

Office of Research on Women's Health

Science Series

2008

Interdisciplinary Research and Career Development Programs in Women's Health

Initiatives To Promote Sex and Gender Research and Career Development

Interdisciplinary Programs

The scale and complexity of biomedical research increasingly demands that scientists move beyond the confines of their own discipline and explore new organizational models for team science. Interdisciplinary approaches integrate knowledge from multiple perspectives, resulting in more comprehensive definitions of underlying biological processes. Research on women's health and sex and gender factors in health and disease can be enhanced by the synergy that comes from exchanging ideas between diverse interdisciplinary fields. Advances in our understanding of sex and gender factors can serve to reduce remaining gaps in knowledge of health and disease, through scientific progress not only in biological, biophysical, social science, and behavioral disciplines, but also in disciplines like anthropology, bioinformatics, computer science, chemistry, dentistry, engineering, mathematics, medicine, nursing, pharmacology, and other related fields.

Believing in the value of collaborative endeavors, the Office of Research on Women's Health (ORWH) developed two interdisciplinary programs to support interdisciplinary research centers in women's health and to advance the careers of young investigators in interdisciplinary research.

Building Interdisciplinary Research Careers in Women's Health

To provide for the career development of researchers in women's health, the ORWH developed and implemented

the Building Interdisciplinary Research Centers in Women's Health (BIRCWH) program utilizing the Mentored Research Scientist Development Program Award (K12). The BIRCWH program, which began in 2000, promotes the mentoring of junior faculty by established investigators who have a commitment to fostering interdisciplinary approaches to research in women's health and sex and gender factors, and provides support for junior faculty to transition into independent researchers. The ORWH leads the BIRCWH initiative, which is administered by the *Eunice Kennedy Shriver* National Institute on Child Health and Human Development and is cosponsored by several National Institutes of Health (NIH) Institutes, the NIH Office of Dietary Supplements, and the Agency for Healthcare Research and Quality.

In addition to learning skills to become independent investigators and mentors, BIRCWH scholars perform interdisciplinary research in basic, clinical, translational, behavioral, or health services research in areas relevant to women's health. To date, this program has resulted in a cadre of more than 325 scholars, approximately 75 percent of whom are female, who can further advance and perpetuate an interdisciplinary team approach to scientific research and who have secured positions and advanced scientific awards in the area of women's health research. BIRCWH scholar research areas include mental health, diabetes, cardiovascular health, neurological disorders, trauma, health disparities, reproductive health, menopausal hormone therapy, substance abuse, cancer, and arthritis and musculoskeletal health. An initial evaluation from the

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University of Michigan Center indicates that the majority of their scholars achieve independent research funding after completing the mentored program.¹ An evaluation of the overall program is in progress.

¹ Domino, S. E., Smith, Y. R., Johnson, T. R. (2007). Opportunities and challenges of interdisciplinary research career development: Implementation of a women's health research training program. *Journal of Women's Health (Larchmt)*, 16, 256.

Specialized Centers of Research on Sex and Gender Factors Affecting Women's Health

The Specialized Centers of Research (SCOR) on Sex and Gender Factors Affecting Women's Health program was designed and implemented by the ORWH in 2001 and provides new opportunities for interdisciplinary approaches to advancing studies on how sex and gender factors affect women's health. Research integrating knowledge from disparate sources and research teams with multiple areas of scientific expertise (for example, physicians, dentists, nurses, pharmacologists, epidemiologists, biotechnologists, social scientists, chemists, physicists, bioengineers, and geneticists) is needed to advance our knowledge of

women's health. Each SCOR has developed a research agenda bridging basic, clinical, and translational research on sex and gender factors underlying a priority health issue to which interdisciplinary efforts are being directed. SCOR research areas include depression, fetal drug exposure during pregnancy, mental health, metabolic disorders, substance abuse, reproductive health, pain disorders such as irritable bowel disorder and interstitial cystitis, osteoporosis, steroids and sleep, and urinary tract health, including incontinence. Many collaborations (that might not have occurred otherwise) have been initiated across the SCOR programs, including conferences and the sharing of resources, scientific progress, and publications. The SCOR program has inspired interdisciplinary institutional initiatives, such as the new Center for Women's Infectious Disease Research (cWIDR) at Washington University in St. Louis.²

The SCOR program is administered by the National Institute on Arthritis and Musculoskeletal and Skin Diseases and is cosponsored by several NIH Institutes and the U.S. Food and Drug Administration.

² Hultgren, S., Elam, J. (2008). Infectious disease and women's health. *Nature Reviews. Microbiology*, 6, 254.

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BIRCWH I (RFA-OD-99-008), 12 awards: Baylor College of Medicine, University of Alabama at Birmingham, University of California–Los Angeles, University of California–San Francisco, University of Connecticut Health Center, University of Kentucky, University of Medicine and Dentistry of New Jersey, University of Michigan–Ann Arbor, University of North Carolina–Chapel Hill, Virginia Commonwealth University, Washington University, and Yale University.

BIRCWH II (RFA-OD-02-001), 12 awards: Boston Medical Center, Brown University, Duke University, Oregon Health & Science University, State University of New York–Downstate, Stanford University, Tulane University, University of Maryland, University of Pennsylvania, University of Pittsburgh, University of Utah, and Vanderbilt University.

BIRCWH III (RFA-OD-05-002), 11 awards: Harvard University, University of California–Davis, University of California–Los Angeles, University of California–San Francisco, University of Cincinnati, University of Kansas Medical Center, University of Kentucky Medical Center, University of Michigan, University of North Carolina at Chapel Hill, University of Texas Medical Branch, and Washington University.

BIRCWH IV (RFA-OD-06-004), 15 awards: Boston University Medical Campus, Duke University, Magee-Womens Health Corporation, Medical University of South Carolina, Northwestern University, Oregon Health & Science University, Pennsylvania State University Hershey Medical Center, Tulane University, University of Colorado–Denver, University of Illinois–Chicago, University of Maryland Baltimore, University of Minnesota–Twin Cities, University of Wisconsin–Madison, Vanderbilt University, and Virginia Commonwealth University.

SCOR I (RFA-OD-02-002), 11 awards: Emory University, Medical University of South Carolina, Northwestern University, University of California–Los Angeles, University of California–San Francisco, University of Maryland, University of Michigan–Ann Arbor, University of Pittsburgh, University of Washington, Washington University, and Yale University.

SCOR II (RFA-OD-06-003), 11 awards: Brigham and Women's Hospital, Medical University of South Carolina, Northwestern University, University of California–Los Angeles, University of California–San Francisco, University of Chicago, University of Miami, University of Michigan–Ann Arbor, University of Missouri–Kansas City, Washington University, and Yale University.

For current information about interdisciplinary research and career development programs in women's health, visit the NIH Office of Research on Women's Health Web site at <http://orwh.od.nih.gov/>.

NIH Publication No. 08-6360

