



**Sigma Zeta National Science & Mathematics Honor Society**  
**2016 National Convention**  
**McKendree University, Lebanon IL**

**Thursday, March 31**

**5:00-7:00 pm Registration** - PAC Lobby

**7:00-9:00 Student Social Activity** - The Lair

**6:30-10:00 Executive Council Meeting** - PAC214

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**Friday, April 1**

**7:45 am Registration and Poster Set Up Time** - The Hett Lobby

**8:00 - 8:40 Opening meeting, Welcome** - The Hett

**8:40 - 10:00 Oral Presentations** - The Hett

- 8:40-9:00 Benjamin Albers, Alpha Psi Chapter, Hillsdale College, Determination of Discontinuity in a Pristine, Small Michigan River through Benthic Metabolism and T-RFLP Analysis
- 9:00-9:20 Katie M. Beverley, Rho Chapter, University of Indianapolis, Ciprofloxacin, 5-Flouracil, and Gemcitabine as Adjuvant Chemotherapy Agents for Pancreatic Cancer
- 9:20-9:40 Codi Broten, Alpha Psi Chapter, Hillsdale College, Evaluation of Forskolin for Desmutagenic and Antioxidant Activity via the SOS Chromotest and DPPH Assay
- 9:40-10:00 Joseph T. Hare, Alpha Pi Chapter, Trevecca Nazarene University, Meniscus Size: A New Approach to Meniscal Matching for Meniscal Transplants

**10:00 - 11:00 Poster Session** - The Hett Lobby

- Alexander Cardascio, Pi Chapter, Millikin University, The Effects of Late Transition Metal Nanoparticles on the Formation of Carbonic Acid
- Dianessa Dizon, Beth Ringwelski, Hunter Smith, Gamma Gamma Chapter, Concordia College, Comparison of Red and Gray Squirrel's Behavior on an Urban College Campus
- Robin Fettig, Gamma Gamma Chapter, Concordia College, Concordia Science Academy: A Community-Based Science Outreach Organization
- Robin Fettig, Gamma Gamma Chapter, Isolation and Cloning of Trypanosoma brucei Genes Involved in Lipid Droplet Function and Biogenesis
- Bethany Freeland, Hannah Schmiesing, and Kylee Seljevod, Gamma Gamma Chapter, Concordia College, The Effects of Burning and Elevation on *Andropogon gerardii* Height and Phosphorus Content in Restored Prairies
- Madeline M. Gemuenden, Gamma Gamma Chapter, Concordia College, Synthesis of Folic Acid Derivative of Cisplatin
- Taylor Hatch, Rho, University of Indianapolis, Ultrastructure of Spermiogenesis within the Germinal Epithelium of the Red-Eared Slider, *Trachemys scripta elegans*

- David Hollis, Rho Chapter, University of Indianapolis, Electrochemical analysis of 2,2-diphenyl-1-picrylhydrazyl in different solvents using cyclic voltammetry
- Meia Kjellberg, Gamma Gamma Chapter, Concordia College, Degradation of Sulfa Drugs with Chlorine Dioxide - Investigating the pH Dependence of the Reaction
- Joel Manzi, Rachel Baines, Beta Eta Chapter, Evangel University, Determination of the Crystal Structure and Kinetics of the Human Airway Trypsin-like Protease
- Brooke Maruska, Meia Kjellberg, Scott Schwandt, Jessica Kongelf, Gamma Gamma Chapter, Concordia College, Wind Turbine Influence on Invertebrate and Mammal Species
- Alexandra Nash and Aubrey Masterson, Beta Chapter, McKendree University, Artificial prairie plant community effects on pollinator richness
- Matthew Nelson, Lily Erdal, Maddi Gemuenden, and Landry Hacklander, Gamma Gamma Chapter, Concordia College, Analyzing Effects of Urine and Meat on Vertebrate Scavenging Behavior
- Ali Al Saegh, Gamma Gamma Chapter, Concordia College, Changes in the protein levels of an anti-sprouting factor, thy-1, with age in the supraoptic nucleus: implications for a role in collateral axonal sprouting
- Hannah Schmiesing, Gamma Gamma Chapter, Concordia College, Response of the small mammal community to prairie restoration in northwestern Minnesota
- Hunter Smith, Gamma Gamma Chapter, Concordia College, Understanding Morphological Differences of American Waterweeds that Invade Europe
- Jessica Watson, Gamma Gamma Chapter, Concordia College, A Comparison of Behavioral and Spatial Interactions Between American Red (*Tamiasciurus hudsonicus*) and Eastern Gray (*Sciurus carolinensis*) Squirrels
- Madeline Weber, Jocelyn Young, Samantha Collins, William Grabowski, Gamma Eta Chapter, Marian University, Examining reactive oxygen species (ROS) as a trigger to induce mitochondrial biogenesis in *Saccharomyces cerevisiae*
- Sarah Yeh, Maria West, Kailee Zabolotny, Gamma Gamma Chapter, Concordia College, Effects of Fire on Grasshopper Assemblages
- Ashlyn N. York, Rho Chapter, University of Indianapolis, Progress Toward the Functionalization of Epigallocatechin Gallate

### **11:00 - 12:00 Oral Presentations - The Hett**

- 11:00-11:20 Marissa Owen, Alpha Psi Chapter, Hillsdale College, Ethanol-induced effects on embryonic brain glutathione levels and glutathione peroxidase activities
- 11:20-11:40 Mikalah Smith, Alpha Psi Chapter, Hillsdale College, Acute Phase Protein Assays with qPCR in Cows and Giraffes
- 11:40-12:00 Jordan Thomas, Sigma Chapter, Our Lady of the Lake University, Computational model of the afferent connections to the mesocorticolimbic pathway

### **12:00 - 5:00 Field Trips (pdf)**

- Saint Louis Zoo – FREE <http://www.stlzoo.org>
- Saint Louis Science Center – FREE <http://www.slsc.org>
- Missouri Botanical Garden – Groups >15 \$6/person, <http://www.missouribotanicalgarden.org>
- St. Louis City Museum – Groups >15 \$8/person plus tax, <http://www.citymuseum.org>

### **6:30 - 7:30 pm Banquet - The Hett Lobby**

**7:30 - 8:00 pm Keynote Speaker:** Dr. Barbara Schaal, Mary Dell Chilton Distinguished Professor in Arts and Sciences and Dean of the Faculty of Arts & Sciences at Washington University

### **8:00 - 8:30 Sigma Zeta Awards Presentations**

### **8:30 - 9:00 pm Committee Meetings**

[Auditing, Website, National Service Project, Resolutions, Nominations, Founder's Cup Award, Presentation Awards (faculty), Honor Awards]

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## **Saturday, April 2**

**8:00-8:15 Committee meetings**—if needed for last minute decisions or instructions

### **8:20 - 9:20 Oral Presentations - Bothwell Chapel (5)**

- 8:20-8:40 Quinton Barnes, Brittany Miller, Cheyenne Parker, Beta Eta Chapter, Evangel University, Developing Partnerships for Research: The stake holder tightrope
- 8:40-9:00 Caitlin Behme, Rho Chapter, University of Indianapolis, Progress toward improving the efficiency of cost-efficient photovoltaic cells
- 9:00-9:20 Maria Donnay, Beta Eta Chapter, Evangel University, Effects of urine and biochar on the emergence and biomass of cow pea
- 9:20-9:40 Grason Godfrey, Alpha Pi Chapter, Trevecca Nazarene University, GRK6, p38 MAPK, and Parkinson's Disease: The Effects of Kinase Inhibitors on Alpha Synuclein Aggregation

### **9:40 - 10:20 Break -- Circuit Riders in Bothwell Chapel**

### **10:20 - 11:40 Oral Presentations - Bothwell Chapel**

- 10:20-10:40 Bailey Houle, Gamma Gamma Chapter, Concordia College, Concordia Science Academy: A collaborative science outreach organization run by students and faculty
- 10:40-11:00 Peter Piers, Pi Chapter, Millikin University, Lysis of liposome and nanoparticle composites by laser and thermal heating
- 11:00-11:20 Amanda Scanameo, Gamma Eta Chapter, Marian University, In vitro analysis of the antimicrobial efficacy of rose bengal and green light against *Staphylococcus aureus*
- 11:20-11:40 Elisabeth Wynia, Alpha Psi Chapter, Hillsdale College, Determination of the Effect of Analyte Charge and Concentration on Chiral Separation Efficiency by Capillary Electrophoresis

### **11:40-1:00 Closing Meeting - Bothwell Chapel**

### **1:00 - 1:15 Chapter Pictures - Bothwell Chapel**