

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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Did you miss the recent Career Development and BIRCWH Conferences?

On June 6-7, 2016, the NIH Office of Research on Women's Health (ORWH) held its Conference on Evidence-Based Innovations to Support Women in Biomedical Research Careers and its 2016 Building Interdisciplinary Research Careers in Women's Health (BIRCWH) Meeting, respectively.

The Conference on Evidence-Based Innovations to Support Women in Biomedical Research Careers, held on June 6, honored ORWH's 25th Anniversary and featured the inaugural Ruth L. Kirschstein lecture and included presentations and panel discussions with members of the Research Partnership on Women in Biomedical Careers ([Full Agenda - PDF](#)).

The Building Interdisciplinary Research Careers in Women's Health Meeting, held on June 7, is an annual meeting to convene the BIRCWH scholars and principal investigators from academic institutions from around the country. The meeting consisted of plenary sessions, three exciting oral presentations by BIRCWH scholars, an afternoon mentoring session with scientific staff, and a poster session.



NIH Working Group on Women in Biomedical Careers Co-Chairs (left to right): NIH Director Francis Collins, M.D., Ph.D., and Associate Director for Research on Women's Health Janine Clayton, M.D.

For institutions interested in applying for the BIRCWH program, please visit <http://grants.nih.gov/grants/guide/rfa-files/RFA-OD-16-013.html>.

The videocast links are available online now:

- Conference on Evidence-Based Interventions to Support Women in Biomedical Research Careers
- 2016 Building Interdisciplinary Research Careers in Women's Health Meeting



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Conference on Evidence-Based Innovations to Support Women in Biomedical Research Careers

2016 Building Interdisciplinary Research Careers in Women's Health Meeting

Recent Research and Perspectives

Trends and comparison of female first authorship in high impact medical journals: observational study (1994–2014)

Filardo, G., da Graca, B., Sass, D. M., Pollock, B. D., Smith, E. B., & Martinez, M. A. (2016). *BMJ*, 352, i847.

<http://www.ncbi.nlm.nih.gov/pubmed/26935100>

The leading general medicine journals publish more articles with female first authors than they did 20 years ago, but in recent years this trend has reached a plateau, with troubling implications for women's ability to help shape the medical research agenda and, ultimately, future standards of care. Filardo et al. analyzed the rates at which the six highest-impact journals in general medicine published articles with female first authors over a 20-year period (nearly 4,000 articles). The proportion rose from 27 percent in 1994 to 37 percent in 2014, although the trend was not consistent across journals. Examining differences among journals in such factors as submission rates, publication success, and editorial board composition might help identify ways to increase women's representation among first authors. Intriguingly, the journals that published female authors at the highest rates in the final five years of the analysis all had female editors-in-chief.

Student evaluation of faculty physicians: gender differences in teaching evaluations

Morgan, H. K., Purkiss, J. A., Porter, A. C., Lypson, M. L., Christner, J. G., Grum, C. M., & Hammoud, M. M. (2016). *Journal of Women's Health*, 25(5), 453–456.

<http://www.ncbi.nlm.nih.gov/pubmed/26974476>

Disparities in medical students' evaluation of female and male faculty physicians could negatively affect women's pay, selection for awards and recognition, and career trajectory. Morgan et al. analyzed more than 14,000 evaluations completed across four required clinical rotations at a single medical school between 2008 and 2012. Average evaluation scores were lower among the female faculty than among the male faculty, regardless of the sex of the student evaluator. The gap was largest among faculty in the surgery rotation, followed by pediatrics, obstetrics and gynecology, and internal medicine. Given the rising importance of evaluations in decisions about promotion, it might be worth considering additional faculty development opportunities for female faculty to help alleviate the promotion gap between men and women.

Recent Research and Perspectives

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Student evaluation of faculty physicians: gender differences in teaching evaluations

STEM training and early career outcomes of female and male graduate students: evidence from UMETRICS data linked to the 2010 census

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Institutional Spotlight

University of California, San Diego

STEM training and early career outcomes of female and male graduate students: evidence from UMETRICS data linked to the 2010 census

Buffington, C., Cerf, B., Jones, C., & Weinberg, B. A. (2016). *American Economic Review*, 106(5), 333–338.

<https://www.aeaweb.org/articles?id=10.1257/aer.p20161124>

How does the government's \$38 billion investment in university-based science, technology, engineering, and math (STEM) research contribute to female and male graduates' participation in funded research and wages? Buffington et al. analyzed university payroll data for more than 1,200 people employed under federal research awards and linked this data to W-2 forms and census information—including gender, race, and marital status. In looking at training settings before graduation, they found that female graduate students tend to be on awards with smaller teams, be employed on fewer awards overall, and appear on university payrolls for a shorter time before graduation—but the factors contributing to these differences are not clear and could be advantageous or disadvantageous. When graduates were one year out of school, the researchers documented differences in where female and male graduates were employed (academia, government, or industry) and in compensation. After accounting for field of study, the gap in wages was 11 percent. However, factoring in partnership status and the presence of children virtually eliminated the difference.

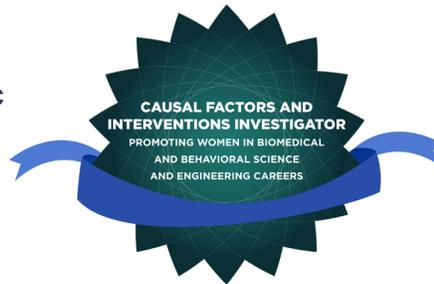
Gender differences in publication productivity, academic rank, and career duration among U.S. academic gastroenterology faculty

Diamond, S. J., Thomas, C. R., Jr., Desai S., Holliday, E. B., Jagsi, R., Schmitt, C., & Enestvedt, B. K. (2016).

Academic Medicine. Advance online publication.

<http://www.ncbi.nlm.nih.gov/pubmed/27144993>

Despite barriers to academic advancement for female physicians in academic medicine, findings from an examination of research productivity suggest the gender gap may be diminishing—at least in one specialty. Diamond et al. examined the career length and productivity of faculty at 114 U.S. academic programs in gastroenterology, a traditionally male-dominated specialty. Only 24 percent of the faculty were women. On average, men held a higher academic rank, had more publications, and published articles with higher impact. However, these results were attributable to the longer careers of the male faculty (20 years, on average, compared with 11 years). The results showed no difference in publication impact among senior faculty, and publication quality also did not differ when career duration was taken into account. In particular, the number and impact of publications were not significantly different for women and men who had joined the field in the past 10 years, suggesting a narrowing of the gap.



Current News and Reports

Global Research Council: Commit to equity for women researchers

If there's only one woman in your candidate pools, there's statistically no chance she'll be hired

A recipe for change: Creating a more inclusive academy

Medscape Physician Compensation Report 2016

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Improving the Health of Women in the United States: Workshop Summary

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Spotlights

Scientist Spotlights



Patricia Grady, Ph.D.

Patricia Grady, Ph.D., has a master's degree in nursing and a doctorate in physiology from the University of Maryland. Her scientific research has been primarily in stroke, with emphasis on arterial stenosis and cerebral ischemia. In 1988, Dr. Grady joined NIH as an administrator in the National Institute of Neurological Disorders and Stroke, focusing on stroke and brain imaging. Since 1995, she has been...[\(read more\)](#)



Marilyn Huestis, Ph.D.

Chief of the Chemistry and Drug Metabolism Section of the National Institute on Drug Abuse since 1998, Marilyn Huestis, Ph.D., is a toxicologist studying the effects of illicit drugs on the body and brain and in utero. Her doctoral research focused on cannabis (marijuana), and she went on to study a wide range of illicit drugs, including cocaine, methamphetamine, ecstasy, and heroin...[\(read more\)](#)



Ana María López, M.D., M.P.H., FACP

Ana María López, M.D., M.P.H., FACP, entered medicine to take care of people. Her career trajectory shows continuous movement toward not only doing that better but also making better care more accessible for more people. Following undergraduate study at Bryn Mawr College, Dr. López earned her M.D. at the Sidney Kimmel Medical College of Thomas Jefferson University and went on to a residency in internal...[\(read more\)](#)



Karen E. Nelson, Ph.D.

Karen E. Nelson, Ph.D., is the president of the J. Craig Venter Institute and the head of the microbiome program at Human Longevity, Inc. She received her undergraduate degree from the University of the West Indies and her Ph.D. from Cornell University. Dr. Nelson has authored or co-authored more than 150 peer-reviewed publications and edited three books, and she is currently editor of...[\(read more\)](#)



Martha Somerman, D.D.S., Ph.D.

With a distinguished career in academic and clinical dentistry and research, Martha Somerman, D.D.S., Ph.D., was appointed director of the National Institute of Dental and Craniofacial Research (NIDCR) in 2011. Even before becoming director of NIDCR, Dr. Somerman had a long history with NIH and NIDCR...[\(read more\)](#)

Institutional Spotlight

University of California, San Diego

The University of California, San Diego (UCSD), has developed numerous programs to fulfill its mission as a “student-centered, research-focused, service-oriented public institution that provides opportunity for all.” The university has implemented a number of unique programs that promote the recruitment, retention, and development of girls and women at all stages of the STEM pipeline.

UCSD Extension is the university’s professional education and public service division, aimed at promoting the education and economy of the community. Assistant Dean Dr. Edward Abeyta, recognizing a need to better engage with the community, created the UCSD Pre-Collegiate and Career Preparation Programs. These programs have self-sustaining budgets: Nearly 40 percent of funds received from sponsors or student fees are used to create scholarships that are redistributed to the community. In June 2016, UCSD Extension began offering 1-week summer camps to engage girls in middle and high school in innovative courses grounded in technology and STEM (e.g., mobile app development, building a national disaster response). UCSD Extension further reaches into its community through the STE[+a]M channel, a fun way to disseminate science to a wider audience.

Dr. Abeyta established the channel after recognizing that Leonardo da Vinci’s integration of art and science/engineering offered a vision of how art integration into STEM is more powerful than STEM alone. With 4 million to 5 million viewers per month, the STE[+a]M channel is proving to be a valuable portal for both showcasing the versatility of STEM and highlighting accomplished women in biotechnology.

UCSD is further expanding accessible and affordable learning through its recent partnership with Sally Ride Science (SRS). Sally Ride and Tam O’Shaughnessy, who were professors at UCSD, recognized the lack of female role models in academia, media, and textbooks. Dr. O’Shaughnessy said this led to the SRS mission to “engage kids, with an emphasis on girls; and to perturb the balance across the country so overall the general population appreciates that girls appreciate science, math, and technology just as much as boys do and try to make the situation more equitable.” SRS has produced engaging, challenging books for young people, engaged with thousands of students all over the world, and trained teachers who often did not have a background in STEM. With UCSD, SRS found a supportive and strategic partner to better interact with the San Diego community and focus on children in elementary and middle school. This summer, SRS is launching a Junior Academy, a hands-on technology and engineering program designed for girls entering sixth through ninth grade. Furthermore, SRS has developed two rigorous teacher-training programs (teachers receive credit through UCSD Extension). One program focuses on how to engage kids in STEM, and the other uses research-based techniques for how to effectively teach STEM. The SRS dialogue series “The Constellation: Sally Ride Science Conversations” is now featured on the STE[+a]M channel, highlighting the careers and achievements of female scientists and engineers.



UCSD has also used multiple strategies to recruit and retain female faculty in the health sciences. Through the Institutional Research and Academic Career Development Awards (IRACDA) Program, UCSD aims to support women and underrepresented minority scholars who will pursue independent research and teaching careers in academic institutions. So far, the program, which is primarily funded through NIH/NIGMS (National Institute of General Medical Sciences) K12 grants to support 12 scholars, has trained 53 postdoctoral scholars; 62 percent are women, and 64 percent have obtained faculty positions at colleges and universities across the country, including UCSD. Dr. JoAnn Trejo, who directs the IRACDA Program, said it is unique in offering a strong, mentored postdoctoral research-intensive experience combined with training in academic skills and teaching. Fellows develop a research project with biomedical relevance and engage in forums that enhance their scientific development and oral presentations skills. Fellows receive scientific writing training through peer-led writing groups and a 6-week grant-writing course. They also practice course redesign and new course design and are offered workshops and courses on scientific teaching principles to enhance student learning. Each year, fellows attend 18 professional development meetings designed to provide training in job searches, networking, negotiations, communication and presentations, research ethics, leadership, time and lab management, and cultural competence. Also, program activities are devoted to effective mentoring training, with an emphasis

on mentoring students from diverse backgrounds. These professional development meetings help build camaraderie, trust, and friendship, providing critical support for fellows. The program stays in close contact with alumni, monitoring and tracking their career development. Alumni are invited annually to speak with current fellows and provide suggestions and advice about the training program.

The UCSD National Center of Leadership in Academic Medicine (NCLAM), a 7-month training program, focuses on women who are junior faculty and features faculty development workshops, academic strategic career planning, individual academic performance counseling, and senior/junior faculty mentoring relationships based on each junior member's academic career goals (e.g., writing an R01 grant, developing interdisciplinary projects, developing a clinical or research focus). Between 1999 and 2015, 288 junior faculty have graduated from the NCLAM program; more than half are women, and a majority have remained in academic medicine.

UCSD's commitment to creating engaging environments is evident through the school's strategic approaches, which collectively target multiple outposts and demographics. Taken together, these programs are successfully celebrating, highlighting, motivating, and supporting the next generation of women in STEM.



UCSD Health Sciences National Centers of Leadership in Academic Medicine (NCLAM) women faculty participants. Pictured from left to right: Camille Nebeker, Ed.D., M.S. (family medicine and public health), Chi-Hua Chen, Ph.D. (radiology), JoAnn Trejo, Ph.D., M.B.A. (pharmacology), Irena Dragojevic, Ph.D. (radiation medicine and applied science), Heidi Cook-Andersen, M.D., Ph.D. (reproductive medicine), Leah Kern, M.D., M.P.H. (pediatrics), Pei Betty Shih, Ph.D. (psychiatry), Sara Gianella-Weibel, M.D. (medicine, infectious diseases), and Taraneh Paravar, M.D. (dermatology)

Did you know?

NIH recently revised the policy on parental leave for Ruth L. Kirschstein National Research Service Awards (NRSA) grantees. This policy affects recipients of T32, T34, T35, T90, F30, F31, F32, and F33 grants. To learn more, please visit <http://grants.nih.gov/grants/guide/notice-files/NOT-OD-16-105.html>.

Current News and Reports

Global Research Council: Commit to equity for women researchers

Written by France A. Córdova for *Nature* on June 22, 2016

Nearly 50 national research agency principals attending a meeting of the Global Research Council in May adopted a statement in support of promoting women's participation and leadership in research. It includes a commitment to collect and share data reflecting relevant trends so progress can be tracked and compared across countries and recommends actions such as recognizing unconscious bias, conducting diversity training, establishing pathways to leadership, and putting family-friendly policies in place.

If there's only one woman in your candidate pools, there's statistically no chance she'll be hired

Written by Stefanie K. Johnson, David R. Hekman, and Elsa T. Chan for *Harvard Business Review* on April 26, 2016

One crucial factor in overcoming unconscious bias so that diversity initiatives succeed is having at least two people of an underrepresented group in the finalist pool for a job position. One in a series of three similar studies showed that when there were at least two women in the finalist pool, the odds that a woman was hired were nearly 80 times greater than if there was only one woman in the pool—even across various finalist pool sizes. The impact of this approach was even greater with regard to race: The hiring odds were 194 times greater when at least two minority candidates were in the finalist pool. The presence of two or more finalists may alter decision-makers' perception of whether a candidate fits the status quo for a given position.

A recipe for change: Creating a more inclusive academy

Written by Beth Mitchneck, Jessi L. Smith, and Melissa Latimer for *Science* on April 8, 2016

Removing barriers to the participation of women and minorities in academic science, technology, engineering, and math (STEM) can be addressed with a six-point plan: Make the academic community aware of the extent of research about bias, ensure accountability among institutional leaders, work with outside institutions, look closely at the department-level climate, collect and share data transparently, and pay close attention to the flexibility and inclusiveness of work-life and other policies.

Medscape Physician Compensation Report 2016

Written by Carol Peckham for *Medscape* on April 1, 2016

The latest salary data from almost 20,000 physicians across 26 specialties documents a continuing gender gap in pay. On the whole, female physicians make 24 percent less than their male peers. Although the earnings of female primary care physicians and specialists rose faster between 2012 and 2016 than those of their male counterparts, significant gaps remained. Of note, obstetrics and gynecology and pediatrics are the specialties with the highest percentage of women, and neither is among the most highly compensated.

More Info from ORWH

Meet ORWH's New Deputy Director!

Elizabeth Spencer joined ORWH in June as the new Deputy Director. Most recently, Ms. Spencer was the Human Resources Officer and Director of Human Resources Operations for the Federal Emergency Management Agency (FEMA), supporting 14,000 FEMA employees in disaster and office settings across the country and in U.S. territories. Before joining FEMA, Ms. Spencer served as the Deputy Director for Human Resources at the National Aeronautics and Space Administration (NASA) headquarters. Early in her career, she was the chief operating officer of First Assist, a health care staffing firm; the head of physician development at the University of Maryland Medical Center Midtown Campus (formerly Maryland General Hospital), a part of the University of Maryland Medical System; and the director of physician development for Capitol Emergency Associates. Ms. Spencer is a graduate of the University of Maryland School of Nursing. She is excited to use the administrative and management skills that she has gained over the years to help advance ORWH's mission.

What's New in the Director's Corner?

Check out the new Director's Corner posts from Dr. Janine Clayton:

- [Using Science to Achieve Workforce Diversity](#)
- [Women's Health Research: 25 Years of Progress \(and Counting\)](#)

Improving the Health of Women in the United States: Workshop Summary

National Academies of Sciences, Engineering, and Medicine (2016). Washington, DC: The National Academies Press.
<http://www.nap.edu/23441>

In the Fall of 2015, ORWH held a workshop to highlight a challenge—that the health of women in the United States is significantly worse than the health of women in 16 peer countries. The workshop reached across sectors, disciplines, and areas of expertise to highlight what is known and what needs to be known. The report is now freely available online.