



NSF Research Experience for Undergraduates at WPI: Integrated Bioengineering Research, Education, and Outreach Experiences for Females and Underrepresented Minorities at WPI



WPI REU in Bioengineering 2009 Highlights

REU Student Profile (2009)

105 Applicants: 81% female, 44% under-represented minority (13% black, 10% Hispanic)

9 Participants: 100% female, 33% under-represented minority (22% black, 11% Hispanic)

71% from schools that do not offer Ph.D. in BME (2 from community college)

First research experience for >80%; 2 participated as supplement to RET

Professional Education Series - Topics

Research Communication	Format, Audience, and Goals of Research Communications; Maintaining a Laboratory Notebook PowerPoint Presentations Technical Writing - Abstracts, Papers and Proposals
Communication: Practice	Final presentation practice sessions Peer Review and Discussion of conference-style abstracts
Research Tools	Ethics in science, Experimental Design Data Analysis and Data Presentation
Personal	Balancing work and family life (panel discussion) How to choose a graduate school and application process

BioDiscovery Program: Mentoring middle school girls

Each REU student receives formal mentoring training and acts as a mentor
One week, full time program for eleven 5-8th grade girls
Group demonstrations in the morning, individual projects in the afternoon
Culminates in poster session with peers, parents, and faculty

Projects and research supervisors:

Olufunmilayo Adebayo*: “Comparative Study of Cell-Derived and Biologic Gel Tissue Rings” advised by Marsha Rolle, Ph.D., Biomedical Engineering

Roseann Gammal: “A Hybrid Bilayer Membrane / Insulin Receptor Construct for High-Throughput Screening” advised by Chris Lambert, Ph.D., Chemistry and Biochemistry

Lauren Huyett*: “Measuring the Effects of Cranberry Juice on Biofilm Formation of Uropathogenic Bacteria” advised by Terri Camesano, Ph.D., Chemical Engineering

Amy Manaresi*: “Binding and Inactivating Pathogenic E. coli using Antimicrobial Peptide Cecropin P1-cys Fragments” advised by Terri Camesano, Ph.D., Chemical Engineering

Rebecca Slater*: “Evaluation of PriMatrix™ Dermal Repair Scaffold” advised by George Pins, Ph.D., Biomedical Engineering

Laura Firstenberg: “Design of a Strip Biaxial Stretch Device for Use in Cell Studies Involving Substrates of Tunable Stiffness,”* advised by Kristen Billiar, Ph.D., Biomedical Engineering

Delisa Adams: “Cyclic Loading of Fibrin Threads for Cell Delivery to the Heart” advised by Glenn Gaudette, Ph.D., Biomedical Engineering

Julie Chau: “Mechanically-Strengthening Fibrin Microthreads Using EDC Crosslinking” advised by George Pins, Ph.D., Biomedical Engineering

Keila Vazquez*: “Optimizing Cell-Derived Tissue Ring Fabrication for Dynamic Conditioning” advised by Marsha Rolle, Ph.D., Biomedical Engineering

**Presented at a national conference (BMES, ASME, etc.)*