Research Experiences for Undergraduates - Program Impact

The Research Experiences for Undergraduates (REU) program supports active research participation by undergraduate students in any of the areas of research funded by the National Science Foundation.

- Provides appropriate and valuable educational experiences for undergraduate students through participation in 10 weeks of research
- Features high-quality interactions of students with faculty and/or other research mentors and access to appropriate facilities and professional development opportunities
- Offers an opportunity to tap the nation’s diverse student talent pool and broaden participation in science and engineering

86 students participated in CfSE-led REU programs at Northeastern University since 2016

Life and Learning in Labs:
Students overwhelmingly found the experience valuable, and many cited the importance of learning more about life as a student doing research.

REU Initiatives:
- D3 [NSF #1559894]: 2016-19
- POWER [NSF #1757650]: 2018-22
- PATHWAYS [NSF #2150417]: 2022-26

- students participated from 28 school
- 45% of students from Community College
Program Impact Summary - 2023 [REU-PATHWAYS]

2023 Projects

Leveraging Parallel Processing for Advanced Graph Computations - Ayman Alabbasi (North Shore C.C.) w/ Prof. Dave Kaeli (ECE)
Leveraging Parallel Processing for Advanced Graph Computations - Shamil Imakaev (MassBay C.C.) w/ Prof. Dave Kaeli (ECE)
Cleaning, Curation, and Communication of Home Metadata - Zoe Chappell (Middlesex C.C.) w/ Prof. Mike Kane (CEE)
Demographic/Building Info for Residential Load Flexibility Data - Justin Muñoz (Bunker Hill C.C.) w/ Prof. Mike Kane (CEE)
User Experience Design for Building Operator Training Curriculum - Sarah Collecoci (Bunker Hill C.C.) w/ Prof. Mike Kane (CEE)
Magnetic Field Gradient for Magneto-Functional Materials - Isabela Eliassen (Green Mountain College) w/ Prof. Laura Lewis (ChemE)
Design of Sequential Injection Analysis System for Nitrate Sensing - Jodie Zangari (Middlesex C.C.) w/ Prof. Amy Mueller (CEE)
Cross-Calibration and Data Visualization of Portable Air Quality Monitor – Olivier Francois (Bunker Hill C.C.) w/ Prof. Amy Mueller (CEE)
Analyzing Infant Behavior Using Machine Learning - Muskan Kumar (MassBay C.C.) w/ Prof. Sarah Ostadabbas (ECE)

WORKSHOPS & PRESENTATIONS

7 x SparkFun / Arduino Workshops
4 x Research Presentations
Prof. Fernandez: “Man-made Chemicals”
Prof. Ramezani: “Bio-Inspired Robots”
Prof. Cram: “All about Worms”
Prof. Liu: “Materials for Optics”
5 x Information Sessions
Diversity Workshop
Life of Luis Frias
REU/NSF Research
GEM Fellowship
Transfer Process

7 x Skill-Building Seminars (w/ Lydia Bird)
Professional Development
Resumes
LinkedIn
Cover Letters & References
Poster Training Session (w/ Mark Casto)
Interviews & Elevator Pitches
Networking & Mentoring

DEMOGRAPHICS

Ethnicity: Asian: 1 (11.1%) || Black: 1 (11.1%)
Hispanic: 2 (22.2%) || White: 5 (55.6%)

Gender: Male: 4 (44.4%) || Female: 4 (44.4%) || N.B.: 1 (11.1%)
Age: Avg: 26.8 | Range: 19-46

“The biggest discovery for me was how much I could really do. Taking the complex topics and understanding them and to be able to explain them helped show that I’m actually deserving of being here.”
- 2023 REU Participant

“This summer was such a great experience! I loved the lab that I was in, and I am so grateful to both Ben and Amy for all their support. I also loved the field trips and seminars and Arduino workshops! Learning Arduino was one of my favorite parts of this entire summer, but I also really appreciated how Lydia and Nick took the time to coordinate field trips for us to come together and get to know each other and experience new and exciting things and places that we otherwise may not have seen.”
- 2023 REU Participant