

**SURES**  
**Summer Undergraduate Research in Energy and Sustainability**  
**Program Participants & Projects**  
**2009 & 2010**

<b>2010 Student Names</b>	<b>Major</b>	<b>Project Title</b>	<b>Mentor</b>
Tristan Chen	History & Economics	Coal and Chinese Industrialization, 1980-2010	Prof. Peter Shulman, History
Colin Downey	Chemical Engineering & Material Science and Engineering	Performance and Durability of Micro-channel Heat Exchangers	Prof. David Schwam, Macromolecular Science and Engineering
Quinn Gleisner	Chemistry	Synthesis of Monomers in a Photovoltaic Cell	Prof. Genevieve Sauve, Chemistry
Wesley Gould	Physics	Study of Proton Conduction in Nafion Membranes using Monte Carlo Techniques	Prof. Philip Taylor, Physics
Aaron Hickman	Cognitive Science	Sustainable Food Initiative at the University Farm	Prof. Ana Locci, University Farm & Biology
Erin Hollinger	Polymer Science and Engineering	Benzoxazine-functionalized Chitosan: A New Class of Green Energy Saving Polymers with Many Potential Applications	Prof. Hatsuo Ishida, Macromolecular Science and Engineering
Jeffrey Justus	Chemical Engineering & Biomedical Engineering	Study of V4+/V5+ Redox Couple in an Operational Vanadium Redox Flow Battery	Prof. Robert Savinell, Chemical Engineering
Ian Kidd	Materials Science and Engineering	Metal Casting Using Self-Propagation Reactions	Prof. David Schwam, Macromolecular Science and Engineering
Evan Maynard	Aerospace Engineering	Maximizing Efficiency and Power From a Hybrid Powertrain during a Drive Cycle	Prof. Kenneth Loparo, Electrical Engineering and Computer Science
Wenjie Xia	Civil Engineering	Turbulence Sensor for Wind Turbine Blades	Prof. Xiong (Bill) Yu, Civil Engineering

<b>2009 Student Names</b>	<b>Major</b>	<b>Project Title</b>	<b>Mentor</b>
Trevor Allen	Physics	An Analysis of the Feasibility of Campus-Wide Composting	Prof. Peter McCall, Geology
Kevin Brent	Aerospace Engineering	Determination of the Relative Response Factor of Methane in Gas Chroma-tography with Flame Ionization Detection	Prof. Chih-Jen Sung, Mechanical and Aerospace Engineering
Beatrice Floyd	Mechanical Engineering	Bio-Inspired Polyelectrolytes	Prof. Alexis Abramson, Mechanical and Aerospace Engineering
Julia German	Materials Science and Engineering	Smart Metering for Monitoring Energy Consumption	Prof. David Schwam, Macromolecular Science and Engineering
Michael Kelley	Physics	Spectroscopic Studies of Self-Assembly and Charge Transfer in Liquid Crystalline Photovoltaic Materials	Prof. Kenneth Singer, Physics
Joshua Lostroh	Biology	Making a Greener Campus at the CWRU Farm	Prof. Ana Locci, University Farm & Biology
Michael MacDonald	Engineering Physics	Measurement of Thermoelectric Properties in InAs and InSb Nanowires	Prof. Xuan Gao, Physics
Paul Manglona, Jr.	Civil Engineering	Feasibility Study of Thermoelectric Power Harvesting	Prof. Xiong (Bill) Yu, Civil Engineering
Cassandra McFadden	Natural Sciences	Pilot Study of Microbial Fuel Cell Technology for Commercial Use in Waste Water Management and Generating Electricity	Prof. Xiong (Bill) Yu, Civil Engineering
Paul Niebrzydowski	History	Understanding Conceptions of Energy Independence	Prof. Peter Shulman, History
Alexander Papadopoulos	Civil Engineering	Carbon Footprint of Forged and Cast Automotive Components	Prof. David Schwam, Macromolecular Science and Engineering
Mariya Topolyanskaya	Psychology	Sustainable Eating in Cleveland	Prof. Peter McCall, Geology
Brandon Wenning	Polymer Science and Engineering	Nanocomposites of Supramolecular Polymeric Materials for Tougher Flexible Crack-Healing Materials	Prof. Stuart Rowan, Macromolecular Science and Engineering