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ADVANCES & INSIGHTS:
The NIH Women in Science Newsletter

This e-newsletter is brought to you by the NIH Working Group on Women in Biomedical Careers.

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Recent Research

Expectations of brilliance underlie gender distributions across academic disciplines

Leslie SJ, Cimpian A, Meyer M, Freeland E. Science. 2015 Jan 16; 347(6219):262-265.

http://www.ncbi.nlm.nih.gov/pubmed/25593183

Women are well represented at the Ph.D. level in some disciplines but not in others, with variation in both the sciences and the humanities (e.g., in 2011, 54% of U.S. Ph.D.s in molecular biology were awarded to women; 31% of philosophy Ph.D.s went to women). The authors of this study suggest that women are more likely to be underrepresented in fields whose practitioners believe that raw, innate talent is a primary requirement for success, because women are stereotyped as not possessing such talent. The investigators apply this "field-specific ability beliefs hypothesis model" to a nationwide study of academics (n = 1,820 participants) from 30 different disciplines, including representatives from both STEM and non-STEM fields. They find that field-specific ability belief scores are correlated with female representation across all 30 fields. Furthermore, there is no correlation between female representation and hours worked, field selectivity, or the degree to which the nature of the work requires practitioners to "systemize" rather than "empathize." The investigators extend and find support for their hypothesis with respect to underrepresentation of African Americans as well. The authors suggest that academics who want to diversify their fields should downplay talk of innate intellectual giftedness and highlight the importance of sustained effort.

In This Issue

Double jeopardy? Gender bias against women of color in science

Williams JC, Phillips KW, Hall EV. Tools for Change in STEM. 2015.
http://www.uchastings.edu/news/articles/2015/01/double-jeopardy-report.pdf

This report focuses on the career experiences of female scientists of color and on how women's perceptions of gender bias in science careers differs by race. The authors interview 60 women of color (20 Latina, Asian American, and black women) and survey 557 female scientists (white, black, Asian American, and Latina women). Their findings reveal unique influences on female scientists by race. Asian American women reported feeling competing stereotypical influences due to their gender and race; stereotypes hold that women are not as good at science as men, but Asians are thought to excel in the sciences. However, in this study, Asian American women reported more identification with the negative, sex stereotype than the positive, race-based assumptions. Asian American women were also more likely than other women to report backlash for stereotypically masculine behaviors such as being assertive and self-promoting and were more likely than other women to report pressures to adopt traditionally feminine roles. In contrast, black women rarely reported pressures to adopt traditionally feminine roles and had the lowest levels of backlash for self-promotion, yet they reported more feelings of isolation. Compared with women of other backgrounds, black women were also more likely to report feeling that they have to provide more evidence of competence to be considered equal to men. Latinas more often reported a risk of being seen as "angry" or "emotional" than other groups, and women of all backgrounds reported similar experiences of "maternal bias," or perceptions of difference related to motherhood status. The report concludes by reviewing approaches to organizational change to interrupt gender and race bias.

The association between confidence and accuracy among users of a mobile web platform for medical education

Theobald J, Gaglani S, Haynes MR. Ann Inter Med. 3 Mar 2015; 162(5):395-396.
http://www.ncbi.nlm.nih.gov/pubmed/25732296

This study addresses gender gaps in confidence about medical knowledge and examines the association between confidence and accuracy for men and women students. Prior research indicates that female medical students are as competent as their male peers, but report less confidence. The authors of this study add a "confidence calibration index," which allows for self-reports of confidence in answers to questions on Osmosis, a medical school training computer platform that is commonly used to provide medical students with supplemental questions to enhance their curriculum. When answering questions on Osmosis, students were prompted to report their confidence in their answer by selecting one of three options: "I'm sure," "feeling lucky," or "no clue." An automated software package was used to infer the sex of the 1,021 users (617 men and 404 women). The authors find that women are more likely to answer questions correctly, but are less likely to be confident about their answers. The authors discuss how these differences may have implications not only on medical career trajectories, but also on the treatment received by patients.

Current News and Reports

The underrepresentation of women in leadership positions at U.S. medical schools

National Student Clearinghouse snapshot report on degree attainment

Suturing the surgical gender gap

NIH issues notice of its interest in diversity

Lab life with kids

Reflections of a woman pioneer

Scientist Spotlight

Marie A. Bernard, M.D., Deputy Director, National Institute on Aging, NIH

Dr. Marie A. Bernard is deputy director of the National Institute on Aging (NIA) at NIH. As the principal advisor to the NIA Director, she is involved in all of the Institute's activities and oversees the Office of Planning, Analysis, and Evaluation and the Office of Special Populations. Dr. Bernard also devotes significant attention to supporting the pipeline of future biomedical scientists and to preparing researchers for a focus on the aging population.

In addition to serving as the deputy director of NIA, Dr. Bernard is a dedicated advocate for women of color in science. She is co-chair of the Committee on Women of Color in Biomedical Careers (the WOC committee), a subcommittee of the NIH Working Group on Women in Biomedical Careers. The WOC committee's goal is to provide support and resources to address the unique career challenges faced by women scientists of color, with attention to recruitment, mentoring, retention, and promotion. Recent WOC committee activities have included the development and maintenance of the Women of Color Research Network (WoCRn), the creation of regional chapters of the WoCRn, and a systematic focus on nominating successful women scientists of color for awards and lectureships. Dr. Bernard is thrilled to have such an active committee at NIH. "I greatly enjoy interacting with the dedicated members of the WOC committee. Their initiative makes the committee especially productive," she said.

Prior to arriving at NIH, Dr. Bernard was professor and founding chair of the Donald W. Reynolds Department of Geriatric Medicine at the University of Oklahoma College of Medicine. As chair, she moved from focusing on her own research on nutrition and function in aging populations to building research on the basic biology of aging for the department. During her tenure at the University of Oklahoma, she also served as associate chief of staff for geriatrics and extended care at the Oklahoma City Veterans Affairs Medical Center and director of the Oklahoma Geriatric Education Center.

Dr. Bernard received an A.B. from Bryn Mawr College and an M.D. from the University of Pennsylvania School of Medicine. She completed her residency in medicine at Temple University Hospital, where she also served as chief resident. She received additional training at the Geriatric Education Center of Pennsylvania, the Association of American Medical Colleges Health Services Research Institute, and the Wharton School Executive Development Program. Dr. Bernard is board certified in internal medicine and geriatric medicine.

Dr. Bernard has received numerous honors and awards. In 2014, she was awarded the Gerontological Society of America's Kent Award, which is given annually to a member of the Society "who best exemplifies the highest standards for professional leadership in gerontology." She was also awarded the Association for Gerontology in Higher Education's Clark Tibbits Award for outstanding contributions to gerontology and geriatrics education. She has been listed in "Best Doctors in America" several times. Dr. Bernard is highly respected among the scientific and medical community and has been involved in more than 90 trans–Department of Health and Human Services (HHS), trans-NIH, and national committees. She has written more than 50 articles, monographs, books, and chapters and has given over 150 research presentations.

In addition to having successful professional life, Dr. Bernard has a fulfilling personal life as a mother of two children. She is also a yoga enthusiast, saying, "Yoga is a great outlet that keeps you balanced in body and spirit." Dr. Bernard is an extraordinary scientist who serves as a role model to all women pursuing a career in science or medicine.

Current News and Reports

The underrepresentation of women in leadership positions at U.S. medical schools

Posted by Diana Lautenbreger, Claudia Raezer, and Susan Bunton in February 2015 for the Association of American Medical Colleges

The percentage of women faculty at medical schools has greatly increased in the past 2 decades, but women are significantly underrepresented in leadership positions. This report provides a snapshot of the number of women in leadership positions at U.S. medical schools. The authors conclude by suggesting that institutions strive to increase representation of women in leadership positions, arguing that doing so would result in significant organizational and productivity benefits.

Snapshot report of degree attainment, winter 2015

Posted on January 26, 2015, for the National Student Clearinghouse

This report provides information on the number of science and engineering degrees earned by men an women at all academic stages. It demonstrates that the percentage of science and engineering bachelor's degrees as a percentage of all degrees has grown for both sexes, but the rate of growth has been higher for men than women.

Suturing the surgical gap

Posted by Amy Garner and Virginia Bowbrick on February 25, 2015, for BMJ Careers

Although half of all doctors in training in the United Kingdom are female, women account for only 10 percent of surgical residents. This article reviews potential explanations for the surgical gender gap. One potential supply-side explanation is a lack of interest in surgery; only 18 percent of female medical students report wanting to be surgeons, compared with 50 percent of male medical students. A second possible reason is that women are less likely than men to be invited by senior colleagues to observe surgeries or participate in the field. Furthermore, women are less likely to be promoted within the surgical specialty, resulting in a lack of role models. Finally, the authors suggest that the assumed difficulties of combining a family life with a career in surgery may steer women away. The authors conclude that more emphasis could be placed on the benefits a surgical career can provide for both women and men.

NIH issues notice of its interest in diversity

Posted by Jennifer Plank and Lisa Evans on February 2, 2015, for the Women of Color Research Network

On January 12, 2015, NIH released an updated diversity statement describing NIH's interest in diversity.

NIH Guide Notice OD-15-053 updates the recruitment and retention information appearing in funding opportunity announcements for diversity-targeted programs. Beginning in 2004, all NIH diversity-targeted program announcements included this information to provide applicants with instructions on how to address their plan to recruit and retain individuals from underrepresented backgrounds. Since then, NIH has been monitoring its approach to diversity-targeted programs. Review of current research and reports on research workforce diversity, in addition to input from external stakeholders and NIH staff, demonstrated a need to update how diversity is addressed, so NIH released the updated notice.

OD-15-053 clarifies the definition of underrepresented populations and clarifies additional implications for women. While women are not an underrepresented group in the biomedical workforce as a whole, women—particularly women from underrepresented backgrounds—face challenges and barriers to advancement at senior faculty levels in many academic science disciplines. The new notice announces that, going forward, NIH will conduct an internal assessment of National Science Foundation (NSF) data, as well as scientific discipline or field-related data, when developing diversity programs that address faculty recruitment, appointment, retention, or advancement. If this analysis finds that women are underrepresented in the target population, Institutes, Centers, and offices may include senior faculty-level women as eligible candidates for that diversity program. The revised eligibility criteria will impact only funding opportunity announcements published after January 12, 2015.

For more information regarding the Notice of NIH's Interest on Diversity, please visit http://grants.nih.gov/grants/guide/notice-files/NOT-OD-15-053.html.

Lab life with kids

Posted by Kendall Powell on January 25, 2015, for Nature

This article discusses various techniques parents can use to balance work responsibilities and family time. The author stresses the importance of flexibility and efficient time management.

Reflections of a woman pioneer

Posted by Vijaysree Venkatraman on November 7, 2014, for Science

In this interview, Dr. Mildred "Millie" Dresselhaus, 83, discusses her notable and successful career as a physicist. Dr. Dresselhaus's dedication to science and women in STEM is an inspiration for all young women considering scientific careers.