



## NIH **U**pdates on Women in Science News for Yo**U** to Use!

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*NIH Updates on Women in Science* is brought to you by the [NIH Working Group on Women in Biomedical Careers](#). We encourage you to share this e-newsletter with colleagues.

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### Faculty Diversity in Medical Schools Compared to other Academic Environments

A recent article made available ahead of publication in the journal *DNA and Cell Biology* examined the number of tenured and tenure-track female and Black faculty members in basic science departments of research-intensive institutions. The authors found that women made up 32.1% of assistant professors in biomedical science departments, compared with 38.4% in biology departments, 27.2% in chemistry departments, and 25% in physics departments. Women were significantly less likely to be assistant professors in basic science departments of medical schools compared to other academic environments. A similar trend was observed for Black investigators: Fewer Blacks held associate and assistant professor positions in medical schools compared to other research institutions, although this

difference was not statistically significant. Interestingly, Black scientists in three of the four disciplines studied were more likely to be tenured rather than tenure-track. The discrepancy was particularly striking for chemistry departments. The authors surmised that this might reflect the preference for elite institutions to hire Black scientists who had already proven themselves elsewhere. Black women, vulnerable to both race and gender bias, made up less than 25% of the Black faculty members in the life sciences departments studied, despite earning more than 50% of the doctoral degrees received by Black scientists in biological fields. The authors advocate for institutional changes focused on issues of workplace climate and inclusion, as well as changes in NIH grants policies that support diversity in the biomedical workforce.

#### [Limitations on Diversity in Basic Science Departments](#)

## **What Role Does Demographic Inertia Play in Current Gender Differences among Scientists?**

Despite an abundance of support for increased diversity in the scientific and biomedical workforce, women and minorities remain underrepresented in scientific disciplines. A recent article in *Proceedings of the Royal Society Biological Sciences* examined the role of demographic inertia for women in academic careers in the natural and social sciences. “Demographic inertia” refers to the time-lag between changing attitudes and improved recruitment practices leading to a visible difference in workforce statistics. To perform this analysis, the authors used public data from the National Science Foundation on scientists working in the United States from 1979 to 2006. They constructed a model of the academic career pipeline from college graduation through tenured professorship, in order to investigate the relative contribution of demographic inertia. While their model supports a role for demographic inertia in hampering participation of women in later stages of the pipeline, they found that it cannot explain all apparent gender differences. Other factors, such as cultural issues and unequal recruitment practices, also affect the likelihood of women pursuing academic careers. The study identified key transition points, such as the decision to pursue certain scientific fields at the undergraduate level and the choice to continue in academia after receiving a graduate degree. The authors suggest that societal and cultural factors weigh heavily into career decisions, and thus affect the number of women pursuing academic science careers at all stages throughout the pipeline.

#### [Leaks in the Pipeline: Separating Demographic Inertia from Ongoing Gender Differences in Academia](#)

## **An Educational Intervention to Promote Institutional Change**

Increasing the number of women in academic science departments can require institutional transformation to make environments more welcoming to female recruits, and to confront the faculty behaviors that reinforce a male-dominated structure. Dr. Molly Carnes and colleagues from the University of Wisconsin-Madison considered gender bias as a modifiable behavior that could be altered through education. They developed a bias literacy workshop, which they implemented for 167 faculty members and 53 administrative staff members from 17 departments at the University of Wisconsin-Madison. The workshop content was evidence-based, interdisciplinary, and hands-on, and each workshop ended with participants individually formulating a written “commitment to change.” Feedback was overwhelmingly positive, with 74% of the participants evaluating the program as “very useful,” and the other 26% calling it “somewhat useful.” Interviews of 26 participants several months after the workshop revealed that 75% of those interviewed had either changed or planned to change their behaviors based on workshop content. The authors were thrilled with the

preliminary results of their intervention, saying, "Taken together, our success in developing and launching this workshop and the response of [science technology engineering, mathematics, and medicine] faculty leave us optimistic that such an educational intervention may be effective in promoting institutional change towards gender equity." They plan to further evaluate the intervention by examining recruitment and retention data over a two-year period following the workshop.

[Promoting Institutional Change through Bias Literacy](#)

## **New Program Increases Flexibility for NIH Intramural Postdoctoral Fellows**

The Committee on the NIH Intramural Research Program of the NIH Working Group on Women in Biomedical Careers has launched a new pilot program to increase flexibility for NIH intramural fellows who need alternative career development schedules. The "Keep the Thread" program is an accommodation and reentry program open to all NIH Intramural Research Training Award (IRTA) postdoctoral fellows, with the approval of their principle investigators (PIs) and scientific directors. Emphasizing flexibility, the program offers an array of options ranging from alternative work schedules to temporary part time work options. The goal of the Keep the Thread program is to encourage trainees to stay connected to the NIH community during times of intense personal and/or care-giving needs, in order to facilitate eventual reentry into full-time research. The program aims to recognize common roadblocks to balancing work and personal life, in order to proactively address these issues. For instance, one key feature of the Keep the Thread program is that it allows fellows working at least 40-percent of full-time to maintain full health insurance coverage, as long as they assume responsibility for a portion of the costs. Another key feature is the focus on eventual reentry into full-time research. The program encourages fellows and their PIs to work together to design a reentry plan that meets the needs of both the fellow and the laboratory. According to Dr. Michael Gottesman, NIH Deputy Director for Intramural Research and Co-Chair of the Committee on the NIH Intramural Research Program of the NIH Working Group on Women in Biomedical Careers, "Some of our fellows have pointed out the difficulty of juggling their family and personal needs with a full schedule in our laboratories and clinics. The Keep the Thread program is a menu of options that allows them to work with their supervisors to develop a personalized plan to continue their career development at work, while attending to important responsibilities at home."

[Keep the Thread Program, NIH Sourcebook](#)

## **Remembering Dr. Sally Ride, Ph.D.**

Trailblazing astronaut and role model Dr. Sally Ride passed away recently from pancreatic cancer. Sally Kristen Ride was born in 1951 in Encino, California. She excelled in school easily, and was an avid athlete and tennis player. She attended Swarthmore College for three semesters, before returning to California. She considered becoming a professional tennis player, but decided to continue her studies at Stanford University. She remained at Stanford to receive a bachelor's degree in physics and English, a master's degree in physics, and a doctorate in astrophysics. After graduation, she responded to a newspaper ad calling for astronauts, and was selected out of pool of over 1000 applicants to join the space program. In 1983, Dr. Ride took her first trip on the shuttle Challenger, becoming the first American woman and the youngest American to fly in space. She returned to space in 1984 in a second mission on Challenger. Dr. Ride retired from the space program in 1987, but continued to serve the National Aeronautics and Space Administration (NASA). She served on panels investigating the 1986 Challenger disaster and the 2003 Columbia crash, and worked on strategic

planning for NASA. After leaving the space program, Dr. Ride returned to Stanford as a fellow in the Center for International Security and Arms Control. In 1989, she moved to the University of California San Diego as a physics professor and director of the California Space Institute. Passionate about science education, and eager to recruit more girls into scientific fields, she wrote science books for children and directed middle school science outreach programs. She started a company, called Sally Ride Science, to design educational programs and inspire girls to study science, math, and technology. Dr. Ride has received numerous awards for her work as a scientist, astronaut, and educator. In a statement after her death, President Obama called her “a national hero and powerful role model.”

[American Woman Who Shattered Space Ceiling](#)

## **Women Scientists in Action – Clarisa Gracia, M.D., M.S.C.E.**

Dr. Clarisa Gracia enjoys many aspects of her job: the teaching, the mentoring, the research, and especially the clinical work.

Dr. Gracia grew up outside of Buffalo, New York, and attended Amherst College, where she received a Bachelor’s degree in Spanish. Immediately after graduation, she enrolled at the State University of New York at Buffalo School of Medicine, where she received her medical degree. According to Dr. Gracia, she found herself drawn to obstetrics and gynecology for a variety of reasons: The ability to combine surgery and medicine, the opportunity to assist with pregnancy and delivery, and to take care of the many health needs of women. She matched for residency in obstetrics and gynecology at the University of Pennsylvania, and has been there ever since. Following her residency, she pursued a fellowship in reproductive endocrinology and infertility. To gain further research training, she completed a master of science degree in clinical epidemiology and biostatistics at Penn. Dr. Gracia has been on the faculty at the Hospital of the University of Pennsylvania, University of Pennsylvania School of Medicine since 1997, where she is now an associate professor. She is also the director of the Fertility Preservation Program at Penn Fertility Care.

Dr. Gracia balances clinical work with research in reproductive aging, the menopausal transition, and oncofertility. She is particularly interested in fertility preservation for cancer patients and maximizing fertility potential for cancer survivors. In addition to studying the effect of cancer treatments on future fertility, her research team optimizes experimental protocols for oocyte and ovarian tissue cryopreservation that can allow pediatric and young adult cancer patients to maintain options for future fertility as they approach cancer treatment.

Dr. Gracia has authored over sixty peer-reviewed publications, and has received numerous awards and honors and several grants from the National Institutes of Health (NIH). Early in her career, she received a Women’s Reproductive Health Research (WRHR) K-12 mentored career development award, funded by the NIH *Eunice Kennedy Shriver* National Institute of Child Health and Human Development and the Office of Research on Women’s Health (ORWH). She credits this program with giving her protected time for research, which kick-started her career in clinical research.

Recently, Dr. Gracia presented “Emerging Technologies in Oncofertility” as part of the ORWH Women’s Health Seminar on Innovations in Reproductive Technologies.

According to Dr. Gracia, the strong mentorship she received along her professional journey has been critical to her success. She says, “My mentors have shown me that research can be exciting and rewarding. They have also allowed me to see that it is possible to combine clinical practice and clinical research, and they have been a huge part of my success in publishing and getting funding.” Dr. Gracia has two daughters, ages 7 and 9. She credits her supportive husband and a strong network of friends with helping her balance a demanding career with family life.

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