

**14th Annual Berea Undergraduate
Research Symposium
October 18th, 2013**

Sponsored by Division I and the Office of Academic Services



Special Thanks

Chemistry Program

**Douglas Stickle
Undergraduate Research and Creative Projects Program
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Oral Session I – Room 106
Moderator – Jay Baltisberger
Speakers indicated by bold typeface

- 2:20 PM** **Leif Van Laar, Michon Martin**, Christina Benedict, Alyssa Hubbard, Rebecca Jeong, “Variation in Diversity and Abundance of Salamanders in Relation to Human Development in Six Selected Stream Habitats in Central Kentucky”, Berea College; Mentor – Dr. Roy Scudder-Davis
- 2:40 PM** **John F. Darling**, Sophia Al-Maamary, Lauren A. Ballou, and Alanna M. Wentworth, “Seed germination ecology and seedling survivorship of the endangered cream gentian *Gentiana flavida*. A. Gray (Gentianaceae)”, Berea College; Mentor – Dr. Chris Adams
- 3:00 PM** **Pyae Phyoe**, “Using Phase Incremented Echo Train Acquisition (PIETA) Experiment to Measure Homonuclear ³¹P J-Couplings in Phosphate Glasses”, Berea College & The Ohio State University; Mentor – Dr. Jay Baltisberger
- 3:20 PM** **Michael McCann**, “Asymmetric Catalytic Synthesis of β -Ketoesters through Ketene Intermediation”, Berea College; Mentors – Dr. Mary Robert Garrett
- 3:40 PM** **Kyle Godbey**, “Synthesis and exploration of Half-Metallic Heusler Alloys”, Berea College; Mentor – Dr. Amer Lahamer
- 4:00 PM** **Danielle Schaper**, “Analyzing Topological Defects in Disordered Charge Density Waves in Transition-Metal Dichalcogenides”, University of Colorado, Boulder; Mentor – Dr. Kyle McElroy
- 4:20 PM** **Kenny Madden**, “Berea Community Food System Assessment”, Berea College & Eastern Kentucky University; Mentors – Dr. Andrea Woodward & Dr. Stephanie McSpirit
- 4:40 PM** **Zachary Mullins**, “An Orthodontic Internship”, Hazard Ortho Clinic; Mentors – Dr. Derek Watts

Poster Session – Lobby

3:30 to 4:30 PM

- Poster 1** Reena Martin, Yoshua Reece, “Soil microbial analysis of differing spoil types from Bent Mountain surface mine in Pike Co., KY”, Berea College; Mentor – Dr. Sarah Hall
- Poster 2** Phillip Palumbo, “A Putative Antimicrobial Defense Mechanism in Basement Membranes”, Vanderbilt University; Mentor – Dr. Ron Rosen
- Poster 3** Kaitlyn Reasoner, “The role of residue K752 in β 1 integrin homodimerization”, Vanderbilt University; Mentor – Dr. Charles Sanders
- Poster 4** Josh Avance, “Pyridoxamine protects collagen-4 from damage by hypochlorous acid”, Vanderbilt University; Mentor – Dr. Billy Hudson
- Poster 5** Amber Boothe, “Inverted Formin 2(INF2), A Fetal Risk Gene for Preterm Birth, is Highly Expressed in Mouse and Human Placentas”, Cincinnati Children’s Hospital; Mentor – Dr. Louis Muglia

- Poster 6** Hsuan Peng, “Dietary Immunomodulation: Examining the Effect of Conjugated Linoleic Acid Treatment on Dendritic Cell Cytokine Production”, University of Wisconsin; Mentor – Dr. Xue Qun Xu & Dr. Jenny Gumperz
- Poster 7** Ericka Berg, “Proprotein Convertase Processing of Peroxidase”, Vanderbilt University; Mentor – Dr. Gautam Bhawe
- Poster 8** Jenna Rufer, “Toward defining the oncogenic activities in Aurora Kinase A that transform pre-malignant keratinocytes”, University of Colorado, Denver; Mentor – Dr. Enrique Torchia & Dr. Dennis Roop
- Poster 9** Amber Crabtree, “Expression and modulation of Lysyl Oxidase Like-2 in PFHR9 mouse endodermal cell line”, Vanderbilt University; Mentor – Dr. Roberto Vanacore
- Poster 10** Lin Peng, “Porosity change after aging high-copper dental amalgams for 19 years”, College of Dentistry, University of Kentucky; Mentor – Dr. Richard Mitchell
- Poster 11** William Assan, “Cordon-Bleu and IRTKS protein interaction in microvillar brush border formation”, Vanderbilt University; Mentor – Dr. Matthew Tyska
- Poster 12** Travis Clay & Chyna Johnson, “Synthesis of Beta-ketoesters via ketene intermediate”, Berea College; Mentor – Dr. Mary Robert Garrett
- Poster 13** Mikiyas Assefa, “Spinning Sideband Analysis of Phosphate Glasses using scaled and unscaled correlation experiments”, Berea College & The Ohio State University; Mentor – Dr. Jay Baltisberger & Dr. Philip Grandinetti
- Poster 14** Anna Tribble, “Coherence Pathways for CPMG and PIETA NMR Experiments”, Berea College; Mentor – Dr. Jay Baltisberger
- Poster 15** Christina Kolsto, “Lead analysis in soils attributed to roadside gasoline deposition and pesticide usage”, Berea College; Mentor – Dr. Paul Smithson
- Poster 16** Phyto Phyto Zin, “Leaded paint analysis in soil around the buildings in Berea campus”, Berea College; Mentor – Dr. Paul Smithson
- Poster 17** Garrett Cairo, Andrew Norris & Corey Payton, “Optimization of Synthesis of Internally-Quenched Fluorescent Peptides”, Berea College; Mentor – Dr. Matthew Saderholm
- Poster 18** Dipendra Sharma Chapagain, “Comparative analysis of different types of colorectal cancer surgeries”, Alta Bates Summit Medical Hospital, Oakland CA; Mentor – Dr. Giovanni Begossi & Dr. Ajaya Upadhya
- Poster 19** Daniel Pardue, “Characterization of Magnesium Stearate”, University of Kentucky; Mentor – Dr. Eric Munson
- Poster 20** Namukaba Hichilo, Hatina Wedu Mupiwa & Logan Ray, “Home Health Sensing and Automation”, Berea College; Mentor – Dr. Matt Jadud & Dr. Mark Mahoney
- Poster 21** Karla Sophia Robinson, “Raven Rocks Visitors Center Construction Internship”, Raven Rocks, VA; Mentor – Dr. Martin Veillette

- Poster 22** Fidel Tewolde, “Bistable pneumatic actuators for soft robotics”, University of Louisville; Mentor – Dr. Cindy Harnette
- Poster 23** Brandon Schurter, “Equivalent Dosage from Neutron Radiation Produced by Deuterium-Palladium Plasma in the NTF Zebra Chamber”, University of Toledo & Nevada Terawatt Facility; Mentor – Dr. Tom Kvale, Dr. Rick Irving, Dr. Erick McKee & Dr. Tim Darling
- Poster 24** Denzell Barnett, “Development of Low Cost, Efficient CZTS Thin Films and Solar Cells”, Southern Polytechnic State University; Mentor – Dr. Diedra Hodges
- Poster 25** Mackenzie Endres, “Boron Fullerenes: Laser Ablation of Boron crystals mixed with Carbon”, Berea College; Mentor – Dr. Amer Lahamer
- Poster 26** Joshua Wedding, Melanie Keil, “POGIL in General Biology: Introduction and Analysis of Process Oriented Guided Inquiry Learning”, Berea College; Mentor – Dr. Megan Hoffman
- Poster 27** Melanie Keil, Joshua Wedding, “An Innovative Approach to Teaching Cellular Respiration in Introductory Biology”, Berea College; Mentor – Dr. Megan Hoffman
- Poster 28** Mahlon Kirk, “Microbiology Summer 2013”, Berea College; Mentor – Dr. Dawn Anderson
- Poster 29** Kaamilah Wilson, “Obesity Induced Leptin Mediated Notch Signaling in Breast Cancer”, Morehouse School of Medicine; Mentor – Dr. Ruben R. Gonzalez-Perez

Plenary Talk – Room 106 at 5:15 PM
Dr. Paula K. Shear - “Neuropsychology of Epilepsy”
Professor of Psychology and Psychiatry
University of Cincinnati

Clinical neuropsychology refers to study of brain-behavior relationships in typical development and in individuals with a variety of disorders that affect neurologic functioning. This presentation will begin with an overview of the field of clinical neuropsychology and will then turn to research on the cognitive functioning of people with epilepsy who have damage to specific areas of the brain.

