

Presentation Slides

Women in Science Symposium

University of Tennessee, Knoxville

Oct. 15-16, 2007

Organizer: Janice L. Musfeldt

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NSF Session

[Laura Kramer](#), "The ADVANCE Program: Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers"

[Lynnette D. Madsen](#), "Strategy for Diversity from the Division of Materials Research at the National Science Foundation"

Strategy for Diversity from the Division of Materials Research (DMR) at the National Science Foundation (NSF)

L.D. Madsen, W. Fuller-Mora, M.A. Lee,
C.D. Logan, A.J. Lovinger, B.A. MacDonald,
T.P. Rieker, G.X. Tessema and U. Venkateswaran

Acknowledgements:

Everyone in DMR, particularly
Carmen Huber and Lance Haworth

Motivation

“the push”

EXAMPLES

- National Science Board
 - workshop entitled “Broadening Participation in Science and Engineering Research and Education” on August 12, 2003
 - reports NSB 03-69, NSB 04-41 & NSB 04-72
- National Science Foundation (NSF)
 - “The current science and engineering workforce is aging. To meet continuing, strong demand, it will be important that every American has an opportunity to achieve in mathematics and science. Women, minorities and persons with disabilities remain underrepresented in STEM professions while they are an increasing percentage of the overall U.S. workforce. Alternative and diverse approaches to excellence in education and mentoring create opportunities to tap America’s potential.” Strategic Plan NSF 06-48
 - Formation of NSF-wide working group (WG) for Broadening Participation in 2007

Motivation

“the push”

EXAMPLES

- NSF at the Directorate Level: Mathematical & Physical Sciences (MPS)
 - Lunch to discuss broadening participation in Feb. 2007: Tony Chan (Assistant Director of MPS), Judy Sunley (Executive Officer of MPS), Luis Echegoyen (Division Director Chemistry), Fae Korsmo (Staff Associate, Office of the Director), Tom Windham (Staff Associate, Office of the Director), Tracy Gorman (Staff Assistant, Office of the Director), Roosevelt Johnson (Program Director, Education and Human Resources), Alice Hogan (Program Director, ADVANCE) and Lynnette Madsen (Program Director, DMR)
- DMR
 - Acting Division Director, Lance Haworth, requests a DMR diversity strategy for FY08
- Personal level
 - I have been there!

It is the right thing to do.

Motivation

“the push”

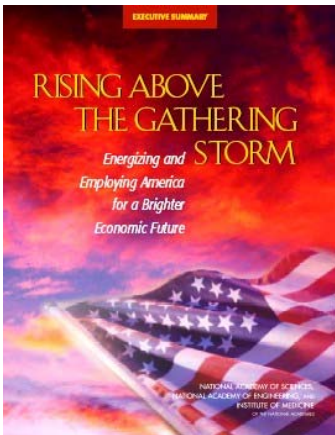
EXAMPLES

- Community
 - Wenneras, C. & Wold, A. (1997). “Nepotism and sexism in peer-review.” *Nature*, 387, 341-343.
 - MIT Study and Reports:
<http://web.mit.edu/newsoffice/1999/women-0331.html>
 - Valian, Virginia. (1999). *Why So Slow? The Advancement of Women*. Cambridge, Mass.: The MIT Press.
 - [Report of the Congressional Commission on the Advancement of Women and Minorities in Science, Engineering and Technology Development \(2000\) "Land of Plenty"](#)
 - [Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering \(2007\)](#) National Academies Press: Committee on Science, Engineering, and Public Policy (COSEPUP) and Policy and Global Affairs (PGA)

Economics

EXAMPLES

- *Denise Denton, former Dean of Engineering at University of Washington*: hiring faculty is expensive, it is in our best interest (financially) to help them succeed



- *2006 Storm report*: Enlarge the pipeline of students who are prepared to enter college and graduate with a degree in science, engineering, or mathematics; Increase the number and proportion of US citizens who earn bachelor's degree in the physical sciences, the life sciences, engineering, & mathematics

(Cover image used with permission of the National Academies Press)

- *Luncheon briefing*: The Impact of R&D on U.S. Economic Competitiveness (Jan. 2007) Senate Hart Office Building

[The Dragon and the Elephant: Understanding the Developing Innovation Capacity in China and India](#)

Sept. 2007 National Academies' HQ, 2100 C St. NW, Washington, DC

Oct. 2007

Economics

EXAMPLES from the NSF FY08 Budget Request

- Programs for Minority Individuals, \$86.19M
 - Broadening Participation in the Biological Sciences, \$8.65M
- Programs for Minority Institutions, \$ 83.96M
 - Partnerships for Research and Education in Materials, \$6.58M
- Gender-Based Programs, \$38.59M
 - Graduate Research Fellowships - Women in Engineering and Computer Science, \$8.06M
- Programs for Persons with Disabilities, \$6M
- Other Broadening Participation Programs, \$443.98M
 - Broadening Participation in Computing (BPC), \$14M

TOTAL \$658.72M

~10% of NSF's \$6.43B Request

DMR's Diversity Working Group

From: Haworth, W. Lance
Sent: Thursday, February 15, 2007 10:01 AM
To: DMR All Personnel
Subject: Diversity Strategy for DMR

It will be important and helpful to articulate a diversity strategy for DMR. A number of activities and 'mechanisms' currently exist in DMR aimed at (1) broadening participation in materials research and education, and (2) ensuring equal opportunity in DMR recruitment and staffing. What are these activities, what works, can/should they be better coordinated, what other approaches might be considered, and what can/should be done in the future?

I plan to appoint a DMR working group to address these challenges.
Lance

1st Action: Help Community Be Involved

<http://www.nsf.gov/mps/dmr/diversity.jsp>

Broadening Participation for Greater Diversity

National Science Foundation (NSF) Diversity Mission Statement

NSF's goal is to expand the numbers and diversity of individuals – women and men, underrepresented minorities, and persons with disabilities – engaged in the science and engineering enterprise through increased participation of underrepresented groups and institutions in all NSF programs and activities. Here underrepresented minorities include African Americans, American Indians including Native Alaskans, Hispanics and Native Pacific Islanders. (For further details see the [FY 2007 Budget Request to Congress](#)).

The links below provide a sampling of information that may help Principal Investigators and others in broadening participation in their activities. This list is not meant to be exhaustive or to imply any special endorsement by NSF.

Recruitment

- [NSB Report on Broadening Participation](#)
- [Race-Neutral Approaches to Diversity](#) [student recruitment]

2nd Action: Looking Inwards

- Climate, Advancement, and Recruitment / Retention
- Outcomes
 - Involve Everyone, e.g., in hiring at any level
 - Division Composition: Division Director, Executive Officer, Senior Staff Associate, Administrative Manager, Secretary, 3 Senior Program Assistants, Specialists (Computer, Financial Operations, & Information Technology), Program Directors
 - full time, part time, permanent, rotating and volunteers
 - Improve Communication
 - Career, Not a Job
 - Training
 - Mentorship

Happy
Contributing
Productive

2nd Action: Looking Inwards

- Recruitment Practices (Under-Represented Groups (URGs))

Current Status in DMR, effective 10/15/2007

Scientific & Professional Staff	Total	URG	%
Management & Senior Advisors	3	2	—
Program Directors	20	9	—
Total	23	11	48

*Administrative Unit is 90% URG

- RECOMMENDATIONS

- Advertise positions far in advance & broadly
- Formalize search committee procedures
- Establish better interview practices
- Visit MSI, women's colleges, etc.

http://www.nsf.gov/about/career_opps/



[← Back to Search Results](#)

Chemist (Program Director)

Additional Duty Location Info: 1 vacancy - Alexandria, Arlington & Falls Church, VA

MAJOR DUTIES:

[Top ▲](#)

The Program Director will be responsible for implementing the proposal review and evaluation process for the program. Conducts scientific/technical analyses of proposals received in the program. Contributes, consistent with NSF directives, to the establishment or modification of the system of selection of ad hoc reviewers to meet NSF objectives and program needs. Selects individuals to provide objective reviews of proposals either as experts or as members of a panel. Conducts programmatic reviews, determines funds availability, and evaluates similar or related projects, including internal and external liaison. Negotiates technical and financial revisions of proposals as required. Conducts final review of proposals and evaluations and recommends awards or declinations based on knowledge or resources availability and program goals and peer reviewer comments. Evaluates projects and activities that are proposed or funded by conducting site visits and reviewing interim and final reports.

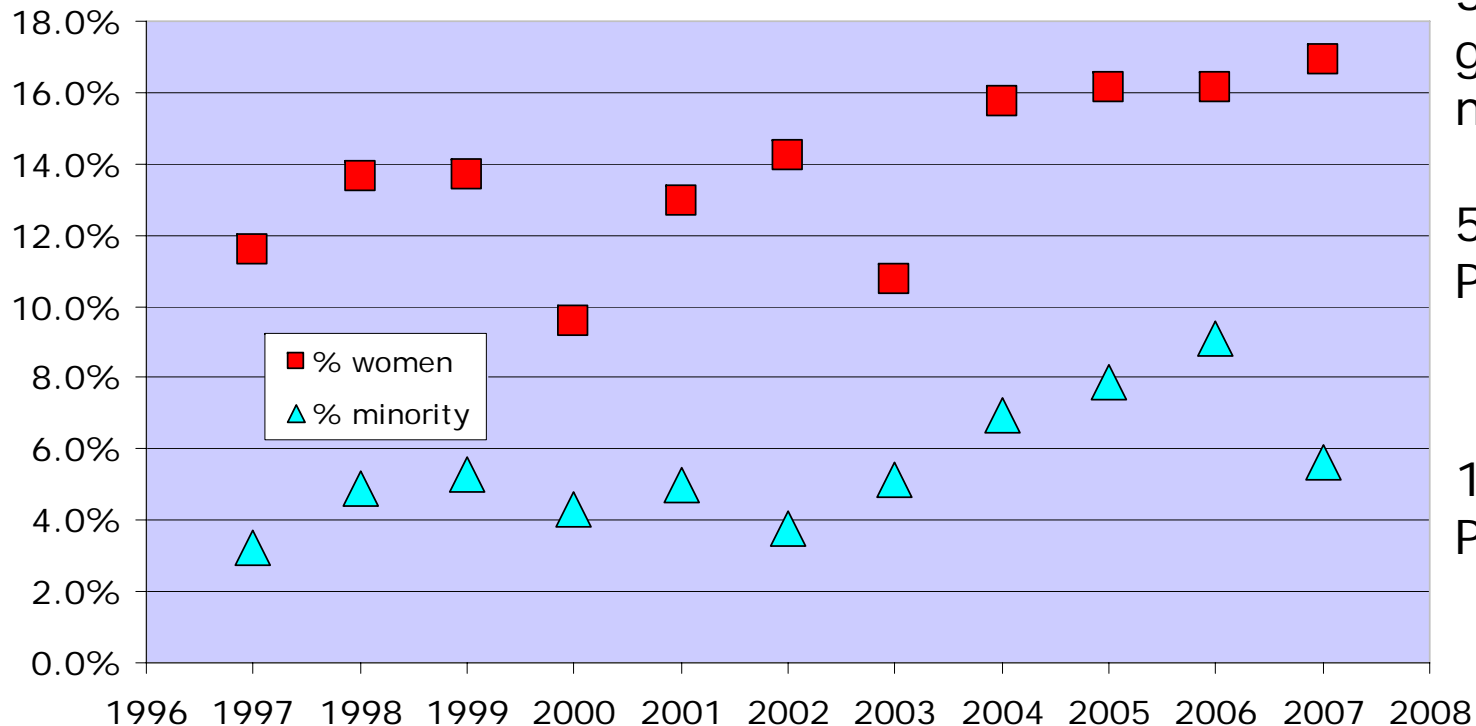
Negotiates interagency agreements with other Federal agencies for transfer of funds to assist in the support of research and education.

3rd Action: What can we do to Help?

- Statistics
- Existing funding opportunities & mechanisms
- Selected practices of Program Directors (PDs) to broaden participation
- Ideas to consider for broadening participation

Percentage of research awards to women and minorities as PIs out of the total number of awards made by DMR.

% of Women and Minority Grants in DMR



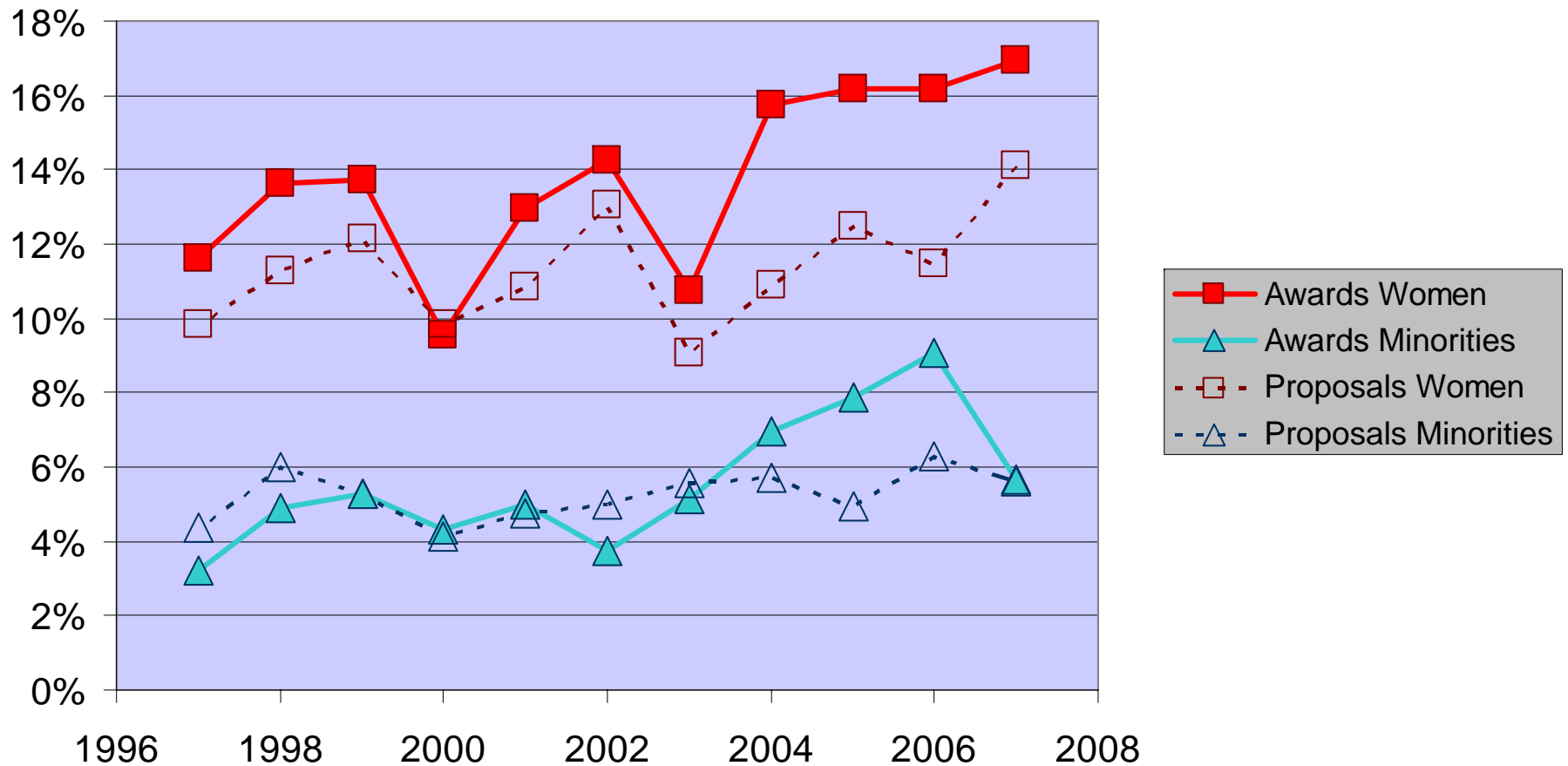
In 2007,
301 research
grants were
made for DMR.

51 have female
PIs (~17%).

17 have minority
PIs (~6%).

Incoming proposals from women & under-represented minorities as a percentage of total proposals to DMR + similar information for DMR awards.

How our awards compare to proposals from URGs



Existing funding opportunities & mechanisms

- TARGETED PROGRAM:
Partnerships for Research & Education in Materials (PREM) targets MSI & establishes partnerships between them & DMR-supported Centers, Groups & Facilities.
- MECHANISMS:
 - Division Reserve Fund assists with some awards including those aimed at broadening participation
 - DMR Centers & Facilities have diversity plans in place
 - Research Experiences for Teachers (RET)/Research Experiences for Undergraduates (REU)
 - Research Opportunity Awards (ROA) (part of Research at Undergraduate Institution solicitation 00-144)
 - Supplements
 - Programs in Education and Human Resources that we help support (ADVANCE and IGERT)

Selected Practices for Broadening Participation

- Guidance to PIs
- Identification of Proposals from URGs and/or Minority Serving Institutions and Women's Colleges
- Guidelines for enhancing diversity in reviewer selection
- Funding Recommendations
- Inclusion of URGs in NSF activities
- Support of activities that broaden participation
- Recognition of PIs (which may include individuals that help broaden participation)

Guidance to PIs

- provide information about the submission and review processes in conference presentations, university visits and in response to inquiries in person, via e-mail and by telephone.
- provide guidance about when and where to submit proposals.
- when asked, program directors (PDs) provide written or oral feedback to PIs on one-page proposal summaries or shorter descriptions.
(PDs are consistent with the feedback that they supply to their community).
- Provide feedback on declined proposals to PIs
- Provide explicit guidance on inclusion of URGs to PIs in response to inquiries about support for workshop and conferences
- Upon request, suggest possible speakers from URGs to conference organizers
- Include URG members on site visits, reverse site visits and proposal review panels
- Encourage PIs to volunteers as panelists

Ideas for Broadening Participation

Structural/Operational

- Obtain better statistics
- Improve tracking of divisional practices/mechanisms
- Modify orientation to make panelists aware of inherent bias
- Designate and advertise lactation areas at NSF
- Outreach to the PI community about NSF opportunities and proposal writing

Programmatic

- Extend effective ideas
- Adopt effective programs from elsewhere at NSF
- Restructure programs to make them more effective

Thank You!

Questions and Comments

Dr. Lynnette D. Madsen

Chair of DMR's Diversity Working Group

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