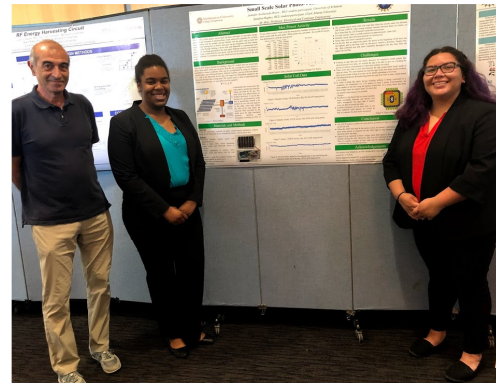




Northeastern University
Center for STEM Education



Research Experiences for Undergraduates - Program Impact



Program Goals

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

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Program Impact Summary – 2023 [REU-PATHWAYS]

Eye-Opening
Educational Enriching
Explorative Welcoming
Insightful Exciting
Safe
Experience
Communication Autocad
Growth Intellectual
Eye-Opener Analysis Processes
Informational
Learning

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 Callecod
(Bunker Hill C.C.) w/ Prof. Mike Kane (CEE)

**Magnetic Field Gradient for Magneto-
Functional Materials** – Isabela Eliassen

(North Shore C.C.) 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