding the workshop structure could also be taken into account when designing future workshops. A few individuals noted that the training could be more effective if allotted more time, perhaps over several themed sessions. This suggests that on-going evaluation efforts should be aimed at comparing the experiences and outcomes of the different workshop formats. This is currently impossible, due to the low numbers of participants found in several formats. A few comments also supported expanded workshop participation, particularly to include search committee members. This suggestion should be weighed against evidence that identification as a search committee member is negatively correlated with respondents' overall evaluation of the workshop.[10] It is plausible that search committee members may find the workshop focus misaligned with their search committee role.

Method 2: Follow-up Survey to Assess Impact of the Search Workshops

In an effort to evaluate what, if any, substantive impact the search committee training has had on hiring practices, we administered an electronic survey to past workshop participants (see Appendix B for a copy of this survey). This survey asked respondents to report how, if at all, the training they had received had changed the process and outcome of a post-workshop search. In particular, we were interested in identifying how participants had changed their behaviors during the recruitment, applicant screening, and interview stages of the search.

Respondents

A request to complete the electronic survey instrument was sent by email to 116 participants who had completed the Search Workshop through November 2005. Response to the request was low, with only 29 persons completing the survey. Of these, six were excluded because the respondents

[10] Identification as a search committee member is negatively correlated with both mean rating of all workshop components (ρ=-0.15) and overall rating (ρ=-0.23). Identification as a search committee chair was positively correlated with both measures (ρ=0.20 and ρ=0.06).

indicated that they had not participated in a search since completing the workshop.[11] The overall response rate was thus approximately 20% (see Table 11).

Table 11.
Follow-up Survey Response Rate

	N
Past workshop participants	116
Responses	29
Excluded responses	6
Total response rate	19.8%

The demographic characteristics of respondents are similar to the sample population as a whole. The distribution of genders, titles/ranks, and UW-Madison school or college affiliation among respondents is consistent with the group of past workshop participants as a whole. Considering other characteristics, some types of workshop participants may be over or under represented among respondents. Both the most recent and initial pilot workshop participants more often returned a valid survey than other workshop cohorts (26% and 40%, respectively, versus 16% for all others). Participants who had been trained in an individual workshop session infrequently responded to the survey as compared to group workshop participants (5% vs. 23% total response).

Given the low response and the relatively small initial sample population, it is necessary to proceed cautiously in interpreting the survey data. As noted, while the general characteristics of the respondents are consistent with the overall population of past workshop participants, there may be some systematic variation in survey responses. To address this possibility, the general themes identified here are verified within the over- and under represented groups wherever possible.

Before proceeding to ask respondents to evaluate their post-workshop search experience, we asked them to describe the characteristics of the candidate being sought. Most indicated that they were searching for a faculty member (86%), most commonly at the junior or all levels (50% and 23%, respectively) and rarely at the senior level (9%). The remaining searches were described as seeking administrators (14%). The majority of searches required a PhD as a minimum qualification (67%), while some required a health sciences advanced degree (MD, PharmD, or DVM required by 29% of searches).

Implementing Workshop Strategies

We asked respondents to evaluate the impact of their Search Workshop training in a variety of ways. First, we asked respondents to indicate whether they had undertaken any of the Workshop's suggested actions to improve hiring practices. A list of 17 action items, any of which could be checked, followed the question: ***"Which of the following did you do as a result of participating in the search workshop(s)?"*** The distribution of responses is presented in Figures 1a to 1c.

[11] A number of individuals who received the survey replied separately and requested that the survey be sent again once they had completed a search (spring 2006).

Figure 1a: Changes in search committee behavior attributable to Workshop training, self-reports of past participants; most common responses

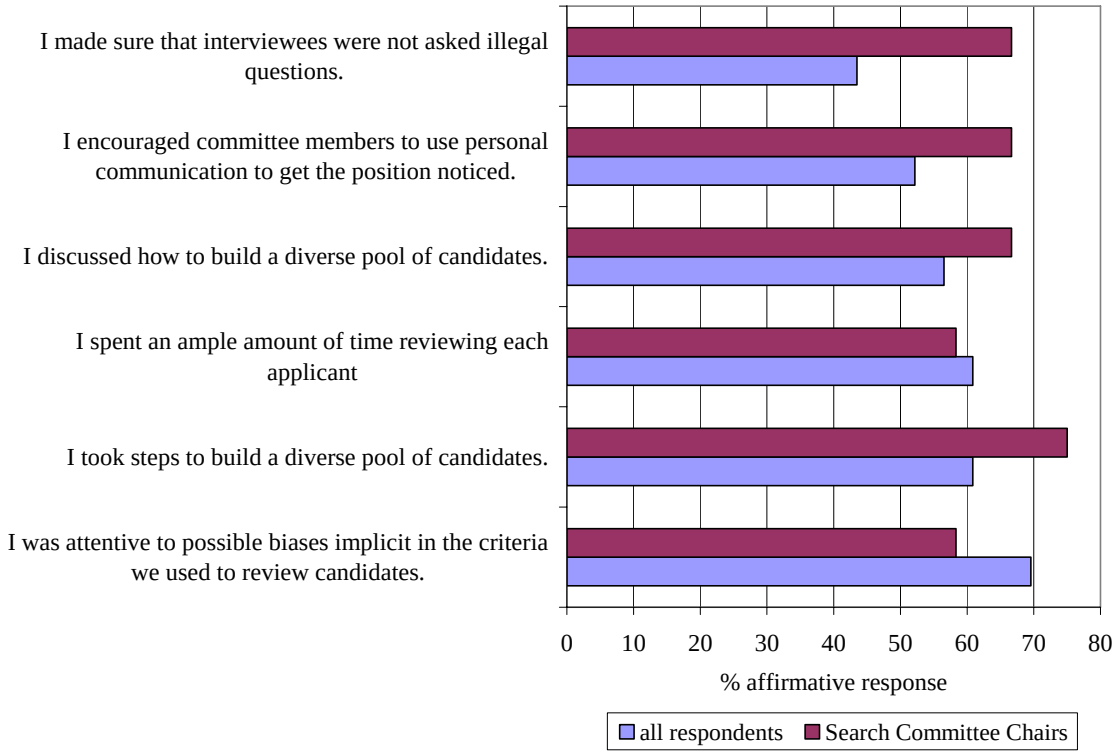
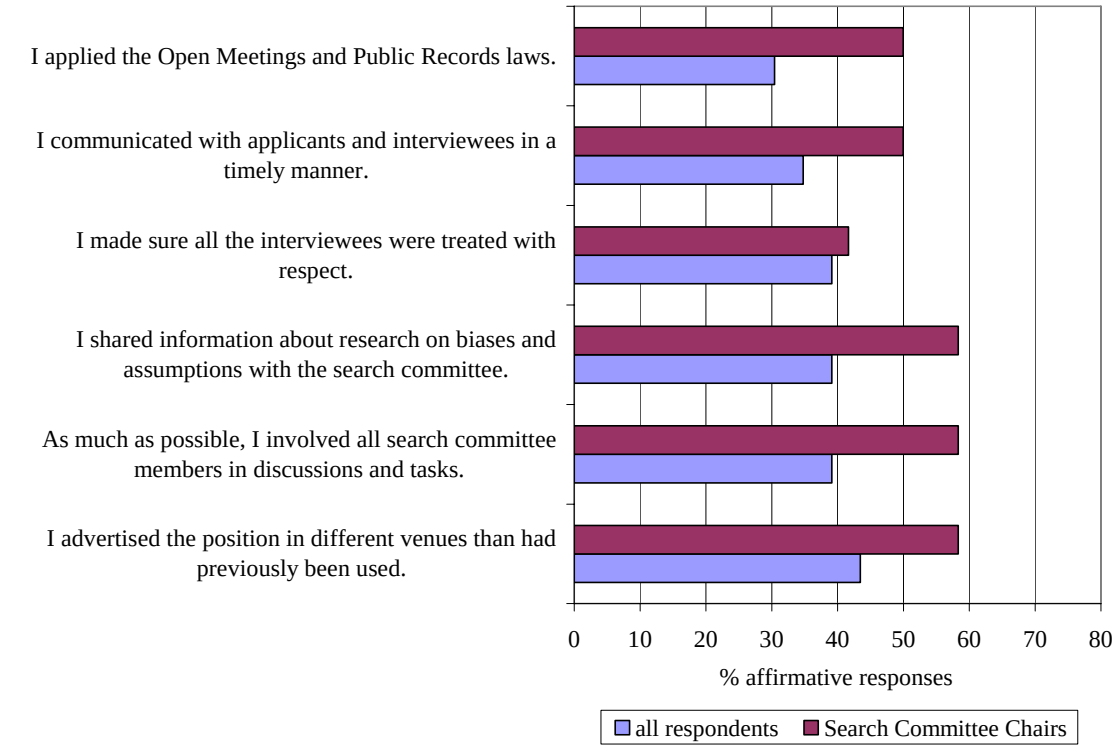


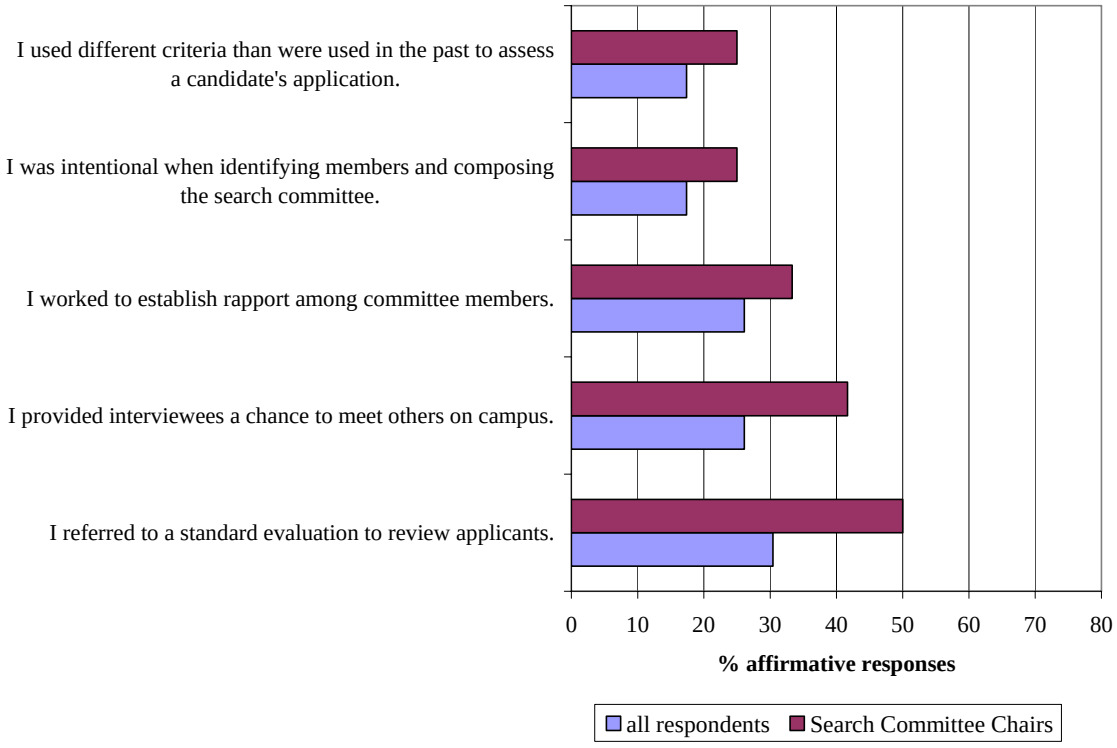
Figure 1b: Changes in search committee behavior attributable to Workshop training, self-reports of past participants; moderately common responses



Responses to this question suggest that the Search Workshops were most effective in motivating changes in the recruitment/pool building and applicant evaluation/interview phases of search committee work. A majority of respondents affirmed that they had undertaken suggested strategies to enlarge and increase the diversity of the candidate pool as well as ways to reduce the impact of implicit biases on candidate evaluation. This tends to suggest that search committees may tend to be unaware of these strategies, which can be readily translated from training to implementation (see Figures 1a and 1b).

These responses also suggest that the Search Workshops were least effective at encouraging changes in the composition of search committees, the method and tenor of search committee meetings, and the criteria used to evaluate applicants and candidates. This might suggest that these strategies were already incorporated into search committee practices prior to workshop training or that participants encountered obstacles to implementing these strategies (see Figure 1c).

Figure 1c: Changes in search committee behavior attributable to Workshop training, self-reports of past participants; least common responses



Overall, responses also suggest that past workshop participants who chaired a search committee were more likely to implement Workshop strategies as compared to participants who played other roles on a search committee. This is consistent with the leadership role of the search committee chair and with the Workshop's focus on training search committee chairs.

Broad Impact

Second, we asked respondents to describe in their own words how, if at all, their post-workshop search experience differed from previous experiences. In particular, several questions asked respondents to discuss how their training had impacted several aspects of the search process and outcomes as well as the overall process. Considered together, responses were suggestive of several themes.

Many respondents attributed changes in their behavior vis-à-vis the search committee to participation in the workshop. The changes they perceived are summarized below and illustrated using quotations culled from survey responses.

- *More attention to diversity in the search process, generally* – More than a third of respondents (35%) indicated that the workshop had raised their awareness of diversity issues, had helped them to better articulate the benefits of diversity, or had focused their attention on addressing implicit biases in the search process.
    - "I was better able to articulate the position that 'best' encompasses many attributes besides research prowess – including the ways in which an applicant could 'stretch' or 'challenge' the department and could recruit and retain underrepresented classes of students."
    - "The workshop was very helpful in putting the issue of diversity on the agenda. It helped that several committee members also attended the workshop."

- *Revised methods of candidate evaluation* – Again, more than one-third of respondents (35%) reported that the search committee had altered the candidate evaluation procedures so as to minimize the impact of implicit biases and that this change had resulted from their Workshop training.
    - "A more thorough evaluation process was used."
    - "This workshop made me more aware of the biases which exist in the interview process. I kept this concept in mind when reviewing the applications and interviewing the candidates."

- *Proactive recruitment* – Some respondents (22%) described how their search committee had taken steps suggested in the Workshop to proactively recruit a larger and more diverse pool of candidates.
    - "[The committee] advertis[ed] in journals and on web sites which would assist in resulting in a more diverse candidate pool."
    - "Proactive recruitment to enhance diversity of the pool."

- *Changed composition of the search committee* – A few respondents (9%) indicated that they had made efforts to change the composition of the search committee to broaden faculty participation.
    - "The people who served on the search committee were more diverse in science background and gender than some."
    - "Screening was in the hands of a full committee as opposed to a few dept. members."

- *Qualifications for the position revised* – A few respondents (9%) stated that because of the Workshop training, the required qualifications for the position were changed.
    - "We added a statement in the qualifications, indicating that the candidate should be active in promoting diversity within the profession."

- *No behavior changes* – Some respondents (13%) attributed no behavioral changes to their Workshop participation.
- "Not different; we have always looked for the best person."
- "We had most of the suggestions already in place [before the workshop]."

Other respondents highlighted how the Search Workshop had changed their attitudes and knowledge with regards to diversity in hiring and the search process more generally. These reported changes highlight three attitudinal and knowledge impacts of the Workshop.

- *Attitudes towards and knowledge about diversity-* – The approximately one-third of respondents (35%) who indicated that their behaviors had become more attuned to addressing diversity and bias issues also typically described how this change was linked to the increased knowledge about and concurrent attitude shifts regarding diversity in hiring.
    - "My sensitivities about gender assumptions have been raised. I'm more careful about how I consider potential applicants who may be different [with regards to] diversity."

- *More knowledgeable about the search process and campus resources for search committees* – Some respondents (17%) reported that they had gained new insight into the rules, procedures, and legalities for searches and the resources available on the UW-Madison campus to assist search committees.
    - "I was much better informed on how to do a search. In the past, we were told to search, but there was never a guideline to follow. This is the first time in my [more than two decades] here where I actually received some education in the process of chairing a search."
    - "I knew more about the resources and legalities."

- *No attitude or knowledge changes* – A few (9%) respondents reported that their attitudes had not changed nor had they gained any new knowledge as a result of their workshop participation.
    - "The workshop added nothing to what I knew before."

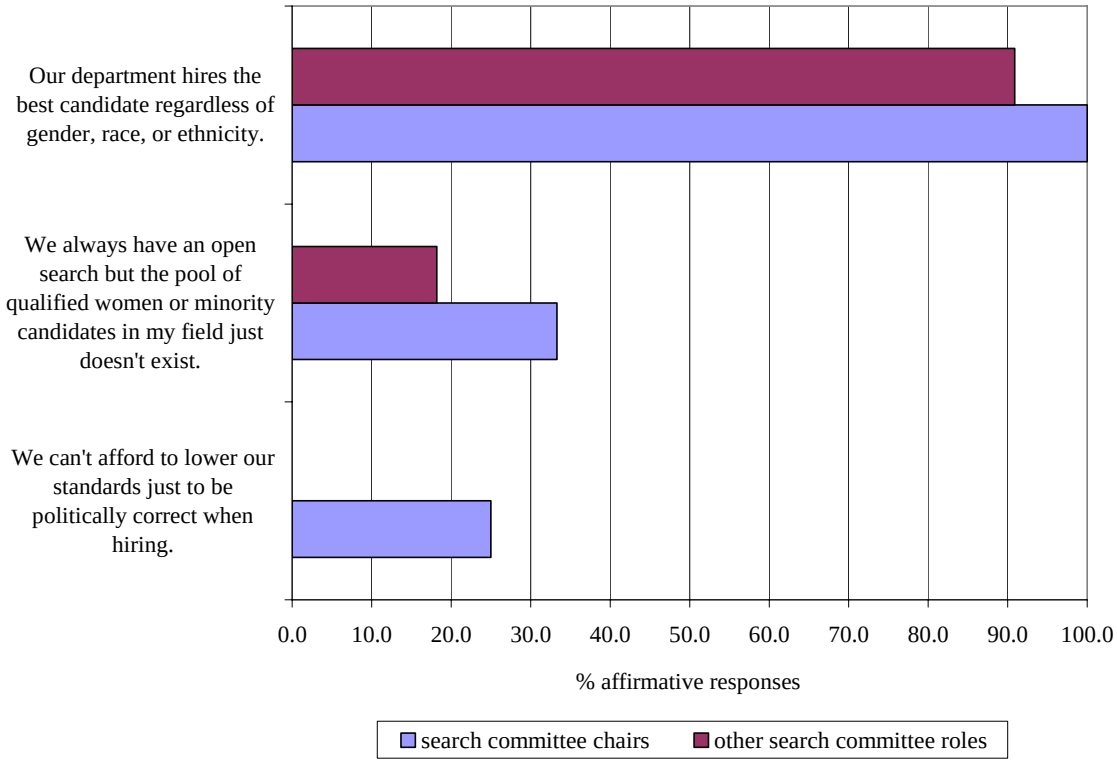
Finally, a number of respondents commented on how the behavioral and attitudinal changes they attributed to their Workshop training had affected the outcome of their searches. On this point many respondents were decidedly more negative than on others, with many (39%) seemingly describing a frustrating situation in which they had undertaken to revise the search process in hopes of attracting more diverse candidates but ultimately arrived at a similar outcome as 'traditional' searches they had participated in previously. Some respondents however indicated that their revised search strategy had resulted in a more diverse (17%) or larger (9%) pool of candidates.

Third, we asked respondents to indicate what common assumptions about diversity in hiring they had encountered in their post-workshop search committee experience and to evaluate whether or not the Workshop had provided them with tools to address these assumptions. We provided a list of eight common assumptions and asked, ***"Which of the following assumptions did you feel were either implicit or explicit in the process of working with your search committee?"***

Nearly all respondents (96%) indicated that in their post-Workshop search experience they had encountered the assumption that all department hiring decisions are based solely on merit. Some also indicated that they had encountered assumptions that efforts at diversity in hiring are thwarted by the lack of diverse candidates rather than search strategies (26%) and that standards should not be 'lowered' in order to allow for diversity in hiring (13%). No more than one individual reported encountering any of the other five assumptions on our list.

Comparing the responses of search committee chairs to individuals who played other roles on search committees reveals that chairs were more likely to report encountering assumptions about diversity in hiring (Figure 2). This might tend to suggest that search committee chairs are more perceptive with regards to the assumptions prevalent among search committee members or that such assumptions are more likely to be revealed by members to a chair. In either case, this suggests that search committee chairs may tend to be better placed to address and dispel these common assumptions about diversity in hiring.

Figure 2: Most commonly encountered assumptions about diversity in hiring, self-reports of past workshop participants



We also asked respondents: "Did you feel prepared to address these assumptions due to participating in the workshop?" Nearly all respondents (95.5%) agreed that the workshop had provided tools to address assumptions about diversity in hiring. This agreement was consistent across search committee chairs and other search committee roles.

Finally, we asked respondents to evaluate how their Workshop training had impacted the search committee experience overall. We asked, ***"Overall, do you feel you did a better job in this search process due to participating in the search workshop(s)?"*** Many (83%) agreed that their workshop training did positively affect their search committee work. Both search committee chairs and other members indicated a similar level of agreement (see Table 12).

Table 12.
Self-reported improvement in search process as a result of workshop participation, by all respondents and search committee chairs

	Agree	
	N	%
All respondents	19	82.6
Search committee chairs	10	83.3

Summary

Overall, the follow-up survey provides valuable feedback that highlights how past participants have utilized the training they received in the search workshop. Many report changes in their behaviors and attitudes in post-workshop search experiences. Nearly three times as many respondents indicated that the workshop raised their awareness and attentiveness to diversity in the search process than indicated no substantive change in their post-workshop behaviors or attitudes. A majority of respondents agreed that they feel better equipped to address common assumptions about diversity in hiring and that their workshop training had enabled them to conduct a better search than they had in the past.

Despite these changes, many also report few changes in search outcomes. More respondents reported no change in their post-workshop pool than reported a substantive change. One interpretation of this finding is that search committees encounter obstacles in implementing the spectrum of alterations suggested in the workshop. That many more respondents reported more behavior and attitudinal changes with regards to diversity generally as compared to recruitment and candidate evaluation specifically. Alternatively this may also suggest that the interventions are only able to affect limited change in the short-term. Ongoing evaluation efforts should aim to discriminate between these two possible explanations and to identify programmatic modifications that might encourage further, specific changes in search practices.

Conclusions and Recommendations

In summary, three broad conclusions about WISELI's search workshops emerge. First, the workshop initiative has been highly successful in accomplishing its goal of raising the awareness about diversity in hiring and the impact of implicit biases on candidate evaluation. The workshops have reached a broad audience, with a special emphasis on science and engineering departments. A large majority of survey respondents indicated that this aspect of the workshop was highly valuable and had a meaningful effect on their post-workshop search committee experience. The evidence-based approach to raising awareness on diversity and bias has been effective in accomplishing a critical aim of the workshop.

Second, the workshop has been partially successful in providing practical, 'implementable' strategies to improve the hiring practices of faculty and administrative search committees. Survey respondents indicated both that they found the workshop's suggested strategies and resources to be a valuable aspect of the workshop and that they sought additional information on best practices for promoting excellence and diversity in hiring. One interpretation of this mixed finding is that the workshop is not adequately tailored to the varied needs of the departments reached. Additional efforts might be aimed at tailoring workshops to the special circumstances of different audiences, possibly by utilizing facilitators from related departments or providing supplemental discipline-specific resources.

Finally, the workshop's effect on short-term hiring outcomes remains unclear. Evidence from the follow-up survey suggests that search committees may encounter obstacles to changing candidate evaluation, and to a lesser degree, recruitment practices. Future workshops should seek to incorporate on-going feedback on what strategies have and have not been successful in overcoming these obstacles. On-going evaluation efforts should be directed towards identifying these best practices and under what circumstances they can be expected to be most effective.

2005 Financial Report

	2002	2003	2004	2005*	Total
Income					
NSF	$750,000	$750,000	$750,000	$749,903	$2,999,903
Celebrating Grants	$6,000	$13,365	$4,000	$10,000	$33,365
College of Engineering	$10,000	$20,000	$10,000	$10,000	$50,000
Provost's Office	$0	$0	$0	$16,072	$16,072
Salaries and Fringes					
Directors	$145,180	$115,306	$103,088	$124,317	$487,891
WISELI Staff	$98,419	$128,547	$156,006	$192,857	$575,829
Leadership Team	$69,725	$143,700	$61,618	$35,980	$311,023
Evaluators	$88,261	$72,110	$57,076	$53,537	$270,984
Travel	$9,758	$9,637	$15,291	$10,345	$45,031
Supplies and Equipment	$17,972	$12,348	$12,757	$12,112	$55,189
Initiatives					
Celebrating Grants	$0	$9,037	$11,170	$12,182	$32,389
Life Cycle Research Grants	$0	$81,817	$86,342	$30,162	$198,322
Video	$12,169	$5,160	$7,079	$20,292	$44,700
Survey	$0	$33,381	$0	$0	$33,381
Book Giveaways	$1,756	$395	$0	$0	$2,151
WISELI Seminar	$273	$537	$875	$3,153	$4,838
Senior Women Development	$172	$114	$0	$0	$286
Workshops	$2,015	$1,085	$1,377	$1,360	$5,837
Chairs' Climate Workshops	$0	$174	$1,132	$151	$1,457
Search Committee Chairs' Workshops	$0	$382	$1,142	$2,414	$3,938
Awards Brochure	$0	$0	$305	$10	$315
Dissemination Activities	$0	$0	$0	$1,901	$1,901
Overhead	$198,942	$251,851	$200,416	$228,238	$879,447
Total Income	$766,000	$783,365	$764,000	$785,975	$3,099,340
Total Expenditures	$644,642	$841,412	$682,240	$729,011	$2,897,305

* 2005 Expenditures are projected, this report was prepared 12/22/05

2006 Proposed Budget

prepared 12/22/05

		Estimated 2002-05 Total	2006 Proposed	Estimated Total
Income				
	NSF	$3,000,000	$750,000	$3,750,000
	Celebrating Grants	$33,365	$10,000	$43,365
	College of Engineering	$50,000	$18,000	$68,000
	Provost (Carol & survey)	$16,072	$34,072	$50,144
	Graduate School (PA - salary & benefits)	$0	$18,717	$18,717
	College of L & S (survey)	$0	$5,000	$5,000
Salaries and Fringes				
	Directors	$487,891	$124,568	$612,459
	WISELI Staff	$575,829	$206,674	$782,503
	Leadership Team	$311,023	$69,730	$380,753
	Evaluators	$270,984	$107,570	$378,554
Travel		$45,031	$15,000	$60,031
Supplies & Equipment		$55,189	$15,000	$70,189
Initiatives				
	Celebrating Grants	$32,389	$10,000	$42,389
	Life Cycle Research Grants	$198,322	$0	$198,322
	Video	$44,700	$16,300	$61,000
	Survey	$33,381	$41,272	$74,653
	Book Giveaways	$2,151	$0	$2,151
	WISELI Seminar	$4,838	$875	$5,713
	Senior Women Development	$286	$0	$286
	Workshops	$5,837	$1,500	$7,337
	Chairs' Climate Workshops	$1,457	$500	$1,957
	Search Committee Chair' Workshops	$3,938	$2,500	$6,438
	Awards Brochure	$315	$500	$815
	Dissemination Activities	$1,901	$1,500	$3,401
Overhead		$879,447	$228,994	$1,108,441
Total Income		$3,099,437	$835,789	$3,935,226
Total Expenditures		$2,954,909	$842,483	$3,797,392

Cost Sharing Summary (January 1, 2002 - December 31, 2005)
WISELI

	Certified Year 1 + 2 + 3 Total	Uncertified Year 4 (2005)	TOTAL Year 1 - Year 4	Estimate Year 5 (2006)
1 Salareis & Fringe Benefits	$100,707	$81,910	$182,617	$30,000
2 Graduate Student support	$65,658	$0	$65,658	$17,000
3 Symposium support	$23,215	$11,182	$34,397	$10,000
4 WISE Program support	$27,762	$4,071	$31,833	$5,000
5 Other Program support	$101,765	$11,960	$113,725	$42,000
Indirect Costs	$139,989	$49,651	$189,640	$46,000
Total Costs	$459,096	$158,774	**$617,870**	$150,000

1- Includes faculty and staff salaries and fringe benefits for 2002, 2003, 2004, and 2005.
2- Graduate student support is for: 1 Research Assistant at 50% beginning 9/1/02 through 12/31/04; 1 Project Assistant at 50% beginning 9/1/03 through 1/31/04.
3- Funds for Celebrating Women in Science & Engineering Grant program.
4- Includes program support and undergraduate support for the Women in Science and Engineering Residential Program.
5- Includes funds for documentary video project, suvery of faculty and academic staff, the Life Cycle Research Grant programs, and contributions towards equipment and supplies from the College of Engineering.

Institutional Data, 2005

Table 1. Number and Percent of Women Faculty in Science/Engineering by Department, 2005

Division/Department	Women	Men	% Women
Physical Sciences	**54.00**	**406.05**	**11.7%**
Biological Systems Engineering	1.00	11.3	8.2%
Soil Science	3.50	16.0	17.9%
Chemical & Biological Engineering	1.00	17.0	5.6%
Civil & Environmental Engineering	2.00	25.00	7.4%
Electrical & Computer Engineering	5.00	38.25	11.6%
Biomedical Engineering	3.00	6.10	33.0%
Industrial Engineering	4.50	12.00	27.3%
Mechanical Engineering	3.00	27.75	9.8%
Materials Science & Engineering	3.00	14.00	17.6%
Engineering Physics	1.25	20.50	5.7%
Engineering Professional Development	-	7.00	0.0%
Astronomy	2.75	10.00	21.6%
Chemistry	3.50	37.00	8.6%
Computer Sciences	4.00	28.00	12.5%
Geology & Geophysics	5.00	15.00	25.0%
Mathematics	3.25	52.00	5.9%
Atmospheric & Oceanic Sciences	1.00	14.00	6.7%
Physics	4.25	41.75	9.2%
Statistics	3.00	13.45	18.2%
Biological Sciences	**176.81**	**592.04**	**23.0%**
Agronomy	1.00	17.00	5.6%
Animal Science	1.00	14.60	6.4%
Bacteriology	4.00	14.00	22.2%
Biochemistry	8.50	24.00	26.2%
Dairy Science	1.00	12.40	7.5%
Entomology	3.00	11.00	21.4%
Food Microbiology & Toxicology	1.00	4.00	20.0%
Food Science	2.00	13.00	13.3%
Genetics	1.50	11.67	11.4%
Horticulture	3.00	12.50	19.4%
Nutritional Sciences	5.00	5.50	47.6%
Plant Pathology	6.00	8.00	42.9%
Forest Ecology & Management	0.50	14.13	3.4%
Natural Resources - Wildlife Ecology	-	6.00	0.0%
Kinesiology	9.00	7.00	56.3%
Nelson Institute for Environmental Studies	3.50	4.67	42.8%
Botany	6.00	9.50	38.7%
Communicative Disorders	9.00	7.00	56.3%
Zoology	8.00	16.00	33.3%
Anatomy	5.00	14.50	25.6%
Anesthesiology	-	4.00	0.0%
Biostatistics & Medical Informatics	2.75	6.75	28.9%
Family Medicine	2.00	6.75	22.9%

Genetics	2.50	5.82	30.0%
Obstetrics & Gynecology	2.00	10.00	16.7%
Medical History & Bioethics	2.50	5.90	29.8%
Human Oncology	1.00	7.25	12.1%
Medicine	10.00	51.24	16.3%
Dermatology	-	6.00	0.0%
Medical Microbiology	5.20	8.50	38.0%
Medical Physics	1.00	13.75	6.8%
Neurology	1.00	10.50	8.7%
Neurological Surgery	2.00	5.00	28.6%
Oncology	4.00	11.90	25.2%
Ophthalmology & Visual Sciences	3.60	10.00	26.5%
Orthopedics & Rehabilitation	1.00	10.50	8.7%
Pathology & Laboratory Medicine	5.00	14.51	25.6%
Pediatrics	6.25	14.20	30.6%
Pharmacology	2.50	9.00	21.7%
Biomolecular Chemistry	2.80	7.25	27.9%
Physiology	6.00	16.00	27.3%
Population Health Sciences	9.20	12.50	42.4%
Psychiatry	8.51	7.60	52.8%
Radiology	1.50	14.65	9.3%
Surgery	-	27.00	0.0%
School of Pharmacy	5.50	26.00	17.5%
Animal Health & Biomedical Sciences	1.00	5.00	16.7%
Medical Sciences	3.00	8.00	27.3%
Pathobiological Sciences	1.00	12.00	7.7%
Comparative Biosciences	4.00	11.00	26.7%
Surgical Sciences	2.00	7.00	22.2%
Social Studies	**223.20**	**366.73**	**37.8%**
Agricultural & Applied Economics	3.00	22.90	11.6%
Life Sciences Communication	5.00	3.00	62.5%
Rural Sociology	3.00	10.00	23.1%
Natural Resources-Landscape Architecture	4.00	3.00	57.1%
Urban & Regional Planning	0.00	3.00	0.0%
School of Business	14.75	62.00	19.2%
Counseling Psychology	4.00	4.00	50.0%
Curriculum & Instruction	17.00	17.15	49.8%
Educational Leadership & Policy Analysis	4.75	11.00	30.2%
Educational Policy Studies	6.00	6.00	50.0%
Educational Psychology	6.00	10.00	37.5%
Rehabilitation Psychology & Special Education	5.00	6.00	45.5%
School of Human Ecology	22.00	13.00	62.9%
Law School	12.50	26.25	32.3%
Anthropology	9.00	13.00	40.9%
Afro-American Studies	5.00	5.25	48.8%
Communication Arts	9.00	13.00	40.9%
Economics	3.20	23.75	11.9%
Ethnic Studies	1.00	0.00	100.0%
Geography	4.00	14.00	22.2%
LaFollette School of Public Affairs	3.50	7.50	31.8%

	School of Journalism & Mass Communication	5.00	8.50	37.0%
	School of Library & Information Studies	7.00	0.50	93.3%
	Political Science	7.00	27.25	20.4%
	Psychology	13.00	19.00	40.6%
	Social Work	9.50	6.00	61.3%
	Sociology	15.50	25.42	37.9%
	Urban & Regional Planning	1.00	3.75	21.1%
	School of Nursing	21.50	0.00	100.0%
	Professional Development & Applied Studies	2.00	2.51	44.3%
Humanities		**157.25**	**221.73**	**41.5%**
	Art	11.00	17.00	39.3%
	Dance	2.00	3.00	40.0%
	African Languages & Literature	4.00	3.50	53.3%
	Art History	8.00	4.75	62.7%
	Classics	5.00	3.50	58.8%
	Comparative Literature	1.00	4.25	19.0%
	East Asian Languages & Literature	5.00	6.00	45.5%
	English	27.70	24.30	53.3%
	French & Italian	7.00	14.25	32.9%
	German	6.00	9.35	39.1%
	Hebrew & Semitic Studies	3.00	3.00	50.0%
	History	16.50	32.50	33.7%
	History of Science	2.00	4.50	30.8%
	Linguistics	4.00	3.00	57.1%
	School of Music	15.00	32.50	31.6%
	Philosophy	3.00	16.00	15.8%
	Scandinavian Studies	3.00	2.00	60.0%
	Slavic Languages	3.00	6.00	33.3%
	Languages & Cultures of Asia	4.00	7.33	35.3%
	Spanish & Portuguese	11.00	14.00	44.0%
	Theatre & Drama	7.75	8.00	49.2%
	Women's Studies Program	3.50	0.00	100.0%
	Social Sciences	0.00	1.00	0.0%
	Liberal Studies & the Arts	4.80	2.00	70.6%

SOURCE: October 2005 IADS Frozen slice

NOTES: Faculty are assigned to discipline based on tenure home departments using the the classification system developed for the Women in Science and Engineering Leadership Institute (WISELI). An individual tenured in more than one department is shown based on the tenure split. Thus, a person who is 50% statistics and 50% plant pathology is shown as .5 FTE in Physical Sciences and .5 FTE in Biological Sciences. Faculty with zero-dollar appointments and faculty who are paid wholly through an administrative appointment (such as dean or chancellor) are excluded from the salary median and salary FTE calculations. Years are calculated based on current faculty appointment. (Some individuals have held appointments at UW Madison prior to the current appointment. The years in the prior appointment are not included in this calculation.)
Prepared by : Margaret Harrigan, Office of Academic Planning and Analysis 3/13/2006

Table 2. Number and Percent of Women Faculty in Science/Engineering by Rank and Department, 2005

Division/Department	Women			Men			% Women		
	Full	Associate	Assistant	Full	Associate	Assistant	Full	Associate	Assistant
Physical Sciences	**26.00**	**8.00**	**20.00**	**277.20**	**51.00**	**77.85**	**8.6%**	**13.6%**	**20.4%**
Biological Systems Engineering	-	-	1.00	9.25	1.00	1.00	0.0%	0.0%	50.0%
Soil Science	-	-	3.50	13.00	1.00	2.00	0.0%	0.0%	63.6%
Chemical & Biological Engineering	1.00	-	-	9.00	4.00	4.00	10.0%	0.0%	0.0%
Civil & Environmental Engineering	1.00	-	1.00	16.00	6.00	3.00	5.9%	0.0%	25.0%
Electrical & Computer Engineering	1.00	1.00	3.00	24.25	8.00	6.00	4.0%	11.1%	33.3%
Biomedical Engineering	-	1.00	2.00	3.50	-	2.60	0.0%	100.0%	43.5%
Industrial Engineering	3.50	-	1.00	7.00	1.00	4.00	33.3%	0.0%	20.0%
Mechanical Engineering	1.00	1.00	1.00	16.75	2.00	9.00	5.6%	33.3%	10.0%
Materials Science & Engineering	1.00	-	2.00	9.00	2.00	3.00	10.0%	0.0%	40.0%
Engineering Physics	0.25	1.00	-	13.50	3.00	4.00	1.8%	25.0%	0.0%
Engineering Professional Development	-	-	-	3.00	2.00	2.00	0.0%	0.0%	0.0%
Astronomy	1.75	1.00	-	7.00	2.00	1.00	20.0%	33.3%	0.0%
Chemistry	1.50	-	2.00	27.00	2.00	8.00	5.3%	0.0%	20.0%
Computer Sciences	2.00	1.00	1.00	19.00	1.00	8.00	9.5%	50.0%	11.1%
Geology & Geophysics	4.00	1.00	0.00	10.00	2.00	3.00	28.6%	33.3%	0.0%
Mathematics	2.75	-	0.50	40.00	6.25	5.75	6.4%	0.0%	8.0%
Atmospheric & Oceanic Sciences	-	-	1.00	10.00	-	4.00	0.0%	N/A	20.0%
Physics	4.25	-	-	30.00	5.75	6.00	12.4%	0.0%	0.0%
Statistics	1.00	1.00	1.00	9.95	2.00	1.50	9.1%	33.3%	40.0%
Biological Sciences	**65.31**	**41.25**	**70.25**	**379.24**	**95.65**	**117.15**	**14.7%**	**30.1%**	**37.5%**
Agronomy	-	1.00	-	13.00	-	4.00	0.0%	100.0%	0.0%
Animal Science	-	-	1.00	11.60	1.00	2.00	0.0%	0.0%	33.3%
Bacteriology	1.00	2.00	1.00	10.00	2.00	2.00	9.1%	50.0%	33.3%
Biochemistry	6.00	-	2.50	21.00	2.00	1.00	22.2%	0.0%	71.4%
Dairy Science	-	1.00	-	7.40	3.00	2.00	0.0%	25.0%	0.0%
Entomology	1.00	-	2.00	8.00	-	3.00	11.1%	N/A	40.0%
Food Microbiology & Toxicology	1.00	-	-	3.00	-	1.00	25.0%	N/A	0.0%
Food Science	-	1.00	1.00	11.00	1.00	1.00	0.0%	50.0%	50.0%
Genetics	-	0.50	1.00	10.67	0.50	0.50	0.0%	50.0%	66.7%
Horticulture	-	-	3.00	7.50	1.00	4.00	0.0%	0.0%	42.9%
Nutritional Sciences	3.00	1.00	1.00	3.50	2.00	-	46.2%	33.3%	100.0%
Plant Pathology	4.00	1.00	1.00	6.00	1.00	1.00	40.0%	50.0%	50.0%
Forest Ecology & Management	-	0.50	-	10.13	1.00	3.00	0.0%	33.3%	0.0%
Natural Resources - Wildlife Ecology	-	-	-	3.00	1.00	2.00	0.0%	0.0%	0.0%
Kinesiology	1.00	2.00	6.00	1.00	3.00	3.00	50.0%	40.0%	66.7%
Nelson Institute for Environmental Studies	1.00	1.50	1.00	4.07	0.60	-	19.7%	71.4%	100.0%
Botany	3.00	-	3.00	8.00	0.50	1.00	27.3%	0.0%	75.0%

Communicative Disorders	3.00	1.00	5.00	5.00	2.00	-	37.5%	33.3%	100.0%
Zoology	2.00	1.00	5.00	11.00	1.00	4.00	15.4%	50.0%	55.6%
Anatomy	2.00	2.00	1.00	9.50	2.00	3.00	17.4%	50.0%	25.0%
Anesthesiology	-	-	-	2.00	1.00	1.00	0.0%	0.0%	0.0%
Biostatistics & Medical Informatics	1.00	0.25	1.50	3.25	2.50	1.00	23.5%	9.1%	60.0%
Family Medicine	1.00	-	1.00	3.10	1.65	2.00	24.4%	0.0%	33.3%
Genetics	-	0.50	2.00	2.82	0.50	2.50	0.0%	50.0%	44.4%
Obstetrics & Gynecology	-	1.00	1.00	7.00	-	3.00	0.0%	100.0%	25.0%
Medical History & Bioethics	1.00	1.00	0.50	2.90	1.00	2.00	25.6%	50.0%	20.0%
Human Oncology	-	1.00	-	4.05	3.00	0.20	0.0%	25.0%	0.0%
Medicine	3.00	1.00	6.00	22.49	15.75	13.00	11.8%	6.0%	31.6%
Dermatology	-	-	-	3.00	1.00	2.00	0.0%	0.0%	0.0%
Medical Microbiology	2.00	-	3.20	6.50	1.00	1.00	23.5%	0.0%	76.2%
Medical Physics	-	1.00	-	6.90	1.25	5.60	0.0%	44.4%	0.0%
Neurology	1.00	-	-	9.50	1.00	-	9.5%	0.0%	N/A
Neurological Surgery	-	1.00	1.00	1.00	-	4.00	0.0%	100.0%	20.0%
Oncology	2.00	-	2.00	10.90	-	1.00	15.5%	N/A	66.7%
Ophthalmology & Visual Sciences	2.60	1.00	-	7.00	2.00	1.00	27.1%	33.3%	0.0%
Orthopedics & Rehabilitation	-	1.00	-	3.50	2.00	5.00	0.0%	33.3%	0.0%
Pathology & Laboratory Medicine	4.00	1.00	-	7.51	2.00	5.00	34.8%	33.3%	0.0%
Pediatrics	1.00	2.50	2.75	10.20	1.00	3.00	8.9%	71.4%	47.8%
Pharmacology	1.00	0.50	1.00	5.00	2.00	2.00	16.7%	20.0%	33.3%
Biomolecular Chemistry	1.00	1.00	0.80	4.00	2.00	1.25	20.0%	33.3%	39.0%
Physiology	3.00	2.00	1.00	14.00	-	2.00	17.6%	100.0%	33.3%
Population Health Sciences	4.20	2.00	3.00	7.60	2.40	2.50	35.6%	45.5%	54.5%
Psychiatry	3.51	1.00	4.00	5.20	-	2.40	40.3%	100.0%	62.5%
Radiology	0.50	-	1.00	9.45	3.00	2.20	5.0%	0.0%	31.3%
Surgery	-	-	-	17.00	6.00	4.00	0.0%	0.0%	0.0%
School of Pharmacy	1.50	2.00	2.00	13.00	8.00	5.00	10.3%	20.0%	28.6%
Animal Health & Biomedical Sciences	-	-	1.00	4.00	-	1.00	0.0%	N/A	50.0%
Medical Sciences	1.00	2.00	-	3.00	4.00	1.00	25.0%	33.3%	0.0%
Pathobiological Sciences	-	1.00	-	8.00	3.00	1.00	0.0%	25.0%	0.0%
Comparative Biosciences	3.00	-	1.00	8.00	1.00	2.00	27.3%	0.0%	33.3%
Surgical Sciences	-	2.00	-	3.00	3.00	1.00	0.0%	40.0%	0.0%
Social Studies	**112.70**	**30.00**	**80.50**	**230.23**	**58.50**	**78.00**	**32.9%**	**33.9%**	**50.8%**
Agricultural & Applied Economics	-	-	3.00	15.90	4.00	3.00	0.0%	0.0%	50.0%
Life Sciences Communication	2.00	2.00	1.00	1.00	1.00	1.00	66.7%	66.7%	50.0%
Rural Sociology	2.00	-	1.00	6.00	2.00	2.00	25.0%	0.0%	33.3%
Natural Resources-Landscape Architecture	1.00	1.00	2.00	2.00	-	1.00	33.3%	100.0%	66.7%
Urban & Regional Planning	-	-	-	2.00	-	1.00	0.0%	N/A	0.0%
School of Business	2.00	5.75	7.00	33.00	19.00	10.00	5.7%	23.2%	41.2%
Counseling Psychology	2.00	-	2.00	3.00	1.00	-	40.0%	0.0%	100.0%
Curriculum & Instruction	6.75	3.25	7.00	11.15	2.00	4.00	37.7%	61.9%	63.6%
Educational Leadership & Policy Analysis	3.75	1.00	-	7.00	1.00	3.00	34.9%	50.0%	0.0%

	Educational Policy Studies	2.00	1.00	3.00	5.00	-	1.00	28.6%	100.0%	75.0%
	Educational Psychology	3.00	1.00	2.00	6.00	2.00	2.00	33.3%	33.3%	50.0%
	Rehabilitation Psychology & Special Education	3.00	1.00	1.00	2.00	1.00	3.00	60.0%	50.0%	25.0%
	School of Human Ecology	13.00	4.00	5.00	7.00	2.00	4.00	65.0%	66.7%	55.6%
	Law School	9.50	-	3.00	19.25	3.00	4.00	33.0%	0.0%	42.9%
	Anthropology	6.00	2.00	1.00	7.00	2.00	4.00	46.2%	50.0%	20.0%
	Afro-American Studies	4.00	1.00	-	4.25	-	1.00	48.5%	100.0%	0.0%
	Communication Arts	3.00	1.00	5.00	6.00	4.00	3.00	33.3%	20.0%	62.5%
	Economics	0.20	-	3.00	15.75	2.00	6.00	1.3%	0.0%	33.3%
	Ethnic Studies	1.00	-	-	-	-	-	100.0%	N/A	N/A
	Geography	-	1.00	3.00	10.00	2.00	2.00	0.0%	33.3%	60.0%
	LaFollette School of Public Affairs	1.50	1.00	1.00	4.50	-	3.00	25.0%	100.0%	25.0%
	School of Journalism & Mass Communication	3.00	-	2.00	8.00	-	0.50	27.3%	N/A	80.0%
	School of Library & Information Studies	2.00	-	5.00	-	-	0.50	100.0%	N/A	90.9%
	Political Science	4.00	-	3.00	16.25	4.00	7.00	19.8%	0.0%	30.0%
	Psychology	12.00	1.00	-	13.00	1.00	5.00	48.0%	50.0%	0.0%
	Social Work	3.50	1.00	5.00	4.00	-	2.00	46.7%	100.0%	71.4%
	Sociology	8.00	-	7.50	14.92	5.50	5.00	34.9%	0.0%	60.0%
	Urban & Regional Planning	-	-	1.00	3.75	-	-	0.0%	N/A	100.0%
	School of Nursing	12.50	2.00	7.00	-	-	-	100.0%	100.0%	100.0%
	Professional Development & Applied Studies	2.00	-	-	2.51	-	-	44.3%	N/A	N/A
Humanities		**85.00**	**31.75**	**40.50**	**146.73**	**34.00**	**41.00**	**36.7%**	**48.3%**	**49.7%**
	Art	5.00	4.00	2.00	12.00	2.00	3.00	29.4%	66.7%	40.0%
	Dance	2.00	-	-	1.00	2.00	-	66.7%	0.0%	N/A
	African Languages & Literature	3.00	-	1.00	2.50	-	1.00	54.5%	N/A	50.0%
	Art History	4.00	1.00	3.00	4.75	-	-	45.7%	100.0%	100.0%
	Classics	3.00	1.00	1.00	2.00	0.50	1.00	60.0%	66.7%	50.0%
	Comparative Literature	1.00	-	-	2.25	-	2.00	30.8%	N/A	0.0%
	East Asian Languages & Literature	1.00	2.00	2.00	2.00	2.00	2.00	33.3%	50.0%	50.0%
	English	15.70	3.00	9.00	16.30	2.00	6.00	49.1%	60.0%	60.0%
	French & Italian	4.00	3.00	-	11.25	2.00	1.00	26.2%	60.0%	0.0%
	German	4.00	2.00	-	7.35	1.00	1.00	35.2%	66.7%	0.0%
	Hebrew & Semitic Studies	1.00	1.00	1.00	2.00	-	1.00	33.3%	100.0%	50.0%
	History	9.50	4.00	3.00	19.00	8.50	5.00	33.3%	32.0%	37.5%
	History of Science	-	1.00	1.00	1.50	2.00	1.00	0.0%	33.3%	50.0%
	Linguistics	3.00	-	1.00	1.00	1.00	1.00	75.0%	0.0%	50.0%
	School of Music	10.00	2.00	3.00	24.50	5.00	3.00	29.0%	28.6%	50.0%
	Philosophy	2.00	-	1.00	14.00	-	2.00	12.5%	N/A	33.3%
	Scandinavian Studies	2.00	-	1.00	2.00	-	-	50.0%	N/A	100.0%
	Slavic Languages	2.00	1.00	-	4.00	1.00	1.00	33.3%	50.0%	0.0%
	Languages & Cultures of Asia	3.00	-	1.00	5.33	1.00	1.00	36.0%	0.0%	50.0%
	Spanish & Portuguese	4.00	2.00	5.00	6.00	3.00	5.00	40.0%	40.0%	50.0%
	Theatre & Drama	2.00	2.75	3.00	4.00	1.00	3.00	33.3%	73.3%	50.0%
	Women's Studies Program	1.00	-	2.50	-	-	-	100.0%	N/A	100.0%

Social Sciences	-	-	-	-	-	1.00	N/A	N/A	0.0%
Liberal Studies & the Arts	2.80	2.00	-	2.00	-	-	58.3%	100.0%	N/A

SOURCE: October 2005 IADS Frozen slice

NOTES: Faculty are assigned to discipline based on tenure home departments using the the classification system developed for the Women in Science and Engineering Leadership Institute (WISELI). An individual tenured in more than one department is shown based on the tenure split. Thus, a person who is 50% statistics and 50% plant pathology is shown as .5 FTE in Physical Sciences and .5 FTE in Biological Sciences. Faculty with zero-dollar appointments and faculty who are paid wholly through an administrative appointment (such as dean or chancellor) are excluded from the salary median and salary FTE calculations. Years are calculated based on current faculty appointment. (Some individuals have held appointments at UW Madison prior to the current appointment. The years in the prior appointment are not included in this calculation.)

Prepared by : Margaret Harrigan, Office of Academic Planning and Analysis 3/13/2006

Table 3a. Tenure Promotion Outcomes by Gender, 2005

2001 - 2005

Division/Department	Women			Men		
	Reviewed	Achieved	%	Reviewed	Achieved	%
Physical Sciences	10	10	100.0%	56	50	89.3%
Biological Sciences	25	22	88.0%	45	40	88.9%
Social Studies	27	23	85.2%	43	41	95.3%
Humanities	32	31	96.9%	28	28	100.0%

SOURCE: Office of the Secretary of the Faculty.

Table 3b. Tenure Promotion Outcomes by Gender, 2005

Physical Sciences

Entering Cohort	Women Total Hired	Women % Still Probation	Women % Left w/o Tenure	Women % Tenured	Men Total Hired	Men % Still Probation	Men % Left w/o Tenure	Men % Tenured
1987-91	**16**	**0.0%**	**12.5%**	**87.5%**	**87**	**0.0%**	**24.1%**	**75.9%**
1991-95	**7**	**0.0%**	**57.1%**	**42.9%**	**35**	**0.0%**	**20.0%**	**80.0%**
1995-99	**10**	**0.0%**	**40.0%**	**60.0%**	**34**	**0.0%**	**11.8%**	**88.2%**
1999-03	**15**	66.7%	6.7%	26.7%	**76**	57.9%	10.5%	31.6%
2003-07	14	100.0%	0.0%	0.0%	39	97.4%	0.0%	2.6%

Biological Sciences

Entering Cohort	Women Total Hired	Women % Still Probation	Women % Left w/o Tenure	Women % Tenured	Men Total Hired	Men % Still Probation	Men % Left w/o Tenure	Men % Tenured
1987-91	**27**	**0.0%**	**40.7%**	**59.3%**	**103**	**0.0%**	**32.0%**	**68.0%**
1991-95	**26**	**0.0%**	**26.9%**	**73.1%**	**82**	**0.0%**	**24.4%**	**75.6%**
1995-99	**23**	17.4%	13.0%	69.6%	**49**	2.0%	26.5%	71.4%
1999-03	**46**	73.9%	15.2%	10.9%	**86**	75.6%	12.8%	11.6%
2003-07	22	100.0%	0.0%	0.0%	45	95.6%	4.4%	0.0%

Social Studies

Entering Cohort	Women Total Hired	Women % Still Probation	Women % Left w/o Tenure	Women % Tenured	Men Total Hired	Men % Still Probation	Men % Left w/o Tenure	Men % Tenured
1987-91	**72**	**0.0%**	**51.4%**	**48.6%**	**83**	**0.0%**	**54.2%**	**45.8%**
1991-95	**48**	4.2%	41.7%	54.2%	**51**	**0.0%**	**41.2%**	**58.8%**
1995-99	**41**	9.8%	48.8%	41.5%	**54**	3.7%	48.1%	48.1%
1999-03	**52**	59.6%	30.8%	9.6%	**78**	57.7%	17.9%	24.4%
2003-07	47	100.0%	0.0%	0.0%	35	91.4%	2.9%	5.7%

Humanities

Entering Cohort	Women Total Hired	Women % Still Probation	Women % Left w/o Tenure	Women % Tenured	Men Total Hired	Men % Still Probation	Men % Left w/o Tenure	Men % Tenured
1987-91	**44**	**0.0%**	**36.4%**	**63.6%**	**50**	**0.0%**	**36.0%**	**64.0%**
1991-95	**27**	**0.0%**	**22.2%**	**77.8%**	**25**	**0.0%**	**24.0%**	**76.0%**
1995-99	**23**	4.3%	21.7%	73.9%	**21**	**0.0%**	**14.3%**	**85.7%**
1999-03	**47**	55.3%	8.5%	36.2%	**43**	58.1%	14.0%	27.9%
2003-07	19	89.5%	10.5%	0.0%	20	100.0%	0.0%	0.0%

SOURCE: UW Madison Tenure file and IADS appointment information system, Dec 2004

NOTE: Numbers in **BOLDFACE** are final; numbers in normal typeface are in flux and will change year-to-year as new faculty are hired, are tenured, and/or leave the UW without tenure.

NOTE: Probationary faculty only. Adjustments made for time on tenure clock outside UW; no adjustments for tenure clock extensions.

NOTE: 1987-91 cohort hired between June 1987 and May 1991; 1991-95 cohort hired between June 1991 and May 1995; 1995-99 cohort hired between June 1995 and May 1999; 1999-03 cohort hired between June 1999 and May 2003; 2003-07 cohort hired after May 15 2003.

Table 4. Median Years in Rank by Gender, 2005

	Women			Men			Women's Median Time in Rank as % of Men's		
Division	Full	Associate	Assistant	Full	Associate	Assistant	Full	Associate	Assistant
Total	6.3	2.1	3.1	11.3	3.1	3.1	55.8%	67.7%	100.0%
Physical Sciences	4.2	1.1	2.3	11.1	2.1	3.1	37.4%	52.4%	74.2%
Biological Sciences	7.3	3.3	3.1	10.9	4.3	3.2	67.0%	76.7%	96.9%
Social Studies	6.1	2.1	2.8	13.1	2.1	3.1	46.6%	100.0%	90.3%
Humanities	7.1	2.1	3.1	11.1	3.6	3.3	64.0%	58.3%	93.9%

SOURCE: UW Madison IADS (Integrated Appointment Data System), October 2005 and Tenure File.
NOTES:
Years in rank computed only for those currently holding that rank.
Faculty are assigned to a discipline based on tenure home departments. An individual who is tenured in more than one department is shown based on the tenure split. E.g., a person who is 50% statistics and 50% plant pathology is shown as .5 FTE in Physical Sciences and .5 in Biological Sciences in this analysis. Faculty who have zero-dollar appointments, faculty who are paid wholly through an administrative appointment (such as dean or chancellor) are included in the total FTE count.
Prepared by : Margaret Harrigan, Office of Academic Planning and Analysis

Table 5a. Time at Institution (Median Numer of Years) by Gender and Rank, 2005

	Women				Men				Women's Median as % of Men's			
Division/Department	ALL	Full	Associate	Assistant	ALL	Full	Associate	Assistant	ALL	Full	Associate	Assistant
Physical Sciences	5.0	15.5	5.5	2.0	16.0	20.0	7.0	3.0	31.3%	77.5%	78.6%	66.7%
Biological Sciences	7.0	17.0	9.0	3.0	14.0	19.0	9.0	3.0	50.0%	89.5%	100.0%	100.0%
Social Studies	8.0	16.0	7.0	2.0	12.0	20.0	6.0	3.0	66.7%	80.0%	116.7%	66.7%
Humanities	10.0	17.0	6.0	3.0	15.0	19.0	7.0	3.0	66.7%	89.5%	85.7%	100.0%

SOURCE: October 2005 IADS Frozen slice

Prepared by : Margaret Harrigan, Office of Academic Planning and Analysis 3/13/2006

Table 5b. Attrition by Gender, 2004-2005

	FTEs			%		
	Retired	Resigned	2004 Total FTE	Retired	Resigned	Left UW
Total	55	49	2213.21	2.5%	2.2%	4.7%
Women	7	17	597.01	1.2%	2.8%	4.0%
Men	48	32	1616.20	3.0%	2.0%	4.9%
Physical Sciences						
Women	0	1	55.00	0.0%	1.8%	1.8%
Men	13	3	410.55	3.2%	0.7%	3.9%
Biological Sciences						
Women	2	5	171.56	1.2%	2.9%	4.1%
Men	14	9	596.44	2.3%	1.5%	3.9%
Social Studies						
Women	4	5	215.70	1.9%	2.3%	4.2%
Men	11	19	381.48	2.9%	5.0%	7.9%
Humanities						
Women	1	6	154.75	0.6%	3.9%	4.5%
Men	10	1	227.73	4.4%	0.4%	4.8%

SOURCE: IADS appointment system, Feb. 2006. FTE are based on October 2004.
NOTE:
Year is measured from July 1 through June 30.
Retired=all faculty who were age 55 or older at the time of termination.
Resigned=all faculty who were less than 55 years old at the time of termination.
Discipline is assigned based on appointment major department.
Prepared by : Margaret Harrigan, Office of Academic Planning and Analysis

Table 6. Number of Women in Science & Engineering Who are in Non-Tenure-Track Positions, 2005

	Women		Men		
	Mean FTE	Total FTE	Mean FTE	Total FTE	% Female
Physical Sciences					
Teaching	0.8	24.7	0.7	54.6	31.1%
Research	0.7	27.8	0.9	276.9	9.1%
Clinical	N/A	N/A	N/A	N/A	N/A
Biological Sciences					
Teaching	0.7	45.8	0.7	38.4	54.4%
Research	0.8	256.5	0.8	358.6	41.7%
Clinical	0.8	297.2	0.8	546.2	35.2%
Social Studies					
Teaching	0.5	92.2	0.5	71.9	56.2%
Research	0.8	72.3	0.8	53.8	57.3%
Clinical	0.7	40.8	0.9	15.5	72.5%
Humanities					
Teaching	0.6	60.9	0.6	40.4	60.1%
Research	0.8	3.3	1.0	8.0	28.9%
Clinical	N/A	N/A	N/A	N/A	N/A
Administrative Units					
Teaching	0.6	4.0	0.4	2.1	65.3%
Research	0.9	6.9	0.8	4.9	58.3%
Clinical	0.6	4.4	0.7	4.7	48.6%

SOURCE: October Payroll 2005
NOTE:
Includes only paid appointments. Discipline is assigned based on payroll department. Administrative units are primarily Dean's offices. Teaching titles include Lecturer and Faculty Associate; Research titles include Researcher, Scientist, Visiting Scientist, Instrument Innovator, Research Animal Veterinarian; Clinical titles include Clinical Professor and Professor (CHS).
Prepared by: Margaret Harrigan, Office of Academic Planning and Analysis

Table 7a. Number and Percent of Women Scientists and Engineers in Administrative Positions, 2005

	Total Faculty (Full Profs.)			Department Chairs				
Division	Women	Men	% Women	Women	Men	% Women	% Women Chairs	% Men Chairs
Physical Sciences	29	291	**9.1%**	4	15	**21.1%**	*13.8%*	*5.2%*
Biological Sciences	67	401	**14.3%**	3	44	**6.4%**	*4.5%*	*11.0%*
Social Studies	82	181	**31.2%**	7	17	**29.2%**	*8.5%*	*9.4%*
Humanities	87	152	**36.4%**	7	15	**31.8%**	*8.0%*	*9.9%*
Total	254	971	**20.7%**	21	91	**18.8%**	*8.3%*	*9.4%*

SOURCE: IADS appointment system frozen slice, October 2005.
NOTE: Total faculty is a non-duplicating headcount of full professors. Excludes faculty who are in schools without departments (Business, Pharmacy, Nursing, Law, Human Ecology). Faculty by discipline will not sum to total, since faculty with tenure in more than one department are counted in each department in which they hold tenure (excludes 0% tenure appointments). Faculty members are assigned to a discipline based on their tenure department (not divisional committee affiliation). Thus, all faculty in the department of Biochemistry are shown in the Biological Sciences area. The vast majority of department chairs also hold the rank of full professor. However, in any year, a small percentage of department chairs (e.g., 7chairs, or 6% of total in 2002) hold the rank of asociate professor.
Prepared by: Margaret Harrigan, Office of Academic Planning and Analysis 3/15/2006

Table 7b. Number and Percent of Women Scientists and Engineers in Administrative Positions, 2005

	Total Faculty (Full Profs.)			Deans (Faculty)				
Division	Women	Men	% Women	Women	Men	% Women	% Women Deans	% Men Deans
Physical Sciences	28	304	**8.4%**	1	7	**12.5%**	*3.6%*	*2.3%*
Biological Sciences	61	351	**14.8%**	2	14	**12.5%**	*3.3%*	*4.0%*
Social Studies	104	232	**31.0%**	12	19	**38.7%**	*11.5%*	*8.2%*
Humanities	98	157	**38.4%**	2	2	**50.0%**	*2.0%*	*1.3%*
Total	291	1044	**21.8%**	17	42	**28.8%**	*5.8%*	*4.0%*

SOURCE: IADS Frozen Appointment Data view, October 2005.
NOTE: Includes both paid and zero-dollar deans, associate deans, and assistant deans. Faculty are assigned to a discipline based on the divisional committee responsible for approving their tenure. Each faculty member may choose only one affiliation. However, faculty in the same department may choose different affiliations. For example, about half of the faculty in Biochemistry are affiliated with the Biological Sciences Divisional Committee, and half are affiliated with the Physical Sciences Division. Only faculty report a divisional committee affiliation.
Prepared by: Margaret Harrigan, Office of Academic Planning and Analysis 3/15/2006

Table 7c. Number and Percent of Women Scientists and Engineers in Administrative Positions, 2005

	Total Faculty (Full Profs.)			Central Administration				
Division	Women	Men	% Women	Women	Men	% Women	% Women Admin.	% Men Admin.
Physical Sciences	28	304	**8.4%**	1	1	**50.0%**	*3.6%*	*0.3%*
Biological Sciences	61	351	**14.8%**	0	2	**0.0%**	*0.0%*	*0.6%*
Social Studies	104	232	**31.0%**	1	1	**50.0%**	*1.0%*	*0.4%*
Humanities	98	157	**38.4%**	1	1	**N/A**	*1.0%*	*0.6%*
Total	291	1044	**21.8%**	3	6	**33.3%**	*1.0%*	*0.6%*

SOURCE: IADS Frozen Appointment Data view, October 2005.
NOTE: Faculty are assigned to a discipline based on the divisional committee responsible for approving their tenure. Each faculty member may choose only one affiliation. However, faculty in the same department may choose different affiliations. For example, about half of the faculty in Biochemistry are affiliated with the Biological Sciences Divisional Committee, and half are affiliated with the Physical Sciences Division. Only faculty report a divisional committee affiliation.
Prepared by: Margaret Harrigan, Office of Academic Planning and Analysis 3/15/2006

Table 7d. Number and Percent of Women Scientists and Engineers in Administrative Positions, 2005

	Total Faculty (Full Profs.)			Large Center & Institute Directors				
Division	Women	Men	% Women	Women	Men	% Women	% Women Directors	% Men Directors
Physical Sciences	28	304	**8.4%**	0	18	**0.0%**	*0.0%*	*5.9%*
Biological Sciences	61	351	**14.8%**	1	15	**6.3%**	*1.6%*	*4.3%*
Social Studies	104	232	**31.0%**	8	12	**40.0%**	*7.7%*	*5.2%*
Humanities	98	157	**38.4%**	9	11	**45.0%**	*9.2%*	*7.0%*
Total	291	1044	**21.8%**	18	56	**24.3%**	*6.2%*	*5.4%*

SOURCE: IADS appointment system frozen slice, October 2005.
NOTE: Total faculty is a non-duplicating headcount of full professors. Faculty are assigned to a discipline based on their divisional committee affiliation. Includes both paid and zero-dollar academic program directors and associate or assistant academic program directors. Excludes three male assistant academic program directors without faculty status.
Prepared by: Margaret Harrigan, Office of Academic Planning and Analysis 3/15/2006

Table 8. Number of Women Science & Engineering Faculty in Endowed/Named Chairs Chairs, 2005

	Women	Men	% Female
Named Professorships			
Vilas Professors	4	11	26.7%
Hilldale Professors	1	9	10.0%
John Bascom Professors	1	4	20.0%
Evju-Bascom Professors	3	6	33.3%
Named-Bascom Professors	20	41	32.8%
Steenbock Professors	1	7	12.5%
Wisconsin Distinguished Professors	0	9	0.0%
Other named professorships (incl. WARF)	36	200	15.3%
Holds two named professorships	8	36	18.2%
New named professorships	11	24	31.4%
Number holding named professorships	58	252	18.7%
Full Professors at UW-Madison	**291**	**1044**	**21.8%**
Major Awards			
Vilas Associate Award	13	13	50.0%
Hilldale Award	1	3	25.0%
H. I. Romnes Faculty Fellowship	2	3	40.0%
WARF Kellett Mid-Career Award	0	5	0.0%
Tenured Professors at UW-Madison	**404**	**1288**	**23.9%**

SOURCE: Office of the Provost. Totals from IADS appointment system frozen slice October 2005.
NOTE: Counts of Full Professors are headcounts of active "Professor" appointments in October 2005; counts of Tenured Professors are headcounts of active "Professor" and "Associate Professor" appointments in October 2005.
Prepared by: Jennifer Sheridan, WISELI

Table 9. Number and Percent of Women Science & Engineering Faculty on Promotion and Tenure Committees, 2005

	Women	Men	% Female
Faculty Senate			
Physical Sciences	3	41	6.8%
Biological Sciences	8	64	11.1%
Social Studies	20	35	36.4%
Arts & Humanities	13.5	22.5	37.5%
Senators (total)	**44.5**	**162.5**	**21.5%**
Physical Sciences	2	28	6.7%
Biological Sciences	23	45	33.8%
Social Studies	14	24	36.8%
Arts & Humanities	9.5	16.5	36.5%
Alternates (Total)	**48.5**	**113.5**	**29.9%**
Athletic Board	10	15	40.0%
Campus Planning Committee	6	8	42.9%
Divisional Executive Committees*			
Physical Sciences	0	12	0.0%
Bio. Sciences, Curriculum Planning	4	5	44.4%
Bio. Sciences, Strategic Planning	2	7	22.2%
Bio. Sciences, Tenure	6	6	50.0%
Social Studies	4	8	33.3%
Arts & Humanities	4	8	33.3%
Faculty Compensation and Economic Benefits Commission*	2	7	22.2%
Faculty Rights and Responsibilities Committee*	4	5	44.4%
Library Committee*	7	5	58.3%
University Committee*	3	3	50.0%
University Academic Planning Council	6	10	37.5%
Graduate School Academic Planning Council	2	6	25.0%
Graduate School Executive Committee			
Physical Sciences	0	5	0.0%
Biological Sciences	2	3	40.0%
Social Studies	3	3	50.0%
Arts & Humanities	3	2	60.0%
Graduate School Research Committee			
Physical Sciences	2	9	18.2%
Biological Sciences	6	5	54.5%
Social Studies	4	6	40.0%
Arts & Humanities	4	7	36.4%
All Faculty	**617**	**1602**	**27.8%**
Physical Sciences	**58**	**446**	**11.5%**
Biological Sciences	**156**	**545**	**22.3%**
Social Studies	**220**	**370**	**37.3%**
Arts & Humanities	**183**	**241**	**43.2%**

SOURCE: 2005-2006 Faculty Senate and UW-Madison Committees, Office of the Secretary of the faculty, November 2005. Totals from IADS appointment system frozen slice October 2005.
NOTE: Counts of All Faculty by Division are headcounts of active faculty appointments in October 2005. Unassigned faculty have been temporarily assigned a division according to their departmental affiliation and/or research interests.
Prepared by: Jennifer Sheridan, WISELI

* Members chosen by election of faculty.

Table 10a. Salary of Science & Engineering Faculty by Gender (Controlling for Department), 2005

Division/Department	Women, Median	Men, Median	Women's Median as % of Men's
Physical Sciences	**84,828**	**92,000**	**92.2%**
Biological Systems Engineering	58,785	84,162	69.8%
Soil Science	60,927	76,408	79.7%
Chemical & Biological Engineering	101,943	99,000	103.0%
Civil & Environmental Engineering	84,475	88,300	95.7%
Electrical & Computer Engineering	82,750	101,219	81.8%
Biomedical Engineering	78,309	92,843	84.3%
Industrial Engineering	114,404	122,237	93.6%
Mechanical Engineering	86,905	96,777	89.8%
Materials Science & Engineering	82,539	112,260	73.5%
Engineering Physics	89,545	105,800	84.6%
Engineering Professional Development	N/A	92,666	N/A
Astronomy	90,998	92,844	98.0%
Chemistry	65,162	91,061	71.6%
Computer Sciences	95,236	113,740	83.7%
Geology & Geophysics	74,167	75,310	98.5%
Mathematics	98,716	87,131	113.3%
Atmospheric & Oceanic Sciences	59,862	85,084	70.4%
Physics	112,453	88,448	127.1%
Statistics	80,000	88,010	90.9%
Biological Sciences	**76,564**	**86,178**	**88.8%**
Agronomy	65,039	72,648	89.5%
Animal Science	80,000	86,178	92.8%
Bacteriology	76,431	89,794	85.1%
Biochemistry	91,221	109,266	83.5%
Dairy Science	78,787	77,931	101.1%
Entomology	59,463	83,891	70.9%
Food Microbiology & Toxicology	76,376	81,373	93.9%
Food Science	63,154	83,281	75.8%
Genetics	66,763	104,032	64.2%
Horticulture	62,440	78,310	79.7%
Nutritional Sciences	80,779	95,109	84.9%
Plant Pathology	74,622	88,156	84.6%
Forest Ecology & Management	69,127	86,556	79.9%
Natural Resources - Wildlife Ecology	N/A	76,263	N/A
Kinesiology	57,619	63,302	91.0%
Nelson Institute for Environmental Studies	69,220	90,197	76.7%
Botany	65,293	89,358	73.1%
Communicative Disorders	69,652	86,551	80.5%
Zoology	64,493	74,812	86.2%
Anatomy	77,249	95,936	80.5%
Anesthesiology	N/A	90,519	N/A
Biostatistics & Medical Informatics	68,708	88,739	77.4%

Family Medicine	96,605	94,653	102.1%
Genetics	65,225	73,892	88.3%
Obstetrics & Gynecology	49,528	73,844	67.1%
Medical History & Bioethics	85,493	90,634	94.3%
Human Oncology	69,495	86,582	80.3%
Medicine	84,273	82,677	101.9%
Dermatology	N/A	100,814	N/A
Medical Microbiology	67,606	101,321	66.7%
Medical Physics	79,736	79,150	100.7%
Neurology	101,947	97,325	104.7%
Neurological Surgery	69,922	65,095	107.4%
Oncology	84,901	109,663	77.4%
Ophthalmology & Visual Sciences	100,145	106,756	93.8%
Orthopedics & Rehabilitation	70,930	64,518	109.9%
Pathology & Laboratory Medicine	93,431	87,627	106.6%
Pediatrics	85,780	97,937	87.6%
Pharmacology	83,455	94,297	88.5%
Biomolecular Chemistry	77,721	94,902	81.9%
Physiology	101,662	109,405	92.9%
Population Health Sciences	88,463	108,811	81.3%
Psychiatry	87,167	84,273	103.4%
Radiology	40,002	75,064	53.3%
Surgery	N/A	67,655	N/A
School of Pharmacy	78,422	78,924	99.4%
Animal Health & Biomedical Sciences	65,261	91,503	71.3%
Medical Sciences	76,042	80,236	94.8%
Pathobiological Sciences	68,668	94,025	73.0%
Comparative Biosciences	87,306	85,316	102.3%
Surgical Sciences	77,395	70,549	109.7%
Social Studies	**75,480**	**92,749**	**81.4%**
Agricultural & Applied Economics	72,000	91,815	78.4%
Life Sciences Communication	65,546	79,116	82.8%
Rural Sociology	92,619	70,671	131.1%
Natural Resources-Landscape Architecture	61,140	74,324	82.3%
Urban & Regional Planning		72,390	N/A
School of Business	128,558	150,000	85.7%
Counseling Psychology	63,873	87,581	72.9%
Curriculum & Instruction	62,021	86,637	71.6%
Educational Leadership & Policy Analysis	71,059	88,672	80.1%
Educational Policy Studies	63,571	85,028	74.8%
Educational Psychology	78,545	81,410	96.5%
Rehabilitation Psychology & Special Education	72,060	61,885	116.4%
School of Human Ecology	71,057	73,789	96.3%
Law School	121,962	118,367	103.0%
Anthropology	66,122	68,785	96.1%
Afro-American Studies	86,765	95,265	91.1%
Communication Arts	58,000	68,354	84.9%
Economics	84,651	165,858	51.0%
Ethnic Studies	92,892	N/A	N/A
Geography	54,754	71,290	76.8%

	LaFollette School of Public Affairs	87,146	93,081	93.6%
	School of Journalism & Mass Communication	71,776	73,948	97.1%
	School of Library & Information Studies	58,890	55,870	105.4%
	Political Science	80,624	82,590	97.6%
	Psychology	96,082	91,576	104.9%
	Social Work	68,256	91,286	74.8%
	Sociology	67,888	82,801	82.0%
	Urban & Regional Planning	58,093	68,841	84.4%
	School of Nursing	82,590	N/A	N/A
	Professional Development & Applied Studies	62,015	73,892	83.9%
Humanities		**67,015**	**72,856**	**92.0%**
	Art	64,001	65,485	97.7%
	Dance	67,043	57,351	116.9%
	African Languages & Literature	79,455	78,396	101.4%
	Art History	71,612	77,407	92.5%
	Classics	72,727	83,352	87.3%
	Comparative Literature	85,428	72,856	117.3%
	East Asian Languages & Literature	54,725	62,189	88.0%
	English	70,751	84,666	83.6%
	French & Italian	57,826	84,724	68.3%
	German	65,867	76,297	86.3%
	Hebrew & Semitic Studies	61,695	97,957	63.0%
	History	80,308	75,000	107.1%
	History of Science	61,571	67,779	90.8%
	Linguistics	69,249	59,292	116.8%
	School of Music	70,344	74,752	94.1%
	Philosophy	67,320	78,792	85.4%
	Scandinavian Studies	77,739	71,810	108.3%
	Slavic Languages	81,245	77,202	105.2%
	Languages & Cultures of Asia	74,895	73,533	101.9%
	Spanish & Portuguese	58,173	57,884	100.5%
	Theatre & Drama	58,214	68,929	84.5%
	Women's Studies Program	58,000	N/A	N/A
	Social Sciences	N/A	68,060	N/A
	Liberal Studies & the Arts	68,956	69,542	99.2%

SOURCE: October 2005 IADS Frozen slice

NOTE:

Salaries reported are for personnel paid within the department only; department members being paid as administrators, or who hold zero-dollar appointments, are not counted. Salary paid on 9-month basis.

Prepared by : Margaret Harrigan, Office of Academic Planning and Analysis 3/13/2006

Table 10b. Salary of Science & Engineering Faculty by Gender (Controlling for Department and Rank), 2005

Division/Department	Women's Median Salary			Men's Median Salary			Women's Median Salary as % of Men's		
	Full	Associate	Assistant	Full	Associate	Assistant	Full	Associate	Assistant
Physical Sciences	**105,441**	**80,492**	**77,328**	**105,294**	**80,115**	**77,134**	**100.1%**	**100.5%**	**100.3%**
Biological Systems Engineering	N/A	N/A	58,785	85,052	73,329	60,495	N/A	N/A	97.2%
Soil Science	N/A	N/A	60,927	80,143	67,142	59,577	N/A	N/A	102.3%
Chemical & Biological Engineering	101,943	N/A	N/A	134,403	87,089	79,990	75.8%	N/A	N/A
Civil & Environmental Engineering	95,200	N/A	73,750	104,146	80,021	81,360	91.4%	N/A	90.6%
Electrical & Computer Engineering	119,512	98,400	82,750	114,700	89,369	84,857	104.2%	110.1%	97.5%
Biomedical Engineering	N/A	77,399	78,730	119,305	N/A	80,293	N/A	N/A	98.1%
Industrial Engineering	114,404	N/A	79,550	132,425	110,278	80,600	86.4%	N/A	98.7%
Mechanical Engineering	141,100	86,905	77,368	108,872	86,676	77,012	129.6%	100.3%	100.5%
Materials Science & Engineering	105,000	N/A	81,011	134,117	77,000	82,539	78.3%	N/A	98.1%
Engineering Physics	98,716	89,545	N/A	138,876	88,289	87,588	71.1%	101.4%	N/A
Engineering Professional Development	N/A	N/A	N/A	112,183	85,163	73,632	N/A	N/A	N/A
Astronomy	90,998	68,199	N/A	95,545	78,701	80,000	95.2%	86.7%	N/A
Chemistry	91,575	N/A	64,231	116,508	68,222	64,519	78.6%	N/A	99.6%
Computer Sciences	114,082	80,984	87,278	120,708	90,023	85,055	94.5%	90.0%	102.6%
Geology & Geophysics	80,569	61,948	N/A	82,132	66,865	58,031	98.1%	92.6%	N/A
Mathematics	98,716	N/A	77,288	95,351	70,731	66,532	103.5%	N/A	116.2%
Atmospheric & Oceanic Sciences	N/A	N/A	59,862	89,705	N/A	61,513	N/A	N/A	97.3%
Physics	112,453	N/A	N/A	94,687	74,574	68,250	118.8%	N/A	N/A
Statistics	149,224	80,000	64,058	102,342	80,337	70,000	145.8%	99.6%	91.5%
Biological Sciences	**100,000**	**76,090**	**63,649**	**97,387**	**74,568**	**61,646**	**102.7%**	**102.0%**	**103.2%**
Agronomy	N/A	65,039	N/A	73,993	N/A	59,246	N/A	N/A	N/A
Animal Science	N/A	N/A	80,000	86,308	76,325	58,192	N/A	N/A	137.5%
Bacteriology	86,447	76,431	61,957	92,070	67,392	66,788	93.9%	113.4%	92.8%
Biochemistry	94,382	N/A	63,421	111,790	69,878	70,736	84.4%	N/A	89.7%
Dairy Science	N/A	78,787	N/A	82,272	65,723	57,983	N/A	119.9%	N/A
Entomology	78,210	N/A	58,617	88,056	N/A	58,372	88.8%	N/A	100.4%
Food Microbiology & Toxicology	76,376	N/A	N/A	86,473	N/A	61,646	88.3%	N/A	N/A
Food Science	N/A	67,169	59,138	86,119	67,839	66,224	N/A	99.0%	89.3%
Genetics	N/A	76,430	65,077	112,211	92,892	65,351	N/A	82.3%	99.6%
Horticulture	N/A	N/A	62,440	85,169	80,349	60,958	N/A	N/A	102.4%
Nutritional Sciences	82,314	65,608	60,743	111,980	71,768	N/A	73.5%	91.4%	N/A
Plant Pathology	82,237	66,621	59,873	93,121	84,278	59,302	88.3%	79.0%	101.0%
Forest Ecology & Management	N/A	69,127	N/A	91,042	81,000	57,537	N/A	85.3%	N/A
Natural Resources - Wildlife Ecology	N/A	N/A	N/A	89,822	69,903	59,425	N/A	N/A	N/A
Kinesiology	86,184	66,761	56,707	88,239	66,081	56,660	97.7%	101.0%	100.1%
Nelson Institute for Environmental Studies	N/A	69,220	72,288	90,197	100,145	N/A	N/A	69.1%	N/A

Botany	94,778	N/A	54,575	89,854	70,610	51,415	105.5%	N/A	106.1%
Communicative Disorders	100,000	74,937	63,858	97,916	70,021	N/A	102.1%	107.0%	N/A
Zoology	89,497	65,220	60,762	82,693	60,100	58,464	108.2%	108.5%	103.9%
Anatomy	107,371	76,669	65,460	110,657	81,308	66,850	97.0%	94.3%	97.9%
Anesthesiology	N/A	N/A	N/A	94,706	89,238	64,497	N/A	N/A	N/A
Biostatistics & Medical Informatics	87,089	115,401	68,708	111,439	88,739	68,828	78.1%	130.0%	99.8%
Family Medicine	118,100	N/A	75,109	115,167	94,653	78,819	102.5%	N/A	95.3%
Genetics	N/A	76,430	65,225	96,280	92,892	63,818	N/A	82.3%	102.2%
Obstetrics & Gynecology	N/A	63,902	35,154	90,364	N/A	59,545	N/A	N/A	59.0%
Medical History & Bioethics	143,953	85,493	59,859	126,608	90,634	60,518	113.7%	94.3%	98.9%
Human Oncology	N/A	69,495	N/A	92,858	60,310	67,606	N/A	115.2%	N/A
Medicine	109,478	88,768	80,591	103,663	74,568	66,047	105.6%	119.0%	122.0%
Dermatology	N/A	N/A	N/A	127,374	91,800	64,677	N/A	N/A	N/A
Medical Microbiology	112,081	N/A	65,920	112,664	101,321	68,448	99.5%	N/A	96.3%
Medical Physics	N/A	79,736	N/A	88,678	80,012	67,606	N/A	99.7%	N/A
Neurology	101,947	N/A	N/A	97,325	87,970	N/A	104.7%	N/A	N/A
Neurological Surgery	N/A	80,116	59,727	112,607	N/A	63,843	N/A	N/A	93.6%
Oncology	104,640	N/A	68,139	109,663	N/A	67,606	95.4%	N/A	100.8%
Ophthalmology & Visual Sciences	110,306	79,371	N/A	118,645	92,067	66,691	93.0%	86.2%	N/A
Orthopedics & Rehabilitation	N/A	70,930	N/A	109,750	69,871	61,986	N/A	101.5%	N/A
Pathology & Laboratory Medicine	90,358	106,418	N/A	104,015	73,834	50,748	86.9%	144.1%	N/A
Pediatrics	109,627	85,780	63,391	105,108	70,739	57,286	104.3%	121.3%	110.7%
Pharmacology	109,419	83,455	70,102	109,419	78,835	68,433	100.0%	105.9%	102.4%
Biomolecular Chemistry	93,347	77,721	67,981	101,342	76,667	70,936	92.1%	101.4%	95.8%
Physiology	109,129	85,878	62,097	112,438		65,311	97.1%	N/A	95.1%
Population Health Sciences	107,306	75,784	74,275	118,235	68,465	73,506	90.8%	110.7%	101.0%
Psychiatry	101,049	69,605	74,040	86,404	N/A	59,177	116.9%	N/A	125.1%
Radiology	80,016	N/A	40,002	77,693	62,894	61,364	103.0%	N/A	65.2%
Surgery	N/A	N/A	N/A	78,620	54,979	35,365	N/A	N/A	N/A
School of Pharmacy	74,019	81,793	71,808	99,818	76,165	63,301	74.2%	107.4%	113.4%
Animal Health & Biomedical Sciences		N/A	65,261	99,826	N/A	59,177	0.0%	N/A	110.3%
Medical Sciences	105,224	74,236	N/A	115,096	75,018	68,626	91.4%	99.0%	N/A
Pathobiological Sciences	N/A	68,668	N/A	99,118	65,501	66,764	N/A	104.8%	N/A
Comparative Biosciences	98,048	N/A	61,382	92,595	60,497	66,962	105.9%	N/A	91.7%
Surgical Sciences	N/A	77,395		116,696	70,348	63,706	N/A	110.0%	0.0%
Social Studies	**89,265**	**64,341**	**58,829**	**103,337**	**79,144**	**58,824**	**86.4%**	**81.3%**	**100.0%**
Agricultural & Applied Economics	N/A	N/A	72,000	102,523	83,477	73,296	N/A	N/A	98.2%
Life Sciences Communication	81,068	64,714	60,000	95,232	N/A	63,000	85.1%	N/A	95.2%
Rural Sociology	98,407	N/A	61,245	83,663	69,655	58,379	117.6%	N/A	104.9%
Natural Resources-Landscape Architecture	95,367	66,598	55,268	83,493	N/A	55,696	114.2%	N/A	99.2%
Urban & Regional Planning	N/A	N/A	N/A	80,283	N/A	57,054	N/A	N/A	N/A
School of Business	183,042	140,000	113,016	170,315	138,000	105,977	107.5%	101.4%	106.6%
Counseling Psychology	74,366	N/A	54,034	88,157	63,261	N/A	84.4%	N/A	N/A
Curriculum & Instruction	84,858	62,021	56,100	100,560	62,052	55,500	84.4%	100.0%	101.1%

	Educational Leadership & Policy Analysis	74,753	65,739	N/A	98,904	64,152	56,540	75.6%	102.5%	N/A
	Educational Policy Studies	83,684	68,313	55,786	86,194	N/A	61,330	97.1%	N/A	91.0%
	Educational Psychology	91,091	62,000	62,368	107,030	68,430	55,912	85.1%	90.6%	111.5%
	Rehabilitation Psychology & Special Education	78,879	62,037	56,009	86,456	64,773	57,000	91.2%	95.8%	98.3%
	School of Human Ecology	80,289	64,174	55,963	79,395	62,553	57,985	101.1%	102.6%	96.5%
	Law School	125,846	N/A	90,711	130,605	99,918	91,309	96.4%	N/A	99.3%
	Anthropology	71,461	60,812	60,000	81,000	58,088	51,329	88.2%	104.7%	116.9%
	Afro-American Studies	87,085	58,865	N/A	100,704	N/A	64,260	86.5%	N/A	N/A
	Communication Arts	74,332	81,543	53,531	79,451	62,476	56,000	93.6%	130.5%	95.6%
	Economics	123,942	N/A	84,651	178,500	153,810	92,148	69.4%	N/A	91.9%
	Ethnic Studies	92,892	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Geography	N/A	60,982	53,736	91,799	61,659	55,078	N/A	98.9%	97.6%
	LaFollette School of Public Affairs	87,146	90,946	70,000	110,317	N/A	71,262	79.0%	N/A	98.2%
	School of Journalism & Mass Communication	98,120	N/A	56,642	79,637	N/A	55,870	123.2%	N/A	101.4%
	School of Library & Information Studies	74,963	N/A	56,631	N/A	N/A	55,870	N/A	N/A	101.4%
	Political Science	83,281	N/A	55,385	103,337	73,667	57,281	80.6%	N/A	96.7%
	Psychology	98,157	66,625	N/A	118,855	72,420	58,187	82.6%	92.0%	N/A
	Social Work	89,265	73,558	62,718	92,641	N/A	62,579	96.4%	N/A	100.2%
	Sociology	103,107	N/A	57,160	112,995	68,610	56,000	91.2%	N/A	102.1%
	Urban & Regional Planning	N/A	N/A	58,093	68,841	N/A	N/A	N/A	N/A	N/A
	School of Nursing	96,838	63,716	65,000	N/A	N/A	N/A	N/A	N/A	N/A
	Professional Development & Applied Studies	62,015	N/A	N/A	73,892	N/A	N/A	83.9%	N/A	N/A
Humanities		**78,088**	**61,105**	**51,169**	**81,562**	**58,858**	**52,020**	**95.7%**	**103.8%**	**98.4%**
	Art	68,709	59,915	53,163	73,085	56,714	58,071	94.0%	105.6%	91.5%
	Dance	67,043	N/A	N/A	62,159	56,726	N/A	107.9%	N/A	N/A
	African Languages & Literature	80,347	N/A	52,960	86,711	N/A	51,204	92.7%	N/A	103.4%
	Art History	78,659	66,774	50,731	77,407	N/A	N/A	101.6%	N/A	N/A
	Classics	101,811	60,258	50,158	84,979	57,166	51,096	119.8%	105.4%	98.2%
	Comparative Literature	85,428	N/A	N/A	81,485	N/A	48,753	104.8%	N/A	N/A
	East Asian Languages & Literature	85,731	56,407	48,465	86,350	62,189	49,408	99.3%	90.7%	98.1%
	English	90,995	61,438	51,169	94,491	65,448	53,528	96.3%	93.9%	95.6%
	French & Italian	74,090	57,098	N/A	84,790	65,149	52,071	87.4%	87.6%	N/A
	German	69,591	59,614	N/A	76,505	54,738	51,158	91.0%	108.9%	N/A
	Hebrew & Semitic Studies	74,070	61,695	52,409	98,506	N/A	52,772	75.2%	N/A	99.3%
	History	82,100	63,532	52,000	100,608	57,946	55,723	81.6%	109.6%	93.3%
	History of Science	N/A	72,908	50,234	93,289	66,431	51,349	N/A	109.8%	97.8%
	Linguistics	75,601	N/A	48,641	86,745	59,292	51,724	87.2%	N/A	94.0%
	School of Music	71,817	60,332	50,650	77,823	58,423	52,020	92.3%	103.3%	97.4%
	Philosophy	79,056	N/A	60,000	80,669	N/A	54,054	98.0%	N/A	111.0%
	Scandinavian Studies	82,355	N/A	50,001	71,810	N/A	N/A	114.7%	N/A	N/A
	Slavic Languages	91,288	58,307	N/A	90,739	57,760	52,812	100.6%	100.9%	N/A
	Languages & Cultures of Asia	77,093		51,532	73,533	81,100	54,219	104.8%	0.0%	95.0%
	Spanish & Portuguese	73,650	61,257	50,460	71,915	56,117	49,563	102.4%	109.2%	101.8%
	Theatre & Drama	85,691	59,612	55,000	76,304	72,139	50,923	112.3%	82.6%	108.0%

Women's Studies Program	66,970	N/A	58,000	N/A	N/A	N/A	N/A	N/A	N/A
Social Sciences	N/A	N/A	N/A	N/A	N/A	68,060	N/A	N/A	N/A
Liberal Studies & the Arts	68,956	65,459	N/A	69,542	N/A	N/A	99.2%	N/A	N/A

SOURCE: October 2005 IADS Frozen slice
NOTE:
Salaries reported are for personnel paid within the department only; department members being paid as administrators, or who hold zero-dollar appointments, are not counted. Salary paid on 9-month basis.
Prepared by : Margaret Harrigan, Office of Academic Planning and Analysis

Table 12a. Offers Made, 2002-2005

Division/School	Junior Offers Made			Junior Offers Accepted			
				Women		Men	
	Women	Men	% Women	N	% Accept	N	% Accept
Physical Sciences	**35**	**105**	**25.0%**	**18**	**51.4%**	**52**	**49.5%**
College of Engineering	18	44	29.0%	9	50.0%	25	56.8%
Letters & Sciences	14	60	18.9%	6	42.9%	26	43.3%
College of Agricultural & Life Sciences	3	1	75.0%	3	100.0%	1	100.0%
Biological Sciences	**37**	**74**	**33.3%**	**34**	**91.9%**	**60**	**81.1%**
Letters & Sciences	8	2	80.0%	8	100.0%	2	100.0%
School of Veterinary Medicine	1	4	20.0%	1	100.0%	4	100.0%
School of Pharmacy	1	2	33.3%	1	100.0%	2	100.0%
Medical School	20	53	27.4%	17	85.0%	40	75.5%
College of Agricultural & Life Sciences	7	13	35.0%	7	100.0%	12	92.3%

Division/School	Tenured** Offers Made			Tenured** Offers Accepted			
				Women		Men	
	Women	Men	% Women	N	% Accept	N	% Accept
Physical Sciences	**3**	**18**	**14.3%**	**2**	**66.7%**	**13**	**72.2%**
College of Engineering	1	6	14.3%	0	0.0%	5	83.3%
Letters & Sciences	2	12	14.3%	2	100.0%	8	66.7%
College of Agricultural & Life Sciences	0	0	N/A	N/A	N/A	N/A	N/A
Biological Sciences	**6**	**25**	**19.4%**	**5**	**83.3%**	**17**	**68.0%**
Letters & Sciences	1	1	50.0%	1	100.0%	1	100.0%
School of Veterinary Medicine	2	1	66.7%	1	50.0%	1	100.0%
School of Pharmacy	0	2	0.0%	N/A	N/A	1	50.0%
Medical School	3	18	14.3%	3	100.0%	12	66.7%
College of Agricultural & Life Sciences	0	3	0.0%	N/A	N/A	2	66.7%

** Associate Professor and Professor titles.

Table 12b. Base Salary (12 Month) Offers, 2002-2005

Division/School	Base Salary, Offers Made, Junior Faculty: Women Median	Base Salary, Offers Made, Junior Faculty: Men Median	Base Salary, Offers Made, Junior Faculty: Women's Median as % of Men's	Base Salary, Offers Accepted, Junior Faculty: Women Median	Base Salary, Offers Accepted, Junior Faculty: Men Median	Base Salary, Offers Accepted, Junior Faculty: Women's Median as % of Men's
Physical Sciences	**$100,000**	**$103,333**	**96.8%**	**$97,333**	**$98,000**	**99.3%**
College of Engineering	$102,333	$104,000	98.4%	$101,333	$104,000	97.4%
Letters & Sciences	$88,000	$92,667	95.0%	$90,000	$89,333	100.7%
College of Agricultural & Life Sciences	$68,500	$69,000	99.3%	$68,500	$69,000	99.3%
Biological Sciences	**$74,500**	**$75,000**	**99.3%**	**$74,000**	**$75,000**	**98.7%**
Letters & Sciences	$78,000	$76,667	101.7%	$78,000	$76,667	101.7%
School of Veterinary Medicine	**	$106,667	**	**	$106,667	**
School of Pharmacy	$73,333	$80,000	91.7%	$73,333	$80,000	91.7%
Medical School	$74,000	$75,000	98.7%	$74,000	$76,500	96.7%
College of Agricultural & Life Sciences	$72,500	$73,000	99.3%	$72,500	$72,000	100.7%

Division/School	Base Salary, Offers Made, Tenured Faculty: Women Median	Base Salary, Offers Made, Tenured Faculty: Men Median	Base Salary, Offers Made, Tenured Faculty: Women's Median as % of Men's	Base Salary, Offers Accepted, Tenured Faculty: Women Median	Base Salary, Offers Accepted, Tenured Faculty: Men Median	Base Salary, Offers Accepted, Tenured Faculty: Women's Median as % of Men's
Physical Sciences	**$126,667**	**$124,667**	**101.6%**	**$114,000**	**$122,667**	**92.9%**
College of Engineering	$126,667	$129,000	98.2%	N/A	$127,333	N/A
Letters & Sciences	$114,000	$114,000	100.0%	$114,000	$109,000	104.6%
College of Agricultural & Life Sciences	N/A	N/A	N/A	N/A	N/A	N/A
Biological Sciences	**$128,667**	**$105,000**	**122.5%**	**$128,667**	**$102,500**	**125.5%**
Letters & Sciences	$133,333	$100,000	133.3%	$133,333	$100,000	133.3%
School of Veterinary Medicine	$128,667	**	**	$128,667	**	**
School of Pharmacy	N/A	$136,667	N/A	N/A	$100,000	N/A
Medical School	$120,000	$105,000	114.3%	$120,000	$97,500	123.1%
College of Agricultural & Life Sciences	N/A	$108,000	N/A	N/A	$127,333	N/A

** Data not provided.

Table 12c. Total Startup Package* Offers, 2002-2005

Division/School	Total Startup, Offers Made, Junior Faculty: Women Median	Total Startup, Offers Made, Junior Faculty: Men Median	Women's Median as % of Men's	Total Startup, Offers Accepted, Junior Faculty: Women Median	Total Startup, Offers Accepted, Junior Faculty: Men Median	Women's Median as % of Men's
Physical Sciences	**$209,360**	**$208,000**	**100.7%**	**$223,500**	**$231,550**	**96.5%**
College of Engineering	$209,360	$284,661	73.5%	$199,720	$272,500	73.3%
Letters & Sciences	$164,514	$177,167	92.9%	$304,750	$174,533	174.6%
College of Agricultural & Life Sciences	$228,000	$178,000	128.1%	$228,000	$178,000	128.1%
Biological Sciences	**$222,000**	**$216,750**	**102.4%**	**$212,500**	**$216,750**	**98.0%**
Letters & Sciences	$137,500	$376,091	36.6%	$137,500	$376,091	36.6%
School of Veterinary Medicine	$330,556	$207,700	159.2%	$330,556	$207,700	159.2%
School of Pharmacy	$539,900	$235,000	229.7%	$539,900	$235,000	229.7%
Medical School	$270,000	$210,000	128.6%	$270,000	$210,000	128.6%
College of Agricultural & Life Sciences	$232,000	$225,000	103.1%	$232,000	$243,500	95.3%

Division/School	Total Startup, Offers Made, Tenured Faculty: Women Median	Total Startup, Offers Made, Tenured Faculty: Men Median	Women's Median as % of Men's	Total Startup, Offers Accepted, Tenured Faculty: Women Median	Total Startup, Offers Accepted, Tenured Faculty: Men Median	Women's Median as % of Men's
Physical Sciences	**$230,250**	**$160,750**	**143.2%**	**$211,075**	**$154,000**	**137.1%**
College of Engineering	$306,787	$179,750	170.7%	N/A	$161,500	N/A
Letters & Sciences	$211,075	$151,600	139.2%	$211,075	$90,700	232.7%
College of Agricultural & Life Sciences	N/A	N/A	N/A	N/A	N/A	N/A
Biological Sciences	**$226,750**	**$280,000**	**81.0%**	**$153,500**	**$262,400**	**58.5%**
Letters & Sciences	$153,500	$73,500	208.8%	$153,500	$73,500	208.8%
School of Veterinary Medicine	$160,000	$262,400	61.0%	***	$262,400	***
School of Pharmacy	N/A	$933,334	N/A	N/A	$516,667	N/A
Medical School	$300,000	$275,500	108.9%	$300,000	$265,000	113.2%
College of Agricultural & Life Sciences	N/A	$398,000	N/A	N/A	$329,000	N/A

* Total Startup Package does not include Base Salary.
*** No Data Provided.

Table 13. New Hires, 1999-2005

	1999-2000		2000-2001		2001-2002		2002-2003		2003-2004		2004-2005		2005-2006	
	Total Hires	Percent Women	Total Hires	Percent Women	Total Hires	Percent Women	Total Hires	Percent Women	Total Hires	Percent Women	Total Hires	Percent Women	Total Hires	Percent Women
Junior Hires														
Biological Sciences	27	33.3%	35	40.0%	38	31.6%	35	31.4%	34	41.2%	24	37.5%	21	23.8%
Physical Sciences	20	10.0%	27	25.9%	18	5.6%	22	18.2%	14	35.7%	21	38.1%	13	0.0%
Senior Hires														
Biological Sciences	5	0.0%	5	20.0%	12	16.7%	9	0.0%	13	15.4%	5	40.0%	14	28.6%
Physical Sciences	6	16.7%	6	16.7%	5	20.0%	7	14.3%	5	20.0%	2	50.0%	1	0.0%
Total Hires, Biological Sciences	32	28.1%	40	37.5%	50	28.0%	44	25.0%	47	34.0%	29	37.9%	35	25.7%
Total Hires, Physical Sciences	26	11.5%	33	24.2%	23	8.7%	29	17.2%	19	31.6%	23	39.1%	14	0.0%
Total Hires, Junior	47	23.4%	62	33.9%	56	23.2%	57	26.3%	48	39.6%	45	37.8%	34	14.7%
Total Hires, Senior	11	9.1%	11	18.2%	17	19.7%	16	6.3%	18	16.7%	7	42.9%	15	26.7%
TOTAL HIRES	**58**	**20.7%**	**73**	**31.5%**	**73**	**21.9%**	**73**	**21.9%**	**66**	**33.3%**	**52**	**38.5%**	**49**	**18.4%**

NOTE: Faculty hired as Assistant Professors are Junior Hires; Associate and (Full) Professors are Senior Hires.
SOURCE: October Frozen Data Slice, 1998-2005. Prepared by Jennifer Sheridan.