



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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NIH Women Scientist Advisors Honor Outstanding Female Scientists

In early March, the NIH Women Scientists Advisors (WSA) honored three outstanding female trainees from the NIH intramural community at their annual WSA Scholar Seminar. Anne Lai, Ph.D., of the National Institute of Environmental

Health Sciences, and Yurong Song, Ph.D., of the National Cancer Institute were selected as co-scholars. Shruti Naik of the National Institute of Allergy and Infectious Diseases was selected as runner up. Lai and Song are postdoctoral fellows, and Naik is a pre-doctoral research fellow with the NIH-University of Pennsylvania Immunology Graduate Partnership Program. Each scholar presented a short research seminar during the event, which was sponsored by WSA and the Office of Research on Women's Health. During the selection process, a panel of senior NIH women scientists reviewed abstracts by female fellows who had been previously selected as winners of the Fellows Award for Research Excellence (FARE). From this pool, they chose three WSA scholars who exemplify the outstanding talent among NIH Intramural female fellows. The fellows received their awards at the fall 2011 NIH Research festival. WSA held the seminar in March to coincide with Women's History Month.

[NIH WSA Scholar Award](#)

Women@NASA Reaches Out to Middle School Girls through Virtual Mentoring Program

[Women@NASA](#) is launching a new mentoring initiative to get girls excited about science. NASA G.I.R.L.S. (Giving Initiative and Relevance to Learning Science) will match middle school girls with NASA volunteer mentors, who may be scientists, astronauts, engineers, or accountants. The program will use Skype and other online chat programs to facilitate weekly one-on-one meetings between the girls and their mentors for a five-week relationship. All mentors will follow a shared curriculum, designed to expose girls broadly to science, and encourage them to pursue careers in science, engineering, technology, and math (STEM) fields. Mamta Patel Nagaraja, Ph.D., is the NASA project manager behind this initiative. She said, "We are excited to debut a program that could inspire many young girls around the country to learn more about STEM. More than anything, though, we hope to show the girls how these subjects can help them do what we know they dream about: To make the world a better place! We hope many of the young generation will aim to be a NASA G.I.R.L." The first round of NASA G.I.R.L.S. is scheduled to begin in July. Applications are now being accepted on the NASA G.I.R.L.S. Website.

[NASA G.I.R.L.S.](#)

NSF Examines Diversity among Scientists and Engineers Working in Industry

In a recent report, the National Center for Science and Engineering Statistics of the National Science Foundation (NSF) examined diversity in the science and engineering industry workforce. Using data from three NSF workforce surveys administered in 2008, the report described science and engineering industry employment by sex, racial and ethnic identity, and disability status. Of the 19 million scientists and engineers employed in the United States in 2008, 53% worked in industry. According to the report, white men not of Hispanic origin made up fully half of the science and engineering industry workforce. Women, blacks, Hispanics, Native Americans, Native Alaskans, and persons with disabilities were all underrepresented in industry. In contrast, Asian scientists were overrepresented, making up half of all minority science and engineering industry workers. The study found that gender and minority status also influenced the kind of work that industry scientists performed. For instance, men were more likely to work in research and development, as computer scientists, or as mathematicians, whereas women were more likely to be teachers or health care providers. Black scientists were more likely to teach than white scientists, and Asians were more likely to work in computer science or mathematics. There was no effect of disability on major work activities or occupation reported. In

addition, women and minorities were less likely than white men to hold managerial positions, although this might reflect the younger age distribution found for women and minorities compared to white men in this study.

[Diversity in Science and Engineering Employment in Industry](#)

Conditional Bias Among High School Math Teachers Affects Student Assessment

Stereotypes about women in science can be self-fulfilling, lowering confidence and undermining performance. In a recent report, Catherine Riegle-Crumb and Melissa Humphries of the University of Texas at Austin examined how gender and racial or ethnic stereotypes influence high school math teachers. Using data from the Education Longitudinal Study of 2002, they found conditional bias, where teachers' perceptions of student aptitude persist despite evidence to the contrary. Riegle-Crumb and Humphries examined students' math grades and test scores, comparing them to teachers' assessments of whether the course was too easy, too difficult, or the appropriate level for students. They found that teachers expected higher performance from white males relative to females or minority students, and were more likely to conclude that a white male's math class was too easy for him. Comparing teachers' comments with grades and test scores revealed that teachers were most likely to underestimate achievement and ability for white females. The discrepancy was most evident for less experienced teachers. The authors found that the data took an unexpected twist for black females: While black females were underrepresented in high level math classes, black females in those classes were more likely than any other group to be judged as high ability math students able to handle the challenge. The authors speculate that truly outstanding students who have demonstrated superior performance can transcend stereotypes.

[Exploring Bias in Math Teachers' Perceptions of Students' Ability by Gender and Race/Ethnicity](#)

Dr. Vivian Pinn Honored with the Dr. Bernadine Healy Award

This spring, at the 20th Annual Congress on Women's Health, Dr. Vivian W. Pinn received the inaugural Dr. Bernadine Healy Award for Visionary Leadership in Women's Health. Dr. Pinn was the first full-time director of the NIH Office of Research on Women's Health, a position she held for more than 20 years until her retirement in 2011. In an interview with [WUSA9](#), she said, "I was so surprised and honored because Bernadine Healy was a real star to me and the one who really helped make this part of my career possible." Bernadine Healy, a physician and cardiologist, was the first woman to serve as NIH director, and was a strong advocate for women's health. She also served as president of the Red Cross from 1999 to 2001. Dr. Healy passed away in 2011. This award was presented to Dr. Pinn at the Congress' 20th Anniversary Gala, which took place at the National Museum of Women in the Arts in Washington, DC.

[Two Trailblazers in Science and Medicine are Being Recognized During Women's History Month.](#)

Women Scientists in Action: Angela Kashuba, PharmD

Angela Kashuba, PharmD, is a rising star in the HIV research world. A full professor of pharmacy at the University of North Carolina (UNC) Eshelman School of Pharmacy, she works closely with a team of 25 researchers and clinicians to study antiretroviral medications used in the treatment and prevention of HIV infection. Dr. Kashuba also serves as

director of the UNC Center for AIDS Research Clinical Pharmacology and Analytical Chemistry Core, co-director of the Clinical Pharmacology Fellowship Program, vice chair for Research and Graduate Education in the Division of Pharmacotherapy and Experimental Therapeutics, and Chair of the HIV Pharmacology Best Practices Working Group, associated with the National Institute of Allergy and Infectious Diseases (NIAID), Division of AIDS.

After receiving her Bachelor of Science degree in pharmacy from the University of Toronto, Dr. Kashuba trained as a resident at Women's College Hospital in Toronto. Following her residency, she practiced as a critical care pharmacist. Drawn to research, she pursued graduate studies at the State University of New York at Buffalo, where she received a Doctor of Pharmacy (PharmD) degree. A clinical pharmacology fellowship at Bassett Healthcare in Cooperstown, NY, followed. During this fellowship, Dr. Kashuba became interested in the pharmacology of HIV drugs. She joined the UNC Eshelman School of Pharmacy as an assistant professor in the Division of Pharmacotherapy and Experimental Therapeutics, and was promoted to full professor in 2011. Dr. Kashuba has published one hundred and twenty peer-reviewed articles and sixteen book chapters; she has received numerous awards and honors, and multiple large grants to support her research.

As an assistant professor at UNC, Dr. Kashuba was selected as a faculty scholar for the UNC Building Interdisciplinary Research Careers in Women's Health (BIRCWH) mentored research grant. The NIH Office of Research on Women's Health and the *Eunice Kennedy Shriver* National Institute of Child Health & Development co-sponsor the BIRCWH program. This grant uses the NIH Mentored Research Scientist Development Program Award (K12) mechanism to support career development of junior faculty members pursuing basic, clinical or translational research. Dr. Kashuba credits the BIRCWH program with transforming her career by providing protected time for research, grantsmanship training, and access to exceptional mentors.

Dr. Kashuba's research team focuses on several aspects of HIV drug development and pharmacology. Their methods range from clinical trials in healthy volunteers to pre-clinical animal models. Because a mixture of medications is used to treat HIV infection, drug interactions are a concern. Dr. Kashuba and her collaborators optimized a method they call "phenotyping" that measures rates of drug metabolism over time in volunteers who take a single drug on its own and in combination with a second, experimental medication. They also study pharmacology issues in special populations, including HIV-infected pregnant women and newborns. In addition, Dr. Kashuba's team explores the use of HIV treatment drugs as tools of prevention.

One major success of her research group has been the development of mass spectrometry techniques that accurately measure concentrations of antiretroviral drugs in mucosal tissues vulnerable to HIV infection. They found that drug levels accumulating in the tissue could differ dramatically from drug concentrations in the bloodstream. Another finding involved sex differences in the drug concentrations that accumulate after treatment. Through these studies, Dr. Kashuba's group optimizes treatment and prevention of HIV in men and women. Other projects in the laboratory focus on optimizing the use of antiretrovirals during pregnancy and breastfeeding to prevent HIV transmission from mother-to-baby safely and effectively.

Dr. Kashuba is the mother of two young children. Her advice for young scientists starting their careers is to strive for overall balance rather than absolute balance on a day-to-day basis. "Sometimes work priorities must be your focus, sometimes your family must your focus, sometimes your community must be your focus, and sometimes you must focus on yourself," she says. Her second piece of advice is to evaluate strategically the opportunities that present themselves and carefully choose which ones to pursue. She says, "I've learned that it's very important to critically evaluate the opportunities that come your way, to jump at those that are really meaningful, and to pass on those that aren't."

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