Interim Report: NIH Working Group on Women in Biomedical Careers

Advisory Committee to the Director
National Institutes of Health
June 2007

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Associate Director for Research on Women's Health
Director, Office of Research on Women's Health
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Department of Health and Human Services

Barriers to/Factors for Biomedical Careers for Women

- Recruiting women & girls into scientific careers
- Lack of female role models & mentors
- Career paths/rewards (salaries, promotions, etc.)
- Family responsibilities/dual roles
- Need for reentry into biomedical careers
- Sex discrimination and sexual harassment
- Gender sensitivity
- Racial bias/special needs of minority women
- Research initiatives on women's health

ORWH Workshop Report,
Women in Biomedical Careers: Dynamics of Change, 1994

Women and Science: The Debate!

Differences in innate or cognitive ability to be proficient in math or science…

…Versus…

Behavioral correlates that affect the selection and advancement of women in biomedical careers

Women and Science: Addressing The Debate

Committee on Women in Academic Science and Engineering
COMMITTEE ON SCIENCE ENGINEERING AND PUBLIC POLICY

- *Convocation on* ***Biological, Social, and Organizational Contributions to Science and Engineering Success,*** *hosted by the National Academies Committee on Women in Academic Science and Engineering on December 9, 2005 in Washington DC.*

- *The National Academies launched a new study, Maximizing the Potential of Women in Academic Science and Engineering, chaired by Donna Shalala, President of the University of Miami. The study committee was charged to produce a comprehensive interdisciplinary guide to effective policies and practices for recruiting, hiring, and retaining women faculty, considering implicit and explicit barriers to career advancement and the intersectionality of race and gender.*

The study was sponsored by the Office of Research on Women's Health at the National Institutes of Health; Eli Lilly and Co.; National Science Foundation; Ford Foundation; and the National Academies.

www.nationalacademies.org

NEWS

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FOR IMMEDIATE RELEASE

Broad National Effort Urgently Needed To Maximize Potential of Women Scientists and Engineers in Academia

WASHINGTON -- Women face barriers to hiring and promotion in research universities in many fields of science and engineering -- a situation that deprives the United States of an important source of talent as the country faces increasingly stiff global competition in higher education, science and technology, and the marketplace, says a new report from the National Academies. Eliminating gender bias in universities requires immediate, overarching reform and decisive action by university administrators, professional societies, government agencies, and Congress.

Beyond Bias and Barriers:
Fulfilling the Potential of Women in Academic Science and Engineering

"For women to participate to their full potential across all science and engineering fields, they must see a career path that allows them to reach their full intellectual potential. Much remains to be done to achieve that goal."

Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering

"It is not lack of talent, but unintentional biases and outmoded institutional structures that are hindering the access and advancement of women."

Recommendations from National Academies Report, Beyond Bias, for Research Funding Agencies and Federal Agencies

(C). <u>Federal funding agencies and foundations</u> should ensure that their practices—including rules and regulations—support the full participation of women and do not reinforce a culture that fundamentally discriminates against women.

U.S. Department of Health and Human Services
NIH News
National Institutes of Health

NIH Office of the Director (OD)

Office of Research on Women's Health (ORWH)

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NIH Leads Effort to Help Women in Science and Medicine Fulfill Potential

NIH Director Dr. Elias A. Zerhouni has created the Working Group on Women in Biomedical Careers to examine issues raised in the recent National Academies report, "Beyond Bias and Barriers, Fulfilling the Potential of Women in Academic Science and Engineering," and to respond to the challenges issued to government funding agencies to maximize the potential of women scientists and engineers.

"It is critical to address the barriers that women face in hiring and promotion at research universities in many fields of science," said Dr. Zerhouni. "I have appointed the NIH Working Group on Women in Biomedical Careers to help address this challenge and to develop innovative strategies and tangible actions that can be implemented to promote the advancement of women in research careers both within the NIH intramural community and throughout the extramural research community."

Dr. Zerhouni and Dr. Vivian Pinn, Associate Director for Research on Women's Health and Director of the Office of Research on Women's Health, will co-chair the Working Group, which will carefully consider the recommendations in the National Academies report.

Working Group Members

- Co-chaired by Dr. Zerhouni and Dr. Pinn
- NIH Deputy Directors
- NIH Institute and Center Directors
- Dual Career Couple
- Postdoctoral fellow
- Intramural scientists
- Extramural grants administrators

Members of the NIH Working Group on Women in Biomedical Careers

Co-chairs

Elias Zerhouni, M.D., Director, NIH
Vivian W. Pinn, M.D., Associate Director for Research on Women's Health; Director, ORWH

IC Directors

Barbara Alving, M.D., Director, NCRR
Jeremy Berg, Ph.D., Director, NIGMS
Ruth L. Kirschstein, M.D., Acting Director, NCCAM, Senior Advisor to the NIH Director
Story Landis, Ph.D., Director, NINDS
Donald Lindberg, M.D., Director, NLM
Lawrence Tabak, D.D.S., Ph.D., Director, NIDCR
Patricia Grady, Ph.D., R.N., F.A.A.N., Director, NINR

Members of the NIH Working Group on Women in Biomedical Careers (continued)

OD

Raynard S. Kington, M.D., Ph.D., Deputy Director, NIH

Catherine Manzi, J.D., Attorney Advisor, Public Health Division, DHHS, OGC

Joyce Rudick, Director, Programs and Management, ORWH

Lawrence Self, Director, Office of Equal Opportunity and Diversity Management (*Ex-Officio member*)

Extramural Research

Norka Ruiz Bravo, Ph.D., Deputy Director for Extramural Research, OER

Walter Schaffer, Ph.D., Senior Scientific Advisor for Extramural Research, OER

J. Taylor Harden, Ph.D., Assistant to the Director for Special Populations, NIA

Pamela Marino, Ph.D., Program Director, Pharmacology, Physiology, and Biological Chemistry Division; Co-Director, Pharmacology Research Associate Program, NIGMS

Members of the NIH Working Group on Women in Biomedical Careers (continued)

Intramural Research

Michael Gottesman, M.D., Deputy Director for Intramural Research
Joan Schwartz, Ph.D., Assistant Director, Office of Intramural Research
Jennifer Lippincott-Schwartz, Ph.D., Head, Section on Organelle Biology, Cell and Molecular Biology Branch, NICHD
Ira Pastan, M.D., Chief, Laboratory of Molecular Biology, NCI
Janine Smith, M.D., Deputy Clinical Director, NEI
Kathryn Zoon, Ph.D., Scientific Director, NIAID
Edward Giniger, Ph.D., Investigator, NINDS
Elaine Ostrander, Ph.D., Chief & Senior Investigator, Cancer Genetics Branch, NHGRI
Catherine Kuo, Ph.D., Postdoctoral Fellow Cartilage Biology and Orthopedics Branch, NIAMS

Staff to Working Group

Amy Bany Adams, Ph.D., Special Assistant to the NIH Director
Jennifer Pohlhaus, Ph.D., AAAS Science and Technology Policy Fellow, ORWH

NIH Working Group on Women in Biomedical Careers

- "It is critical to address the barriers that women face in hiring and promotion at research universities in many fields of science.”

- “I have appointed the NIH Working Group on Women in Biomedical Careers to help address this challenge and to develop innovative strategies and tangible actions that can be implemented to promote the advancement of women in research careers both within the NIH intramural community and throughout the extramural research community."

NIH Director Elias A. Zerhouni, M.D.

Charge to the Working Group

- “My exhortation to the group is to determine solutions to the gender gap in sciences and engineering and change the reality. This is a long journey and results will not happen overnight.”

- “I encourage this Working Group to define what we can do in the short term that can be implemented intramurally and extramurally. This Working Group should also determine the obstacles that are amenable to experiments that can inform us about how best to proceed in the medium and long term.”

NIH Director Elias A. Zerhouni, M.D.

NIH Working Group on Women in Biomedical Careers

- Consider recommendations from the National Academies Report
- Give attention to the NIH intramural community and the concerns of intramural women scientists
- Consider broader context of girls and women in science
- Provide special attention to issues of barriers, minority women scientists and of mentoring

Working Group Subcommittees

- Development of a “Best Practices” conference/workshop
- Examination and publication of the demographics of extramural funding applicants and recipients
- Development of female-friendly extramural funding mechanisms and policies and ensuring gender equity in NIH funding reviews
- Expansion of support for research on the efficacy of programs to reduce gender bias
- Expansion and development of mentoring programs
- Changing the NIH work culture, including the expansion of childcare facilities
- Ensuring the recruitment, retention, and advancement of women at NIH
- Ensuring the integration of women into bioengineering fields

NIH Working Group on Women in Biomedical Careers: Background Resources Provided

- National Academies reports & press clippings
- OER report on Sex/Gender in the Biomedical Science Workforce
- OIR report on Intramural Women Scientists
- ORWH career development program summaries
- Summary of IC & OD/PO Career Development and Mentoring Programs
- AAMC and other professional resources

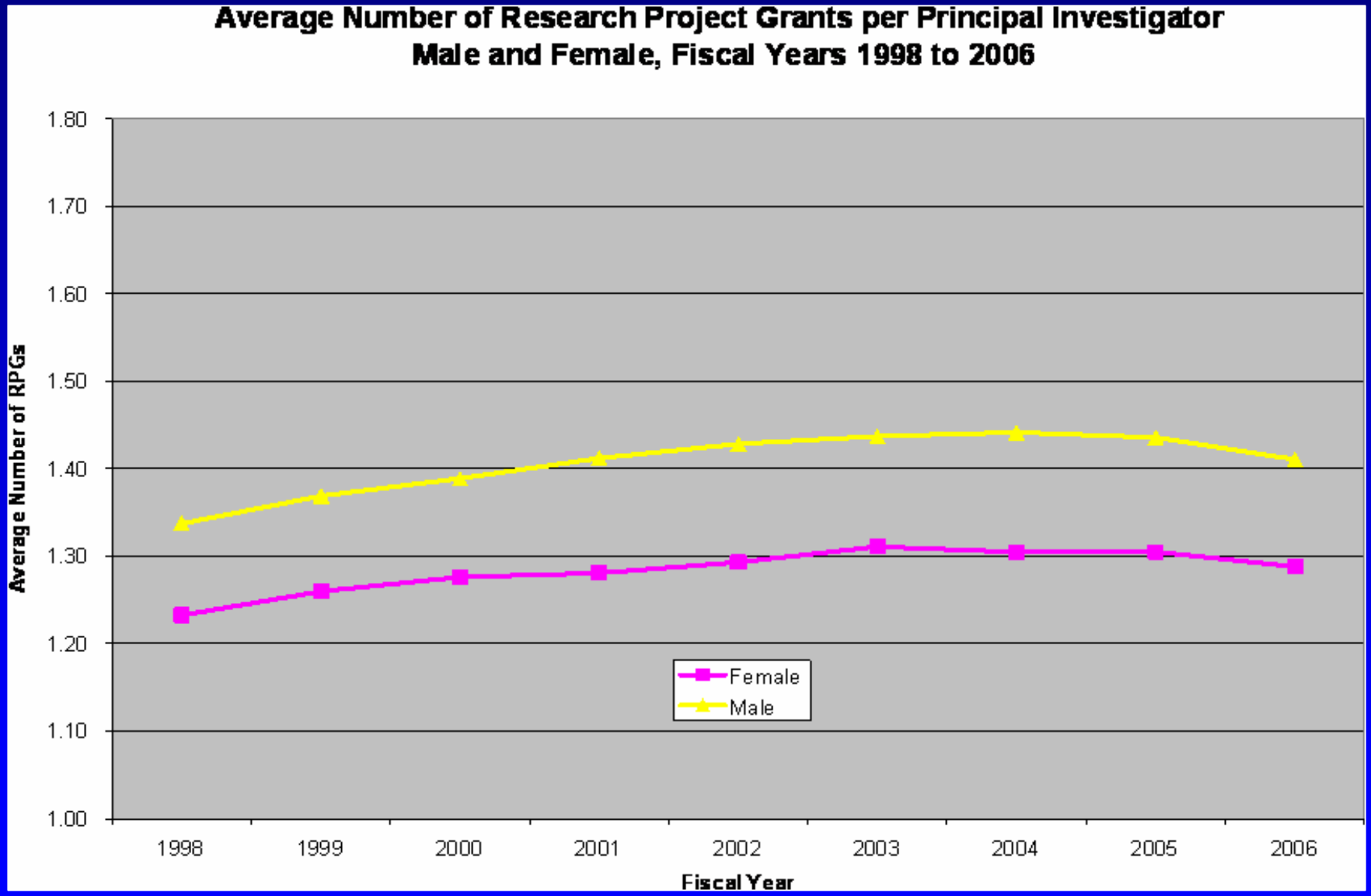
NIH Working Group on Women in Biomedical Careers: Background Resources Provided

- ADVANCE program description from NSF
- Career and mentoring programs from AWIS
- Career and mentoring programs of ELAM
- Career and mentoring programs of AAAS
- Rand report: *Gender Differences in Major External Grant Programs*

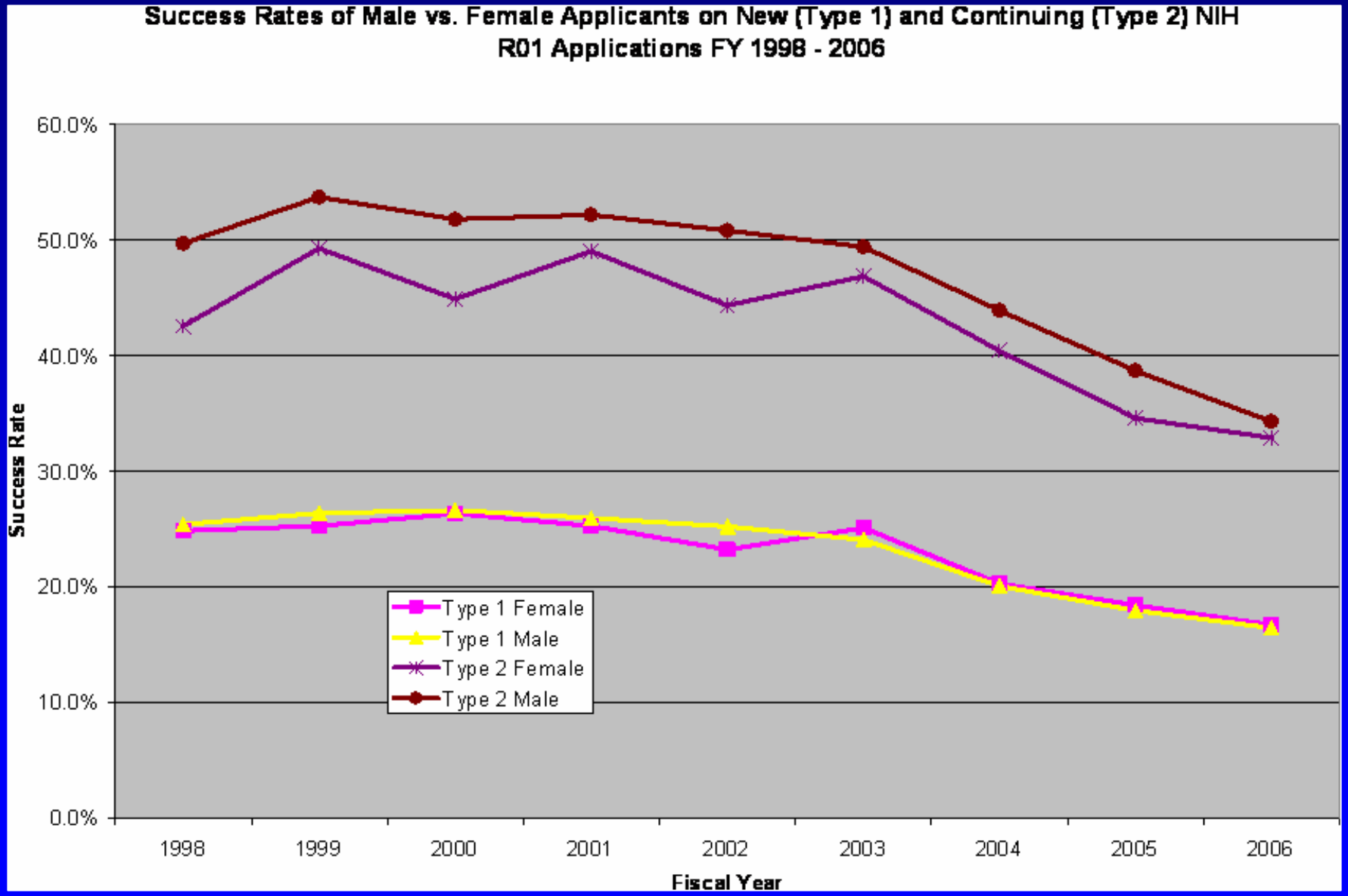
Short Term Accomplishments

- <u>Updated information on sex/gender in the NIH extramural biomedical research community</u>
  - Number of research project grants per PI is higher for males
  - Gap between male and female success rates on Type 2 (continuing) NIH R01 grants is narrowing
  - Average female request for research project grants is less than the average male request
  - Females and males both receive about the same percentage of their request

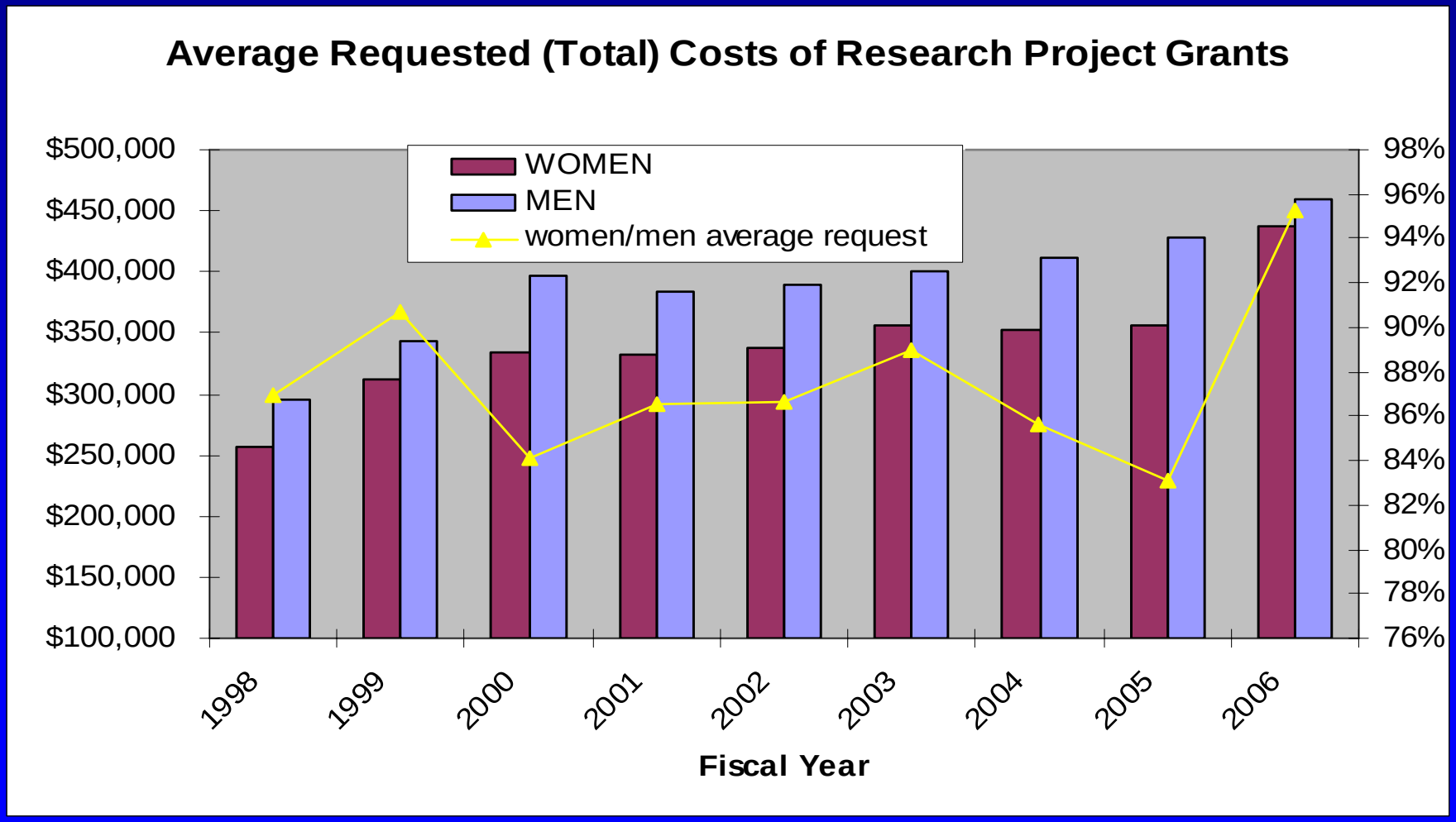
Number of research project grants per PI is higher for males



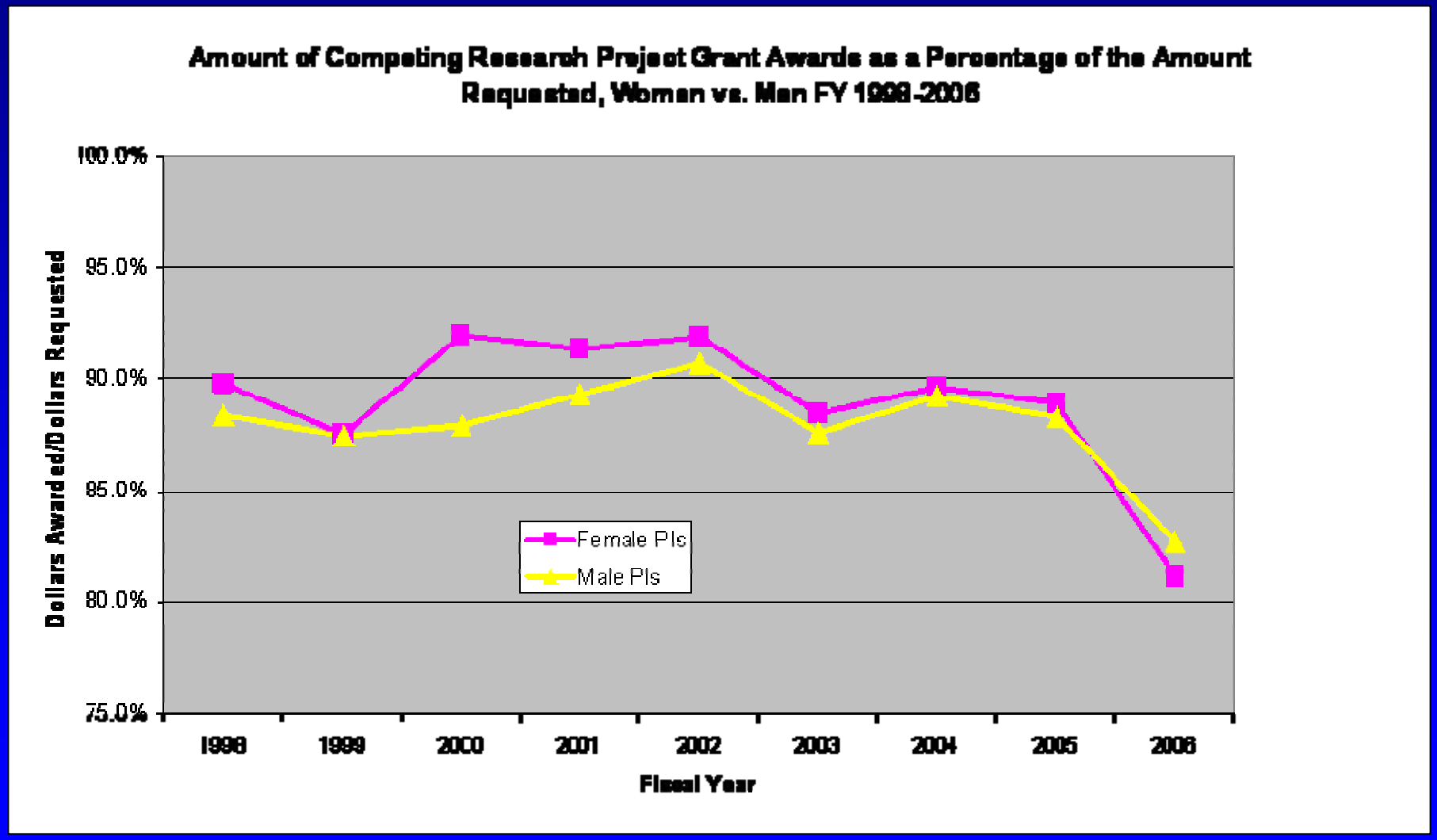
Gap between male and female success rates on Type 2 R01 grants is narrowing



Average female request for research project grants is less than the average male request



Females and males both receive about the same percentage of their request



Short Term Accomplishments

- <u>Career Development and Mentoring Programs</u>
  - Survey of NIH Career Development and Mentoring Programs
    - Intramural Programs
    - Extramural Programs
  - Over 30 Trans-NIH Programs
  - Over 30 Office of the Director Programs
  - Over 100 Institute and Center Programs
  - Document is posted on Working Group Website

http://womeninscience.nih.gov

NIH Launches New Web Site to Promote the Advancement of Women in Biomedical Research Careers

The National Institutes of Health (NIH) announces a new Web site, "Women in Biomedical Careers," (http://womeninscience.nih.gov) that provides information about the recently created NIH Working Group on Women in Biomedical Careers. The Working Group was appointed by NIH Director Elias A. Zerhouni, M.D. to develop innovative strategies and tangible actions to promote the advancement of women in biomedical research.

"The Web site is an important new resource that will highlight the activities of the NIH Working Group on Women in Biomedical Careers and provide information about NIH career development programs," says Vivian W. Pinn, M.D., NIH Associate Director for Research on Women's Health, and co-chair of the Working Group.

The NIH Working Group on Women in Biomedical Careers was created to respond to the challenges issued to federal funding agencies by the National Academies report, *Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering*, and also to promote the career advancement of women in the intramural research community. The Web site provides information about the Working Group, including the list of members, the subcommittee tasks and members, and the initial charge.

The Web site provides links to useful career development resources from the NIH Offices of Intramural Research, Extramural Research, and Research on Women's Health. The Web site also provides links to career development and mentoring resources from professional societies and other organizations, including the Association for Women in Science and the Association of American Medical Colleges.

The NIH invites you to explore http://womeninscience.nih.gov and contact us at womeninscience@nih.gov.

Proposed Initiatives

- Plans for a “Best Practices” Conference in response to recommendation to provide workshops to minimize gender bias
  - “Women in Biomedical Research: Best Practices for Sustaining Career Success”
  - March 4-5, 2008 on NIH Campus
  - Highlight best practices of organizations that are successfully addressing major barriers in career development of women scientists, and determine which can be applied and adapted to the needs of women in biomedical research

Proposed Initiatives

- <u>Plans for a “Best Practices” Conference:</u>

- Topics to be considered include childcare responsibilities and need to ‘restart the clock’, need for personal sabbaticals, mentoring, executive and team leadership training, issues of promotion to senior leadership positions, etc.

- Ongoing group (NIH, Pharma, professional organizations) will be established to track and provide summaries of programs in industry, government, and academic health centers that address career needs of women.

Short Term Accomplishments

- Review of federal policies associated with child care, parental leave, extension of time, and availability of temporary replacement help to understand the benefits available under extramural grants.

- Recommendations will undergo further analysis to determine their impact and possible budgetary effects on NIH and the extramural community.

Short Term Accomplishments

- Approaches are being developed to expand support for research on the efficacy of organizational programs designed to reduce gender bias, prejudice, and stereotype threat, and the role of leadership in achieving gender equity.

- Some existing programs were contacted to explore their efficacy and the evidence base for such programs, including:

  Committee on the Advancement of Women Chemists (COACh)

  Clare Booth Luce Foundation

  Association for Women in Science (AWIS)

  NSF ADVANCE

  Yale Women's Faculty Forum

  University of Wisconsin, Women in Science & Engineering Leadership Institute (WISELI)

Short Term Accomplishments

- There is little information on the impact of such programs or of rigorous assessment

  of their effect on the careers of women, such as number of women hired and supported as a result of these programs.

- Discussions are continuing about avenues to assess impact of programs to support women researchers and analyze new metrics to abate gender bias in performance evaluations, the magnitude of the “female tax” and its impact on careers of women in science, etc.

Short Term Accomplishments

- The mentoring subcommittee is discussing how to increase the use and utility of current programs and mechanisms that support mentoring in the NIH community and to develop new conferences, programs, or funding mechanisms to support mentoring programs and networks.

Short Term Accomplishments

The subcommittee identified three major challenges related to the mentoring of scientists that may disproportionately affect women during their professional development:

- The unavailability of trained mentors, including those familiar with issues that are frequently important to and/or disproportionately affect women.
- The absence of avenues for networking among women scientists that are vital to providing information and support, as well as avoiding “feelings of isolation,” and pitfalls.
- The scarcity of structured programs or training opportunities offering career development for scientists, including those that address issues of concern to women and/or issues that disproportionately affect women.

Short Term Accomplishments

- The subcommittee also acknowledges that particular attention must be paid to mentoring of women who are members of underrepresented groups at all levels of career development.

- Mentoring Programs under consideration include an NIH-wide Mentoring Program for Scientists that would address both postdoctoral fellows and tenure track investigators, an NIH-wide Mentorship forum, and a Mentoring Program for Scientists at grantee institutions.

- Other items under discussion include mentorship awards, incentives for excellence in mentoring, and flexible work arrangements.

Short Term Accomplishments

- One subcommittee is considering changes to the work culture at NIH, and will work towards eliminating possible impediments to the recruitment, retention, reentry, and advancement of women scientists in the NIH Intramural Research Program.
- Topics being discussed include:
  - Mentoring & need for role models
  - **Need to provide necessary training for professional development**
  - **Need to change the NIH work culture to enhance flexibilities**
  - **Need to enhance availability of child/family care options**
  - **Need to develop better recruitment strategies**

Short Term Accomplishments

- A subcommittee was established to explore ways to address the career challenges faced by women in bioengineering fields and to consider and develop resources for the career development and advancement of female bioengineers

Short Term Accomplishments

- Issues identified and being discussed include:
  - **Few mentors and role models for women engineers at the NIH**
  - **Societal expectations of women in bioengineering and biophysical fields**
  - **The gender gap in bioengineering and biophysical research careers**
  - Other issues, such as the poor advancement of women engineers in academia, the need for more ties between NIH and extramural bioengineering societies, and the expectation that engineers in biomedical fields are expected to provide “service” to scientists, which may create a problem that is especially difficult for women engineers because of societal expectations and culture.

Short Term Accomplishments

- The National Library of Medicine is considering pilot programs within its grants to provide additional support for grantees with child/ dependent care needs. Programs under discussion include:
  - extension of leave for birth or adoption of a child,
  - a modification of the NIAID Primary Caregiver Technical Assistance Supplements (PCTAS) program,
  - extension of paid leave for caregivers, and
  - help for trainees who are caregivers to attend meetings

NIAID Primary Caregiver Technical Assistance Supplements (PCTAS) Program

- NIAID recognizes that postdoctoral scientists with young children or ailing parents are sometimes unable to focus completely on their research activities because of primary caregiver responsibilities. As a result productivity can be seriously compromised during this critical period of a young scientist's career.

- Thus, NIAID created the PCTAS program in FY 2004 in order to provide technical support to postdocs who have primary caregiver responsibilities. The purpose of the PCTAS award is to enable an eligible postdoc to maintain high productivity in the laboratory while engaging in primary care-giving for a child or relative.

- Principal Investigators with NIAID research grants may apply for technical support for a postdoc for a period of 1 year. The application should be written in the format of applications for Diversity Supplements. Eligible grants to which these supplements may be attached are the same ones for the Diversity Supplements.

NIAID Primary Caregiver Technical Assistance Supplements (PCTAS) Program

NIAID has made four awards since the beginning of the program in FY 2004. Please see table below for details.

Fiscal Year	Mechanisms Funded	Mechanisms Received	Total Funded	Total Received
FY04	1-R01	5-R01 1-P01	1	6
FY05	1- R01 1- U01	10-R01 2-U01 1-U19 2-P01 2-R37	2	17
FY06	0	2-R01	0	2
FY07	1- R01	3-R01	1	3

Innovative interdisciplinary research

Set research agenda: Focus on gaps and emerging areas in women's health and sex/gender issues

Office of Research on Women's Health

Biomedical career development for women, & for women's health researchers

Inclusion of Women & Minorities In Clinical Research

Race/ethnicity, effects of poverty; special populations e.g. disabled, immigrants

RECRUITMENT, RETENTION, REENTRY, & ADVANCEMENT OF WOMEN & MINORITIES IN BIOMEDICAL CAREERS and HEALTH CARE PROFESSIONS

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The ORWH Mandate

Future Directions

- The ORWH established the Reentry Supplement Program in 1992 as a pilot program to help fully trained scientists (women and men) re-establish their careers in biomedical or behavioral science after taking time off to fulfill familial responsibilities. After three years as a successful pilot program, it was expanded to a trans-NIH program.

- The Reentry Supplement Program will be reissued in July 2007, and will be supported by most of the ICs, ODS and ORWH.

- To address suggestions for improving the Reentry Supplement Program, ORWH has initiated a clarification of the eligibility requirements so that individuals who were postdoctoral fellows at the time they left active research will be specifically eligible to apply. The new program announcement is expected to state that candidates “must have been in a postdoctoral or faculty position at the time they left active research”.

Future Directions

- The ORWH will coordinate efforts to develop a National Leadership Workshop on Mentoring Women in Biomedical Careers to be held at the National Institutes of Health in 2008. The National Leadership Workshop will be targeted toward biomedical researchers at three levels: postdoctoral fellows, junior investigators, and senior investigators.

- Training courses already developed by the Office of Intramural Research, such as Speaking about Science, Writing about Science, and Assertiveness Training will be considered as possible tracks during the workshop.

- A small planning committee will be convened to determine the focus of the workshop, including guidelines for effective mentoring for career advancement, with special consideration for the special needs of women and individuals from underrepresented groups

Future Directions

- ORWH will continue to develop and implement new career development – and advancement – initiatives

- ORWH intends to take findings, information and recommendations of the NIH Working Group out to the public, especially academia, in a series of meetings across the country for dissemination and for further ideas

Future Directions for the Working Group

- Determine legal and policy implications of recommendations, suggested new programs and innovative ideas
- Encourage all ICs to consider innovative programs
- Continue efforts of Working Group to develop and implement innovative initiatives
- Hold the Best Practices Workshop