

National Institutes of Health
Working Group on Women in Biomedical Careers

Committee on Advancing Women in Independent Positions
Office of Research on Women's Health

Workshop on Advancing Women in Independent Positions
Meeting Summary

Monday, July 25, 2016, 9:00 am – 2:30 pm

Natcher Conference Center, Room D

National Institutes of Health

Bethesda, Maryland

This meeting was organized by the Committee on Advancing Women in Independent Positions, a subcommittee of the NIH Working Group on Women in Biomedical Careers. The NIH Working Group on Women in Biomedical Careers is a trans-NIH effort to consider barriers for women in science and to develop innovative strategies to promote entry, recruitment, retention, and sustained advancement of women in biomedical and research careers. The Committee on Advancing Women in Independent Positions seeks to (1) identify successful approaches to spur advancement of women biomedical scientists who have completed research training and are in independent research or research-related positions, and (2) collaborate with organizations that support the advancement of women in science. To address the second goal, the committee convened scientific societies and other organizations with a proven track record of supporting women in science to discuss strategies, best practices, and lessons learned. The conference was sponsored by the National Institute of General Medical Sciences (NIGMS), the Office of Research on Women's Health (ORWH), the Division of Biomedical Research Workforce Programs in the NIH Office of the Director, and the National Library of Medicine (NLM).

For more information, please see: www.womeninscience.nih.gov or email womeninscience@nih.gov.

Overview

On July 25, 2016, the Committee on Advancing Women in Independent Positions, a subcommittee of the NIH Working Group on Women in Biomedical Careers, held a Workshop on Advancing Women in Independent Positions to discuss efforts to enhance the advancement of women once they have achieved independent biomedical careers. Scientific societies and other organizations participated in the conference to share information on successful initiatives and best practices. Participants provided information their activities having a positive impact on women holding independent positions in the biomedical sciences.

Representatives from the following organizations attended:

- ADVANCE Program, National Science Foundation (NSF)
- American Society for Cell Biology (ASCB)
- Association for Women in Science (AWIS)
- COACH
- Committee on Women in Science, Engineering, and Medicine — National Academy of Sciences
- Executive Leadership in Academic Medicine (ELAM)
- International Society for Computational Biology (ISCB)
- Leadership Lab for Women in STEM
- New York Stem Cell Foundation (NYSCF)
- Society for Neuroscience (SfN)

Introduction

Janine Austin Clayton, MD, Director, NIH Office of Research on Women's Health

Dr. Clayton opened the workshop with data from the NSF Survey of Doctorate Recipients.¹ The data demonstrate that there is relative parity in the numbers of men and women at the assistant professor stage, but those at the full professor stage are predominantly men. Data from American Association of Medical Colleges indicate the same; there is a steady decline in the percentage of positions held by women from the trainee (i.e., resident) stage to the full professor or leadership level in academic medicine.² For example, 38 percent of full-time faculty positions are held by women while only 21 percent of full professor positions are held by women.

The data are similar for people of color. The percentage of positions held by white faculty is larger at each subsequent career stage.³ While data examining individuals at the intersection of gender and race/ethnicity are unavailable, one can hypothesize that women of color are significantly underrepresented. This phenomenon, dubbed the double-bind, suggests that women of color are disadvantaged twice – by their race/ethnicity and gender.

¹ Survey of Doctorate Recipients, 2013 <http://www.nsf.gov/statistics/srvydoctoratework>

² The State of Women in Academic Medicine: The Pipeline and Pathways to Leadership, 2013-2014 <https://www.aamc.org/members/gwims/statistics/>

³ Survey of Doctorate Recipients, 2013 <http://www.nsf.gov/statistics/srvydoctoratework>

Dr. Clayton next provided background on ORWH, noting that it was mandated by Congress. She identified the office's tri-partite mission:

- Ensuring women and diverse populations are included in all NIH-funded clinical research studies;
- Examining sex/gender influences on health and disease to inform women's health and women's health research across NIH;
- Recruitment, retention, reentry, and sustained advancement of women in biomedical careers.

She explained that the advancement of women in biomedical careers is of interest to the entire NIH community, as evidenced by former NIH Director Elias Zerhouni, MD, forming the trans-NIH Working Group on Women in Biomedical Careers, which he co-chaired with former ORWH Director Vivian Pinn, MD.

The Working Group — currently co-chaired by NIH Director Francis Collins, MD, PhD, and Dr. Clayton — was established in 2007 to consider recommendations from the National Academies report “Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering.”⁴

Dr. Clayton explained that the Working Group, whose activities were recently discussed in an article in *Academic Medicine*,⁵ seeks innovative strategies to address concerns of NIH intramural and extramural communities, paying special attention to issues of barriers, scientists who are women of color, and mentoring. The Working Group and its subcommittees have been instrumental in funding research, establishing family-friendly policies, and increasing recognition of women scientists.

She highlighted a major product of the Working Group, the bi-monthly newsletter titled “Advances and Insights,” which is edited by Jennifer Plank-Bazinet, PhD, of ORWH and currently has over 1,000 subscribers. The publication, available at www.womeninscience.nih.gov, contains summaries of studies and reports pertaining to women in science, profiles and personal insights of women in science, and highlights of innovative initiatives at institutions and organizations that support women in scientific careers.

Dr. Clayton also highlighted the Working Group's Committee on Women of Color in Biomedical Careers as well as the Women of Color Research Network⁶, which is a social media site for anyone interested in supporting the development of a diverse scientific workforce.

Judith H. Greenberg, PhD, Deputy Director, National Institute of General Medical Sciences

Dr. Greenberg provided some historical context to the workshop, noting that starting approximately eight years ago, men and women were earning medical and doctorate degrees at about the same rate, but women are not progressing into independent positions at the same rate. The NIH realized that addressing this disparity would involve rigorous scientific research and issued a funding opportunity announcement titled “Research on Causal Factors and Interventions That Promote and Support the

⁴ Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering, 2007 <https://www.nap.edu/catalog/11741/beyond-bias-and-barriers-fulfilling-the-potential-of-women-in>

⁵ Programmatic Efforts at the National Institutes of Health to Promote and Support the Careers of Women in Biomedical Science <https://www.ncbi.nlm.nih.gov/pubmed/27191836>

⁶ Women of Color Research Network <https://www.linkedin.com/groups/8501207>

Careers of Women in Biomedical and Behavioral Science and Engineering.”⁷ Through that effort, 14 grants, totaling over \$16 million, were issued.

In November 2012, the Committee on Advancing Women in Independent Positions, formerly called The Committee on Research and Evidence to Promote Women in Biomedical Careers, brought the PIs together to discuss findings and identify next steps. Themes developed in areas of educational pathways, institutional and individual factors, career trajectories, and intervention strategies. A full report from the workshop is available.⁸

To help translate the findings into actions, the committee held another workshop in June 2014. In attendance were leaders from academia, government, industry, and nonprofits to raise awareness about ways to overcome barriers to women’s advancement. It was noted that institutional culture needs to change, and institutions must undergo transformational change on their own.⁹

Dr. Greenberg explained that the current workshop, as well as those held in 2012 and 2014, are part of a long list of efforts addressing the advancement of women in biomedical research careers. She explained that in 1999 the ORWH, several NIH Institutes, and the American Society for Cell Biology held the Achieving EXXcellence in Science workshop, which explored the advancement of women in all areas of science. In 2002, the Committee on Women in Science and Engineering at the National Research Council focused on women in clinical research, but its findings/activities were applicable to those in other areas as well. Despite these and numerous other past efforts, a palpable change in culture has not yet been felt. Therefore, it is important to understand activities and initiatives that have been successful in supporting the careers of women in science.

Presentations

Jessie DeAro, PhD, ADVANCE, National Science Foundation (NSF)

Dr. DeAro noted that ADVANCE has been in place since 2001. The ADVANCE program focuses on fixing the culture of institutions as opposed to individuals, addressing more systemic issues that affect recruitment, retention, and promotion (e.g., policies). The program is also focused on equity (e.g., pay differences), but not necessarily the broadening of participation of women in science. Other areas of focus include equitable career support, increasing awareness of implicit biases and micro-aggressions, as well as tools to address these concerns.

Dr. DeAro emphasized the need to collect, analyze, and publish demographic data of faculty, fellows, and studies that are disaggregated by sex/gender and race/ethnicity. Without this information, scientists may not realize there is a gender equity issue. She noted that more data on women of color, in particular, are needed.

⁷ Research on Causal Factors and Interventions that Promote and Support the Careers of Women in Biomedical and Behavioral Science and Engineering (R01) <https://grants.nih.gov/grants/guide/rfa-files/RFA-GM-09-012.html>

⁸ Causal Factors and Interventions Workshop https://womeninscience.nih.gov/pdfs/Causal_Factor_Summary.pdf

⁹ Advancement of Women in Biomedical Careers Workshop <https://womeninscience.nih.gov/pdfs/AdvancingWomensCareersWorkshopSummary.pdf>

Diane Barber, PhD, American Society for Cell Biology (ASCB)

Dr. Barber explained that ASCB utilizes various mechanisms to support the career advancement of women in science and gender equity. The ASCB annual meeting, which is attended by more than 10,000 people, contains Career Roundtable sessions. These sessions draw between 100 and 800 participants and consist of informal discussions on career issues at all stages of career development. The discussions are moderated by those with experience on the issues, including career options, strategies for developing a career, and work/life balance. The society also provides awards at three career levels, hosts a mentoring theater, and sponsors a networking reception. Each of these activities provide women with an opportunity to gain exposure or helpful advice. Finally, ASCB also provides awards to help those in need of childcare to attend the meeting.

In addition to the conference, ASCB publishes a career advice column in its newsletter as well as articles on networking and challenges women in leadership positions often face. ASCB also has a speaker referral list, CV and resume-assistance services, online resources, and a monthly email listserv. Lastly, Dr. Barber noted that ASCB is currently drafting an anti-harassment policy.

Donna L. Vogel, MD, PhD, Association for Women in Science (AWIS)

AWIS is the largest interdisciplinary organization for women in STEM and reaches more than 20,000 members. Dr. Vogel noted that the association has a wide scope, with chapters across the country, and focuses on research, teaching, entrepreneurship, as well as government, private, and nonprofit matters. The association advocates for institutional and departmental change to support career advancement and seeks to empower individual women in their efforts to achieve work-life integration. The association also advocates for changes in legislation.

AWIS publishes a newsletter, magazine, resources for large groups, professional development activities, series of webinars, and books. The publications record women's contributions and impact on society as executives, faculty, volunteers, mathematicians, moms, scientists, and engineers.

In response to a report that indicated that women were underrepresented for research awards and overrepresented for service awards, the association developed training materials for scientific societies to improve the process of granting awards and prizes.¹⁰ To date, 18 partner societies have received training on the awards process, and in many instances, a great increase in the percentage of women receiving awards has increased.¹¹

Dr. Vogel explained that interventions can improve circumstances, but one needs to “keep the pressure on” and utilize multiple measures.

¹⁰ The Best Practices for Awards Process http://www.awis.org/?page=Awards_Recs

¹¹ The Awards Society Partners and Outcomes https://awis.site-ym.com/?Awards_Outcomes

Gilda A. Barabino, PhD, COACH

COACH is a grass-roots organization that is working to increase the number and career success of women scientists and engineers through innovative programs and strategies, including career development programs that have been attended by over 12,000 scientists and engineers. Dr. Barabino explained that COACH focuses on women as leaders — providing training on negotiation techniques, entrepreneurship, launching careers, and balancing one’s career portfolio. She noted that COACH holds workshops on career development, leadership, and management. It also conducts workshops to “train the trainer,” as developing mentoring skills was found to be key in feedback from COACH’s workshops.

Dr. Barabino emphasized that important concepts for advancing the careers of women in science include coordination, connectivity, and sustained efforts, particularly at the national level. The organization is also engaged in multinational collaborations. Dr. Barabino also emphasized the need for more data on women of color scientists.

Ashley Bear, PhD, Committee on Women in Science, Engineering, and Medicine, National Academy of Sciences

The Committee on Women in Science, Engineering and Medicine seeks to understand mechanisms for supporting women’s advancement, retention, and recognition in science. One approach for understanding these issues is convening diverse groups of experts to conduct research studies. Recent findings suggest a need for support regarding family responsibilities that disproportionately affect women.

In agreement with Dr. Clayton’s opening remarks, Dr. Bear highlighted the fact there is a critical transition period between women attaining their doctorate and the application for a tenure-track position, as there is a significant reduction in the percent of women between these stages. The committee examined issues of implicit bias, stereotypes, and sexual harassment. During a recent workshop on sexual harassment, several problems emerged:¹²

- High prevalence but low reporting of sexual harassment;
- Policies not publicized well;
- Many interventions not properly evaluated;
- Fear of retaliation.

The committee is currently looking for more data in this area, specifically regarding STEM.

Diane Magrane, MD, Executive Leadership in Academic Medicine (ELAM)

The goal of ELAM is to increase and sustain the number and impact of women in academic leadership positions in the health professions. Its sister program, Executive Leadership in Academic Technology and Engineering (ELATE), specifically focuses on STEM fields. Dr. Magrane explained that the primary task of

¹² Addressing sexual harassment in the science, engineering, and medical work places: A scoping workshop summary http://sites.nationalacademies.org/PGA/cwsem/PGA_173087

leadership is to manage competing (but ultimately inter-related) interests. Advancing women in science, she noted, requires balancing society's expectation of women as nurturing and supporting (communal behaviors) and agentic behaviors associated with leadership. She further explained that leadership development can be viewed as a continuum, with broadening skill sets, in which self-confidence and self-efficacy are built, and political savvy is gained to sustain personal and professional growth.

An outcomes-based research model, she noted, looks at career development as a systems problem: "How does professional development help women scholars negotiate with societal expectations of gender and professional goals?" Participants in ELAM and ELATE show an increased rate of retention in academic medicine and within their institutions. Graduates of the programs show increased self-efficacy and are aware of specific leadership skills they can apply to their work.

Within its first two years, 60 percent of ELATE's participants have moved into leadership positions. Others are having impact within the roles that they have. Dr. Magrane emphasized the need for a matrix of development at all career levels and that collaborative work needs to be specifically rewarded.

Diane Kovats, CMP, International Society for Computational Biology (ISCB)

ISCB is a scholarly society for advancing understanding of living systems through computation and for communicating scientific advances worldwide. In an attempt to collect data on the gender of ISCB members, ISCB asks its members to identify gender in their membership profiles. Half of the society's membership is women.

Ms. Kovats noted that some of the society's members issued a letter critical of its diversity. Many felt that the society leadership was diverse, but that the membership as a whole was less diverse. Therefore, the society now provides reports on diversity to its membership, and it also held a diversity dialogue at the annual meeting.

To increase the recognition of women, the society requires that at least 30 percent of conference planning committee members be women. In most instances, the women comprise approximately 50 percent of the members. Historically, 85 percent of award applications have been from men, resulting in the society developing a selection task force to increase the number of women applying.

Finally, the society is working on a white paper on diversity education and the importance of promoting diversity at the institutional level.

Kathleen Buse, PhD, Leadership Lab for Women in STEM

The Leadership Lab for Women in STEM is a professional leadership development program for women working in male-dominated environments. It focuses on the individual woman and the skills she needs to persist. Aspects of the program include participants developing a personal vision of themselves, the assessment of skills, and building skills. In the six months following the first program, 40 percent of the women were promoted. Program leaders are looking to replicate or improve upon this result. The ultimate hope is that more women will be retained, will advance, and will help to transform their organizations.

Kristin Smith, New York Stem Cell Foundation (NYSCF)

The New York Stem Cell Foundation (NYSCF) is a non-profit organization dedicated to accelerating the cures for the major diseases of our time through stem cell research. In addition to their mission to support research, the Foundation is devoted to understanding issues preventing gender equity. Ms. Smith discussed the Foundation's institutional report card for gender equality. It has now been incorporated into the Foundation's extramural grant application process, and applicants must complete it to be eligible for funding. While the report card does not influence the applicant's score, the act of filling out the report card requires applicants to self-assess gender equity at their institution. Ms. Smith emphasized that the report card is meant to be educational, not punitive. The Foundation is hoping other organizations will adopt the tool.

Janice R. Naeyegele, PhD, Society for Neuroscience (SfN)

SfN is committed to the continued advancement of women in neuroscience. From 2009 to 2013 the society received an NSF ADVANCE grant to specifically increase the number of women in neuroscience. Using the ADVANCE grant support, the society built Web-based programming/videos (e.g., tips for investigators) and toolkits for promoting cultural change and professional development.

The society also holds its Annual Celebration of Women in Neuroscience event to honor women in the field. At the society's annual meeting, it offers professional development activities, mentoring opportunities, and networking events. Dr. Naeyegele noted that, although its resources are accessible by members only, those members can freely share the resources with their colleagues.

General Discussion

Following the presentations, participants and attendees were invited to have an open discussion. Several themes emerged, and below are highlights from the discussion related to each of them.

Addressing Sexual Harassment

- There are many behaviors that fall under the term "sexual harassment," ranging from gender harassment to unwanted sexual advances and sexual coercion. Gender harassment is the most prevalent form. Implicit bias and micro-aggression are also important issues, particularly the cumulative effect of such actions.
- Memberships in societies should be revoked for offensive behaviors.

Fixing the system – inducing a culture shift

- Interventions should not focus on changing the behavior of women, but rather on inducing systemic change. Also, the term "diversity training" invokes different feelings in different individuals and could be renamed.
- Engaging men as allies/partners is important. The focus should be on gender equity, as a term that includes men.

- At professional society meetings, there should be career-building activities that individuals – male and female - can take back to their institutions. Department heads and deans need to hear the information and then take the lead to implement change.
- Awareness and avoidance of sex/gender bias needs to be taught at a younger age.
- Professional societies could conduct training for institutions as a formal activity.
- The limited advancement of women in science needs to be framed as a “scientific problem,” rather than a women’s issue.

Transforming selection/promotion committees

- There needs to be a constant reinforcement of issues related to gender equity on committees (e.g., tenure committees, search committees).
- Women are often asked to participate in gender equity activities, but this and other committee work are not always considered during the tenure and promotion process.
- Before selecting speakers/panelists for meetings, conversations are needed about implicit bias.

Supporting individual women

- More work needs to be done to encourage women to apply for tenure track positions.
- Women in junior positions typically receive more mentoring than more senior women. Accordingly, there is a need to support more senior women moving toward leadership positions, for example with executive coaching.

Greater data collection and dissemination

- More data and the sharing of data are critical. Common metrics for data gathering and analysis are needed. There is also a need for common measures of success.
- A greater understanding is needed of why some women persist, while others do not. This may be related to questions about how girls are raised, how they are treated differently — girls called “bossy” but boys called “leaders.” How does this affect leadership skills and resiliency later in life?
- Outcomes from “Women in Science” groups at organizations need to be disseminated widely.