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The NIH BIRCWH Program: Contributions of Interdisciplinary Teams to Career Development and Research Success in the 21st Century

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National Institutes of Health

- The National Institutes of Health (NIH) is the principal health research agency of the Federal Government
- The NIH has two primary goals:
 - Ø To identify and fund the most promising and highest quality **research** that will ultimately improve the health of all people
 - Ø To **train** the current and the next generation of researchers, thereby ensuring that the capability to advance medical science will remain strong



National Institutes of Health

- Both academic institutions and the overall NIH have tended to lump researchers into broad areas of scientific interest and then group them into distinct, departmentally or thematically-based specialties (or silos). Unfortunately, in many instances, this separation has tended to isolate researchers and thereby often impede the pace of scientific discovery.
- In 1999, the Office of Research on Women's Health (ORWH) first conceived of the BIRCWH Program, an innovative and visionary training program, the purpose of which was to break down these artificial silos.
- The BIRCWH awards were designed to identify junior faculty scholars whose primary focus was women's health research and then train them in an ***interdisciplinary*** manner.



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The NIH BIRCWH Program

Building
Interdisciplinary
Research
Careers in
Women's
Health



What is meant by “*interdisciplinary*”

- An *interdisciplinary* approach draws together experts from diverse disciplines with a goal of bringing their expertise to bear on a complex problem.
- Each individual is expected to address this complex problem from the perspective of his or her own discipline.
- It is very likely that the collective efforts of this diverse group of experts will have a far better chance of solving the complex problem than will any one of them working on it individually.



NIH BIRCWH Program

The BIRCWH Award employs the

K12 Grant Mechanism



K12 Award

- A K12 grant is an institutional award. It is designed to provide protected time for training and research to a group of scientists who are committed to academic, research-focused careers.
- K12 Awards are very much like NIH-funded T32-type training grants.
- However, K12 awards like the BIRCWH are designed to support junior faculty rather than post-doctoral fellows.

The NIH BIRCWH Program

- Most of the funding for the BIRCWH Program comes from the Office of Research on Women's Health (ORWH). Additional support is provided by nine of the NIH Institutes as well as by AHRQ
- Each institution receiving a BIRCWH Award selects its own Scholars, all of whom are committed to women's health research.
- Scholars can have doctorates in either a clinical or non-clinical discipline, and their research can range from basic science to translational & clinical research, to health services & health outcomes
- The selection criteria are expected to include the quality of the scholars, their mentors, and their interdisciplinary research team
- In addition to protected time, each BIRCWH Program is expected to provide education, training and career development for their Scholars



BIRCWH Program - National Data

- Total # of BIRCWH RFAs - 4 (2000, 2002, 2005, 2007)
- Total # of BIRCWH awards funded in these 4 cycles - 50
- Total # of BIRCWH Programs currently funded - 26
- Total # of institutions receiving at least 1 award - 37



NIH BIRCWH PROGRAMS

Class of 2005

1. UC-Davis
2. UCLA
3. UCSF
4. Kansas
5. Kentucky
6. Harvard
7. Michigan
8. Washington U
9. UNC-Chapel Hill
10. Cincinnati
11. UTMB - Galveston

Class of 2007

1. Colorado
2. Northwestern
3. U of Illinois- Chicago
4. Tulane
5. Maryland
6. Boston U
7. Minnesota
8. Duke
9. Oregon
10. Pittsburgh
11. Penn State
12. MUSC
13. Vanderbilt
14. Virginia Commonwealth
15. Wisconsin

BIRCWH Program - National Data

- Total # of BIRCWH Scholars (2000 - present) - 335
 - ∅ Females = 264 (79%)
 - ∅ Males = 71 (21%)
- Terminal Degree held by all of the BIRCWH Scholars
 - ∅ MD = 148 (44%)
 - ∅ PhD = 137 (41%)
 - ∅ MD-PhD = 40 (12%)
 - ∅ Other (PharmD, DVM, DDS, etc) = 10 (3%)

BIRCWH Program - National Data

From the inception of the BIRCWH Program until the end of 2007, 335 BIRCWH Scholars have received a total of 117 NIH grants. These grants include:

- Individual K awards 36
- R awards 72
- P awards 3
- U awards (cooperative agreements) 2
- Other NIH award mechanisms 4



BIRCWH Program

History of the BIRCWH at UNC-Chapel Hill



UNC BIRCWH Program

- UNC BIRCWH Award was funded for 5 years in 2000 & renewed for 5 additional years in 2005
- Each year, this grant has brought us a total of \$500,000
- We have used the vast majority of these \$'s to provide salary support to junior faculty members in exchange for 75% of their time that is carefully protected for research
- Our goal has always been to assure that within 2 years each BIRCWH Scholar is able to write and submit an independent NIH grant (e.g., K23, K08, R01)



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UNC BIRCWH Program

Data for UNC BIRCWH Scholars





UNC BIRCWH PROGRAM

Demographics

- Total # of Awardees (2000 - Present) 24
- Women 22
- Men 2
- MDs - 10, PhDs - 11, MD-PhD - 1, PharmD - 1, Nursing PhD - 1
- Program Graduates 18
- Current BIRCWH Scholars 6
- Currently on the Faculty at UNC 19
- Recruited away from UNC 5
 - » University of Virginia 1
 - » San Diego State 1
 - » Vanderbilt 1
 - » University of Kentucky 1
 - » UNC - Greensboro 1

UNC BIRCWH - Representative Scholar Examples

Scholar	Department Discipline	Degree	Mentors	Funding
Nancy DeMore	Surgery Oncology	MD	Calvo Patterson	K08, Kimmel, ACS
Terry Tarrant	Medicine Rheumatology	MD	Patel Siderovski	K08
Eliana Perrin	Pediatrics Nutrition	MD	Ammerman Bulik	K23, R01
Angela Kashuba	Pharmacy Clinical Pharmacology Infectious Diseases	PharmD	Brouwer Cohen	K23, CFAR
Joan Taylor	Pathology Vascular Biology	PhD	Maeda Patterson	2 R01s, AHA
Caterina Gallippi	Biomedical Engineering Cardiovascular Imaging	PhD	Patterson Nichols Pisano	R01 (pending)
Penny Gordon-Larsen	Public Health – Nutrition Social Anthropology	PhD	Emch Popkin	K01, P20

Example of Interdisciplinary BIRCWH Teams

An Interdisciplinary Strategy for Obesity:

P20 RR020649 - PI: Dr. Barry Popkin

BIRCWH Scholar: Penny Gordon-Larsen

- Obesity prevention and treatment have had limited success to date, in part because interventions have focused on isolated, individual factors
- Dr. Popkin and his colleagues hypothesize that obesity could be much more effectively addressed within a complex system of proximate and distal biological and environmental factors using an intensive interdisciplinary approach.
- To be effective, such an approach requires bringing together scientists and practitioners from a broad range of perspectives and providing them with a fertile environment and infrastructure in which to synergize their expertise with that of investigators from other key disciplines. The long-term goal of this interdisciplinary strategy is to define effective interventions for prevention and treatment of obesity.
- interdisciplinary Team: Dr. Popkin is an economist. Dr. Emch is a geographer. Dr. Gordon-Larsen is a social anthropologist. She focuses on the “built environment” and other environmental assessment models that will help develop novel interventions.



UNC BIRCWH PROGRAM

• BIRCWH Awardees Currently in Academe	24
• Actively Involved in Women's Health Research	24
• UNC BIRCWH Graduates	18
Ø Active Research Support	18
Ø NIH Grant Recipients	16
Ø American Cancer Society	1
Ø American Heart Association	1
• Current UNC BIRCWH Scholars	6
Ø R03 award from NICHD	1
Ø K23 from NHLBI (pending)	1
Ø K23 from NIMH (pending)	1
Ø Assoc of Women's Health (Ob & Neonatal Nursing)	1
Ø None	2



UNC BIRCWH PROGRAM

- NIH Grants Held by Graduates of the UNC BIRCWH Program

- Ø K23 Awards

6

- Ø K08 Awards

3

- Ø K01 Awards

1

- Ø R01 Awards

5

- Ø R21 Awards

3

- Ø R03 Awards

2

- Ø Minority Supplement

1

- Ø Misc NIH Grants

Z01, P20, U01, & a Subproject on a P50

- Pending NIH Grants

- Ø K23 Awards

2 (1 will be awarded)

- Ø R01 Awards

2

- Ø R21

2



UNC BIRCWH PROGRAM

Miscellaneous Awards

- American Cancer Society
- Pfizer Scholar Award
- RWJ Foundation
- AHRQ
- CDC
- American Water Works Fdn
- NSABP Award
- Doris Duke Foundation
- ASCO
- Kimmel Scholar
- American Heart Association
- Hemophilia Foundation

Industry Awards

- Boehringer Ingelheim
- Novo Nordisk
- Bayer
- Glaxo SmithKline
- Gilead Sciences
- Abbot Labs
- Marine Polymer Technologies



UNC BIRCWH / National BIRCWH Data

	# of BIRCWH Institutions	Total # of Scholars	# of K Awards	# of R Awards	# of Other NIH Awards
UNC-CH BIRCWH Program	1	24	10	10	5
National BIRCWH Program	37	335	36	72	6
Percentage	2.7%	7.2%	27.8%	13.9%	83.3%

Programmatic and Career Development Support for UNC BIRCWH Scholars

- Career development activities including interdisciplinary K30 seminars and a seminar series designed specifically for the BIRCWH Scholars
- Assistance with national presentations and grant proposal development
- Teaching Scholars to interact effectively with the NIH (e.g., Program Officers, SROs, dual assignment of grants, REAP Program, etc.)
- Meetings with and support/encouragement of the mentors
- Improved institutional climate: parental leave, guidance and counseling with promotion & tenure issues (e.g., stopping the clock, part-time tenure)
- Institutional APT policy designed specifically to recognize interdisciplinary team research in the promotion and tenure process

UNC School of Medicine - APT Policy

*While the evaluation of accomplishments in research, clinical scholarship, and educational scholarship has traditionally focused on a faculty member's individual achievements (e.g., first and senior authorships, funding as the principal investigator on grant awards, invitations to make presentations on national or international forums, etc.), **it has become increasingly clear that the present and future of biomedical science is placing more and more emphasis on interdisciplinary team activities.** Therefore, when relevant, a faculty member's contributions to interdisciplinary teamwork will be given careful consideration. Factors such as originality, creativity, indispensability, and unique abilities will be considered when making this evaluation. The candidate is expected to include in the promotion packet a description of his/her role in the overall activities of the team. The departmental review process will include a solicitation of information regarding the candidate from the director of the project, the principal investigator, as well as any others who have first-hand knowledge that would clarify the candidate's role in the overall team effort. Finally, the Chair's letter must spell out such collaboration(s) in considerable detail, especially if interdisciplinary team activities are felt to be an important aspect of the case being made for the specific promotion.*

UNC BIRCWH Program Summary

The UNC BIRCWH Program has consistently been identified by the ORWH as a model interdisciplinary training program.

We believe that our Scholars have been successful in navigating the complexities of their academic research careers for a variety of reasons. A few of these reasons include:

1. The high quality of both our Scholars and their research teams
2. The support they have received from their interdisciplinary mentors
3. The institutional commitment to these Scholars that crosses the traditional silos (i.e., both departments and schools)
4. The establishment of a novel K to R Program



The Big Elephant in the Room

The
K → **R**
Transition

