2019 Undergraduate Summer Research Symposium

10:00 AM  Welcome, Dr. David Sanchez

10:05 AM  Reducing Emissions - Fuel Consumption Reduction Technologies for Pittsburgh Port Authority Buses
Advisor: Matthew Barry, mechanical engineering & materials science
Student: Kathryn Rossi, chemical & petroleum engineering (John C. Mascaro Scholar)

10:15 AM  Silk-based flexible/wearable electronics: towards sustainable fabrication and materials engineering
Advisor: Mostafa Bedewy, mechanical engineering & materials science
Student: Rim Biaz, industrial engineering (John C. Mascaro Scholar)

10:25 AM  Validating citizen science tools used to identify lead water lines
Advisor: Mike Blackhurst, university center for urban and social research
Student: Arianna Heilbrunn, environmental studies (John C. Mascaro Scholar)

10:35 AM  Ni-Mn-Ga magnetic shape memory alloys for power generation applications
Advisor: Markus Chmielus, mechanical engineering & materials science
Student: Tyler Paplham, mechanical engineering & materials science (John C. Mascaro Scholar)

10:45 AM  Chemical semantics and its implications on environmental transport, fate, and toxicity
Advisors: Leanne Gilbertson and Carla Ng, civil & environmental engineering
Student: Rachel Fay, civil & environmental engineering (John C. Mascaro Scholar)

10:55 AM  Durable Antireflective, Anti-Soiling and Self-Cleaning Solar Glass
Advisor: Paul Leu, industrial engineering
Student: Sooraj Sharma, mechanical engineering & materials science (John C. Mascaro Scholar)

11:05 AM  Structural Design with Bamboo
Advisor: Kent Harries, civil & environmental engineering
Student: Harisa Martinos, architectural studies (John C. Mascaro Scholar)

11:15 – 11:30  BREAK

11:30 AM  Capturing and storing energy from hurricane waves with a piezoelectric device
Advisor: Katherine Hornbostel, mechanical engineering & materials science
Student: Stephanie Litwack, mechanical engineering & materials science (John C. Mascaro Scholar)

11:40 AM  Capturing carbon dioxide from the ocean with a membrane device
Advisor: Katherine Hornbostel, mechanical engineering & materials science
Student: Christopher Snodgrass, bioengineering (John C. Mascaro Scholar)

11:50 AM  Reducing frictional energy losses in transportation and industry: Surface coatings and the effect of surface roughness on friction
Advisor: Tevis Jacobs, mechanical engineering & materials science
Student: Annie Shi, mechanical engineering & materials science (John C. Mascaro Scholar)

Noon  Using acoustic sensors and machine learning to locate birds and bats in the field
Advisor: Justin Kitzes, biological sciences
Student: Jiade Song, industrial engineering (John C. Mascaro Scholar)
12:10 PM  Small & Mighty: Exploring nature to identify bacteria capable of degrading a new generation of environmental contaminants
Advisor: Sarah Haig, civil & environmental engineering
Student: Kareem Rabbat, civil & environmental engineering (Charles and Linda Sorber Scholar)

12:20 PM  Increasing the Structural Resilience of Reinforced Concrete through Bio-Remediation
Advisor: Sarah Haig, civil & environmental engineering
Student: Aamil Shah, bioengineering (John C. Mascaro Scholar)

12:30 – 1:10  LUNCH

1:10 PM  Smarter Riversheds – real-time sensor networks
Advisor: David Sanchez, civil & environmental engineering
Student: Carlie Johnson, civil & environmental engineering (John C. Mascaro Scholar)

1:20 PM  Recirculating Aquaculture – managing water quality in a closed system
Advisor: David Sanchez, civil & environmental engineering
Student: Mason Unger, civil & environmental engineering (John C. Mascaro Scholar)

1:30 PM  Campus-Wide Sustainability Dashboard
Advisor: Aurora Sharrard, Director, University Office of Sustainability
Collaborators: Melissa Bilec & Michael Blackhurst, plus interactions with Pitt Facilities Management
Student: Jonathan Coles, civil & environmental engineering (John C. Mascaro Scholar)

1:40 PM  Examination of Electrode Performance for Redox Flow Batteries
Advisor: James McKone, chemical & petroleum engineering
Student: Carissa Yim, chemical & petroleum engineering (Frank and Daphna Lederman Scholar)

1:50 PM  What the Frack: Designing nanocatalysts for responsible use of natural gas
Advisor: Goetz Veser, chemical & petroleum engineering
Student: Albert Lopez-Martinez, chemical & petroleum engineering (John C. Mascaro Scholar)

2:00 PM  Post-processing design on superalloys by additive manufacturing for NASA space technology missions.
Advisor: Wei Xiong, mechanical engineering & materials science
Student: Yinxuan Li, mechanical engineering & materials science (John C. Mascaro Scholar)

2:10 PM  Graphene-based composite materials for high performance thermoelectric devices
Advisor: Minhee Yun, electrical and computer engineering
Student: Seth So, electrical and computer engineering (Douglas Condon Scholar)

2:20 PM  Developing a novel photopolymer based additive manufacturing machine (3D Printer) for high-resolution applications
Advisor: Xiayun Zhao, mechanical engineering & materials science
Student: Yue Zhang, mechanical engineering & materials science (John C. Mascaro Scholar)