

# **NIH Working Group on Women in Biomedical Careers**

**“Taking actions that will change the reality”  
-- Dr. Zerhouni, January 2007**

**Subcommittee Interim Reports on Progress and Tangible Actions  
October 29, 2008**

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## NIH Working Group on Women in Biomedical Careers

“Taking actions that will change the reality” -- Dr. Zerhouni, January 2007

### Highlights of Accomplishments

- The [\*Women in Biomedical Research: Best Practices for Sustained Career Success\*](#) Workshop helped to ensure that professional organizations and Academic Health Centers recognize that the workforce that is currently being trained is very different from previous generations (has different priorities as well as different personal and family challenges).
- Several initiatives have been developed and implemented by the [Extramural Program](#):
  - The [doubling of the period of parental leave available to National Research Service Awards \(NRSA\) recipients](#) will encourage institutions to examine their own parental leave policies for all students and postdoctoral fellows.
  - The [clarification of federal cost policies](#) provide guidance to universities on how to structure their indirect cost and fringe benefit arrangements when considering reimbursement for child care, parental leave and other factors.
- The intent of the RFA, [\*Research on Causal Factors and Interventions that Promote and Support the Careers of Women in Biomedical and Behavioral Science and Engineering\*](#), is to develop the evidence base that will inform policy decisions that will promote changing the reality. Rigorous research will help define the reality and provide guidance on the development of effective interventions and strategies.
- The [\*National Leadership Workshop on Mentoring Women in Biomedical Careers\*](#), with over 500 registrants, was held in November 2007. The Planning Committee collected many recommendations from the outside community that are under consideration for future initiatives.
- Several initiatives have been developed and implemented within the [Intramural Program](#):
  - [NIH-wide message](#) from Dr. Zerhouni highlighting family-friendly initiatives
  - Raised awareness about the Voluntary Leave Transfer Program (VLTP)
  - Extended the [tenure-track clock](#) to accommodate family leave
  - Assisted in establishing the [Mid-Atlantic Higher Education Recruitment Consortium](#)
- Establishment of an [Engineering and Physical Sciences Special Interest Group](#) will galvanize the intramural scientists and will attract bioengineering postdoctoral fellows to the NIH.
- The [NIH Director's lectureship awarded to a woman bioengineer](#) would not have happened without the efforts of this Subcommittee. The prospect of a [second lectureship](#) given to a woman bioengineer further affirms the positive changes the Subcommittee has achieved.
- The [National Library of Medicine's training programs](#) promote family-friendly practices by allowing trainees to take additional leave for birth, adoption, or dependent care.

## **Subcommittee 1: Best Practices Workshop Planning Committee**

### **I. Membership**

Barbara Alving, M.D., NCRR, Chair

Janine Austin Clayton, M.D., OD/ORWH; Kameha Kidd, Ph.D., NCRR; Joslyn Yudenfreund Kravitz, Ph.D., OD/ORWH; Jennifer Reineke Pohlhaus, Ph.D., OD/ORWH; Louise Ramm, Ph.D., NCRR; Joyce Rudick, OD/ORWH; Joan Schwartz, Ph.D., OD/OIR; Mona Trempe, Ph.D., NIGMS; Kathryn Zoon, Ph.D., NIAID

### **II. Subcommittee Charge**

To plan and coordinate a workshop on best practices for sustaining career success for women in biomedical science careers.

### **III. Working Strategies to Accomplish Charge**

The Subcommittee met regularly to plan the workshop. Public input was solicited in August and September of 2007 for the planning of the workshop. A [website](#) was created and maintained to promote, solicit input, and archive the workshop.

### **IV. Tangible Actions and Accomplishments**

#### **Developed and/or Implemented**

The Subcommittee hosted the workshop on March 4, 2008 entitled *Women in Biomedical Research: Best Practices for Sustaining Career Success* at the NIH Natcher Conference Center.

#### **Underway**

Currently the Subcommittee is working on generating the workshop final report - anticipated completion is December 2008. In addition, an article is being drafted for publication in a peer-reviewed journal such as the Journal of the American Medical Association.

### **V. Additional Long-term Actions and Further Needs to Be Addressed**

An outcome of the workshop was an identified need for a central forum that provides a “one-stop-shop” for what programs and efforts are underway or available that promote career success for women in biomedical sciences. It was repeatedly noted that it would be very valuable to not only see what is available, but what is being done, where, the level of success, and factors that lead to a program’s success.

**VI. Liaisons, Committees, or Organizational Collaborations**

- Staff of NCRR met with Dr. Darrell Kirch, Dr. David Korn, Dr. Diane Magrane, Dr. Valerie Clark, and others at the Association of American Medical Colleges (AAMC) to discuss Clinical and Translation Science Awards (CTSA) and workforce training. In a follow-up letter, Dr. Kirch stated that the AAMC would be interested in highlighting resources that are available on the NIH website for women and minorities in biomedical science and including links for these sites in the AAMC website. The Subcommittee will carry out this action, working with the AAMC.
- The CTSA training program provides the opportunity to track in a prospective fashion the careers of women receiving degrees in clinical and translational science. Since at least 50% of the trainees are women, the National Center for Research Resources (NCRR) and training committee of the CTSA consortium can place extra emphasis on the need to ensure opportunities for continued career success. Working with the AAMC, the NCRR can also highlight and post the best practices of academic health centers (AHC) in ensuring opportunities for continued participation and advancement for women and minorities in the biomedical workforce. The NIH and AAMC can also post current statistics on involvement of women and minorities in NIH funded research and in the upper ranks of academia and then continue to post updated data on an annual basis.
- Dr. Alving discussed ways to sustain a diverse workforce at an AAMC-APM forum "The Physician-Scientist Workforce: A Workshop for Clinical Faculty Leaders" on Friday, October 31, 2008 in San Antonio, Texas. Approximately 50 leaders of the academic, medical, and research communities met to address the issues of the development, nurturing, and sustenance of the physician scientist.
- Dr. Alving also addressed these issues in an invited lecture delivered at the national meeting of the AAMC on November 3, 2008.
- The March 4 conference has received international attention, and Dr. Alving has been invited to speak at the national symposium of the Dutch Network of Women Professors in November in Amsterdam. This network works with associate professors to receive coaching and training in furthering career development.

**VII. Highlights of Subcommittee Actions that Change (what was) the Reality**

- The success of this Subcommittee will be in ensuring that professional organizations and AHCs recognize that the workforce that is currently being trained is very different from previous generations (has different priorities as well as different personal and family challenges); in order to reap the full benefit from the tremendous investments that are being made in training, AHCs and professional organizations need to acknowledge challenges faced by women and minorities and then develop and share best practices for providing opportunities to sustain and advance the workforce throughout the career maturation.
- By including discussions of development of a diverse workforce in conferences and planning and by highlighting those institutions with excellent models for advancement, the NIH, in partnership with professional organizations, can change the statistics over a 5-10 year period.

## **Subcommittees 2, 3, 4, and 5: The Participation of Women in Extramural Biomedical Research**

### **I. Membership**

Norka Ruiz Bravo, Ph.D., OD/OER, Chair

Patricia Grady, Ph.D., NINR; J Taylor Harden, Ph.D., NIA; Ruth Kirschstein, M.D., OD; Donald Lindberg, M.D., NLM; Becky Lyon, NLM; Pam Marino, Ph.D., NIGMS; Sherry Mills, Ph.D., OD/OER; Elaine Ostrander, Ph.D., NHGRI; Joyce Rudick, OD/ORWH; Walter Schaffer, Ph.D., OD/OER.

### **II. Subcommittee Charge**

Document demographics of extramural funding of applicants and recipients. Determine if grant moneys can be used for dependent care expenses. Identify funding mechanisms to provide technical and administrative support to accommodate family care responsibilities. Consider policies for extending grant support during and after a leave of absence.

### **III. Working Strategies to Accomplish Charge**

The Subcommittee met frequently to plan and implement activities related to the charge. The group created a work plan and then monitored the development of several products including websites, reports, modified policies and other factors related to the involvement of women in biomedical research.

### **IV. Tangible Actions and Accomplishments**

#### **Developed and/or Implemented**

- Extensive data resources on the involvement of women were developed by the Subcommittee. This data are displayed on the [NIH REPORT website](#). Data indicate that women have made substantial gains in nearly all NIH extramural programs and are close to parity with men in predoctoral and postdoctoral research training as well as mentored career development awards. Women continue to lag behind men as Principal Investigators (PI) on NIH research grants, where they comprise less than 22 percent of the PIs on research project grants, center grants, small business awards and others. The situation for women on traditional research grants (R01s) is slightly more encouraging. The success rates on new R01s are almost identical for men and women. In addition, R01 awards are slightly larger for women than for men. These data are referenced on and linked to by the NIH Working Group website.



- The Subcommittee conducted an extensive investigation in collaboration with the OER Office on Policy for Extramural Research Administration (OPERA) and the Office of General Council (OGC) to clarify federal policies associated with child care, parental leave, extension of time, and the availability of temporary replacement help to understand the benefits available under extramural NIH grants. The Subcommittee found that these policies are generally driven by federal cost accounting principles and rules, but that sufficient policy flexibility exists to permit support from federal grants when identified conditions are met. The Subcommittee created an easily available web page on [Policies Related to Parental Leave and Child Care](#). Because this information is keyed to federal cost principles they generally apply to all federal granting agencies.
- The Subcommittee proposed extending the period of parental leave offered to trainees and fellows supported by the Ruth L. Kirschstein National Research Service Award (NRSA) program from 30 days to 60 days. This proposal was presented to governance and approved and the revised policy was announced in the [NIH Guide for Grants and Contracts](#).
- Subcommittee members have published on the importance of women in biomedical research. For example see the [Director's Column in the OER Nexus on July 2008](#).

### **Underway**

- In collaboration with Jennifer Pohlhaus in ORWH, selected Subcommittee members are conducting a detailed investigation of the involvement of women in extramural programs including an analysis of success rates of men and women in order to identify areas of concern. A manuscript is being prepared for submission to a peer reviewed journal.
- The Subcommittee helped design an extensive website to describe programs and objectives and offer an easy-to-use inventory of NIH programs designed to increase the involvement of underrepresented groups in research including women.
- The Subcommittee has supported the concept of making NIH supported extramural conferences easier for parents to attend. This would be encouraged by asking applicants for conference grant support to describe any information that will be provided to participants regarding the availability of day care or other child care resources. The revised Conference Grant funding opportunity announcement is in preparation.

**V. Additional Long-term Actions and Further Needs to Be Addressed**

- The OER will continue to update data on the involvement of women that appears on the NIH REPORT website. This data will be used on an ongoing basis in order to monitor the continuing participation of women in extramural programs.
- OER staff members are involved with a number of professional, health-related academic societies who would like to see changes in the eligibility policies associated with NIH career development awards to better accommodate faculty who work part-time. Many of these individuals are women with child-care responsibilities. Those discussions are underway.

**VI. Liaisons, Committees, or Organizational Collaborations**

OER staff collaborates with the AAMC, the Federation of American Societies for Experimental Biology (FASEB), the Federal Demonstration Partnership (FDP), and several other professional and scientific groups on a regular basis.

**VII. Highlights of Subcommittee Actions that Change (what was) the Reality**

- The availability of detailed information on the involvement of women in NIH extramural programs has highlighted the transition from training to independence as the most important barrier to women. Women are close to parity with men on mentored NIH training and career development programs but rapidly fall off at the faculty level and in the NIH pool of principal investigators. Women also have identical success rates to men on NIH traditional research grants (R01s). This information has been used in a number of settings to describe NIH programs. The observation also informs future studies. It will allow us to focus on this critical career transition and to re-examine assumptions about underlying issues. It offers an opportunity to explore and identify factors that lead to very different career choices for women and for men.
- The doubling of the period of parental leave available to NRSA recipients will encourage institutions to examine their own parental leave policies as they apply to all students and postdocs.
- The clarification of federal cost policies provide guidance to universities on how to structure their indirect cost and fringe benefit arrangements when considering reimbursement for child care, parental leave and other factors.

## **Subcommittee 6 – Research on the Efficacy of Programs to Reduce Gender Bias**

### **I. Membership**

Raynard Kington, M.D., Ph.D., OD, Chair

Amy Bany Adams, Ph.D., OD; Jeremy Berg, Ph.D., NIGMS; Janine Austin Clayton, M.D., OD/ORWH; Patricia Grady, Ph.D., NINR; Camelia Owens, Ph.D., OD; Belinda Seto, Ph.D., NIBIB

### **II. Subcommittee Charge**

Expand support for research on the efficacy of organizational programs designed to reduce gender bias and bring systemic organizational change.

### **III. Working Strategies to Accomplish Charge**

The Subcommittee met on a monthly basis to outline and prioritize tasks/initiatives. An analysis of existing programs to reduce gender bias (i.e. ADVANCE, WISELI, etc.) was conducted to understand the purpose, structure and efficacy of these programs. This analysis highlighted the need for rigorous quantitative and analytical research on the causal factors that influence the career trajectories of men and women in biomedical careers. Establishing the evidence base will help (i) inform policy decisions, (ii) improve the efforts of existing programs, and (iii) provide guidance to develop new programs. With this perspective, the Subcommittee developed a Request for Applications (RFA) and is analyzing the work activities of faculty in the life sciences to understand gender, racial/ethnic, and other differences.

### **IV. Tangible Actions and Accomplishments**

#### **Developed and/or Implemented**

With input from IC representatives, OER, the Mentoring and Leadership Workshop participants and others, the Subcommittee developed *RFA-GM-09-012: Research on the Causal Factors and Interventions that Promote and Support the Careers of Women in Biomedical and Behavioral Science and Engineering (R01)*. A press release and web announcement accompanied the Request for Applications (RFA). The RFA strongly encourages research inclusive of minority women to understand the full spectrum of disparity that exists in science and engineering. The application deadline was October 22, 2008.

## **Underway**

Using data from the National Science Foundation Survey of Doctorate Recipients (SDR), the Subcommittee is working with the National Opinion Research Center (NORC) to research the work activities of faculty in the life sciences. The 2003 and 2006 SDR respondents indicate their degree of participation in tasks such as: applied research, basic research, teaching, computer applications, managing people or projects, and other work activities. The 2003 SDR also obtains data on productivity measures such as the average number of publications, presentations, books, and hours worked per week. This analysis will complement existing research on faculty committee service and research productivity to understand gender and/or racial/ethnic differences in participation of certain work activities. These results will be published to help inform policy decisions.

## **V. Additional Long-term Actions and Further Needs to Be Addressed**

From the initial analysis of existing programs and the different types of bias, the Subcommittee recognized the limitations of existing performance measures such as number of publications, presentations, prestigious awards, etc. Another long-term initiative is to perform an extensive analysis of existing and proposed performance metrics such as the h-index and others to see if there are ways to minimize or remove bias from the reward/recognition system in scientific research.

## **VI. Liaisons, Committees, or Organizational Collaborations**

The Subcommittee collaborated with numerous IC representatives, OER, OCPL, and others to develop the aforementioned RFA. The Subcommittee is collaborating with NORC to research the work activities of faculty in the life sciences.

## **VII. Highlights of Subcommittee Actions that Change (what was) the Reality**

The intent of the RFA is to develop the evidence base that will inform policy decisions that will promote changing the reality. Rigorous research will help define the reality and provide guidance on the development of effective interventions and strategies.

## Subcommittee 8: Mentoring

### I. Membership

Lawrence Tabak, D.D.S., Ph.D., NIDCR, Chair

J Taylor Harden, Ph.D., NIA; Catherine Kuo, Ph.D., NIAMS; Pam Marino, Ph.D., NIGMS; Ira Pastan, M.D., NCI; Jennifer Reineke Pohlhaus, Ph.D., OD/ORWH; Joyce Rudick, OD/ORWH; Joan Schwartz, Ph.D., OD/OIR; Kathy Zoon, Ph.D., NIAID

### II. Subcommittee Charge

Determine how to increase the use and utility of current programs and mechanisms that support mentoring in the intramural and extramural NIH community and develop new conferences, programs, or funding mechanisms to support mentoring programs and networks.

### III. Working Strategies to Accomplish Charge

- Increase the visibility and status of trained mentors, especially those that are familiar with issues that are important to and/or disproportionately affect women.
- Increase career development opportunities for scientists, including those that address issues of concern to women and/or issues that disproportionately affect women.

### IV. Tangible Actions and Accomplishments

#### Developed and/or Implemented

- This Subcommittee worked in concert with the Office of Research on Women's Health to hold the *National Leadership Workshop on Mentoring Women in Biomedical Careers* in November, 2008. The workshop had over 500 registrants from the government, academia, industry, and other organizations. [Meeting materials and a videocast of the plenary sessions are available online.](#)
- This Subcommittee suggested that the Intramural Research Program establish a NIH-wide Mentoring Program for Intramural Scientists. This recommendation was referred to the Intramural Subcommittee of the Working Group (Subcommittee 9-10), who implemented the suggestion.

#### Underway

The Subcommittee is scheduled to meet with the Extramural Activities Working Group (EAWG) to get their buy-in to codify mentoring efforts extramurally.

**V. Additional Long-term Actions and Further Needs to Be Addressed**

The Subcommittee is planning collaborations with outside groups such as the Consortium of Social Science Associations (COSSA) and the group of professional societies and organizations that organized the retreat, *Enhancing Diversity in Science*.

**VI. Liaisons, Committees, or Organizational Collaborations**

- Subcommittee 9-10 of the Working Group
- National Planning Committee of the *National Leadership Workshop on Mentoring Women in Biomedical Careers*
- EAWG
- Planning Committee for the Retreat, *Enhancing Diversity in Science*, led by the COSSA, and including American Association for the Advancement of Science (AAAS), Association of American Medical Colleges (AAMC), Federation of American Societies for Experimental Biology (FASEB), American Educational Research Association (AERA), American Psychological Association (APA), American Sociological Association (ASA), Institute for the Advancement of Social Work Research (IASWR), Society for Research in Child Development (SRCD).

**VII. Highlights of Subcommittee Actions that Change (*what was*) the Reality**

The *National Leadership Workshop on Mentoring Women in Biomedical Careers*, with over 500 registrants, was held in November 2007. The Planning Committee collected many recommendations from the outside community that are under consideration for future initiatives.

## **Subcommittee 9-10: Changing the NIH Work Culture and Improving the Recruitment, Retention, and Advancement of Women at NIH**

### **I. Membership**

Michael Gottesman, M.D., OD/OIR and Joan P. Schwartz, Ph.D., OD/OIR, Co-chairs

Mirit Aladjem, Ph.D., NCI; Janine Austin Clayton, M.D., OD/ORWH; Valerie Durrant, Ph.D., CSR; Edward Giniger, Ph.D., NINDS; Patricia Grady, Ph.D., NINR; Ruth L. Kirschstein, M.D., OD; Joslyn Yudenfreund Kravitz, Ph.D., OD/OIR; Story Landis, Ph.D., NINDS; Germaine Buck Louis, Ph.D., NICHD; Elaine Ostrander, Ph.D., NHGRI; Ira Pastan, M.D., NCI; Joyce Rudick, OD/ORWH; Lawrence Tabak, D.D.S., Ph.D., NIDCR; Kathryn Zoon, Ph.D., NIAID

### **II. Subcommittee Charge**

To identify ways to overcome impediments to the recruitment, retention, and advancement of both women and minority scientists in Principal Investigator (PI) positions (tenure-track and tenured) and to the success of postdoctoral fellows in the NIH Intramural Research Program. These impediments include, in part: a need for mentoring; a need for role models; a need to provide necessary training for professional development; a need to change the NIH work culture to enhance flexibilities; a need to enhance availability of child/family care options; a need to develop better recruitment strategies; and a need to enhance the diversity of the NIH workforce.

### **III. Working Strategies to Accomplish Charge**

- Raise awareness and promote use of workplace flexibilities including teleworking, alternative work schedules, and leave options through a message from Dr. Zerhouni to the entire NIH, distribution of materials, and enhanced awareness of useful websites
- Modify the time-frame and add programs to the tenure-track aimed at addressing the family issues that may impact success
- Hold focus groups to determine what, if any, obstacles impede the ability of women and minorities to succeed at the NIH so that programs can be designed or enhanced to address them
- Expand child care options

#### IV. Tangible Actions and Accomplishments

##### Developed and/or Implemented

- An e-mail message entitled *Enhancing the Work Culture at NIH* was sent to all employees by Dr. Zerhouni on July 23, 2008.
- The parental leave policy for NIH intramural trainees was extended from 6 weeks to 8 weeks.
- An e-mail message was sent in December 2007 by Dr. Gottesman encouraging the use of the Voluntary Leave Transfer Program (VLTP), that led to an increase in enrollment and in leave donations to the VLTP.
- The tenure-track clock was extended by one year (with an option to opt out) to seven years (nine for clinical or epidemiological research) to allow a candidate extended family or sick leave.
- A mechanism was developed to employ a temporary lab manager to continue lab/branch operations while a PI is on extended medical or family leave.
- The existing OIR practice (dating back to 1993) of yearly reviews of intramural scientists' salaries to ensure pay equity will be continued.
- A regional chapter of the National Higher Education Recruitment Consortium (HERC) was established as a joint venture between universities, colleges, and federal agencies located between Baltimore and Richmond and the NIH Office of Human Resources (OHR). The Mid-Atlantic HERC consists of a web-based search engine of all job listings at member institutions to enhance dual career job searches.
- The Trans-NIH Mentoring Committee was established.
- A subcommittee to develop ways to change the NIH culture to make it more welcoming to all, by incorporating new programs based on suggestions from our minority scientists was established.
- A focus group was held on October 7, 2008 with tenure-track investigators to address issues of recruitment and retention of minority scientists.
- The FAES generously entered into a contract with a local daycare center to secure priority placement for the children of new tenure-track hires.



**Underway**

- A pilot leave bank program is in development by OHR and is expected to go live in 2009-2010.
- Smaller focus groups with IC leadership to discuss with them the process of addressing issues of diversity in the intramural program and learn their strategies are planned to take place in early 2009.
- Focus groups with postdoctoral fellows and staff clinicians/scientists to address issues of recruitment and retention of minority scientists will be held in December 2008.
- Several extramural faculty and administrators with expertise in minority recruitment and retention programs have been contacted to provide individual advice and recommendations as new programs are being considered. Further conversations are planned for December 2008 and early 2009.
- Trans-NIH Mentoring Committee will review methods used for annual progress reviews for fellows to ensure that they are beneficial for both the fellow and the PI in December 2008.
- Trans-NIH Mentoring Committee will review mentoring by PIs to determine how it can be evaluated and enhanced in December 2008.
- OIR will develop an intramural process for enhancing the recruitment of dual career spouses/partners in December 2008.

**V. Additional Long-term Actions and Further Needs to Be Addressed**

- Fund and build the NIH Northwest Child Care Center
- Work with NIEHS to develop a HERC in the Research Triangle Park area to promote recruitment at the North Carolina campus
- Disseminate information on the benefits of workplace flexibility, and examples, to enhance utilization of the existing programs throughout the NIH
- Work with the NIH Child Care Board to explore backup care at the NIH, as well as child care at conferences

**VI. Liaisons, Committees, or Organizational Collaborations**

- Office of the Director (OD)
- Board of Scientific Directors
- Office of Research on Women's Health (ORWH)
- Office of Human Resources (OHR)
- Office of Research Facilities (ORF)
- Office of Research Services (ORS)
- NIH Child Care Board
- Women Scientist Advisors Committee
- Office of Intramural Training and Education (OITE)
- Trans-NIH Mentoring Committee
- Foundation for Advanced Education in the Sciences (FAES)
- Foundation for the NIH (FNIH)

**VII. Highlights of Subcommittee Actions that Change (*what was*) the Reality**

- NIH-wide message from Dr. Zerhouni promoted use of family friendly programs
- Raised awareness of the VLTP
- Extended the tenure-track clock to accommodate family leave
- Helped establish the Mid-Atlantic Higher Education Recruitment Consortium
- Pilot Leave Bank to be launched in 2009-2010

## Subcommittee 11: Integration of Women into Bioengineering Fields

### I. Membership

Belinda Seto, Ph.D., NIBIB, Chair

Robert Balaban, Ph.D., NHLBI; Felicia Haynes, OD/ORF; Christine Kelley, Ph.D., NIBIB; Alan Koretsky, Ph.D., NINDS; Joslyn Yudenfreund Kravitz, Ph.D., OD/ORWH; Richard Leapman, Ph.D., NIBIB; Joan McGowan, Ph.D., NIAMS; Jennifer Reineke Pohlhaus, Ph.D., OD/ORWH; Joyce Rudick, OD/ORWH; Rocky Tuan, Ph.D., NIAMS

### II. Subcommittee Charge

Ensure that the career challenges faced by women in bioengineering fields are considered and develop resources for the career development and advancement of female and male bioengineers with caregiving responsibilities.

### III. Working Strategies to Accomplish Charge

- Educate intramural and extramural NIH employees about the role that engineers and bioengineers can play in the interdisciplinary biomedical field and the value of quantitative approaches to biology
- Counteract the societal bias against females in regard to their aptitude in quantitative and physical sciences and engineering
- Encourage the inclusion of women in engineering disciplines that are involved in biomedical research (other than bioengineering)

### IV. Tangible Actions and Accomplishments

#### Developed and/or Implemented

- **The NIH Director's Wednesday Afternoon Lecture Series (WALS).** The Subcommittee has twice sponsored a women engineer for the prestigious WALS. Gordona Vunjak-Novakovic, Ph.D., Columbia University spoke on Tissue Engineering on October 17, 2007, and Martha Gray, Ph.D. is scheduled to speak on January 21, 2009.
- **Engineering and Physical Sciences Special Interest Group.** The Engineering and Physical Sciences Special Interest Group (EPSSIG) aims to galvanize the intramural scientists to bridge the physical and biomedical sciences. The EPSSIG provides a forum for interdisciplinary scientific seminars and to focus visibility on bioengineering programs at NIH.

- **K-12 Student Outreach and Education.** An award within the NCRR Science Education Partnership Award (SEPA) Program, which funds grants for innovative educational programs, has been supplemented to include funding for increasing interest in the physical sciences in a largely Native American community.

### Underway

- **High School and College Student Outreach.** To encourage participation of young women in research, the Subcommittee is considering the development of a brochure to highlight the bioengineering and imaging opportunities available within the NIH Summer Internship Program. The brochure would be designed to appeal to females. Discussions with Subcommittee members and communication contacts within relevant ICs, such as NIAMS and NIBIB, are underway.
- **K-12 Student Outreach and Education.** An educational video to counteract the gender bias in quantitative science, *Women are Bioengineers*, is proposed. Initial partners are NIBIB and ORWH. The hope is to broaden the participation by additional ICs.
- **Graduate Student, Postdoctoral Trainee, and Resident Outreach.** Members will continue to monitor data on women supported in the NIH Graduate Partnership Program (GPP), the NIH (NIBIB)-NIST Postdoctoral Fellowship Program, the Imaging Sciences Training Program (NIBIB-ISTP), and the NIBIB supported Biomedical Engineering Summer Internship Program (BESIP) with an eye towards encouraging medical and biomedical doctoral degree-holders to consider interdisciplinary research between the biological and physical sciences.

## V. Additional Long-term Actions and Further Needs to Be Addressed

The Subcommittee will continue to address the pipeline issue, ensuring that women are interested and supported in bioengineering

## VI. Liaisons, Committees, or Organizational Collaborations

Members of the EPSSIG are currently being identified. Both the EPSSIG and the Steering Committee will be trans-NIH. NIBIB will continue to partner with the American Institute of Medical and Biological Engineering (AIMBE) to advance the interests of women bioengineers. In December 2008, NIBIB will co-host a workshop with AIMBE to highlight research and policy issues relevant to women bioengineers.

**VII. Highlights of Subcommittee Actions that Change (*what was*) the Reality**

- The growth of bioengineering as a discipline, as reflected by the number and size of such departments in the extramural institutions is astounding. However, bioengineering does not have comparable visibility in the NIH intramural program. Since the Subcommittee began to address this issue, we have successfully established a Special Interest Group (SIG) to provide a forum for bioengineers and other physical scientists to discuss scientific and research interests. The hope is that the SIG will not only galvanize the intramural scientists but will also serve to attract potential postdoctoral fellows interested in bioengineering to the NIH.
- The NIH Director's lectureship given to a woman bioengineer would not have happened without the efforts of this Subcommittee. The prospect of a second lectureship given to a woman bioengineer further affirms the positive changes the Subcommittee has achieved.

## **Subcommittee: National Library of Medicine Pilot Initiatives**

### **I. Membership**

Donald Lindberg, M.D., NLM, Chair

Becky Lyon, NLM; Barbara Rapp, Ph.D., NLM

### **II. Subcommittee Charge**

National Library of Medicine (NLM) pilot initiatives to provide caregiver relief for grantees were developed in conjunction with service on Subcommittee 2-5 and are responsive to the following National Academies recommendations:

- make it possible to use grant monies for dependent care expenses necessary to engage in off-site or after-hours research-related activities or to attend work-related conferences and meetings,
- identify funding mechanisms to provide for technical or administrative support during a leave of absence related to caregiving, and
- establish policies for extending grant support to the extramural community during and after a leave of absence.

### **III. Working Strategies to Accomplish Charge**

The initiatives were developed as a result of NLM staff's reviewing the background materials provided to the Working Group, identifying beneficial changes that could be made within NLM grant programs, investigating practices of professional associations related to providing child care at conferences, gathering information on the cost of child care services, consulting with the Office of Extramural Research, and considering federal cost-accounting standards and potential legal issues to be addressed. In June 2007, proposed initiatives were discussed with directors of NLM's Informatics Training Program, followed by implementation of two programs in July 2007. Two additional initiatives are in progress.

#### **IV. Tangible Actions and Accomplishments**

In July 2007 the National Library of Medicine implemented within its grant programs two pilot initiatives to provide additional support for grantees with child/dependent care needs. Two additional pilot initiatives were also developed and planned for implementation in 2009. The policies apply to both women and men as well as to married and single care-givers. The four initiatives are described below.

##### **Developed and/or Implemented**

- **Extension of leave for birth or adoption of a child:**  
The NLM extended the parental leave benefit for NLM Institutional Training Grants trainees from 30 days to 60 days for birth or adoption of a child, if also in accordance with the grantee institution's leave policy. The grantee institution's leave policy must provide at least 60 days of leave coverage to those in comparable positions, regardless of the funding source. This policy change for NLM's pilot program was also adopted more broadly for the National Research Service Awards (NRSA) program and outlined on the OER website of FAQs on Policies Related to Parental Leave and Child Care.
- **Extending paid leave for caregivers:**  
When an NLM Institutional Training Grant trainee who has taken leave to care for a child or sick family member has exhausted available sick leave and paid leave, the NLM will permit an additional extension of leave with half-pay for 30 days, if also in accordance with the grantee institution's leave policy. The grantee institution's leave policy must provide such leave coverage to those in comparable positions, regardless of the funding source.

##### **Underway**

- **Primary Caregiver Technical Assistance Supplements (PCTAS):**  
The NLM program will allow additional funding for PIs to hire a technical surrogate in support of the postdoctoral research scientist or pre- or post-doctoral trainee who is on parental care leave from their NLM supported R01 grant. The extent of leave time on the research grant must be consistent with the leave policies of the applicant's grantee institution, as applied to federally and non-federally sponsored activities.

NLM support for this pilot program will be usually limited to one year, but may be extended to up to two more years with approval of NLM. Applications may be submitted at any time by the PI of the grant, review is conducted by NLM staff, and turn-around time is approximately eight weeks. To be eligible, pre- or postdocs must be primary caregivers for a child or ailing relative and in at least their second year on an NLM grant. Annual progress reports will include an item that reports on use of the pilot.

This initiative was based on the experimental PCTAS program previously created by NIAID. The NIAID program is restricted to post-docs, but NLM has included eligibility for pre-docs. The NLM has retained the PCTAS requirement that post-doc or pre-doc be in at least the second year on the grant. This is planned for possible implementation in 2009.

- Support for caregiver-related expenses associated with trainees' travel to meetings:  
In addition to the above pilots in NLM's grant programs, the NLM has considered mechanisms for offering support to NLM Institutional Training Grant trainees who incur child-care expenses related to attending professional meetings that are clearly relevant to the grant, but require travel or attendance after normal business hours. It was determined that such costs may be claimed as training related expense, provided that they meet the requirement for providing this coverage on a consistent basis (i.e., make the coverage available to all comparable trainees at an institution). This is planned for implementation in 2009.

**V. Additional Long-term Actions and Further Needs to Be Addressed**

N/A

**VI. Liaisons, Committees, or Organizational Collaborations**

N/A

**VII. Highlights of Subcommittee Actions that Change (what was) the Reality**

- Trainees may take additional leave for birth, adoption, or dependent care
- RO1 grantees may hire technical assistance to maintain operation of a research project while grant-supported post-docs and pre-docs are on extended leave
- Trainees may receive support for dependent care expenses necessary to attend work-related conferences and meetings



### VIII. Experience with the programs and proposals:

Based on the experience with the two pilot programs offering extended leave and the feedback we have received from trainees and program directors, we are finding that there may be limited uptake in the beginning, but there is a definite interest and indications that participation will grow in the future. There is also interest in the fact that such programs are even being discussed and considered as important and serious programs. In terms of implementation, we have learned that the program should be promoted directly to both program directors and trainees. The program directors and administrators must drive the program through personal investment and by making all trainees aware of the options available to them. But in addition, direct communication from NLM to the trainees about the programs helped to ensure that everyone was not only aware of the options, but also aware of their importance to NLM. Despite the need for and interest in such programs, there remains a reluctance to ask for this type of help and a concern about receiving special treatment, so proactive indications of support from both program directors and the funding agency are important. From an administrative perspective, we have learned that the funding source must be made clear in terms of whether supplemental funds will be provided or whether existing funds are to be used. Additionally, the requirement that the NIH program must also be in accordance with the grantee institution's leave policy may create inequities, or haves and have-nots, due to differences in institutional policies.

Feedback from trainees regarding proposed travel-related child care support suggests an interest and need for child care services when travelling, with particular interest in a conference-sponsored group day care setting. Regarding other challenges as parents pursuing a scientific career, feedback from trainees focused largely on the long working hours required for scientific success, but also included length of maternity leave, availability of day care, need for flexibility in the work week, affordability on a fellow's stipend, and general cultural change and increased awareness – issues also identified in *Beyond Bias and Barriers* and considered by the NIH Working Group. Concern about balancing family and research responsibilities was expressed by both male and female trainees. For example, a father said, "...I only have two days on which I can extend my hours...my greatest challenge is simply having enough time for work." And a woman who is anticipating having a family said, "I'm most worried about...if I can be a scientist without having to work 50+ hours a week...It's the biggest thing that will deter me from an academic career if it comes to that. My family deserves as much time (or more) than my career."