

Engaging Women and Other Under Represented MDs in a Research Career: Results from 10 Years of MUSC's Drug Abuse Research Training (DART) Program

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ABSTRACT

PURPOSE: There is a paucity of well-trained physician scientists, and the number of physicians with active research careers has remained unchanged over the past decade. In addition, three times as many male, as compared to female, physicians submit grant applications to NIH, and the NIH applicant pool of MD Principle Investigators is underrepresented by minorities (i.e., Hispanic, American Indian, and African American)(Ginsburg et al, 2014).

METHOD: In response to this shortage of physician scientists, the MUSC Department of Psychiatry and Behavioral Sciences launched an NIH-funded research track (R25 DA020537) in 2006 to address the institutional, financial and regulatory barriers to research training during residency. Furthermore, in 2009 a summer research program was initiated to train medical, undergraduate and graduate students.

RESULTS: Since 2006, we have trained 28 psychiatry residents and 96 summer students, comprised of 67% women and 20% minorities. This group of trainees has published 131 manuscripts, given 149 research conference presentations, and submitted 19 grants to NIH as either PI or Co-I. The key training components of the program are described below.

CONCLUSIONS: This program provides a model to effectively integrate research training during residency without increasing the number of years of residency training, and it exposes a diversity of students at various levels of training to the potential of a career in research.

INTRODUCTION

- Throughout history, physicians have been the drivers of medical research.
- Physicians bring a unique perspective to science through the lens of patient care.
- In the 1970s, the proportion of MDs applying for NIH funding started to drop.
- In the 1990s, the NIH created mechanisms to increase the number of clinician scientists.
 - Career development grants
 - Loan repayment programs
- Also in the late 1990s, the NIH budget began to increase significantly.
 - 1998: \$13.7 billion
 - 2003: \$27.2 billion
- In the past decade, the NIH budget hasn't changed.
- The number of physician scientists hasn't changed in the past 30 years. However, the average age has been steadily rising- they are "aging out."
- 75% of NIH Principal Investigators with an MD are Caucasian, 20% are Asian, 70% are male.
- African American, Hispanic, and Women MDs are underrepresented as NIH PIs.

KEY TRAINING COMPONENTS

RESIDENT RESEARCH TRACK

- 2006 MUSC Awarded NIDA R25 to create a research track within our general psychiatric resident training program: Drug Abuse Research Training DART
- PGY2 Residents are recruited to apply
- Program includes 50% time during PGY3 and PGY4 years
- Each resident (1-3 per year) is paired with a research mentor
- Research mentors all have R01 funding from NIH
- Residents meet weekly with mentor
- Bi annual evaluation with DART leadership team
- Weekly didactic series
- Research ethics training (CITI)
- Create research project
- Submit IRB application
- Design database with assistance of staff epidemiologist
- Collect data
- Submit abstract to national meeting each year
- Give Grand Rounds
- Submit manuscript to peer review journal prior to completion of PGY4

SUMMER STUDENT RESEARCH FELLOWSHIP

- 2009 Summer research program added for students
- 10 week mentored research training program
- Undergraduate, Graduate and Medical students recruited nation wide
- Students assigned research mentor
- Weekly didactic series
- Individual research project
- Write Abstract
- Design and produce research poster presentation
- Final day: Poster presentations in lobby of our Institute of Psychiatry open to the community
- Students encouraged to recycle poster for their school's student research day

RESULTS

RESIDENTS		N=28
Female (%)		11 (39)
URM (%)		2 (7)

STUDENTS				N=96
	Undergraduate	Graduate	Medical	
n	33	5	58	
Female (%)	25 (76)	5 (100)	33 (57)	
URM (%)	4 (12)	1 (20)	15 (26)	

OUTCOMES

Published manuscripts	131
Research conference presentations	149
Submitted grants to NIH as either Co-I or PI	19

EXAMPLE RESEARCH TOPICS

RESIDENTS:

- Substance use as predictors of committing sexually-related crimes
- Prescription opioid use disorders in pain vs addiction clinics
- Predictors of delirium in acute hospitalizations

STUDENTS:

- Prevalence of sleep disruption among newly abstinent treatment seeking substance users
- The effects of stress on ethanol intake in three different mouse models
- Do ADHD, depression, and anxiety symptom ratings correlate with nicotine dependence severity among adolescents enrolled in a smoking cessation pharmacotherapy trial?

CONCLUSIONS

- Women MDs are under represented in academic research.
- The Dart Program is one mechanism for recruiting and training women and other URM MDs in research.
- Brief summer research opportunities and longer term resident research tracks can assist in reducing barriers to careers in research for women and other URMs.

REFERENCES

Ginsburg D, Mills S & Shurin S. Physician-Scientist Workforce Working Group Report. National Institutes of Health, 2014.

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