University of Missouri IMSD EXPRESS

EXPosure to REsearch for Science Students

MU's Initiative for Maximizing Student Diversity (IMSD), a National Institutes of Health (NIH) project

Brian Booton, IMSD Program Coordinator
150 Bond Life Sciences Center
BootonB@missouri.edu
(573) 884-1774

Broadening participation of underrepresented groups

Program Objectives

The Initiative for Maximizing Student Diversity (IMSD) EXPRESS Program at the University of Missouri aims to identify and train the next generation of research leaders and innovators in biomedical science. It is a comprehensive program that integrates research, mentoring, academic and social support, and professional development to prepare students to matriculate into graduate biomedical doctoral and medical/doctoral programs. The MU IMSD Program aims to promote excellence and diversity in the sciences.

IMSD EXPRESS students at the 2012 Annual Biomedical Research Conference for Minority Students (ABRCMS) in San Jose, California.

Who is eligible to participate?

To be eligible, EXPRESS Apprentice applicants must:

- Be from a group that is traditionally underrepresented in biomedical research. This group includes students who identify themselves as African American, Hispanic, Native American, Alaskan Native or Pacific Islander
- Be a U.S. Citizen or Permanent Resident
- Be a freshman, sophomore or first-semester transfer student
- Be a full-time student at the University of Missouri in good academic standing
- Have a passion for science research
- Possess a strong work ethic and time-management skills
- Have a strong commitment to succeed at the University of Missouri and to uphold the goals of the IMSD Program

"Personally, EXPRESS has been the best thing that has happened to me while at Mizzou. No other organization has made me feel more at home on this campus. Not only has EXPRESS allowed me to see a side of research that I previously did not know existed, it has also helped me to grow both academically and personally, and I've made, no doubt, many life-long friends through this organization." **-May 2013 graduate**

Most Common Research Areas

School of Medicine
- Biochemistry
- Molecular Microbiology & Immunology
- Opthalmology
- Medical Pharmacology & Physiology
- Pathology & Anatomical Sciences

College of Veterinary Medicine
- Veterinary Biomedical Sciences
- Veterinary Pathobiology

College of Engineering
- Biomedical Engineering

College of Arts & Science
- Biological Sciences
- Chemistry
- Physics

College of Agriculture, Food & Natural Resources
- Animal Sciences
- Biochemistry
- Biological Engineering
- Fisheries & Wildlife
- Food Science & Nutrition
- Plant Sciences

Note: This list is not comprehensive. Please inquire if you have identified a project that fits IMSD guidelines.

The IMSD EXPRESS Stage System

Stage I EXPRESS Apprentices:
- Attend a weekly seminar that will allow them to explore potential careers in biomedical research
- Meet weekly with an upper-class peer mentor
- Complete a research training "boot camp" in their first fall semester
- Begin identifying faculty for mentored research opportunities
- Maintain a high level of academic achievement

Stage II EXPRESS Apprentices additionally:
- Obtain a paid faculty-mentored research position (average 12 hrs/week, $7.35/hr)
- Meet bi-weekly with an upper-class peer mentor
- Present research project at an on-campus forum

Stage III EXPRESS Fellows additionally:
- Complete an independent faculty-mentored research project during the fall and spring semester (12-15 hrs/wk, $3,200 academic year)
- Complete a paid, immersive summer research program
- Prepare to apply to graduate biomedical doctoral and medical/doctoral programs, including a program-sponsored GRE prep course

Sample Programming Topics

- How to get involved in undergraduate research
- Finding your right livelihood (MD vs. PhD)
- Careers in biomedical research/scientific talks
- Graduate student panels
- Applying to summer undergraduate research programs
- Reading scientific literature
- Chemical Safety Workshop
- Biomedical Ethics Training
- Creating a three-part study plan
- Making the most of tutoring services/Learning Center resources
- Writing effective personal statements
- Resumé/CV workshops
- Applying for fellowships
- GRE preparation
- Mock interviews for graduate school
- Peer mentor-led social events

Peer Mentoring

There are eight peer mentors for the IMSD EXPRESS Program. A Peer Mentor is an upper-class student who serves as a resource, a helping handing, a sounding board, and a referral service. Each mentor provides useful advice to their mentees to help them acclimate to the University, succeed academically, and pursue their careers in the field of biomedical research.

Janae Bradley
Junior,
Biological Engineering

Ed Duqum
Junior,
Biochemistry

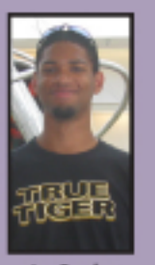
Nicole Herrera
Senior,
Biological Sciences

Victor Martinez-Cassmeyer
Senior,
Biological Sciences

"One of the great things about Peer Mentors is that they have had at least two years of being in the program," says Program Coordinator, Brian Booton. "They really serve as allies, advocates and coaches for incoming students while helping them maximize their undergraduate research experiences."

Dallas Pineda
Junior,
Biochemistry

Reian Roberts
Senior,
Biological Sciences



Joe Rowles
Junior,
Biochemistry

Jenny Schanzle
Senior,
Biological Sciences

Recent Off-Campus Summer Programs

- University of California-Berkeley Amgen Scholars Program
- Duke Summer Research Opportunity Program (SROP)
- Harvard School of Public Health Summer Program in Biological Sciences
- University of Pittsburgh Models of Infectious Disease Agent Study Program (MIDAS)
- University of Virginia Summer Research Internship Program (SRIP)
- Georgia Institute of Technology Emergent Behaviors of Integrated Cellular Systems Program (EBICS)
- Northwestern University HHMI Exceptional Research Opportunities Program (EXROP)
- Yale University Summer Medical and Dental Education Program (SMDEP)

Senior Outcomes May 2013: Sample Programs Entered

- University of Wisconsin-Madison, PhD Biochemistry
- Georgia Institute of Technology, PhD Biomedical Engineering
- Baylor University, PhD Biomedical Studies
- University of Missouri, PhD Molecular Pathogenesis and Therapeutics
- University of Texas-Austin, Master's Public Health
- A.T. Still University, Master's Biomedical Sciences
- Southeast Missouri State University, Master's Forensic Chemistry
- Vanderbilt University, Research Technician
- National Institutes of Health, Postbaccalaureate Intramural Research Training Award (IRTA)