2018 Undergraduate Summer Research Program

Protein-based nanomanufacturing: Using silk and hydrophobins for sustainable lithography
Advisor: Mostafa Bedewy, industrial engineering
Student: Megan Black, mechanical engineering & materials science (Mascaro Scholar)

Microstructure and properties of sintered magnetocaloric materials for efficient magnetic refrigeration
Advisor: Markus Chmielus, mechanical engineering & materials science
Student: Rafael Rodriguez, mechanical engineering & materials science (Mascaro Scholar)

Magnetogaloric effect of binder jet printed Ni-Mn-Ga magnetic shape memory alloy
Advisor: Markus Chmielus, mechanical engineering & materials science
Student: Aaron Acierno, mechanical engineering & materials science (Mascaro Scholar)

Energy-efficient processors, sensors, and systems for space-based sensing and computing
Advisor: Alan George, electrical & computer engineering
Student: Sridhar Reddy Velagala, electrical engineering and computer science (Condon Scholar)

Designing efficient electrocatalysts atom by atom
Advisor: John Keith, chemical & petroleum engineering
Student: Sarah Newton, chemical & petroleum engineering (Mascaro Scholar)

Black silicon solar cells
Advisor: Paul Leu, industrial engineering
Student: Sooraj Sharma, mechanical engineering & materials science (Mascaro Scholar)

Nanofabricated interfaces for electrochemical catalysis
Advisor: James McKone, chemical & petroleum engineering
Student: Julia McKay, chemical & petroleum engineering (Frank and Daphna Lederman Scholar)

Capturing tidal energy using smart materials
Advisor: Katherine Ong, mechanical engineering & materials science
Student: Katrina Haidari, mechanical engineering & materials science (Mascaro Scholar)
Mary Kozuch, mechanical engineering & materials science (Mascaro Scholar)

Smarter Riversheds – Real-time environmental sensors networks
Advisor: David Sanchez, civil & environmental engineering
Student: Kathleen Beaudoin, civil & environmental engineering (Charles A. and Linda E. Sorber Scholar)

Feeding a Growing World: Towards a novel process for ammonia synthesis
Advisor: Goetz Veser, chemical & petroleum engineering
Student: Eyram Akabua, chemical & petroleum engineering (Mascaro Scholar)

Making more with less: “Greening” the process industry via process intensification
Advisor: Goetz Veser, chemical & petroleum engineering
Student: Trevor Devine, chemical & petroleum engineering (Mascaro Scholar)

Green electronics – Low-Power memory device on transparent nanopaper substrate
Advisor: Feng Xiong, electrical and computer engineering
Student: Nolan Ardolino, mechanical engineering & materials science (Mascaro Scholar)

3D Printing of Graded Alloys for Energy Efficiency in Aerospace Materials Manufacturing
Advisor: Wei Xiong, mechanical engineering & material science
Student: Noah Levine, mechanical engineering & material science (Mascaro Scholar)