

Undergraduate Summer Research Scholars

A 12-week summer research program for students interested in independent research on the broad topic of sustainability.

Phytoremediation of Environmental Pollutants

Advisor: Tia-Lynn Ashman, biological sciences

Student: Madison Conn, environmental science & geology (*Charles and Linda Sorber Scholar*)

Solar-Powered Nanotechnology and Origami Engineering

Advisor: Mostafa Bedewy, mechanical engineering & materials science

Student: Thomas Kisiel, mechanical engineering & materials science (*John C. Mascaro Scholar*)

Urban Permaculture

Advisors: Kevin Bell, bioengineering

Corey Flynn, office of sustainability in the health sciences

Student: Pip Mostern, geology & anthropology (*John C. Mascaro Scholar*)

The Effect of In-Solution Particles on Reusable, Additive Manufactured Metal Filters

Advisor: Markus Chmielus, mechanical engineering & materials science

Student: Steven Panico, mechanical engineering & materials science (*John C. Mascaro Scholar*)

Life Cycle Analysis of Metered Dose Inhalers in the UPMC System

Advisors: Noe Copley-Woods, school of medicine

Stephanie Maximous, school of medicine

Student: Priya Vishnoi, biology & chemistry (*John C. Mascaro Scholar*)

Storm Chasing to Understand Nutrient Cycling in the Urban Tree Canopy

Advisor: Emily Elliott, geology & environmental science

Student: Olivia Rossi, geology & environmental science (*John C. Mascaro Scholar*)

Environmental Sustainability and Market Competition

Advisor: Michael Hamilton, business

Student: Xindi Shao, industrial engineering (*John C. Mascaro Scholar*)

Avoiding Numerical Issues in Optimal Power Flow Problems

Advisor: Oliver Hinder, industrial engineering

Student: Haoyu Ding, industrial engineering (*John C. Mascaro Scholar*)

Energy Harvesting Powered Sensors and Machine Learning

Advisor: Jingtong Hu, electrical & computer engineering

Student: Harry Tye, electrical & computer engineering (*John C. Mascaro Scholar*)

Tracking Migration of Monarch Butterflies with the World's Smallest Computer

Advisor: Inhee Lee, electrical and computer engineering

Student: Vishnu Prabakaran, bioengineering (*John C. Mascaro Scholar*)



Solar Recycling

Advisor: Paul Leu, industrial engineering
Student: Aliya Abildayeva, industrial engineering (*John C. Mascaro Scholar*)

Antireflection Glass for Solar

Advisor: Paul Leu, industrial engineering
Student: Dana Briggs, chemical engineering (*John C. Mascaro Scholar*)

CyberWater2 -- A Sustainable Data/Model Integration Framework

Advisor: Xu Liang, civil and environmental engineering
Student: Haoji Wang, industrial engineering (*John C. Mascaro Scholar*)

Manufacturing 3D Biomimetic Fibrous Scaffold

Advisor: Qihan Liu, mechanical engineering and materials science
Student: Yuanxiang Gong, mechanical engineering (*John C. Mascaro Scholar*)

Experimental and Theoretical Grain Growth Studies of Nanocrystalline Soft Magnetic Alloys for Sustainable Aviation and Space

Advisor: Paul Ohodnicki, mechanical engineering & materials science
Student: Evan Chao, mechanical engineering (*John C. Mascaro Scholar*)

Exploring Sustainable Design

Advisor: Stephen Quigley, english
Student: Leanni Barreiros, geology & environmental science (*John C. Mascaro Scholar*)

Mapping Sustainable Consumption Behavior Across PA

Advisor: Amin Rahimian, industrial engineering
Student: Yuru Zhang, industrial engineering (*John C. Mascaro Scholar*)

Single-Use Plastics in Healthcare

Advisor: Joaquin Rodriguez, chemical & petroleum engineering
Student: Nnenna Ekoh, chemical & petroleum engineering (*John C. Mascaro Scholar*)

Using Diatoms to Reconstruct Environmental Change in Central Chile During the Common Era

Advisor: Patrick Shirey, geology & environmental science
Student: Rachael Betz, geology & environmental science (*Charles and Linda Sorber Scholar*)

Practical Optimization of Traffic Signals to Reduce Fuel Consumption and Vehicular Emissions

Advisor: Alek Stevanovic, civil & environmental engineering
Student: Jake Winter, urban studies (*Frank and Daphna Lederman Scholar*)

Environmental Inequality and Disasters Research

Advisor: Fernando Tormos-Aponte, sociology
Student: Christopher Norris Silva, political science (*John C. Mascaro Scholar*)



Depolymerizing Plastics Waste with Liquid Metals Catalysis

Advisor: Götz Vesper, chemical & petroleum engineering

Student: Aaron Winchell, chemistry (*John C. Mascaro Scholar*)

Laccase-Mimicking Bionanozyme for Sustainable Removal of Water Contaminants

Advisor: Meng Wang, mechanical engineering & materials science

Students: Tyler Henry, geology & environmental science (*John C. Mascaro Scholar*)

Materials Design for Advanced Manufacturing of Co-free Cemented Carbides

Advisor: Wei Xiong, mechanical engineering & materials science

Student: Pocket Pizzutillo, mechanical engineering & materials science (*John C. Mascaro Scholar*)

Integrated Photonic Accelerator for Efficient Machine Learning

Advisor: Nathan Youngblood, electrical & computer engineering

Student: Christopher Kefalos, electrical & computer engineering (*John C. Mascaro Scholar*)

Alternative Energy Opportunities

Advisor: Kate Zettl, UPMC center for sustainability

Student: Neeharika Kolli, environmental science & geology (*John C. Mascaro Scholar*)

Climate Inventory and Targets

Advisor: Kate Zettl, UPMC center for sustainability

Student: Dechen Xie, industrial engineering (*UPMC Scholar*)