
Outreach projects for promoting STEM careers and the social appreciation of engineers.

Advisor: Joaquin Rodriguez Alonso, Chemical and Petroleum Engineering

Student: Sabrina Martin, Mechanical Engineering and Materials Science

Metal distributions in Urban Soils and Green Infrastructure

Advisor: Daniel Bain, Geology and Environmental Science

Student: Claire Burns, Environmental Science

Assessing Environmental (In)justices in U.S. Public Housing Siting Decisions

Advisors: Michael Blackhurst, University Center for Social and Urban Research

Randy Walsh, Economics

Student: Natalie Britton, Economics

Exploring cryptic diversity in temperate forests: Do seed banks promote forest sustainability and resilience in wind-disturbed and logged temperate forests?

Advisor: Walter Carson, Biological Sciences

Student: Edith Fields, Biological Sciences

Sustainable Ocean in the Box

Advisor: Lei Fang, Civil and Environmental Engineering

Student: Jamison Beveridge, Mechanical Engineering & Materials Science

Improving the efficiency of microgrids by integrating weather forecasts into optimization models

Advisor: Oliver Hinder, Industrial Engineering

Student: Zhihan Liu, Industrial Engineering

Machine learning green chelating agents

Advisor: John Keith, Chemical and Petroleum Engineering

Student: Elizabeth Niemi, Chemical and Petroleum Engineering

Artificial Intelligence Algorithms for Distributed Energy Resource Management Systems (DERMS)

Advisor: Robert Kerestes, Electrical and Computer Engineering

Student: Lauren Bruckstein, Computer Science

Using machine learning models to identify wildlife species in field recordings

Advisor: Justin Kitzes, Biological Sciences

Student: Carolyn Tett, Biological Sciences and French

Developing a wireless sensing system for in-situ seed imbibition monitoring

Advisor: In Hee Lee, Electrical and Computer Engineering

Student: Jordan Athas, Electrical and Computer Engineering

Simulation of FirstSolar Solar Modules

Advisor: Paul Leu, Industrial Engineering

Student: Elizabeth Medvedva, Civil & Environmental Engineering

Electrochemistry for a zero-waste chemical economy

Advisor: James McKone, Chemical and Petroleum Engineering

Student: Todd Ackerman, Chemical and Petroleum Engineering

Jared Coffelt, Chemical and Petroleum Engineering



Optical fiber diameter tracking via machine vision

Advisor: Paul Ohodnicki and Bo Liu, Mechanical Engineering and Materials Science

Student: Victoria Schmotzer, Mechanical Engineering and Materials Science

Environmental Justice Teaching

Advisor: Cassie Quigley, Department of Teaching, Learning and Leading, School of Education

Student: Sydney DuBose, Environmental Science

Data-Driven Vaccine Allocations (Parallelization and Cluster Computing)

Advisor: Amin Rahimian, Industrial Engineering

Student: Qingshi Sun, Industrial Engineering

Shitao You, Industrial Engineering

Smarter Riversheds –real-time sensor networks

Advisor: David Sanchez, Civil and Environmental Engineering

Student: Heather Phillips, Civil and Environmental Engineering

Comparative Study of Plastic First Mile Policies

Advisor: Kay Shimizu, Political Science

Student: Emily Albrecht, Psychology

Analysis of impact of Connected and Automated operations on fuel consumption at signalized intersections

Advisor: Aleksandar Stevanovic, Civil and Environmental Engineering

Student: Fiyinfoluwa Odeniyi, Civil and Environmental Engineering

A novel process for purely thermal desalination

Advisor: Sachin Velankar, Chemical and Petroleum Engineering

Student: Michael Gresh-Sill, Chemical and Petroleum Engineering

Towards a Circular Economy: Chemical Recycling of Plastics Waste via Liquid Metal Catalysis

Advisors: Goetz Vesper and Eric Beckman, Chemical and Petroleum Engineering

Student: Sean Graham, Chemical and Petroleum Engineering

Modular On-Demand Water Purification for Developing Countries (ChemE Cube)

Advisor: Goetz Vesper, Chemical and Petroleum Engineering

Students: Michael Kane, Chemical and Petroleum Engineering

Cara Klinger, Chemical and Petroleum Engineering

Sydney Hansen, Chemical and Petroleum Engineering

Design spinel ferrite magnetic adsorbents for water purification

Advisor: Guofeng Wang, Mechanical Engineering and Materials Science

Student: Samuel Hunn, Mechanical Engineering and Materials Science

Machine learning of graded alloys made by additive manufacturing for power plant with high energy efficiency

Advisor: Wei Xiong, Mechanical Engineering and Materials Science

Student: Lauren Wewer, Mechanical Engineering and Materials Science

Electrically Reconfigurable Phase-Change Optics

Advisor: Nathan Youngblood, Electrical and Computer Engineering



University of
Pittsburgh

Mascaro Center for Sustainable Innovation

2021 Undergraduate Summer Research
Participants and Project Pairings

Student: Nicholas Nobile, Electrical and Computer Engineering

Develop a novel multi-material 3D printing system

Advisor: Xiayun Zhao, Mechanical Engineering and Materials Science

Student: Elliot Kerachsky, Mechanical Engineering and Materials Science

Soft Robotics for Environmental Monitoring and Sampling

Advisor: Ravi Shankar, Industrial Engineering

Student: Zhen Wu, Computer Science