

## 2017 Undergraduate Summer Research Symposium

*Wednesday, July 26*

*9:30 AM - 2:45 PM*

*102 Benedum Hall*

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- 9:30 am**      **Welcome**  
*Dr. David Sanchez*
- 9:35 am**      **Water desalination through reactive extraction**  
Madeleine Hamrick, Chemical & Petroleum Engineering (*Charles A. and Linda E. Sorber Scholar*)  
Advisor: Eric Beckman, Chemical & Petroleum Engineering
- 9:50 am**      **Pittsburgh Water Microbiome**  
Austin Kuntz, Bioengineering (*Mascaro Scholar*)  
Advisor: Kyle Bibby, Civil & Environmental Engineering
- 10:05 am**      **The Effects of Carbon electrode morphology on Biofilm-electrode formation**  
Kaleigh Smith, Mechanical Engineering & Materials Science (*Mascaro Scholar*)  
Advisor: David Sanchez, Civil & Environmental Engineering
- 10:20 am**      **Development of Next Generation Nano-Antimicrobials**  
Cole D'Aurizio, Mechanical Engineering & Materials Science (*Mascaro Scholar*)  
Advisor: Leanne Gilbertson, Civil & Environmental Engineering
- 10:35 am**      **Fueling a Growing World: Nanoparticle Catalyzed Synthesis of Ethylene**  
Kendra LaVallee, Chemical & Petroleum Engineering (*Mascaro Scholar*)  
Advisor: Goetz Vesper, Chemical & Petroleum Engineering
- 10:50 am**      **WO<sub>3</sub>-Supported Noble Metal Catalysts for Hydrogen Evolution**  
Dean Miller, Chemical & Petroleum Engineering (*Covestro Scholar*)  
Advisor: James McKone, Chemical & Petroleum Engineering
- 11:05 am**      **Break**
- 11:15 am**      **Combining Metal Nanomeshes and Nanostructured Glass as an Alternative to Transparent Conductive Oxides**  
Maxwell Lindsay, Mechanical Engineering & Materials Science (*Mascaro Scholar*)  
Rafael Rodriguez, Mechanical Engineering & Materials Science (*Mascaro Scholar*)  
Advisor: Paul Leu, Industrial Engineering
- 11:30 am**      **Colloidal and Surface Properties of Carbon Particles for Electrochemical Energy Storage**  
James Hughes, Chemical & Petroleum Engineering (*Mascaro Scholar*)  
Advisor: James McKone, Chemical & Petroleum Engineering

- 11:45 am**      ***Additive manufacturing of energy-saving and energy producing materials***  
Colleen Hilla, Mechanical Engineering & Materials Science (*Mascaro Scholar*)  
Advisor: Markus Chmielus, Mechanical Engineering & Materials Science
- Noon**            ***Dynamic antifouling patterned surfaces***  
Joseph Hamm, Chemical & Petroleum Engineering (*Mascaro Scholar*)  
Advisor: Sachin Velankar, Chemical & Petroleum Engineering
- 12:15 pm**      ***Feeding a Growing World: Towards a Novel Process for Ammonia Synthesis***  
Eric McElhinny, Chemical & Petroleum Engineering (*Mascaro Scholar*)  
Advisor: Goetz Vesper, Chemical & Petroleum Engineering
- 12:30 pm**      ***Lunch***
- 1:15 pm**        ***Automated growth of two-dimensional materials for green electronics***  
Joji Bronner, Electrical and Computer Engineering (*Condon Scholar*)  
Advisor: Feng Xiong, Electrical and Computer Engineering
- 1:30 pm**        ***2-D and nanomaterials for Energy Applications***  
Connor Herring, Chemical & Petroleum Engineering (*Mascaro Scholar*)  
Advisor: Minhee Yun, Electrical and Computer Engineering
- 1:45 pm**        ***Engineering Engagement Approaches: Game-Play and Design within the Classroom***  
Abra Spisso, Civil and Environmental Engineering  
Advisor: Melissa Bilec, Civil and Environmental Engineering
- 2:00 pm**        ***A Material, Energy, and Water Use Life Cycle Assessment of High Performance Buildings***  
Julissa Garcia, Civil and Environmental Engineering  
Advisor: Melissa Bilec, Civil and Environmental Engineering
- 2:15 pm**        ***Unlocking energetically efficient water oxidation for ozone disinfectants***  
Angela Leo, Chemical & Petroleum Engineering (*Covestro Scholar*)  
Advisor: John Keith, Chemical & Petroleum Engineering
- 2:30 pm**        ***Machine Learning Blueprints for Green Chelating Agents***  
Ethan Henderson, Chemical & Petroleum Engineering (*Frank and Daphna Lederman Scholar*)  
Advisor: John Keith, Chemical & Petroleum Engineering

***Thank you***  
***to our faculty, graduate student mentors and, our donors***  
***for making this program possible!***