

Schoenborn 2014 Graduate Research Symposium

8:00 – 8:20 am **Continental Breakfast**

8:20 – 8:30 am **Opening Remarks**

Oral presentations Session I: Energy

8:30 am **Ezinne Achinivu** *Selective extraction and recovery of lignin from cornstover using protic ionic liquids (PILs)*

9:00 am **Oscar Bernal** *Cellular Composite Materials for Energy and Gas-Phase Biocatalysis*

9:30 am **Dennis McOwen**, “A Better Battery: Using a New Lithium Salt to Improve Li-ion Battery Stability and Safety”

10:00 am **Coffee Break**

Oral Presentations Session II: Biotechnology

10:30 am **Aaron Hawkins** *Moving From Drops to Kilos: Optimization of Fuel/Chemical Production in Metabolically Engineered *Pyrococcus furiosus**

11:00 am **Cathy Fromen** *Pulmonary Delivery of PRINT Therapeutics*

11:30 am **Marc Kai** *Immune System Interactions with Precision Nano-materials*

12:00 pm **Lunch**

12:30 pm **Announcement of 2014 Stannett Award**

Dr. Harold B. Hopfenberg, Camille Dreyfus Professor Emeritus

12:45 pm **Keynote Address**

Dr. Srinu Raghavan *Polymeric Materials that Stop Severe Bleeding: A Story of our Attempt at Translating Fundamental Discoveries in the Lab into a Life-Saving Technology*

1:30 – 3:00 pm **Materials**

3:00 pm **Stephanie Lam** *Smart Materials from Air and Liquid: Design and Investigation of Novel Classes of Stimuli Responsive Foams*

3:30 pm **Ying Liu** *Shape Programming Polymeric Materials from 2D to 3D*

4:00 pm **Preeti Datta** *Polymerization under confinement*

3:00 – 4:30 pm **Posters (with refreshments)**

List of Poster Presentations

Materials

Daniel Armstrong *Semi-Crystalline Block Copolymer Gels for Applications as Dielectric Elastomer Actuators*

Mandi Burns *Microstructural Rearrangement of Nano-diamond Gels*

Duncan Davis *Shape Memory Polymers and Self Folding*

Martin Dufficy *Hierarchical Carbon Nanofiber Electrodes with Integrated Tin Nanoparticles*

Matt Melillo *Investigating the Swelling Characteristics of Polysiloxane Networks for the Development of Water Purification Materials*

Brittany Mertens *The Impact of Surfactants on Norovirus Colloidal Stability and Surface Adhesion*

Daniel Morales *Fundamentals and Applications of Hydrogel Actuation by Electric Fields*

Alex Richter *Functionalized Environmentally Benign Nanoparticles*

Timothy Shay *Novel Human-device Interfaces: Hydrogel EKG Electrodes and Microfluidic Sweat Monitoring*

Junjie Zhao *Enhanced Growth of Metal Organic Frameworks on Polymer Fiber Mats Using Atomic Layer Deposition*

Catalysis

Patrick Fahey *Elementary Dehydration, Dehydrogenation, and Fragmentation Reactions in Pyrolysis of Alcohols and Ethers*

Arya Shafie Farhood *Mixed Oxides with Tuneable Thermodynamic Properties for Methane Oxidation*

Nathan Galinsky *Supported Oxides for Methane Conversion with Integrated CO₂ Capture - Activation and Deactivation Mechanism Studies*

Mark Schulte *Process Intensification of Gas-phase Biocatalysis by Scalable Cellular Composites*

Taylor Schulz *Catalytic Deoxygenation of β -Hydroxymyristic Acid and Lauric Acid Esters*

Simon Thompson *Hydrodeoxygenation of Guaiacol and Anisole over PdRe/C Catalysts*

Biotechnology

Taliman Afroz *Sugar Utilization by E. coli at the Single-cell Level*

Sophie Carrell *Novel Interactions Between the NF- κ B and BMP Signaling Pathways in the D. melanogaster Embryo*

Jonathan Conway *Role of Multi-domain, Surface Layer Homology Proteins in Biomass Degradation by the Genus Caldicellulosiruptor*

Carlos Cruz *Design of Multi-specific Proteins with Affinity for Solid Surfaces*

Ahmed Gomaa *Programmable Removal of Bacterial Strains Using Genome-targeting CRISPR-Cas Systems*

Ashley Jermusyk *Construction of Synthetic Feedback Networks in Drosophila melanogaster to Understand Signaling*

William Kish *Novel Cyclic Peptide Affinity Ligands for Recombinant Human Erythropoietin (rHuEPO)*

Astor Liu *Morphodynamics of T Lymphocyte Migration*

Michael O'Connell *Fooled by Fluorescence: Teasing Out Active Transcription Factor to Model Gene Expression in Silico*

Anisur Rahman *Quantitative Analysis of mTOR Activation Downstream of Akt*

Laura Weiser *Developing Predictive Models for Peptoids*

Jeffrey Zurawskik *Biochemical and Transcriptomic Analysis of Cellulolytic Caldicellulosiruptor Species Growing on Untreated Switchgrass*