Silk-based lithography: a sustainable alternative towards green micro-/nano-manufacturing?
Advisors: Mostafa Bedewy, industrial engineering
           Leanne Gilbertson, civil & environmental engineering
Student: Todd Ackerman, chemical & petroleum engineering (John C. Mascaro Scholar)

Biodiversity collapse at the urban-rural interface: Consequences for the sustainability and economic viability of small, privately owned forests in Pennsylvania
Advisor: Walter Carson, biological sciences
Student: Ali Carroll, ecology & evolution (John C. Mascaro Scholar)

Energy-efficient processors, sensors, and systems for space-based sensing and computing
Advisor: Alan George, electrical & computer engineering
Student: Francis Fattori, computer engineering (John C. Mascaro Scholar)

Using machine learning models to identify wildlife species in field recordings
Advisor: Justin Kitzes, Biological Sciences
Student: Tiger Wu, industrial engineering (John C. Mascaro Scholar)

Electromagnetic Modeling of Power Systems Elements using COMSOL Multiphysics
Advisor: Bob Kerestes, electrical & computer engineering
Student: Evan Gzesh, electrical & computer engineering (Frank and Daphna Lederman Scholar)

Plastic Trade and Implications for Sustainability
Advisor: Vikas Khanna, civil & environmental engineering
Students: Elijah Smith, industrial engineering (John C. Mascaro Scholar)
          Kevin Padgett, chemical & petroleum engineering (John C. Mascaro Scholar)

Simulations of First Solar Cells
Advisor: Paul Leu, industrial engineering
Student: Maxwell Smith, chemical & petroleum engineering (Douglas Condon Scholar)

Durable, anti-soiling, self-cleaning, antireflective solar glass
Advisor: Paul Leu, industrial engineering
Student: Sooraj Sharma, mechanical engineering & materials science (NSF funded)

Electrochemistry for Sustainable Chemical Production
Advisor: James McKone, chemical & petroleum engineering
Student: Jeff Hoffmann, chemical & petroleum engineering (John C. Mascaro Scholar)

Intelligent Management for Energy Efficiency in Computer Systems
Advisors: Daniel Mosse, computer science
          Vinicius Petrucci, computer science
Student: Caleb Tucker-Loewe, computer science (John C. Mascaro Scholar)

CHEMICAL CATCH: Detecting emerging contaminants of concern in complex environments
Advisor: David Sanchez, civil & environmental engineering
Student: Claire Chouinard, chemical & petroleum engineering (Charles and Linda Sorber Scholar)

SUSTAINABLE OXIDATION- generating chemical-free ways to remove emerging contaminants of concern
Advisor: David Sanchez, civil & environmental engineering
Student: Ethan Arnold-Paine, chemical & petroleum engineering (John C. Mascaro Scholar)
Harnessing ambient energy for manipulation using additively manufactured structures
Advisor: Ravi Shankar, industrial engineering
Student: Julia Kocherzat, chemistry (John C. Mascaro Scholar)

A novel process for purely thermal desalination
Advisor: Sachin Velankar, chemical and petroleum engineering
Student: Brett Mallon, chemical & petroleum engineering (John C. Mascaro Scholar)

Going with a Bang: Cavitation reactors for chemicals production
Advisor: Götz Veser, chemical & petroleum engineering
Student: Tyler Weinstein, chemical & petroleum engineering (John C. Mascaro Scholar)

(Re-)Engineering during covid19: On-site, on-demand production of hand sanitizer
Advisor: Götz Veser, chemical & petroleum engineering
Student: Pablo Salazar, chemical & petroleum engineering (John C. Mascaro Scholar)

Hardware acceleration of artificial neural network for neuromorphic computing
Advisor: Feng Xiong, electrical & computer engineering
Student: Sridhar Reddy Velagala, electrical & computer engineering (John C. Mascaro Scholar)

Design of high strength alloys for energy efficiency
Advisor: Wei Xiong, mechanical engineering & materials science
Student: Eric Rhodes, mechanical engineering & materials science (John C. Mascaro Scholar)