

ORWH CAREER DEVELOPMENT PROGRAMS FOR FY 2003

A. ACHIEVING EXCELLENCE IN SCIENCE AXXS 2002 – Report of the 2002 Conference

In July 2002, a meeting was sponsored by ORWH and the National Academy of Science to examine the role clinical societies can play in the advancement of women's careers in science. A report from this meeting will be published shortly.

Recommendations from the Working Groups

Needs and solutions

Infrastructure (time, social support, administrative)/flexibility -- both genders and
Mentoring at all levels: institutes, societies, national/societal.

Role models/exhaustion, fiscal models, leadership at all three levels (institutional, societal, and national)

Congressional/societal interest – ‘overview societies’

A New Way of Working - What Can Be Done

The following are suggestions were developed from the workgroups on how to improve the status of women in science: lobbying, mentoring programs, debt forgiveness, reentry grants, career development, grant writing workshops, and balancing life and professional development. The criteria for promotion and tenure should be assessed. Criteria for selecting a mentor should be defined, there should be an evaluation of the mentor, and rewards provided to good mentors.

What is different about the clinical research environment?

Skill sets, mentoring, the road to independence and the NIH are all important attributes of the unique clinical research environment.

Societies as agents for the development and advancement of clinical investigators

The workgroups agreed that it is important to think strategically, keep the current culture/mindset in mind and be willing/able to change the current culture/mindset. Success will be evident in academic appointments and scholarship (collaborative and clinical). Thinking strategically must lead to acting strategically. To do this it is important to obtain and disseminate data through surveys reflecting the membership (leadership, staff, salary) and to realize and track the recruitment versus retention costs.

What is needed are models (lists, programs, practices) for career development (financial, academic, and scholarship), mentoring (awards, national recognition), and recruiting and advancing (awards and grants). It was suggested that it would be important to facilitate the use of mentorship programs and establish a MENTORSHIP AWARD (cash award) and provide a mechanism for interaction between mid and senior-level women - maintain an ongoing network. Tracking membership on editorial board to reflect membership and societal interaction and collaboration will be key to the success of women in science.

B. WOMEN'S REPRODUCTIVE HEALTH RESEARCH CAREER DEVELOPMENT CENTERS

**NICHD
\$500,000**

ORWH joined NICHD in the development of a Request For Applications (RFA) to invite institutional career award applications for Women's Reproductive Health Research Career Development Centers in FYs 98 and 99. These Centers support research career development of obstetrician-gynecologists, known as Women's Reproductive Health Research (WRHR) scholars, who recently completed postgraduate clinical training, and were commencing basic, translational and/or clinical research relevant to women's health. The goal of this initiative is to promote the performance of research on women's reproductive health and transfer findings that will benefit the health of women.

In FY 98 12 Centers were funded: Magee-Women's Hospital Pittsburgh, Oregon Health Sciences University, Stanford University, University of California, San Francisco, University of California, Los Angeles, University of Cincinnati, University of Pennsylvania, University of Texas Health Sciences Center/Houston, University of Texas Medical Branch/Galveston, University of Washington, Wake Forest University School of Medicine, and Wayne State University Detroit. In FY 99, eight Centers were added: Brigham and Women's Hospital, Case Western Reserve University, Columbia University, University of Alabama at Birmingham, University of California, San Diego, University of Colorado, University of Rochester, and University of Utah. In FY03 the first round of WRHRs ended. An RFA for a third round of WRHRs was developed (RFA HD 030-020) with funding to start in FY 2004.

The overall goal of the program is to bridge clinical training with research independence through a mentored research experience leading to an independent scientific career addressing women's reproductive health concerns. The emphasis is on research relevant to obstetrics and gynecology and/or its subspecialties: maternal-fetal medicine, gynecologic oncology, and reproductive endocrinology and infertility. Related fields such as adolescent gynecology, urogynecology, and the reproductive health of women with disabilities are also included. Mentors with established research programs covering a broad range of basic and applied biomedical and biobehavioral science related to obstetrics and gynecology, together with collaborating departments, form the intellectual and technical base for mentoring junior faculty accepted into the program.

There are 20 WRHR Centers located in Departments of Obstetrics and Gynecology throughout the nation with the primary goal of increasing the research capacity of clinically trained obstetrician-gynecologists. Since inception, approximately 86 junior faculty have entered the career development program. The long-term goal of this program is to develop a well-qualified cadre of academic obstetrician-gynecologist investigators who will help strengthen institutional research capacity and meet the need for highly skilled physician-scientists with a clinical background who can address the increasing research opportunities in women's reproductive health.

WRHR Scholars' Research Symposium: The symposium was held on March 31-April 1, 2003 at the Lister Hill Auditorium on the NIH campus. The purpose of the *WRHR Scholars'*

Research Symposium was to give the scholars an opportunity to present their research through oral and poster presentations. The meeting brought together junior and senior investigators to share current knowledge, recent findings, and explore research directions. Selected scholars presented their research and invited guest speakers gave formal presentations on research topics of interest to WRHR scholars. Forty-five scholars presented 20 oral and 22 poster presentations representing research in general ob/gyn, reproductive endocrinology and infertility, maternal-fetal-medicine, gynecologic-oncology, and urogynecology. During poster sessions, the scholars had an opportunity to network and present their research to interested parties. The audience consisted of approximately 100 WRHR scholars, mentors, PIs, PDs, clinicians, investigators, and NIH staff. The meeting exposed the scholars to diverse components of research in reproductive medicine and offered opportunities to network and discuss research opportunities focusing on obstetrics and gynecology, as well as its subspecialties.

WRHR Directors' Meeting: The annual *WRHR Directors' Meeting* was convened on May 16, 2003 at the Bethesda Holiday Inn. Twenty-three PIs and PDs provided an update of their respective programs, discussed the success of the WRHR Scholars' Research Symposium, and commented on the release of the WRHR RFA and its importance to the ongoing support and career development of ob/gyn physician scientists.

Women's Reproductive Health Research Career Development Centers Program Announcement (RFA HD-03-020): This RFA represents an expansion of ongoing research efforts to increase the numbers of ob/gyn physician scientists and support the research career development of junior faculty. Moreover, it reflects the NICHD research agenda for expanding the scope of women's reproductive health research. This initiative continues and expands the scientific objectives represented in previous WRHR RFA announcements (RFA HD-98-004 and RFA HD-99-001). The NIH Office of Research on Women's Health is cosponsoring this ongoing career development initiative with NICHD. Twenty-five applications from medical schools nationwide were received in July 2003 in response to this announcement. A Special Emphasis Panel will be assembled to review applications in October 2003.

Future Plans: *The WRHR Program: Transition to Independence for Physician Scientists Workshop* scheduled for October 27, 2003 is planned to bring together a small group of leaders in the academic, professional and scientific communities, WRHR scholars and NIH staff to explore future research career opportunities for the cadre of recently trained ob/gyn physician scientists. Challenges and opportunities for physician scientists will be discussed as well as opportunities for future directions in training and career development of ob/gyn trained junior investigators.

C. ORWH/OFFICE OF EDUCATION JOINT PROGRAMS

\$97,700

The ORWH provides essential support to the Office of Education for the design and implementation of programs that foster the professional development of NIH trainees, in particular the postdoctoral fellows in both clinical and basic research programs across all

institutes and centers. During FY 2003, ORWH supported programs were again implemented to enhance the training experiences of participants in the NIH Postbaccalaureate Intramural Research Training (IRTA) program, as well. All attendance numbers are approximate.

I. PROGRAMS FOR POSTDOCTORAL TRAINEES

Survival Skills Workshops

In 2003, the OE planned and implemented a broad-based educational program designed to provide NIH postdoctoral fellows with the requisite skills necessary to compete for and sustain careers in biomedical research and science-related occupations:

CV/Resume Writing-February 10, 2003

This workshop focused on the development of resumes and CVs that maximize an individual's training and experience.

Attendees: 150

Grants Workshop-April 14, 2003

This workshop, conducted by Beth Fisher, from the Survival Skills and Ethics Program, covered the preparation and submission of research grant proposals as well as the review and funding process. Participants were provided with a wealth of information and strategies that will be invaluable to fellows as they seek funding support to begin their academic careers.

Attendees: 120

Negotiating-May 12, 2003

In this workshop, conducted by Dr. Laurie Weingart of Carnegie-Mellon University, participants learned the skills that are necessary when negotiating a job offer. This workshop featured two sessions, one in the morning and one in the afternoon.

Attendees: 140

Job-Hunting-September 15, 2003

Conducted by Beth Fisher, this workshop covered when and how to seek career opportunities; what employers look for; researching positions; writing effective cover letters, CV's, resumes, statements of interest, and letters of recommendation.

Attendees: 110

Science Communication Courses

Writing about Science-Spring, Summer, and Fall, 2003

This class, taught by Maggie Meitzler, Editor, *Journal of the National Cancer Institute*, was offered for five weeks in spring, summer, and fall. It was taught in morning and evening sessions. Conducted in a workshop format, this course

teaches fellows how to write articles suitable for publication in peer-reviewed scientific journals. Participants learned how to write a research paper using their own laboratory data. During the course, they critiqued the work of others and learned about responsible authorship; the process of publication; dealing with editors and reviewers; and other issues related to scientific writing.

Attendees: 84

Speaking about Science-Spring, Summer, and Fall, 2003

This course, conducted by Scott Morgan of Premier Public Speaking, was offered in morning and evening sessions for four weeks in spring, summer, and fall. The course provided participants with information on how to become an exemplary speaker, to excel in job interviews, and how to deliver scientific presentations using visual aids, including video feedback.

Attendees: 90

Advanced Speaking about Science-July 10 to 31, 2003

Also taught by Scott Morgan, this course is designed to assist fellows in building upon the lessons of the introductory course, provide vocal and other technical instruction, discuss new methods of presentation, and offer a forum for in-depth assistance on the individual needs of the participant.

Attendees: 18

Career Workshops

The OE also sponsored three workshops that focused on careers that would enable fellows to utilize their biomedical research training:

Careers in Patent Administration-November 18, 2002

Conducted by Carol Salat (OD/ OTT) and Dr. Kathy Kerr from the U.S. Patent Office, this workshop focused on career opportunities in patent administration for individuals with scientific training. Attendees: 75

Teaching at a Small College and a Large University-January 13, 2003

This workshop, conducted by Dr. Rachel Myerwitz from Mt. St. Mary's College and Dr. Roger Davenport from the University of Maryland compared the differences between academic life at small colleges and large research universities.

Attendees: 125

Careers in Bio-Defense-March 17, 2003

Drs. Susan Zullo (CBER/FDA), Maria Giovanni (NIAID), and Christa-Marie Singleton, (Director, Public Health Emergency Preparedness, Baltimore County Department of Health), conducted this workshop that focused on emerging scientific career opportunities in bio-defense.

Attendees: 100

II. Job Fair for Postdoctoral and Clinical fellows-October 16, 2003

The Job Fair featured 28 exhibitors from academe, biotechnology firms, and government. This year's program, coordinated by the Office of Education with some assistance from the Fellows Committee, also included a keynote address by Dr. Edward Scolnick, President Emeritus, Merck Research Laboratories, who discussed "Therapeutic Advances Through Genomics: Opportunities and Limitations." The evaluation ratings by exhibitors was the highest ever, 4.36/5.

Attendees: 650

III. FARE 2003-June 1-30, 2003

Administered by the Fellows Committee, the Fellows Award for Research Excellence (FARE) program is a competition for \$1000 travel awards to attend a scientific meeting in the United States. The competition was open to all postdoctoral fellows who have been at NIH for less than five years. Last year's competition featured a total of 828 submissions and produced 203 winners.

Participants: 828

IV. Programs for Postbaccalaureate Trainees

Interviewing-September 30, 2002

This workshop, conducted by Dr. Paul White, Johns Hopkins School of Medicine; Dr. Brian McGrath, George Washington University School of Medicine; and Dr. Jane Atkinson, University of Maryland College of Dental Surgery; was designed to provide postbaccalaureate trainees with information on how to prepare for medical school interviews. It included a focus on the interviewing process from the representative of the admission committee's point of view, including suggestions for preparing for a successful interview.

Attendees: 125

How to Give a Scientific Presentation-February 1 and 15, 2003

Conducted by Scott Morgan this workshop is divided into two parts: part one focuses on developing a scientific presentation, and in part two the trainees learn how to deliver a scientific talk.

Attendees: 45

Test-Taking Skills-Winter and Spring, 2003

Conducted by Dr. William Higgins from the University of Maryland, these classes focus on preparing for the Graduate Record Examination (GRE) and the Medical College Admission Test (MCAT). Divided into three sessions for the GRE and three sessions for the MCAT, the course includes an insight into the application process, types of questions, the need for review courses, and the development of a preparation strategy and schedule.

Attendees: 130

Tips on Preparing Your Poster-April 3 and 17, 2003

This workshop, delivered by Scott Morgan was divided into two parts: part one focused on preparing a scientific poster, and part two involved the evaluation of each individual's poster.

Attendees: 45

Postbaccalaureate Poster Day-May 7, 2003

The third annual Postbaccalaureate Poster Day was held on May 7, 2003. This event provided an opportunity for postbaccalaureate trainees to share their research with the NIH community. The participants represented virtually all Institutes and Centers with intramural programs.

Participants: 153

Premed Advising Workshop-May 12, 2003

On May 12, 2003 a workshop was held featuring premedical advisors Dr. Lee Ann Michelson from Harvard, Dr. Georgiana Aboko-Cole from Howard, and Paula Ashby from the University of Maryland/Baltimore County. The purpose of this workshop is to provide information regarding the admissions process to postbaccalaureate trainees who are interested in applying to medical school or to combined MD/PhD programs.

Attendees: 100

NIH Academy Curriculum

The NIH Academy, a postbaccalaureate program for recent college graduates with an interest in pursuing careers that focus on the elimination of domestic health disparities, enrolled its fourth class during the academic year 2002-2003. ORWH support covered honoraria for three speakers who discussed a range of topics including oral presentations, interviewing techniques, public health programs, and the IOM report on health care and minorities.

Participants: 15 per session

FARE

\$50,750

FARE is the acronym for the **F**ellows **A**ward for **R**esearch **E**xcellence, begun in 1995. The tenth annual NIH-wide FARE competition (FARE 2004) will again provide recognition for the outstanding scientific research performed by intramural postdoctoral fellows. The award is sponsored by the NIH Fellows Committee, the Scientific Directors, the Office of Research on Women's Health, and the NIH Office of Education, and is funded by the Scientific Directors and the Office of Research on Women's Health. Fellows submit an abstract of their research, which is peer reviewed in a blind study section competition. Winners of FARE awards will each receive a \$1,000 stipend to attend a scientific meeting at which they will present their abstract, either as a poster or a seminar. In FY 2003 there were 203 winners with ORWH providing funds for 51.

D. ORWH-FAES-NIH HIGH SCHOOL STUDENT SUMMER PROGRAM OIR

\$123,827

This summer the program had 24 new high school students and 17 returning students. There were 26 women and 15 men, including 11 minorities (2 African-American women and 1 Hispanic woman and 1 Hispanic man), coming from both public and private schools in Maryland, Virginia, and the District of Columbia. The summer started with an informational meeting on June 25 at which the students learned the history of the program, heard about the structure of the NIH, the Intramural Research Program, and the Office of Research on Women's Health, and received guidance on how to make research presentations. Each week from July 2 until August 6 the students met as a group for a lunchtime session at which 6-8 of them made presentations on their research to each other. Included in the audience were their preceptors, a few of the high school teachers in the HHMI-NIH Summer Teachers' Program, some of the advisors for the program (all members of the NIH scientific staff), and either Dr. Michael Gottesman, Deputy Director for Intramural Research or his Assistant Director, Dr. Joan Schwartz. The presence of these NIH senior scientific staff ensured a lively discussion of each presentation, and put each research project into a broader biomedical context. Two of the students were working on clinically relevant women's health projects, one on "Gynecologic Manifestation of Hereditary Leiomyomatosis and Renal Cell Cancer in Families in North America", in Dr. Jorge Toro's laboratory, NCI, and the other on "The Functions of Fibroblast Growth Factor Receptors (FGFRs), Smad Genes, and the Breast Tumor Suppressor Gene (BRCA1) in Mammary Gland Tumorigenesis", in Dr. Chuxia Deng's laboratory, NIDDK. All the students also presented posters at the NIH Summer Student Poster Presentations day, August 7. They thus learned not only how to carry out a research project, how to ask important questions and how to design experiments to answer those questions, but also how to communicate their results to other scientists.

D. UNDERGRADUATE SCHOLARSHIP PROGRAM for INDIVIDUALS from DISADVANTAGED BACKGROUNDS - Progress Report on Scholars Supported by ORWH OLRs \$117,134

The OLRs, Office of Intramural Research (OIR) is responsible for the development and management of the Undergraduate Scholarship Program for Individuals from Disadvantaged Backgrounds (UGSP). The UGSP provides scholarships to undergraduate students who have been competitively selected from a nation-wide pool of candidates. An average of 15 scholarships are awarded each year. In FY03, the ORWH provided funding for three scholars. The following is a summary report on the ORWH-sponsored scholars.

Ms. Louisha Barnett, a student at North Carolina State University, received a UGSP award to pursue her undergraduate studies in Biochemistry, Microbiology and Africana Studies. She performed her Summer 2003 research training on epilepsy under the mentorship of Dr. Michael Rogawski, National Institute of Neurological Disorders and Stroke, and received an impressive evaluation. She presented a poster titled, "Talampanel Effects on Human Cortical

Excitability Determined by EEG and TMA” at the NIH Poster Day in August, 2003. Louisha will continue her studies at North Carolina State and plans to pursue either an MD or MD/PhD program.

Ms. Leslie Giddings, a student at Smith College, received a UGSP award to pursue her undergraduate studies in Chemistry. She performed her Summer 2003 research training under the mentorship of Drs. John Daly and Martin Garraffo, National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), studying novel alkaloids from frogs, and received an excellent evaluation. She presented a poster titled, “Alkaloids in Five Species of Madagascan Frogs” at NIH Poster Day in August, 2003. Leslie will continue her academic studies at Smith and return to the NIH next summer for additional training.

Ms. Melissa Morales, a student at Brandeis University, received scholarship support to complete her undergraduate studies in Biochemistry. She performed her Summer 2003 research under the mentorship of Dr. Stephen Straus, National Institute of Allergy and Infectious Diseases, studying herpes virus, and received an excellent evaluation. She presented a poster titled, “Measuring HSV-Specific CD8+ T-Cells” at NIH Poster Day in August, 2003. Melissa graduated with a 3.8 GPA. She will continue her research training at NIH for a full year, focusing on herpes viruses, before pursuing studies in graduate or medical school.

In addition, funds provided by ORWH were used to partially support two additional scholars.

Ms. Rebecca Slota, a senior at UCLA trained with Dr. Peter Lipsky, National Institute of Arthritis and Musculoskeletal Diseases. She presented a poster titled, “CD40 Engagement on Human B Cells Induces MAPK Activation, Stimulation of AP-1 Components, and Gene Expression” at NIH Poster Day in August, 2003. Rebecca will complete her academic studies during the Fall semester at UCLA and return to the NIH next winter for additional training. She plans to pursue an MD/PhD program.

Ms. Veronica Vasquez, a senior at the University of Washington, trained with Dr. Steven Zeichner in the HIV and AIDS Malignancy Branch, National Cancer Institute. She presented a poster titled, “Examining the Immediate-Early regulation of Kaposi’s Sarcoma-Associated Herpesvirus” at NIH Poster Day in August, 2003. Veronica will continue her academic studies at the University of Washington and return to the NIH next summer for additional training.

The support of these undergraduate students by the ORWH has allowed them to focus on their studies and receive excellent research training and skill enhancement activities at the NIH. These students exemplify measurable development in their biomedical research careers, evidenced, in part, through their academic achievements and research accomplishments. They were honored and recognized as ORWH-UGSP scholars on June 5, 2003.

SACKLER FACULTY OF MEDICINE/TEL AVIV UNIVERSITY STUDENTS OIR
\$50,000

In conjunction with the NIH Office of Intramural Research, a Bi-national Student Exchange Program in Women's Health Studies was initiated in FY 2001 with the Sackler Faculty of Medicine, Tel Aviv University (TAU), Tel Aviv, Israel, with preliminary arrangements such as scholar applications, review, and logistics which began in FY 2000.

This program aims to expose excellent M.D.-Ph.D. or Ph.D. Israeli students in the biomedical field to the leading research programs at the NIH. The program encourages those interested in research related to women's health, whether basic, patient-oriented, or population-based. The program should facilitate and enhance biomedical research in Israel, establish scientific collaborations between Israel and the NIH, and train promising students for postdoctoral studies at the NIH. The Sackler Faculty of Medicine represents the largest medical faculty in Israel with two medical schools (an Israeli program and an American-international school), a dental school, a school of health professions, a school of continuing medical education and a graduate school. To attain the best medical and scientific education for better service to the community, the best training opportunities are required and the NIH, as the largest biomedical research institute in the world, offers a unique location for this education. The new program offers an opportunity to present new horizons for research into women's health issues and should provide a pioneering model for other medical faculties and other countries.

A joint TAU-NIH will choose the best students to join the program each year, with a maximum of ten at any given time. These students will have an Israeli advisor and an American advisor. The students perform 10-months/year of research in the Israeli laboratory and up to two months/year in the NIH laboratory, for a total of four-five years of research. Once a year, the American supervisors will visit Israel for a joint scientific meeting of all enrolled in the program. The program will favor excellence, students enrolled in the M.D./Ph.D. program, women and minorities. In FY 2002, 5 students were supported for a summer experience in NIH intramural laboratories. In FY 2003, all scholars except one continued. Two part-time students came to fill the slot for the one who finished and has gone on to a successful postdoc position.

E. ORWH/OFFICE OF SCIENCE EDUCATION Joint Programs \$96,800

For several years, ORWH and the Office of Science Education (OSE) have worked together to provide educational resources for pre-college students and others who are interested in science and health. In fiscal 2003, the partnership sponsored two programs.

Women are Scientists Video and Poster Series: Colorful, informative videos and posters for middle-school students that feature women scientists. The series is designed to stimulate the interest of girls in science at a time when they are making decisions about the course choices that may affect their career options later. In the middle-school years, many girls are discouraged from pursuing advanced levels of study in math and science. This series is

intended to make them aware of the many interesting and rewarding careers in the medical sciences and the educational requirements necessary to pursue them.

Highlights: The supply of the first video kit, *Women are Surgeons*, was exhausted and a reprint of 5,000 kits was initiated along with 500 of the videos for the Association of Women Surgeons. Both kits and the videos will be received in early fiscal 2004. Meanwhile, some of the *Women are Surgeons* video kits were recycled and 34 kits mailed.

The second two video kits, *Women are Pathologists* and *Women are Researchers*, continued to be extremely popular. The *Women are Pathologists* kits distributed in FY 2003 totaled a 2,985—an increase of 16 percent more than 2002. The total kits distributed of *Women are Researchers* was a 3,224—an increase of 10 percent more than 2002.

The kits are being used by teachers in the classroom, as well as by professional organizations, vocational centers, and by institutions such as the Princeton Environmental Institute for conferences targeting girls in science.

The fourth video kit, *Women Scientists with Disabilities*, is well on its way in development. Three outstanding women role models have been filmed and we are now in the editing stage for the video footage. We have completed the design work for the poster and the next stage is the printing of the labels, sleeves, and boxes to be designed for the kit. We are now looking at disabled women athletes for the celebrity introduction.

The NIH National Library of Medicine has used eight (8) of the nine (9) women scientists that were profiled in the first three videos. These clips are a part of their new exhibit “Changing the face of Medicine: Celebrating America’s Women Physicians.” This exhibition explores the achievements of women in medicine since they first gained admission to American medical schools 150 years ago. The exhibit opens on October 14, 2003 and will be open to the public until April 2, 2005.

Women in Science Poster Series: *A series of free posters, with a companion Web site, aimed primarily at middle-school girls. The series emphasizes that science and medical research offers many different career paths, all of which are open to women.*

Highlights: Three posters were available in FY 2003. They featured careers in neuroscience, heart disease, and cancer research. Distribution of the posters has been primarily at science teacher conferences that the OSE attends, and by mail through a request form on the OSE Web site. The posters have been especially popular at conferences, where there is a dearth of materials that focus on women in science. In FY 2003, 2,700 copies of each poster were distributed to teachers, State departments of education, and local school systems.

The posters were featured in an article in the electronic bulletin of the *Triangle Coalition*. The coalition is a Washington DC-based non-profit organization comprising more than 100 organizations with representation from business, education, and scientific and engineering societies.

F. BUILDING INTERDISCIPLINARY RESEARCH CAREERS IN WOMEN'S HEALTH

BIRCWH I \$3,194,895

BIRCWH II \$4,710,374

The Office of Research on Women's Health (ORWH) developed an institutional career development award for Building Interdisciplinary Research Careers in Women's Health (BIRCWH) Career Development Programs. These Programs support research career development of junior faculty members, known as Interdisciplinary Women's Health Research (IWHR) Scholars, who have recently completed clinical training or postdoctoral fellowships, and who are commencing basic, translational, clinical and/or health services research relevant to women's health.

The goal of this initiative is to promote the performance of research and transfer of findings that will benefit the health of women. The Programs will accomplish these goals by bridging advanced training with research independence, as well as bridging scientific disciplines or areas of interest. This will increase the number and skills of investigators at awardee institutions through a mentored research experience leading to an independent scientific career addressing women's health concerns. This RFA uses the NIH Mentored Research Scientist Development Program Award (K12) mechanism. To date over 100 scholars have been in the program in the following areas:

Mental Health:

- Assessing the impact of SSRI antidepressants on popular notion of women's depressive illness
- Sexual harassment and psychological health of women
- Emergency department screening and treatment intervention to improve the safety and health of battered women
- Examining communication and power dynamics of female patients and their health care providers
- Role of maternal depression on women's breastfeeding decisions

Diabetes:

- Ethnic differences in insulin insensitivity and B cell function
- Knowledge of risk for heart disease among people with diabetes: relations to gender, ethnicity and diabetes treatment regimen
- Mechanism by which diabetes contributes to CVD

Cardiovascular Health:

- Ceramide in circulating lipoprotein and vascular-endothelium
- Estrogen and angiogenesis
- Coronary heart disease risk in women with spinal cord dysfunction
- Primary and Secondary Prevention -Cardiovascular Disease associated with mental health risk factors

- Cardiovascular disease and chronic kidney disease(determine the modifiable environmental risk factors and genetic risk determinants for CVD)
- Study of the properties of a single item global health measure for predicting patient outcomes and high risk CVD
- Vascular disease in Women

Arthritis/Musculoskeletal Health:

- Utilization of services and patterns of specialty care for women with rheumatoid arthritis
- Exercise, amenorrhea, stress and bone health
- A role for activated T lymphocytes in the bone loss associated with Crohn's Disease
- Pharmacogenetics of methotrexate toxicity and efficacy in Rheumatoid Arthritis

Neurological Disorders:

- Gender susceptibility to neurological dysfunctions by altering GABA receptor signaling
- Effect of gender and phenotype in a subset of disorders: neurotransmitter deficiency related disorders
- Hormone changes induced by seizure activity in rats

Menopausal Hormone Therapy:

- Estrogen and angiogenesis
- Effects of estrogen on cardiac fibrosis after MI
- HRT and effects on cognition

Sex/Gender

- Sex differences in substance abuse
- Importance of gender and social supports in the nursing home setting
- Sex differences in HIV therapies

Substance use:

- Sex differences in the etiology of substance abuse
- Gender-specific pathways linking stress and cocaine relapse
- Sex differences in vulnerability to cocaine addiction
- Smoking cessation rates for women with abnormal PAPs

Reproductive Health:

- Risk factors for sexually transmitted infections among women in an Alabama HIV clinic
- Increased vaginal levels of a marker of collagen synthesis and preterm birth
- Epidural-related fever and maternal serum interleukin 6 levels
- Synchrony between LH and leptin pulsatile secretion in women with polycystic ovary syndrome
- Mouse models of premature ovarian failure
- Innovative approach to childbirth decision-making using mathematical model

- NK cell gene expression in normal pregnancy vs. recurrent spontaneous miscarriage
- Insulin sensitivity and pregnancy related weight gain
- Development of a decision aid for patients considering treatment for endometriosis pain

Cancer Research:

- Identifying low-penetrance breast cancer susceptibility genes
- Quantifying breast composition for breast cancer risk using X-ray absorptiometry
- Ovarian Cancer -- immunogenic vs. non-immunogenic profiles
- Causes and consequences of genetic instability in Ovarian Cancer
- Breast cancer -- mechanisms of ischemia, reperfusion injury and ischemic preconditioning
- Universal breast cancer antigens as targets linking early detection and therapeutic vaccination

Molecular Biology/Genetics:

- Genetics of endometriosis (using microarrays)
- Genetics of breast cancer

Health Services/Disparities:

- Hypertension in African American Women and the effects of exercise
- Health services in HIV infected incarcerated women
- Improving health outcomes for women with chronic illness
- Effect of risk perception on breast cancer and colorectal cancer screening
- Social and cultural factors of significance in managing chronic diseases in Caribbean immigrants

Molecular Biology/Genetics

- Genetics of endometriosis (using microarrays)
- Genetics of breast cancer

Trauma

- Estrogen and prolactin in septic shock

A meeting was held in July 2003 for the Program Directors from BIRCWH I and II and scholars were invited to present their research. Principal Investigators and Program Directors' discussions fell into four major categories:

Metrics recommended for measuring the success of BIRCWH:

- Research Independence
- Global Metric beyond individual achievement looking at how much collaborative research is generated by the BIRCWH centers
- Assessment of scholars based on their individual baseline level when they entered the program as they are a diverse group of researchers
- Percentage of scholars who continue to conduct research in women's health post-BIRCWH

- Publications – high impact vs. low impact journals
- Number of grants submitted per scholar compared to the number funded
- Percentage who go into Academia
- Number of scholars teaching clinical research methods (recognition for teaching)
- Number publications, positions held, awards, honors and oral presentations
- Scholar accomplishments, breakdown by sex

BIRCWH K/R01 grant – other federal funding discussion:

- Extensive debate fell into two camps 1) Receiving an R01 signifies success and, thus no further need for a career development grant such as BIRCWH, and BIRCWH slots should be opened for scientists in more need of mentoring. 2) Discontinuing the BIRCWH would be a disincentive to scholars who want to pursue research with R01 or other support, and an R01 does not provide the salary support of BIRCWH.
- Dr. Wally Schaffer shared with the PIs that there is considerable variability across ICs and since K awards are embedded in different institutes they are guided by different policies
- Dr. Schaffer also shared with the group that the EPMC is having discussions about standardizing the policy and one approach is to reduce the salary support from a K when a research grant is awarded acknowledging a period of transition from developing scientist to independent research
- Action Item: Dr. Timothy Johnson, PI of the University of Michigan BIRCWH will come up with language reflecting the consensus of meeting participants that grants should be regulated in a manner that optimizes a research career.

Future BIRCWH Programs:

- Several BIRCWH I PIs raised the question of whether there will be a renewal of BIRCWH I programs who are about to enter year 4 of their grants
- Question: Will competitive renewals of programs not funded/administered by NICHD go back to the original funding institute or to NICHD or to a special committee for review?
- Dr. Johnson will establish a LISTSERV for the BIRCWH PIs and PDs, send out an inquiry, and collect responses to present at the next Advisory Committee on Research on Women's Health meeting which is on November 18, 2003. 2) Dr. Pinn shared with the group that it would be Fall 2003 before ORWH would address the issue of continued BIRCWH funding.

Recruitment and Retention of Scholars (Internal vs. External and Under-Represented Minority Candidates):

- Need to obtain buy-in from departments throughout the institution
- Many programs seek broad representation (mix) from throughout the University (school of medicine, nursing, public health etc...)
- Some programs use the strategy of training people from a number of different departments with hopes they will stay with the institution and direct their interest to areas of women's health they might not have otherwise explored

- Others recruit from an internal pool but seek candidates from outside ob-gyn departments
- Some programs need to do a better job of drawing scholars who are interested in areas of women's health other than ob-gyn
- Some department chairs use the BIRCWH as a recruitment tool
- Some programs conduct a national search through internet sites and advertisements in professional journals
- One BIRCWH program has emphasized recruitment of minority scholars
- Others stated that the program statistics presented on the first day indicate that recruitment of under-represented minorities could be improved
- Some PIs mentioned the need to start regional women's health symposia to highlight work being done by scholars in women's health
- Another strategy suggested is to have a BIRCWH presence at Specialty Meetings for possible recruitment of scholars
- Recommend the compilation of a BIRCWH Directory (listing scholars by site, specialty, research project and subsequent awards and publications) to be made available to anyone involved with faculty recruitment, as on a website.

G. ORWH/NIH REENTRY PROGRAM

\$40,000

The ORWH Reentry Program was developed in 1992 as a pilot program to help fully trained scientists (women and men) reestablish careers in biomedical or behavioral science after taking time off to care for children or parents, or to attend to other family responsibilities. This program was originally started as a pilot program to encourage fully trained women and men to reenter an active research career after taking time off to attend to family needs. The success of this pilot program was the impetus to expand the program across the NIH and is currently supported by all NIH ICs. The aim of these supplements is to encourage fully trained individuals to reenter research careers within the missions of all the program areas of NIH. This program provides administrative supplements to existing NIH research grants for the purpose of supporting full-time or part-time research by these individuals in a program geared to bring their existing research skills and knowledge up to date. It is anticipated that at the completion of the supplement, the scientist will be in a position to apply for a career development (K) award or for a research award. ORWH currently provides funding of \$20,000 for each of 2 years. In FY 03, ORWH sponsored 2 new reentry candidates through NIDA.

PI: Kevin P. Haggerty, MSW
Institution: University of Washington
Title: Examining the Efficacy of "Parents Who Care"
Grant Number: 5 R01 DA 12645-03
Awardee: Elizabeth McKenzie, Ph.D.

In September 1998, the candidate had a baby and, in particular, was interested in using the extra time to develop a strategy for pursuing a mentored research career

award. However, due to her husband's ob loss, they opted to move to the Seattle area to live near extended family and gain support for child rearing, to live in a city with a larger job market and opportunities for her spouse to contribute to the household, and to have a job with a flexible schedule to provide care for my young child. She worked at the Committee for Children for nearly three years and spent the first year working full time on a large clinical trial (the Steps to Respect Evaluation Study) contributing substantively to the study design, recruitment of subjects and to the development and of a student self-report (Committee for Children Research Team, 2000). Her work assignments were reduced research activities were internally funded and the members of the research staff were hired to work for the department rather than on a project basis, these changes in project assignment occurred frequently, based on needs and priorities determined at the organizational level.

This project, funded through 8/31/05, is a five-year experimental test of the efficacy of PWC (Parents Who Care), a theory-based drug abuse prevention intervention for families with early adolescents. The study, being conducted with African American and European American families in the greater Seattle area has three conditions, 1) a family self-administered curriculum with telephone follow-up (SA), 2) a family self-administered curriculum plus parent and teen skills group (PAG), and 3) a no-treatment control condition.

The proposed study has four specific aims.

1. To compare the efficacy of the Parents Who Care family skills training curriculum in enhancing family protective factors and reducing family risks for drug abuse using two different applications of a program intervention, (family self-administered and family self-administered plus parent and teen skills group) with a no treatment control group.
2. To evaluate the effects of the intervention on hypothesized distal outcomes, including drug use, delinquent behavior, academic performance, and teen sexual behavior one and two years following the intervention.
3. To model the impact of the intervention on hypothesized proximal outcomes, including social and behavioral competence, and family bonding in the context of the social development model (Catalano and Hawkins, 1996).
4. To conduct a benefit-cost analysis of the different modes of delivery of the program.

The parent grant focuses on outcomes of the Parents Who Care program and the mediators and moderators of those outcomes. In contrast, the proposed research plan for this supplement, will use data from the parent grant to investigate etiological and theoretical constructs that are not included in the funded proposal. The candidate, Elizabeth P. MacKenzie, will work to accomplish research objectives and training activities.

PI: Carolyn Webster-Stratton, Ph.D.
Institution: University of Washington School of Nursing

Title: Preventing Conduct Problems, Promoting Social Competence
Grant Number: 5 R01 DA 12881-02
Awardee: Jamie Nekich, Ph.D.

Dr. Nekich's research career has been inactive since 1997 when she was last employed in a full time, tenure-track faculty position at California State University - Sonoma during the academic year of 1996-97. However, she spent that year on a personal leave of absence because in the summer of 1996 her son was diagnosed with Asperger's Disorder. The demands of her son's disorder had prompted her to resign from her first tenure-track position at University of Southern California in 1995, to accept a position at California State University, which she believed would be less demanding and allow her to attend more effectively to her son's needs. However, after her first year at California State University, it became clear that the needs of her son were increasing and that maintaining any employment was no longer feasible. Their family made the decision to relocate to a geographic area where they could live on her husband's income alone and she could become a full-time caregiver to her son. Her husband accepted a full-time position at the University of Idaho and they moved to Moscow, Idaho. During the first year in Idaho she also gave birth to a second child. In 98, the demands of her youngest child and care-giving responsibilities for her son decreased allowing some part-time employment.

The purpose of the project is to take empirically supported, clinic-based treatment programs for child oppositional and conduct disorders (ODD/CD) and evaluate their short- and long-term efficacy as school-based, early intervention programs for preventing ODD/CD, one of the most important behavioral predictors of substance abuse and delinquency.

The project conceive for this candidate will span a three-year period and will involve pioneering work to test the feasibility of using self-administered approaches to deliver our existing training and interventions. The goal of this work will be to maintain the integrity of our existing intervention model while adapting its mode of delivery to meet the needs of individuals who may not be able to participate in the trainings offered in our clinic setting. The project provides a context for developing all aspects of this candidate's intervention research skills while also moving our group closer to discovering increasingly cost-effective, portable methods for delivering our empirically validated intervention program. Further, the proposed work provides a natural direction for future projects for this candidate, including securing independent research support. This candidate foresees the use of computer-based technologies as a means of enhancing self-administered intervention approaches, a future direction of interest to our group as well.

The candidate holds a Ph.D. in Counseling Psychology from Stanford University and has clinical experience from Yale University Medical School and University of California-Berkeley child clinical training program. She has strong skills in clinical intervention, psychological research design, data collection, and basic statistical procedures. In addition she has basic skills in web-design and web-based instruction. The proposed

work utilizes her strong research background and builds upon it by providing mentoring and experience in large scale school-based and family-based prevention studies.

The project we have proposed for the candidate will pilot a self-administered version of our teacher training in the implementation of effective classroom management skills. The candidate will be involved in research projects that involve secondary analysis of the existing data. Studies that arise out of our existing data set can result in co-authored publications or presentations for national conferences. The first such study we have proposed for the candidate will be a detailed examination of our standard teacher training approach. The candidate will examine the relationships between teacher satisfaction with the standard training approach, completion of training sessions, and classroom outcome measures, particularly changes in classroom behaviors after completion of the training behavior change.

H. AWIS SEMINAR SERIES

\$5,000

The Association for Women in Science (AWIS) Bethesda Chapter was founded in 1994 to address the issues and concerns of women in science. The goals of the organization are:

To increase, at all levels, the number of women obtaining their degrees in science and technology,

- To increase the number of women participating in the scientific and technological workforce at all levels,
- To raise public awareness of the scientific and technological skills and contributions of women,
- To work with other scientific, educational, and women's organizations in developing national and community programs that meet the above goals, and
 - To provide awards for the recognition of individual women scientists in order to advance the above goals.

With these goals in mind, the organization is continuing the successful year-long seminar series entitled, "Networking for Career Success." This tenth annual series consists of approximately five seminars held at the campus of the National Institutes of Health (NIH) bi-monthly. The topics covered in each series are very diverse, ranging from issues of particular interest to women. In 2003-2004, the following topics will be presented.

The Future of Biomedical Innovation: Career Implications

What's in a Byline: A Career in Science Journalism

Story of My Roots: Disease Mutations in Finns

Women in Science: The Ceiling is Breaking but Watch Out for Falling glass

Negotiating your Career

I. NATIONAL MEDICAL ASSOCIATION

**OMH/DHHS
\$4,500**

ORWH supported the Women's Health Section at the NMA Annual Meeting established to examine and formulate quality contributions to advance the nation's agenda on women's health. It also serves as a pathway to accomplish the two distinct roles of professional support and professional leadership for NMA women physicians.

Established in 1895, the National Medical Association (NMA) is the Nation's largest and oldest professional, educational and scientific organization representing the interests of more than 20,000 African American physicians and their patients, as well as nearly 100 state and local societies. As the leading force for parity and justice in medicine and the elimination of disparities in health, the NMA is committed to improving the health status and outcomes of minorities and the underserved. While, the National Medical Association has historically focused on health issues related to African Americans and medically underserved populations, its principles, goals, initiatives and philosophy address and benefit all Americans.

As an advocate for African American physicians and the medically underserved, the National Medical Association is hard at work addressing some of the most pressing concerns facing African American physicians including:

- ✓ **Health Disparities** – NMA is striving to eliminate gaps in health status that exist between African Americans and the general population.
- ✓ **Access** – NMA is committed to ensuring access to quality and affordable health care services for all Americans; and
- ✓ **Medical Workforce** – NMA is hard at work to increase the representation of African in the medical workforce, academic medicine and medical research.

With the resurgence of old diseases and the emergence of newer ones, escalating health care costs, changes in the crucial health programs and health delivery systems, attacks on affirmative efforts for a diverse medical workforce, and little improvement in the overall health status of African Americans, the need for NMA's advocacy efforts is as critical today as it was more than a century ago.

J. LOAN REPAYMENT PROGRAM for HEALTH DISPARITIES RESEARCH (HDR)

**NCMHD
\$335,652**

The objective of the HDR Program is the recruitment and retention of highly qualified health professionals to research careers that focus on minority health or other health disparities issues. The HDR- LRP serves as an avenue for NIH and the NCMHD to engage in and promote the development of research programs that reflect the variety of issues and problems associated with disparities in health status and highlights the need for the involvement of a cadre of culturally competent scientist in minority health and

other health disparities research and “promotes a diverse and strong 21st century workforce” able to address society’s diverse needs.

The program provides for the repayment of educational loan debt of qualified health professionals who agree to conduct minority health or health disparities research for two years. The program provides for the repayment of the principal and interest of the educational loans, up to a maximum of \$35,000 per year. Recipients are at the following institutions: Columbia University, City University of New York, University of Wisconsin, Missouri Department of Health, Michigan Department of Community Health, University of Illinois at Chicago, and San Diego State University.

K. INTRAMURAL WOMEN’S HEALTH PROGRAM

The NIH Intramural Program on Research on Women’s Health’s serves as the focal point for all intramural women’s health research, including sex and gender comparisons, within the Intramural Research Programs (IRP) at the NIH. It supports the ORWH mission to:

- a. Promote, stimulate, and support efforts to improve the health of women through biomedical and behavioral research within the Institutes and Centers comprising the Intramural Research Programs of the NIH.
- b. Enhance communication among, and recruitment of, researchers on women’s health among the Institutes and Centers.
- c. Develop and communicate training opportunities and recruit new clinical and basic research trainees into the IPRWH at the NIH.

Three subcommittees of the IPRWH were established.

Women’s Health Special Interest Group (WHSIG) The WHSIG is a forum for researchers across the NIH to meet, establish collaborations and learn about sex-based differences, beyond the effects of hormones, that are relevant to molecular, cellular, genetic and developmental processes and affect organ systems, behavior and the organism as a whole. The first two WHSIG lectures were held in November and December 2002. In 2003, 10 lectures were given by outside women’s health researchers and intramural women’s health researchers. Lectures are planned monthly throughout 2004 with a mixture of outside lecturers and intramural lecturers including:

Depression: A Risk Factor for Osteoporosis in Women: Lessons from the POWER Study as a Model for Integrative Clinical Research at NIH
Depression and the Menopause
The Prevention of Breast Cancer – Effects of Raloxifene in Pre-Menopausal Women and Future Directions for Research
Estrogens and B cell Development
Sex Hormone Effects on specific Brain Mechanisms and Generalized Brain Arousal
Autoimmune Disease – Why Female?
Estrogens and Synapses in the Hippocampus
Molecular Targeted Therapeutics and Proteomics in Ovarian Cancer

2. Training – In order to meet the demand for excellent multi-disciplinary research in the area of sex/gender factors that influence the expression of health and disease, four intramural programs in women’s health were proposed:

- Clinical Fellowship in Women’s Health
- Shared Post-Doctoral Fellow Program
- Research Career Re-Direction Program
- Research Re-entry Program

A proposal has been written by IPRWH and Foundation of the NIH (FNIH) to solicit outside funding to carry out these training programs. The FNIH will present the proposal to potential donors and handle the fiduciary responsibilities for these awards. It is anticipated that applications will be solicited, received, reviewed, ranked, and awarded sometime in 2004 by the IPRWH.

3. Outside Support/Grants –The IPRWH will support cooperative, collaborative and interdisciplinary projects through grants. All projects will be science-based and project-oriented, and will be carried out by investigators from the NIH IRP. The research must be directly related to issues of women’s health and sex and gender comparison. Projects may be laboratory, translational, population-based, or clinical in nature.