

The logo for the Kentucky Academy of Science (KAS) features the letters 'KAS' in a bold, green, sans-serif font. A grey swoosh underline is positioned beneath the 'A' and 'S'.

**Kentucky
Academy of Science**

99th ANNUAL MEETING



**Hosted by:
Morehead State University
Morehead, Kentucky**

November 8 - 9, 2013

KAS - 99 Years Serving Kentucky

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UK Integrated Biomedical Science
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UK Center for Applied Energy research
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2013 KAS AFFILIATES

ENHANCED

- Bellarmine University
Berea College
Brescia University
Centre College
Eastern Kentucky University
Georgetown College
Kentucky Community and Technical College System (KCTCS)
Kentucky State University
Midway College
Morehead State University
Murray State University
Northern Kentucky University
University of Pikeville
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Transylvania University
University of Kentucky
University of Louisville
Western Kentucky University

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- Campbellsville University

MEMBERS

- Asbury University
Kentucky Wesleyan College
Lindsey Wilson College
University of the Cumberlands
Wood Hudson Cancer Research Laboratory

ASSOCIATE MEMBERS

- WKU Crawford Hydrology Laboratory
WKU Hoffman Environmental Research Institute

HONORARY PATRON

- Lumins Associates

WELCOME

TO THE 99TH ANNUAL MEETING OF THE KENTUCKY ACADEMY OF SCIENCE

Morehead State University welcomes you to our campus for the 99th annual meeting of the Kentucky Academy of Science. Morehead State University has 11,000 students on its main campus, which is nestled in the Daniel Boone National Forest, regional campuses, and online and Early College programs. The student body represents 122 Kentucky counties, 43 states, and 31 nations. The College of Science and Technology offers high quality undergraduate and graduate programs providing students the intellectual and technical capacity to pursue and succeed in their academic and career goals. The College of Science and Technology is the largest college at Morehead State University with over 3,400 students pursuing degree programs in 9 departments: Agricultural Sciences; Applied Engineering and Technology; Biology and Chemistry; Earth and Space Science; Health, Wellness and Human Performance; Imaging Sciences; Math, Computer Science, and Physics; Nursing; and Psychology.

The College of Science and Technology has facilities including high level technologies to give students the hands-on experience essential for today's job market. The College is housed in seven different buildings on the main campus along with the nearby Derrickson Agricultural Complex and Browning Orchard. I am particularly proud of three new buildings: The Center for Health Education & Research is a \$26M modern healthcare education facility including multi-media laboratory, high-tech nursing simulation laboratories, and computerized radiography and medical sonography laboratories; The Smith-Booth Space Science Center is a \$16.4M facility including a 21-meter space tracking antenna, digital Star Theater, space system development and other laboratories supporting education and research by our space science program faculty, staff and students; and the Equine Medical and Surgical Facility educating students in modern equine veterinary technology, including ultrasound, fiber optic endoscopy, surgery, advanced reproductive techniques, intensive care management and digital radiology.

Morehead State University is extremely pleased to host this year's Kentucky Academy of Sciences annual meeting. We commit to a shared mission to encourage scientific research and dissemination of scientific knowledge and to unify the scientific interests of the Commonwealth of Kentucky. Our local organizing committee has set up a fine venue for the meeting. I hope you will take advantage of some of the tours of our facilities that have been arranged and I look forward to seeing you at the presentations and the awards banquet.

Roger McNeil, Dean
Morehead State University
College of Science and Technology

KENTUCKY ACADEMY OF SCIENCE

99th Annual Meeting

November 8-9, 2013

Hosted by Morehead State University
Morehead, Kentucky

GOVERNING BOARD

Executive Committee

President	Cheryl Davis Western Kentucky University
President-Elect	KC Russell Northern Kentucky University
Vice President	David White Murray State University
Past President	Dawn Anderson Berea College
Secretary	Robert Kingsolver Bellarmine University
Treasurer	Kenneth Crawford Western Kentucky University
Executive Director	Amanda Fuller Kentucky Academy of Science
Editor, JOURNAL	Jerzy Jaromczyk University of Kentucky
Editor, NEWSLETTER	Susan Templeton University Kentucky State
Director, Junior Academy of Science	Ruth Beattie University of Kentucky

Division Representatives and At-Large Members

Ron Jones (2013 - Biological Sciences)	Eastern Kentucky University
Pamela Feldhoff (2015 - Biological Sciences)	University of Louisville
R. Douglas Chatham (2014 - Physical Sciences)	Morehead State University
Eric Jerde (2014 - Physical Sciences)	Morehead State University
Judy Voelker (2014 - Social & Behavioral Sciences)	Northern Kentucky University
David Butz (2014 - Social & Behavioral Sciences)	Morehead State University
Mary Janssen (2013 - At-Large)	KCTCS
KatieAnn Skogsberg (2015 - At-Large)	Centre College
Melony Stambaugh (Program Coordinator)	Northern Kentucky University
Claire Rinehart (Editor, Webpage)	Western Kentucky University
Nancy Martin (AAAS/NAAS Representative)	University of Louisville

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<i>Engineering, Health Sciences</i>	
<i>ADUC Room 312 – Physiology and Biochemistry</i>	
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SYMPOSIUM

“Citizens and Scientists protecting Kentucky’s Water” Panel Discussion

Friday, November 8, 2013
Reed Hall, Room 419
7:00 – 8:00 p.m.

Introduction of Panel and Presiding
K. C. Russell
President Elect – KAS
Professor of Chemistry
Northern Kentucky University

Panel Members:

Amanda Gumbert, Extension Water Quality Liaison
UK Cooperative Extension Service-KY Division of Conservation

Ken Cooke, Friends of Wolf Run, Inc.
retired, Kentucky Division of Water

Tim Joice, Water Policy Director, Kentucky Waterways Alliance



“Spread It On Thick: Managing Nutrients and Water Quality on Kentucky’s Farms.”

AMANDA GUMBERT

Extension Water Quality Liaison
UK Cooperative Extension Service-
KY Division of Conservation

Amanda Gumbert serves as the Extension Water Quality Liaison between the UK College of Agriculture, Food, and Environment and the Kentucky Division of

Conservation to promote the Kentucky Agriculture Water Quality Act. Amanda works to maintain communications among statewide agencies that make natural resources decisions, as well as conducting education and outreach activities related to watershed management, riparian buffers, and agricultural water quality issues. She has worked for the University of Kentucky Cooperative Extension Service for 12 years and holds BS and MS degrees in Plant and Soil Science and a PhD in Soil Science from the University of Kentucky.



“Quality, Contract and Cost considerations of expanding your data collection with volunteers or, How does the National Weather Service, USDA and the National Institute of Health get away with it?”

KEN COOKE

Friends of Wolf Run, Inc.
retired, Kentucky Division of Water

Ken Cooke works to restore his home watershed through the Friends of Wolf Run Inc. (a nonprofit volunteer organization based in Western Lexington). Ken worked for the Kentucky Division of Water Management Branch before retiring in 2007. His responsibilities included recruiting and training volunteers to monitor water quality in streams, rivers, lakes and wetlands through the statewide Water Watch program.

Ken attributes his affection for waterways to playing in the creek as a kid, his training as a Boy Scout (including a stint as Aquatics Director for Camp Wildcat Hollow). He was formerly trained in volunteer organization through work with the American Heart Association as their South Central Division Director prior to working for the Kentucky Division of Water. That background has manifested itself in mixing lay volunteers and professional scientists working on community health issues since 1981.

ken.cooke@canewoods.com www.wolfrunwater.org



"Kentucky Waterways Alliance: Protecting and Restoring Our Waterways with Science and Advocacy"

TIM JOICE

Water Policy Director
Kentucky Waterways Alliance

Tim Joice is the Water Policy Director at Kentucky Waterways Alliance. Since joining KWA in October 2011, Tim has worked to fulfill KWA’s mission of protecting and restoring Kentucky’s waterways through advocacy on clean water policy issues. As part of those efforts, Tim has worked with various partners in the Mississippi River Collaborative to address issues throughout the Mississippi River Basin. He has maintained stakeholder involvement in the Ohio River Basin Nutrient Trading Pilot Program, and other nutrient pollution issues in Kentucky. Tim also works on permit review for wetland, floodplain, and stream impacts, and other clean water issues in Kentucky. He has a Master’s in Landscape Architecture from Penn State University with a focus in watershed stewardship, and a B.S. in Landscape Architecture from University of Kentucky. He has worked as an independent consultant, and in private practice and government.

PLENARY SESSION

Saturday, November 9, 2013
Reed Hall – Room 419
4:15 - 5:15 p.m.

Welcome

Dr. Cheryl Davis, KAS President
Western Kentucky University

Presiding

Dr. K.C. Russell, KAS President-Elect
Northern Kentucky University

“Living on Karst Landscapes in Kentucky and Throughout the World”



DR. CHRIS GROVES

**Distinguished Professor of Hydrogeology
Director of the Hoffman Environmental Research
Institute**

Western Kentucky University

Dr. Chris Groves is a Distinguished University Professor of Hydrogeology at Western Kentucky University. Since receiving a PhD In Environmental Sciences at the University of Virginia in 1993, Dr. Groves has developed an active international research program in hydrogeology, geochemistry, and water resources, with an emphasis on water resources issues in rural southwest China. He serves as a co-leader of the UN Program “Environmental Change and Sustainability in Karst Systems,” and as a Board member of the UNESCO’s International Research Center on Karst. In 2013 he was the Ministry of Land and Resources’ top finalist for the People’s Republic of China Friendship Award, that nation’s highest award for foreign experts. Closer to home, between teaching classes Groves works actively in research and education programs at Mammoth Cave National Park and the Crumps Cave Education and Research Preserve, and serves on the Board of Trustees for the Kentucky Chapter of The Nature Conservancy.

PROGRAM SUMMARY

FRIDAY, NOVEMBER 8, 2013

- 9:00 am - 4:30 pm KBRIN-NIH
Proposal Development Workshop ADUC Room 312
- 2:00 pm – 4:00 pm KAS Governing Board Meeting ADUC Riggle Room
- 3:30 pm – 5: 30 pm Kentucky Organization of
Field Stations Meeting ADUC Room 301
- 4:00 pm – 8:00 pm Registration..... ADUC First Floor Main lobby
- 5:30 pm – 6:50 pm Social ADUC Third Floor
- 7:00 pm - 8:00 pm **SYMPOSIUM** Reed Hall 419
“Citizens and Scientists protecting Kentucky Water”
Panelists:
*Amanda Gumbert, Extension Water Quality Liaison
UK Cooperative Extension Service-KY Division of
Conservation*
*Ken Cooke, Friends of Wolf Run, Inc., retired, KY Division
of Water*
*Tim Joice, Water Policy Director, Kentucky Waterways
Alliance*
- 8:15 pm - 9:15 pm KAS Sectional Officers Meeting Riggle Room 3rd floor

SATURDAY, NOVEMBER 9, 2013

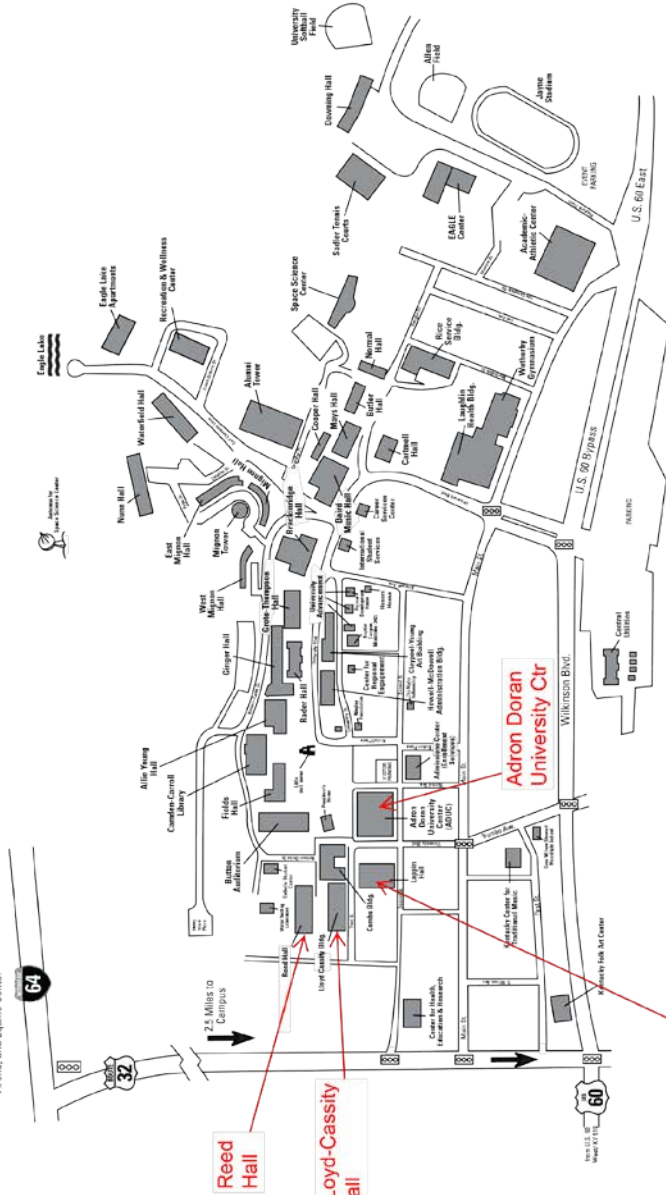
- 7:00 am - 5:00 pm Registration..... ADUC lobby
- 8:00 am - 4:00 pm Exhibitors..... ADUC lobby
- 8:00 am - 9:30 am Oral Presentations See Table of Contents
- 8:00 am – 11:30 pm Scientific Posters on Display
(Divided into AM and PM Poster Sessions. Please check the
Poster Presentation Schedule starting on page 47)
- 9:30 am - 9:45 pm Refreshment Break ...ADUC 1st floor & Lappin Hall 1st Floor
- 9:45 am - 11:30 am Oral Presentations See Table of Contents

10:00 am - 11:00 am	Kentucky Community & Technical College MeetingsCommonwealth Room
11:00 am – 11:30 am	Breakout Rooms Commonwealth Room, Riggle Room 3 rd floor, Room 302
11:30 am - 12:45 pm	Lunch – On your own. (ADUC 2 nd floor food court open)
11:30 am - 12:45 am	KAS Past President’s Luncheon Heritage Room
1:00 pm - 2:15 pm	Oral Presentations..... See Table of Contents
2:15 pm - 2:30 pm	Refreshment Break ...ADUC1 st floor & Lappin Hall 1 st Floor
2:30 pm – 4:00 pm	Oral Presentations See Table of Contents
4:15 pm – 5:15 pm	PLENARY SESSION Reed Hall, Room 419 “Living on Karst Landscapes in Kentucky and Throughout the World” Dr. Chris Groves <i>Distinguished Professor of Hydrogeology</i> <i>Director of the Hoffman Environmental Research Institute</i> <i>Western Kentucky University</i>
5:30 pm - 6:30 pm	Annual KAS Business Meeting and Reception Riggle Room (3 rd Floor)
6:45 pm - 8:00 pm	ANNUAL AWARDS BANQUET ...Crager Room (3 rd Floor)

MOREHEAD STATE UNIVERSITY

UPDATED: 06/27/12

KY 80:
Eagle Trace Golf Course
KY 277:
University Farm, Derription
Agricual Complex, Richardson
Arena, and Equine Center



Reed Hall

Lloyd-Cassidy Hall

Adron Doran University Ctr

Lappin Hall



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MSU is an affirmative action, equal opportunity, educational institution.

99th Annual Kentucky Academy of Science Meeting

Annual Meeting Planning Team Morehead State University

LOCAL ARRANGEMENTS CHAIR

Eric Jerde

Associate Professor of Geoscience
Morehead State University

PROGRAM CHAIR

K.C. Russell

Professor of Chemistry
Northern Kentucky University

PROGRAM COORDINATOR

Melony Stambaugh

Instructor of Anthropology
Northern Kentucky University

PRESENTATIONS

AGRICULTURAL SCIENCES

Iin Handayani, Chair
Murray State University

Hideka Kobayashi, Secretary
Kentucky State University

**SATURDAY, NOVEMBER 9, 2013
LAPPIN HALL 401**

- 8:00 a.m. **Effects of Broiler Litter Application Rate on Soil Physical Properties of Grenada Silt Loam.**¹ Jay Middleton, Ian Handayani and Drayne Driskill - Murray State University
- 8:15 a.m. **Sewage Sludge Increased Vegetables Yield Over Five Years of Field Studies.** Eric T. Turley and George F. Antonious - Kentucky State University
- 8:30 a.m. **Potential Impact of Global Warming on Chilling Requirements of Perennial Plants Grown in Temperate Regions.** Yao Xue and Elmer Gray - Western Kentucky University
- 8:45 a.m. **Soil Compaction in Typical Agricultural Systems in Western Kentucky.**¹ Elizabeth Pettyjohn-Thrall, Iin Handayani and Dwayne Driskill - Murray State University
- 9:00 a.m. **Comparing Soil Structure, Carbon, and Nitrogen Responses in Different Land Use Systems in Western Kentucky.** ¹ Hannah Robbins - Murray State University
- 9:15 a.m. **Advances in Exploring Wild Tomato Leaves.** George Antonious, Katherine Kamminga - Kentucky State University, John Snyder - University of Kentucky
- 9:30 a.m. **Refreshment Break** - ADUC 1st floor & Lappin Hall 1st Floor
- 9:45 a.m. **Beneficial Insects Associated With Native Perennial Grasses and Forbes Planted in Border Rows in Central Kentucky.** John D. Sedlacek, Leticia Estill and Karen L. Friley - Kentucky State University
- 10:00 a.m. **Ground Dwelling Arthropod Populations in Native Perennial Border Rows in Central Kentucky.**¹ Denita Brown, John D. Sedlacek and Karen L. Friley - Kentucky State University
- 10:15 a.m. **Mid-East Organic Corn Variety Trial.** Anthony Silvernail - Kentucky State University, Jake Schmitz - Organic Valley, Jon Cambron and Joni Nelson - Kentucky State University

¹Undergraduate Research Competition

²Graduate Research Competition

- 10:30 a.m. **Effects of Land, Labor and Energy Efficiency on Organic Grain Production.** Michael Bomford, Anthony Silvernail, Jon Cambron and Joni Nelson - Kentucky State University
- 10:45 a.m. **Comparison of Different Light Technologies for Indoor Aquaponic Production of White-Stemmed Pak Choi *Brassica rapa var. chinensis*.** ¹ Doug Blair, Luke Oliver, Zak Kupchinsky, Chelsea Watts, Leigh Anne Bright, Shawn Coyle and James Tidwell - Kentucky State University
- 11:00 a.m. **Can paddlefish control the off-flavor causing cyanobacteria in hybrid catfish ponds? Preliminary evidence.** ¹ Phillip Henderson - Kentucky State University
- 1:00 p.m. **Effect of live versus commercially available prepared diets on growth and survival rates of larval paddlefish, *Polyodon spathula* (Walburn).** ² Alex Squadrito, Rafael Cuevas-Uribe and Steven D. Mims - Kentucky State University
- 1:15 p.m. **The Culture of Paddlefish in Reclaimed Water Disinfected with Ozone and/or Ultraviolet Radiation.** ² Godardo L. Juanich, Rafael Cuevas-Uribe, Steven D. Mims - Kentucky State University
- 1:30 p.m. **Sweet Potatoes for Low-Input Food and Ethanol Production in Kentucky.** ² Jon Cambron, Michael Bomford, Tony Silvernail, Joni Nelson - Kentucky State University
- 1:45 p.m. **Attracting Beneficial Insects to Blackberries Using Methyl Salicylate-Based Lures.** ² Justina A. Riddick, John D. Sedlacek, Karen L. Friley - Kentucky State University
- 2:00 p.m. **Tetracyclines in Swine Waste.** ² Natalie K Jones, Dr. Eric Conte - Western Kentucky University, Dr. John Loughrin, Dr. Kim Cook - USDA
- 2:15 pm **Refreshment Break ...ADUC 1st floor & Lappin Hall 1st Floor**
- 2:30 p.m. **Restaurant Perceptions of Locally Grown Freshwater Seafood in Kentucky and Ohio.** ² Richard Bryant, Siddhartha Dasgupta - Kentucky State University, Angela Caporelli - Kentucky Department of Agriculture, Laura Tiu - Ohio State University
- 2:45 p.m. **Effects of Compost Amendment and Irrigation Water Source on Soil Salinity and Radish Yield.** ² Stephanie Bates, Marie Blacksmith, David Jones, Michael Bomford, John Sedlacek - Kentucky State University
- 3:00 p.m. **Evaluation of heterotrophic algae meal as a protein source for channel catfish (*Ictalurus punctatus*) diets.** ² Zachary A. Kupchinsky, Leigh Anne Bright, Shawn Coyle, James H. Tidwell - Kentucky State University

¹Undergraduate Research Competition

²Graduate Research Competition

ANTHROPOLOGY AND SOCIOLOGY

Benjamin Freed, Chair
Eastern Kentucky University

Changzheng Wang, Secretary
Kentucky State University

SATURDAY, NOVEMBER 9, 2013
LLOYD-CASSITY 317

- 8:00 a.m. **Cultural Models of Student Success: Alumni, Faculty, and Students.** Douglas Hume - Northern Kentucky University
- 8:15 a.m. **Preliminary results from analyses of the comparative and functional anatomy of the hindlimb musculature of Humboldt's woolly monkey (*Lagothrix lagotricha*).** ¹ Vanya Bistrekova - University of Kentucky, Jayme Thomas and Bill Beckerson - Georgetown College, Lindsey Hays - Eastern Kentucky University, Magdalena Muchlinski, Sarah Abshire, Timothy Butterfield and Andrew Deane - University of Kentucky
- 8:30 a.m. **A LiDAR Survey of an Ancient Mayan City.** Timothy Hare - Morehead State University
- 8:45 a.m. **A preliminary analysis of plantaris muscle architecture in *Macaca mulatta* and *Homo sapiens*: Vestigial leftover or proprioceptive sensor?** ¹ Jayme Thomas - Georgetown College, Vanya Bistrekova - University of Kentucky, Bill Beckerson - Georgetown College, Lindsey Hays - Eastern Kentucky University, Magdalena Muchlinski, Sarah Abshire, Timothy Butterfield and Andrew Deane - University of Kentucky
- 9:00 a.m. **Growing up woolly: Ontogenetic scaling of the hindlimb musculature of Humboldt's woolly monkey (*Lagothrix lagotricha*).** ¹ Bill Beckerson - Georgetown College, Vanya Bistrekova - University of Kentucky, Jayme Thomas - Georgetown College, Lindsey Hays, Magdalena Muchlinski, Jason Organ, Timothy Butterfield and Andrew Deane - University of Kentucky
- 9:15 a.m. **The Quest & Archaeological Discovery of George Rogers Clark's 1780-1781 Ft. Jefferson.** Dr. Kenneth Carstens - Murray State University
- 9:30 a.m. **Refreshment Break** - ADUC 1st floor & Lappin Hall 1st Floor
- 10:00 a.m. **Trouble with the curve: A functional biomechanical model for anthropoid incisal curvature variation.** Andrew Deane - University of Kentucky
- 10:15 a.m. **Body Weight Status and Awareness of Food Safety Among Kentucky Adults.** Changzheng Wang, Lingyu Huang and Cecil Butler - Kentucky State University

¹Undergraduate Research Competition

²Graduate Research Competition

BOTANY

Allen Risk, Chair
Morehead State University

Brad Ruhfel, Secretary
Eastern Kentucky University

SATURDAY, NOVEMBER 9, 2013 LLOYD-CASSITY 315

- 8:30 a.m. **The effect of nutrient levels on fern gametophyte success.** Han Ly
- Alice Lloyd College
- 8:45 a.m. **Preliminary lichen species inventory of Carter Caves State
Resort Park, Carter County, KY.**¹ Victoria Evans, Allen C. Risk
and Channing Richardson - Morehead State University
- 9:00 a.m. **Distributions of DNA Identified Red Mulberry (*Morus rubra*)
individuals, and the determination of a Northern Limit.**¹
Samantha G. Thomas, Nhan Huynh and Dayle E. Saar - Murray
State University
- 9:15 a.m. **Vascular plant inventory of the Rowan County Sphagnum
Swamp, Farmers, Kentucky.**¹ Kelly Modaff and Allen C. Risk -
Morehead State University
- 9:30 a.m. **Refreshment Break** - ADUC 1st floor & Lappin Hall 1st Floor
- 9:45 a.m. **Current Status of Woody Plants in Kentucky and Tennessee.**
Ronald L. Jones - Eastern Kentucky University, B. Eugene Wofford
- University of Tennessee
- 10:00 a.m. **Resolving the evolutionary history of the riverweeds
(Podostemaceae).** Brad R. Ruhfel, Heidi Braunreiter, William
Ciocca - Eastern Kentucky University, Claudia P. Bove -
Universidade Federal do Rio de Janeiro, C. Thomas Philbrick -
Western Connecticut State University
- 10:15 a.m. **Vertical patterns in plant and macrolichen species richness in
live oak forests of Cumberland Island, Georgia.** Allen C. Risk -
Morehead State University

¹Undergraduate Research Competition

²Graduate Research Competition

CELLULAR AND MOLECULAR BIOLOGY

Alexey Arkov, Chair
Murray State University

Chris Trzepacz, Secretary
Murray State University

SATURDAY, NOVEMBER 9, 2013

LLOYD-CASSITY 104

- 1:00 p.m. **ABIN1 Dysfunction as a Basis for Lupus Nephritis.**² Korte, Erik, G'Sell, Rachel, Sheehan, Ryan, Caster, Dawn - University of Louisville, Popa, Gabriel and Mendenhall, Michael, Powell, David - University of Kentucky
- 1:15 p.m. **Effects of Soy Glyceollins on Transcription in the Female Mouse Brain.**² Sanaya F. Bamji - University of Louisville, Robert B. Page - College of St. Benedict & St. John's University, Matthew E. Burow - Tulane University, Stephen M. Boue - USDA, Carolyn M. Klinge and Cynthia Corbitt - University of Louisville
- 1:30 p.m. **The Structure-Function Analysis of Tudor Protein Complex in Germline Cells.**² Yanyan Lin, Patrick Bohac, Ming Gao, Jimiaozheng, Alexey L. Arkov - Murray State University
- 1:45 p.m. **Screening for new prions in wild yeasts.**¹ Aung Soe Lin - Berea College
- 2:00 p.m. **Spi-C negatively regulates eosinophil peroxidase production in murine eosinophils.**¹ Michael Stephens - Thomas More College, Kaila L. Schollaert and Patricia C. Fulkerson - Cincinnati Children's Hospital
- 2:15 pm **Refreshment Break** ...ADUC 1st floor & Lappin Hall 1st Floor
- 2:30 p.m. **Host HLA Haplotype May Predict the Effect of Cigarette Smoke in Arthritis.**¹ Shanequa Roscoe - Berea College, David Luckey, Michele Smart, Chella David, Veena Taneja - Mayo Clinic Department of Immunology
- 2:45 p.m. **Integrin subunits $\alpha 3$ and $\alpha 6$ are essential for collecting duct cells functions regulated by binding to LM-511.**¹ Franceska Mehmeti - Berea College, Roy Zent, Tianxiang Tu and Eugenia Yazlovitskaya - Vanderbilt University
- 3:00 p.m. **The Role of Indoleamine 2,3-Dioxygenase in Staphylococcal Toxic Shock Syndrome.**¹ Taylor Rutherford - Berea College, Shahryar Khaleghi, Ashenafi Tilahun, Govindarajan Rajagopalan, Chella David - Mayo Foundation
- 3:15 p.m. **Identification of *Nosema ceranae* pathogen in bee hives of Kentucky area with molecular methods.**¹ Desira Vance, Thomas C. Webster and Li Lu - Kentucky State University

¹Undergraduate Research Competition

²Graduate Research Competition

CHEMISTRY: ANALYTICAL / PHYSICAL

David Cunningham, Chair
Eastern Kentucky University

Jennifer Muzyka, Secretary
Centre College

SATURDAY, NOVEMBER 9, 2013
LLOYD-CASSITY 303

- 8:00 a.m. **Colloidal Motors Self-Propelled via Bio-Conjugation.**¹ Michael Bale - University of Kentucky, Elizabeth Knapp and Dr. Charles Maldarelli - City College of New York
- 8:15 a.m. **Using Phase Incremented Echo Train Acquisition (PIETA) Experiment to Measure Homonuclear³¹P J-Couplings in Phosphate Glasses .**¹ Pyae Phy and Jay Baltisberger - Berea College, Brennan Walder and Philip Grandinetti - The Ohio State University, Franck Fayon, Michael Deschamps and Pierre Florian - CEMHTI
- 8:30 a.m. **Analysis of the Nitric Oxide and Reactive Oxides of Nitrogen in the Low Atmosphere at Mammoth Cave National Park.**¹ Jessica Hall and Matthew Nee - Western Kentucky University
- 8:45 a.m. **Investigation of Novel Environmental Chlorinated Pollutants via Triple Quadrupole Mass Spectrometry.**¹ Kathryn Renyer - Morehead State University, Qian Wang and Paul Chiarelli - Loyola University Chicago
- 9:00 a.m. **Fabrication of mesoscale protein patterns on surfaces by using nanosphere lithography.** Pei Gao - Eastern Kentucky University
- 9:30 a.m. **Refreshment Break** - ADUC 1st floor & Lappin Hall 1st Floor
- 9:45 a.m. **Comparative studies on fire-rated and standard gypsum wallboard.**² Harika Javangula and Quentin Lineberry - Western Kentucky University
- 10:00 a.m. **Thermogravimetric analysis of binding of organic pollutants to titanium dioxide.**² Shashidhar Annarapu and Matthew J.Nee - Western Kentucky University
- 10:15 a.m. **Green Synthesis, Characterization of Sugar Coated Gold Nanoparticles for Catalytic Applications .**² Yogesh Kherde and Jason payne - Western Kentucky University
- 10:30 a.m. **Isotope Effects During Hydrocarbon Synthesis on Iron Catalysts.**² Yunxin Liao and Buchang Shi - Eastern Kentucky University

¹Undergraduate Research Competition

²Graduate Research Competition

CHEMISTRY: ORGANIC/ INORGANIC

Christopher Mullins, Chair
Campbellsville University

Keith Walters, Secretary
Northern Kentucky University

SATURDAY, NOVEMBER 9, 2013
LLOYD-CASSITY 308

- 8:15 a.m. **Synthesis of CAPE Analogues to Test Bioactivity Regarding Xanthine Oxidase Inhibition.**¹ Timothy Dunn, Alma Onate, Janelle Tucker, Donna Do, Dr. Lili Ma, Dr. Stefan Paula - Northern Kentucky University
- 8:30 a.m. **NKU Fullerene Research: Synthesis and spectroscopy of fullerene-transition metal supramolecular systems utilizing phenanthroline bridges.**¹ Emma Jones, Keith A. Walters - Northern Kentucky University
- 8:45 a.m. **Asymmetric Catalytic Synthesis of β -Ketoesters through Ketene Intermediation.**¹ Michael McCann - Berea College
- 9:00 a.m. **Poly-3-hexylthiophene Nanorods as donor for organic-based photovoltaics.**¹ Dharmesh Patel, Venkata Ramana Manda, David Brown, Hemali Rathnayake - Western Kentucky University
- 9:15 a.m. **Enhancing Photovoltaic Performance of P3HT/PDIB-silsesquioxanes Donor-Acceptor using Spray-Coating Fabrication Technique.**² Venkata Ramana Manda, Hemali Rathnayake - Western Kentucky University
- 9:30 a.m. **Refreshment Break** - ADUC 1st floor & Lappin Hall 1st Floor
- 9:45 a.m. **Synthesis and Biological Evaluation of Bifunctionalized Isoflavanone Aromatase Inhibitor.**¹ Thuy (Donna) Do, Alma Onate, Janelle Tucker, Timothy Brian Dunn, Erica Amato, Rebecca Kidney, Lili Ma - Northern Kentucky University
- 10:00 a.m. **Preparation of 1,5-diols via a Titanium Chloride Mediated Allylation.**¹ Samantha Penwell - Asbury University, Aymara Albury and Michael Jennings - University of Alabama, Tuscaloosa, Bruce Branan - Asbury University
- 10:15 a.m. **“Development and SAR of isocoumarin aromatase inhibitors”.**¹ Rebecca Kidney - Northern Kentucky University
- 10:30 a.m. **Synthesis of Peptide-Linked Metal Chelators: A Possible Treatment for Alzheimer's Disease.**¹ Louis Rodgers - Centre College
- 1:00 p.m. **Synthetic Approaches to Cyclopentadiene-Capped Acenes and their Iron.**² Bidhya Maharjan, Sean Parkin, John P. Selegue - University of Kentucky

¹Undergraduate Research Competition

²Graduate Research Competition

- 1:15 p.m. **Synthesis and Characterization of Carbonic Anhydrase Active-Site Mimics for CO₂ Hydration.** ² Deepshikha Gupta - University of Kentucky, Cameron A. Lippert - Center for Applied Energy Research, Lexington, KY, Anitha Wishrojwar, John P. Selegue - University of Kentucky, Joseph E. Remias and Kunlei Liu - Center for Applied Energy Research, Lexington, KY
- 1:30 p.m. **Functionalization and modification of 2-hydroxymethyl-5, 8-dimethoxy-1, 4-naphthaquinone as HER2 inhibitors.** ² Divya Lella, Cheryl Stevens, Bangbo Yan - Western Kentucky University, Jayalakshmi Sridhar - Xavier University
- 1:45 p.m. **Effects of de-polymerization of Cellulose in Producing Sugar from Cellulosic Biomass at Low-temperature.** ² Lin Wu and Buchang Shi - Eastern Kentucky University
- 2:00 p.m. **Approaches to Ferroceno[c]thiophene.** ² Surya Banks, Deepshikha Gupta, Sean Parkin and John P. Selegue - University of Kentucky

¹Undergraduate Research Competition

²Graduate Research Competition

COMPUTER AND INFORMATION SCIENCES

Jerzy Jaromczyk, Chair
University of Kentucky

Sherif Rashad, Secretary
Morehead State University

SATURDAY, NOVEMBER 9, 2013
LAPPIN HALL 311

- 8:00 a.m. **Optimizing Next-Generation Mobile Networks using Frequent Sequential Pattern Mining.** ¹ Zachary Lamb and Sherif Rashad - Morehead State University
- 8:15 a.m. **Classification of Streaming Data using a Grid Density Based Approach to Tackling Concept Drift.** ² Tegjyot Singh Sethi, MEHMED KANTARDZIC and HANQING HU - University of Louisville
- 8:30 a.m. **Stress Propagation in Group Project Social Networks.** ¹ Bryan Knowles and Rong Yang - Western Kentucky University
- 8:45 a.m. **Physics Problem Solver and Educational Toolkit Software.** Michael Robinson - Morehead State University
- 9:00 a.m. **Network Structural Analysis Using igraph** Rong Yang - Western Kentucky University
- 9:15 a.m. **Design and Implementation of Parallel Data Mining Algorithms.** ¹ Erich Hohenstein - Morehead State University
- 9:30 a.m. **Refreshment Break** - ADUC 1st floor & Lappin Hall 1st Floor
- 9:45 a.m. **ARM vs. standard x86.** Daniel M. Moore - Morehead State University
- 10:00 a.m. **All-in-One Entertainment Hub.** Clinton Woodson - University of Kentucky
- 10:15 a.m. **Content-based image retrieval with multi-histogram approach .**¹ Jorge Chang - Morehead State University
- 1:00 p.m. **A novel Local Binary Patterns (LBP) Approach for Recognizing Faces.** ² Abdallah Mohamed - University of Louisville, Roman Yampolskiy - University of Louisville
- 1:15 p.m. **An Island-Based Approach for Differential Expression Analysis.**² Abdallah M. Eteleeb - University of Louisville

¹Undergraduate Research Competition

²Graduate Research Competition

- 1:30 p.m. **An Introduction to DELVE (Document Exploration and Visualization Engine).**² Daniel R. Harris, Jerzy W. Jaromczyk, Ramakanth Kavuluru, Todd R. Johnson - University of Kentucky
- 1:45 p.m. **Image CAPTCHA.**² Darryl D'Souza - University of Louisville
- 2:00 p.m. **Image Registration and Visualization Tool For In-Situ Gene Expression Images.**² Ernur Saka and Eric Rouchka - University of Louisville
- 2:15 pm **Refreshment Break** ...ADUC 1st floor & Lappin Hall 1st Floor
- 2:30 p.m. **Reducing Costs of Labeling for Classifying Unbalanced Streaming Data.**² Hanqing Hu, Mehmed M. Kantardzic, Tegjyot Singh Sethi - University of Louisville
- 2:45 p.m. **A Forensics Software Toolkit for DNA Steganalysis.**² Marc Beck - University of Louisville
- 3:00 p.m. **BLN-Gram-TF-ITF as a new Feature for Authorship Identification.**² Nawaf Ali, Matthew Price and Roman V. Yampolskiy - University of Louisville

¹Undergraduate Research Competition

²Graduate Research Competition

ECOLOGY AND ENVIRONMENTAL SCIENCE

John Starnes, Chair
Kentucky Community and Technical
College System

Stephen Yanoviak, Secretary
University of Louisville

SATURDAY, NOVEMBER 9, 2013
LAPPIN HALL 414

- 8:00 a.m. **Toxicogenomic responses of *Caenorhabditis elegans* exposed to silver nanomaterials.**² Daniel L. Starnes, Emily Oostveen, Catherine Starnes, Blanche Collin, Jason Unrine, Paul Bertsch, Olga Tsyusko - University of Kentucky
- 8:15 a.m. **Trophic dynamic interactions in a temperate river: a comparison between high and lower karst flow reaches**² Elizabeth Malloy, Scott A. Grubbs, Albert J. Meier - Western Kentucky University
- 8:30 a.m. **A Study of Plant Traits in response to drought and competition between C₃ and C₄ bunchgrasses native to the Savanna-Woodland of the Bluegrass Region of Kentucky.**² Jann E. Fry – and Dr. Scott Gleeson - University of Kentucky
- 8:45 a.m. **Community level impacts of *Microstegium vimineum* on arthropods in a temperate deciduous forest.**² Judith L Metcalf and Sarah Emery - University of Louisville
- 9:00 a.m. **African elephant (*Loxodonta africana*) impact to marula (*Sclerocarya birrea*), knobthorn (*Acacia Nigrescens*), and false marula (*Lannea schweinfurti*) in the Associated Private Nature Reserves, South Africa.**² Kelly Derham - Western Kentucky University, Michelle D Henley - Save the Elephant South Africa, Transboundary Research Programme , Bruce A Schulte - Western Kentucky University
- 9:30 a.m. **Refreshment Break** - ADUC 1st floor & Lappin Hall 1st Floor
- 9:45 a.m. **Decay rates, macroinvertebrate colonization patterns, and stable isotopic signatures of riverine *Cladophora*.**² Megan E. Grandinetti, Delaney L. Rockrohr, Scott A Grubbs and Albert J Meier - Western Kentucky University
- 10:00 a.m. **Designing a Unique Therapeutic Agent Involving Gold Nanoparticles Capped with Ceftazidime for Potent Antibacterial Applications.**² Monic Shah, Will Hamilton, Varavoot Siriyutwatana - Western Kentucky University

¹Undergraduate Research Competition

²Graduate Research Competition

- 10:15 a.m. **Benthic Macroinvertebrate Communities from Riffles Habitats in a Recently Restored Stream in Eastern Kentucky (Slabcamp Creek, Rowan Co., KY).**² Nicholas Revetta and Amy Braccia - Eastern Kentucky University, Arthur Parola and Clayton Mastin - University of Louisville
- 10:30 a.m. **Effects of glyphosate-based herbicide and UV-B radiation on fitness in the spotted salamander.** ² Nicholas A. Levis and Jarrett R. Johnson - Western Kentucky University
- 10:45 a.m. **Comparison of water fertility and production in earthen v. plastic-lined hatchery ponds at Minor Clark Fish Hatchery.**² Robyn F. Whitted - Morehead State University, Roderick J. Middleton - Minor Clark Fish Hatchery, Jessica A. E. Lemley, Seth H. Bromagen, Brian C. Reeder - Morehead State University
- 11:00 a.m. **Bat demographic trends before and after the occurrence of white-nose syndrome in Kentucky.** ² Santiago Martin and Dr. Terry Derting - Murray State University
- 11:15 a.m. **Factors affecting small mammal movement factors in an Amur honeysuckle (*Lonicera maackii*) dominated urban park.** ² William E. Persons - University of Louisville
- 1:00 p.m. **The development of old-growth structural characteristics in second-growth forests of the Cumberland Plateau, Kentucky, U.S.A.** Jim Scheff - Kentucky Heartwood
- 1:15 p.m. **Interactions of wheat, *Triticum aestivum* L (Graminaceae) seedlings with bis-phenol A in heat-sensitive cash register receipt paper: detection, toxicity, and detoxification.**¹ Brittany Caldwell - Kentucky Community and Technical College System
- 1:30 p.m. **The Measurement of the Radioactivity in an Outcrop of Ohio Shale.**¹ Lacey Pyles and Ignacio Birriel - Morehead State University
- 1:45 p.m. **Comparative study of airborne culturable bacteria and fungi in lakes with and without cyanobacterial blooms.**¹ Trent Roberts and Miriam Steinitz Kannan - Northern Kentucky University
- 2:00 p.m. **Toxic cyanobacteria in residential ponds: Are there real health risks?**¹ Alexus Rice, Stefania Guglielmi, Stuart Oehrle, Miriam Steinitz-Kannan - Northern Kentucky University
- 2:15 pm **Refreshment Break** ...ADUC 1st floor & Lappin Hall 1st Floor

¹Undergraduate Research Competition

²Graduate Research Competition

- 2:30 p.m. **Bird-Window Collision Project.**¹ Sarah Hayley Shaw , Cody Schumacher , Elizabeth Wiener , James Brown , Dr. Lindsey Walters , Dr. Kristine Hopfensperger - Northern Kentucky University
- 2:45 p.m. **Lone Star Tick (*Amblyomma americanum*) Range and Distribution in Kentucky from Electronic Surveys.**¹ Erika Parks and Tamara Sluss - Kentucky State University
- 3:00 p.m. **As, Pb, Cd, and Formaldehyde in domestic and foreign beers commonly consumed in eastern Kentucky.** John G. Shiber, PhD - Kentucky Community and Technical College System
- 3:15 p.m. **Variation in Diversity and Abundance of Salamanders in Relation to Human Development in Six Selected Stream Habitats in Central Kentucky.**¹ Leif Van Laar, Christina Benedict, Alyssa Hubbard, Rebecca Jeong, Michon Martin, Roy Scudder-Davis - Berea College
- 3:30 p.m. **The beginning of the end? Extensive dieback of an open-grown Amur honeysuckle stand in northern Kentucky.** Richard L. Boyce, Stephanie N. Brossart, Laura A. Bryant, Logan A. Fehrenbach, Rachael Hetzer, Julie E. Holt, Benjamin Parr, Zachary Poynter, Cody Schumacher, Sandra N. Stonebraker, Michael D. Thatcher, and Mark Vater - Northern Kentucky University

¹Undergraduate Research Competition

²Graduate Research Competition

ENGINEERING

Nilesh Joshi, Chair
Morehead State University

Sanjeev Adhikari, Secretary
Morehead State University

SATURDAY, NOVEMBER 9, 2013

LAPPIN HALL 107

- 8:00 a.m. **Protoflight qualification and testing of small satellite systems.**¹
Jennafer Grindrod - Morehead State University
- 8:15 a.m. **Development of a Helmholtz Coil for NanoSatellite Attitude Control for Morehead State University.** ¹ James D Cavins and Jefferey Kruth - Morehead State University
- 8:30 a.m. **Design and fabrication of Morehead-Rome femtosat orbital deployers** ¹ Zach Taulbee, Travis Miller and Jeffery A. Kruth - Morehead State University
- 8:45 a.m. **Development of a Versatile and Efficient Electrical Power System for Small Satellites.**¹ Kien T. Dang, Kevin Z. Brown and Benjamin K. Malphrus - Morehead State University
- 9:00 a.m. **KySat-2: Design, Development, Fabrication, and Integration.**¹
David Mays - Morehead State University, Twyman Clements - Kentucky Space LLC, Dr. Benjamin Malphrus, Kevin Z. Brown and Kien Dang - Morehead State University
- 9:15 a.m. **Using Raspberry Pi Mini Computer for Development of Remote Controlled Rover.**¹ William L. Roach-Barrette and Roger R. McNeil - Morehead State University
- 9:30 a.m. **Refreshment Break** - ADUC 1st floor & Lappin Hall 1st Floor
- 9:45 a.m. **A Miniaturized Low Cost Transceiver for Femto Class Satellites.**¹
William L. Roach-Barrette and Jeff Kruth - Morehead State University
- 10:00 a.m. **The Characterization and Evaluation of Extreme Sensitivity X-ray Detector for Measurement of the Cosmic X-ray Background.**¹ Jordan Healea, Sean McNeil, Jeff Kruth, Benjamin Malphrus - Morehead State University
- 10:15 a.m. **A Circular Polarized Antenna and Phasing Network System for Nanosatellites.**¹ Kien T. Dang, Jeff A. Kruth, Benjamin K. Malphrus - Morehead State University

¹Undergraduate Research Competition

²Graduate Research Competition

- 1:00 p.m. **Developing a Customizable Renewable Energy Laboratory Protocol.**² John Haughery and Dr. Hans Chapman - Morehead State University
- 1:15 p.m. **Fabrication and characterization of blind and through micro-holes in brass using micro scale electrical discharge machining (micro-EDM).**² Mychal-Drew Moses and Muhammad P. Jahan - Western Kentucky University
- 1:30 p.m. **Genetic Algorithm Based Stochastic Modeling to Study and Optimize Single-echelon vs. Multi-echelon Inventory Systems.**² Nadeera Ekanayake and Dr. Nilesh Joshi - Morehead State University
- 1:45 p.m. **Simulation of Spallation Phenomenon in a High Enthalpy Argon Arc-jet Flow Environment.**² Raghava Davuluri and Dr. Alexandre Martin - University of Kentucky
- 2:00 p.m. **Modeling and Development of Ultrasonic based Neuro Navigation System using Smart Instrumentation.**¹ Dustin Patton, Sanjeevi Chitikeshi and Jim Benson - Murray State University

¹Undergraduate Research Competition

²Graduate Research Competition

GEOGRAPHY

Demetrio Zourarakis, Chair
Kentucky Division of Geographic
Information

Leslie North
Western Kentucky University

SATURDAY, NOVEMBER 9, 2013 LAPPIN HALL ROOM 130

- 1:00 pm **Rock Shelter Saltpeter Mines of Eastern Kentucky.** Gary A. O'Dell - Morehead State University, Angelo I. George - A George Consultants
- 1:15 pm **Analyzing the Mixed Flood Hydroclimatology of the Red River Gorge, Kentucky.** Fawn Brooks and C. Andrew Day - University of Louisville
- 1:30 pm **Using Eye-Tracking Techniques to Evaluate the Effectiveness of Visual Stimuli in 2-D Karst Visualizations: Seeing Through the Complexities of Karst Environments).** Elizabeth Tyrie and Dr. Leslie North - Western Kentucky University
- 1:45 pm **A Hydrometeorological Investigation of Precipitation and Water Resource Variability in Barbados.** Veronica Hall, Jason Polk - Western Kentucky University; Gilman Ouellette,- Louisiana State University and Josh Durkee - Western Kentucky University
- 2:00 pm **The Effects of Nominal Pulse Spacing Spatial Distribution on Digital Terrain Model Calculations.** Demetrio P. Zourarakis, Ph.D. - Kentucky Division of Geographic Information

¹Undergraduate Research Competition

²Graduate Research Competition

GEOLOGY

Robert Lierman, Chair
Eastern Kentucky University

Charles Mason, Secretary
Morehead State University

SATURDAY, NOVEMBER 9, 2013 LAPPIN HALL 129

- 1:00 p.m. **Reconstructing the geologic environment at Tigre Dorado, a Pliocene fossil location in southwestern Kansas.**² Jennifer D. Martin - Murray State University
- 1:15 p.m. **Relocating Clifton Cave Using Electrical Resistivity Tomography.** Gary A. O'Dell - Morehead State University, Junfeng Zhu - Kentucky Geological Survey, James C. Currens - Kentucky Geological Survey, Steve Webb - Kentucky Geological Survey, Ellis Lauder milk - Kentucky Nature Preserves Commission, Gregg Bogosian - Newleaf Symbiotics
- 1:30 p.m. **Sourcing Stray Methane in the Eastern Kentucky Coalfields Using Compositional and Isotopic Analysis.** Wesley Smith and Gordon Bowers - KY Department for Natural Resources
- 1:45 p.m. **Sources of nutrient and fecal microbe pollution in Otter Creek, Madison County, Kentucky.**¹ Kandice L. Smith and Walter S. Borowski - Eastern Kentucky University
- 2:00 p.m. **Using Electrical Resistivity to locate unmarked gravesites.** Jessica Damron and Sarah Jones - Northern Kentucky University
- 2:15 pm **Refreshment Break** ...ADUC 1st floor & Lappin Hall 1st Floor
- 2:30 p.m. **Dye Trace Confirmation of a Leaking Sediment Structure on a Contour Coal Mine in eastern Kentucky.** Wesley Smith - KY Department for Natural Resources
- 2:45 p.m. **Geophysical study of a dropstone.** Thomas Brackman - Northern Kentucky University, Marie Cooper - Cardno ATC Inc.
- 3:00 p.m. **The Kinematics and Structural Evolution of the Rough Creek Graben in Western Kentucky.** Evan Crowe and Nahid Gani - Western Kentucky University
- 3:15 p.m. **Using Raman Microscopy to Identify Plagioclase Zoning in Chilean Lava Flows.**¹ Michelle L Foley and Andrew H Wulff - Western Kentucky University
- 3:30 p.m. **Preliminary Investigation and evaluation of a linear hydrocarbon production trend in Barren County, Kentucky.**¹ Richard M. Burnworth, Andrew D. Reeder and Fredrick D. Siewers - Western Kentucky University

¹Undergraduate Research Competition

²Graduate Research Competition

- 3:45 p.m. **The First Modern Conifer, *Archaeopteris Callixyon* (?)newberryi: Detailed study on a cut and polished slab.** Richard A Smath - University of Kentucky, Patrick Gooding and Cortland Eble - KY Geological Survey, Frank Etensohn - University of Kentucky
- 4:00 p.m. **Recognition of the Sauk Megasequence and the Sauk-Tippecanoe Paleogeography in Kentucky and Tennessee.** Patrick J Gooding - Ky Geological Survey

¹Undergraduate Research Competition

²Graduate Research Competition

HEALTH SCIENCES

Bruce Branan, Chair
Asbury University

Lingyu Huang, Secretary
Kentucky State University

SATURDAY, NOVEMBER 9, 2013

LLOYD-CASSITY 104

- 8:15 a.m. **Urinary Levels of Oxidative Stress Marker (8-OHdG) in Young African American Population with Metabolic Syndrome (MetS): A College Study.**¹ Victoria Mathis, Phyllis Rogers, Avinash Tope - Kentucky State University
- 8:30 a.m. **Porosity change after aging high-copper dental amalgams for 19 years.**¹ Lin Peng - Berea College, Dr. Richard J. Mitchell - College of Dentistry, University of Kentucky
- 8:45 a.m. **Allelic Variability in the *CYP11B2* C344T Single Nucleotide Polymorphism from a Cohort of East Africans.**¹ Spencer Wright, Naomi S. Rowland, Nancy A. Rice - Western Kentucky University
- 9:00 a.m. **Correlation of Environmental Risk Factors with the Prevalence of Essential Hypertension in Kasigau, Kenya.**¹ Addie Dodson, Nancy A. Rice - Western Kentucky University
- 9:15 a.m. **Microbial Activation of Culture-derived Alveolar Macrophages.**¹ Rachael Cicci, Joseph Mester - Northern Kentucky University
- 9:30 a.m. **Refreshment Break** - ADUC 1st floor & Lappin Hall 1st Floor
- 9:45 a.m. **Two- and three- layer gold nanoparticles optimized for enhanced uptake in 3D cell cultures.**² Christopher England, Thomas Priest, Andre Gobin, Hermann Frieboes - University of Louisville
- 10:00 a.m. **Water treatment practices prevent gastrointestinal illness in Western Kenya.**² Ben Cheruiyot - Eastern Kentucky University, Peter Sigilai - Eastern Kentucky University, Jason W. Marion - Eastern Kentucky University
- 10:15 a.m. **AdhzUV has greater potency, replication, and spread within lung cancer cells.**² Stephen Wechman B.S., Xiao-mei Rao M.D., Heshan Zhou Ph. D., Kelly McMasters M.D. Ph. D. - University of Louisville

¹Undergraduate Research Competition

²Graduate Research Competition

MATHEMATICS

John Porter, Chair
Murray State University

R. Douglas Chatham, Secretary
Morehead State University

SATURDAY, NOVEMBER 9, 2013

LAPPIN HALL 213

- 9:45 a.m. **The Optimal Golf Swing.** Megan Mantz - Morehead State University
- 10:00 a.m. **Chutes and Ladders for Grown-ups.** Rus May - Morehead State University
- 10:15 a.m. **Modeling a Falling Slinky.**[®] Stephanie Hagan - Western Kentucky University
- 10:30 a.m. **Creating the Fibonacci Sequence & Defining the Golden Ratio.**
Leslie Schellhaas - Morehead State University
- 10:45 a.m. **Games Mathematicians Play: Learning Through Combinatorial Games.**¹ Lauren Burton - Morehead State University
- 11:00 a.m. **Probabilistic Models for Information Spread.**¹ Samantha Griffith,
Duane Skaggs - Morehead State University
- 11:15 a.m. **Effects of Calculator use before versus after instruction on quadratics computations.** Emily Adams - Morehead State University
- 1:00 p.m. **A Mathematical Approach to Bentham's Felicific Calculus.**
Haley Hall - Morehead State University
- 1:15 p.m. **Perfect Numbers.** Jenna Kiser - Morehead State University
- 1:30 p.m. **Color-coding in the Classroom: Moving from ‘What should I show’ to ‘How do I show it’.** Robin Blankenship - Morehead State University
- 1:45 p.m. **Properties of Peak Set Polynomials.**¹ Matthew Fahrbach - University of Kentucky
- 2:00 pm **The n-k queens problem.** Doug Chatham - Morehead State University
- 2:15 pm **Refreshment Break** ...ADUC 1st floor & Lappin Hall 1st Floor

¹Undergraduate Research Competition

²Graduate Research Competition

- 3:00 p.m. **Graphs with equal domination and identification numbers.** R. Duane Skaggs - Morehead State University, Julie E. Lang - Kansas State University, Lindzey Thacker-Yarosh - Morehead State University
- 3:15 p.m. **Patient Rule Induction Method (PRIM) for Identifying Subgroups in Clinical Studies.**² Patrick Trainor - University of Louisville, Shesh Rai - University of Louisville

¹Undergraduate Research Competition

²Graduate Research Competition

MICROBIOLOGY

Tim Johnston, Chair
Murray State University

Cangliang Shen, Secretary
Western Kentucky University

SATURDAY, NOVEMBER 9, 2013

LLOYD-CASSITY 315

- 1:00 p.m. **Control of unstressed and acid-stress adapted *Listeria monocytogenes* on commercial hams by hops beta acids during aerobic storage at 7°C.**¹ Kelsey Carter, Alyssa Huff, Cangliang Shen - Western Kentucky University
- 1:15 p.m. **Identification of Bacterial Contaminates and Evidence for Temperate Phages in Beerwell Samples from a Bioethanol Production Facility.**¹ Charles A. Coomer, Rodney A. King - Western Kentucky University
- 1:30 p.m. **Incidence of Antibiotic Resistant Genes near Wastewater Treatment Plants.**¹ Brooke Johnson, Heath Ward, Bill Staddon - Eastern Kentucky University
- 1:45 p.m. **Cloning and expression of the gene for a novel nitrogenase from *Agrobacterium sp. CRR14*.**² Emily D'Angelo, Timothy Johnston - Murray State University
- 2:00 p.m. **Reduction of microbial load on hybrid striped bass by acidic electrolyzed water.**² Jiashuo Ma, Changzheng Wang, Robert Durborow, Steven Mims, Lingyu Huang, Cecil Butler - Kentucky State University

¹Undergraduate Research Competition

²Graduate Research Competition

PHYSICS AND ASTRONOMY

Keith Andrew, Chair
Western Kentucky University

Robert Arts, Secretary
University of Pikeville

SATURDAY, NOVEMBER 9, 2013
LAPPIN HALL 224

- 9:45 a.m. **Confined Helium: Excited singlet and triplet states.** Ed Montgomery - Centre College
- 10:00 a.m. **Improving High School Physics Through Morehead State's Early College Program.** Kent J. Price - Morehead State University
- 10:15 a.m. **Synthesis and exploration of Half-Metallic Heusler Alloys.**¹ Kyle Godbey - Berea College
- 10:30 a.m. **Beam Monitor Prototype Using Gas Discharge.**¹ Trevor Satterfeld - Morehead State University, Manoel Couder - Notre Dame University
- 10:45 a.m. **Analyzing topological defects in disordered charge density waves in transition-metal dichalcogenides.**¹ Danielle C. Schaper - Berea College
- 11:00 a.m. **Boron Fullerenes' Laster ablation of Boron Crystals Mixed with Carbon.**¹ Mackenzie Endres - Berea College, Dr. Amer Lahamer - Research Advisor
- 11:15 a.m. **Creating a Cooling Chamber to Reduce Noise on a CCD Chip in a DSLR Camera.**¹ Antonio Bill and Dr. Tracy Hodge - Berea College
- 1:00 p.m. **The Use of Physics in Forensics: An Overview.**¹ Clarissa Roe, Jennifer Birriel, Ignacio Birriel - Morehead State University
- 1:15 p.m. **XMM-Newton and Chandra Observations of the Peculiar HII Region in the Nearby Spiral Galaxy M33.** Thomas Pannuti, Alekzander Kosakowski - Morehead State University
- 1:30 p.m. **A Survey of Hidden Molecular Clouds in the Milky Way.**¹ James M Hughes, Steven J Gibson - Western Kentucky University
- 1:45 p.m. **The Physics of a Catcher's Throw to Second Base.**¹ Drew Williams, Ignacio Birriel - Morehead State University
- 2:00 p.m. **A Multi-wavelength Analysis of Cold Evolving Interstellar Clouds.**¹ Mary Spraggs, Steven Gibson - Western Kentucky University

¹Undergraduate Research Competition

²Graduate Research Competition

- 2:15 pm **Refreshment Break** ...ADUC 1st floor & Lappin Hall 1st Floor
- 2:30 p.m. **The Connection between Delta Scuti Stars and Close Binary Parameters.** Garrison Turner - Big Sandy Community and Technical College, Ronald Kaitchuck - Ball State University, John Holaday - Purdue University
- 2:45 p.m. **Studying the Dynamical Disturbance in Galaxy Clusters Cores through Analysis of Chandra X-ray Observations.**¹ Biswas Sharma - Morehead State University, Alberto Doria - Argelander Institute for Astronomy, Bonn, Germany

¹Undergraduate Research Competition

²Graduate Research Competition

PHYSIOLOGY AND BIOCHEMISTRY

Tracy Livingston, Chair
Georgetown College

Michael Fultz, Secretary
Morehead State University

SATURDAY, NOVEMBER 9, 2013
LAPPIN HALL 302

- 8:00 a.m. **Development of the Jordan HAT assay to study mechanosensation: Selective modulation of a neural circuit in larval *Drosophila melanogaster*.** ¹ Jordan H. Rice - Transylvania University, Zana R. Majeed - Univ. of Kentucky, Lexington, KY; Univ. of Salahaddin, Erbil, Iraq, Josh Titlow, Robin L. Cooper - University of Kentucky
- 8:15 a.m. **Differences in *Drosophila* dopamine receptor expression drive metabolic regulation of a gustatory circuit.**¹ Emily Rayens - Wittenberg University, Emily Holsopple, Josh Titlow, Robin L. Cooper - University of Kentucky
- 8:30 a.m. **The effects of GABA on development, behavior and survival in *Drosophila*.** ¹ Nadera Dabbain and Robin Cooper - University of Kentucky
- 8:45 a.m. **The modulatory mechanism of action of serotonin in *Drosophila* larval heart.** ¹ Tripp Crosthwaite, Zana Majeed, Robin Cooper - University of Kentucky
- 9:00 a.m. **Conspecific Phenotypic Plasticity in Response to Sensory Signals of Predation and Death.** ¹ Sara Beth Freytag and Brian L. Storz - Centre College
- 9:15 a.m. **Effects of the Thermal Acclimation on the Critical Thermal Maxima of the Tropical Cockroaches: *Blaptica Dubia*, *Eublaberus Posticus* and *Blaberus Discoidalis* (Blaberidae)** Lauren Goode and Paul V. Cupp - Eastern Kentucky University
- 9:30 a.m. **Refreshment Break** - ADUC 1st floor & Lappin Hall 1st Floor
- 9:45 a.m. **Endothelin-1 induces phosphorylation of ERK 1/2 in bovine corneal endothelial cells.**¹ Brandon Farmer and Kenneth Crawford - Western Kentucky University
- 10:00 a.m. **Targeted delivery of Orail-silencing RNA (Orail-siRNA) using Lipid Nanoparticles.**¹ Matthew Stark - Northern Kentucky University, Peter Hajdu and Laura Conforti - University of Cincinnati College of Medicine

¹Undergraduate Research Competition

²Graduate Research Competition

- 10:15 a.m. **Assessing motor function in *Cyp11a1*(-/-) knockout mice.**¹ Kelsey Taylor, Mindy Stegman, Molly Kromme, Smitha Infante, Christine Perdan Curran - Northern Kentucky University
- 10:30 a.m. **Pak 1 expression in human breast cancer cell in vivo and in vitro.**¹ Kelly Kleier, Hannah Graff, Arielle Marasligiller, Jackie Jansen, Grant Lewis, Ashley Spaulding, Heather Christensen, Julia Carter - Wood Hudson Cancer Research Laboratory
- 10:45 a.m. **Effects of H₂O₂ and Melatonin on Ishikawa Cells.**¹ Makenna Williams, Kelsey Williams, Emily Gumm, Homer White, Tracy Livingston - Georgetown College
- 11:00 a.m. **Identifying Metal Chelators to Reduce Amyloid- β Aggregation in the presence of Cu²⁺, Zn²⁺, and Fe³⁺.**¹ Emily Madden - Centre College
- 1:00 p.m. **Direct Aminoglycoside Coated Gold Nanoparticles Synthesis, Characterization and Antibacterial Susceptibility Testing.**² Rammohan Paripelly, Dillon pender, Gavva Sravan, Merrit Swisher, Rajalingam Dakshinamurthy - Western Kentucky University
- 1:15 p.m. **The effect of serotonergic system dysfunction on neural circuitry and behavior in *Drosophila melanogaster*.**² Zanar Majeed, Kristin Cornwell, Aubrey Bankemper, Esraa Abdeljaber, Robin L. Cooper - University of Kentucky
- 1:30 p.m. **The Heterogeneous Usage of Vesicle Associated Membrane Proteins (VAMPs) In Platelet Secretion.**² Smita Joshi and Dr. Sidney W. Whiteheart - University of Kentucky
- 1:45 p.m. **Unfolding study of a trimeric membrane protein AcrB.**² Cui Ye, Wei Lu, Zhaoshuai Wang, Yinan Wei - University of Kentucky

¹Undergraduate Research Competition

²Graduate Research Competition

PSYCHOLOGY

Jennifer Goetz, Chair
Centre College

Brian Cusato, Secretary
Centre College

SATURDAY, NOVEMBER 9, 2013

LAPPIN HALL 308

- 8:00 a.m. **“It wasn’t as good as the original...”: A comparison of film sequels and remakes to their originals as a function of reviewer ratings.** James L. Spencer - West Virginia State University
- 8:15 a.m. **The Effect of Locus of Control and Situation on Self Efficacy: Self Efficacy After the Fact.**¹ Shondel Younger - Berea College
- 8:30 a.m. **Evolutionary Influences on “Face-in-the-Crowd” Effect: Interactions between Race & Emotion.**¹ Priyanka Shrestha - Berea College
- 8:45 a.m. **Put me in Coach! Differences in Undergraduate Students' knowledge about concussions and return to play guidelines.**¹ Gordon Duren, Jennifer Connor, KatieAnn Skogsberg Ph.D. - Centre College
- 9:00 a.m. **Mood Congruent Memory: Effects of Double Mood Induction on Recall.**¹ Paul Hawkins Jr. - Berea College
- 9:15 a.m. **The Effects of Energy Drinks and Caffeine on Visual Attention.**¹ Gwynne Rose, Blaine Lewis, Katie Stevenson, Chelsea Benham, Dr. KatieAnn Skogsberg - Centre College
- 9:30 a.m. **Refreshment Break** - ADUC 1st floor & Lappin Hall 1st Floor
- 9:45 a.m. **An examination and evaluation of uniform color among North American professional sports teams.** James L. Spencer - West Virginia State University
- 10:00 a.m. **Spontaneous alternation behavior of *Ahr^dCyp1a2(-/-)* and *Ahr^bCyp1a2(-/-)* and *Ahr^bCyp1a2(+/+)* mice exposed to polychlorinated biphenyls during gestation and lactation.**¹ Josephine Brown, Christine Perdan Curran - Northern Kentucky University
- 10:15 a.m. **Using Conditioned Place Preference to Determine if Male Quail Vocalizations are Reinforcing.**¹ Josh Rieskamp, Camille Seger, Katie Strey, Brian Cusato - Centre College
- 10:30 a.m. **The Influence of Relatedness and Causal Controllability on Help Giving.**¹ Sloane Weed, Jennifer Goetz - Centre College

¹Undergraduate Research Competition

²Graduate Research Competition

- 10:45 a.m. **Neurobiology of Avian Pair Bonds.**¹ Paige Baechle, Ellie Bailey, Melissa Burns-Cusato - Centre College
- 11:00 a.m. **Dopamine and the Pair Bond** ¹ Ashley Boerrigter, Melissa Burns-Cusato - Centre College
- 11:15 a.m. **Alternative Explanations for Empathy-Motivated Rescue Behaviors in Rodents: A Preliminary Study.**¹ Andrew O'Bannon, Anne Mitchell, Brian Cusato - Centre College
- 11:30 a.m. **Child attachment is associated with parental mind-mindedness.**¹ Bethany Greene, Tenecia Wallington - Morehead State University
- 1:00 p.m. ***Seeing Voices: Negative Implications of Using the DSM in Diagnosing Deaf Individuals with Schizophrenia.*** ² Clinton Mateusz Nowicke - Eastern Kentucky University
- 1:15 p.m. **The Effect of Negative Feedback on Individuals' Implicit Self-Liking and Self-Competence and the Moderating Role of Relational Self-Construction.**² Tao Jiang - Eastern Kentucky University
- 1:30 p.m. **Initial Validation of the Fusion and Inflexible Responding Scale.**² Richard Ward, Aaron Ellis, John T. Blackledge, Evan Rollins, Kellen Crager - Morehead State University

¹Undergraduate Research Competition

²Graduate Research Competition

SCIENCE EDUCATION

Brent Eldridge, Chair
Kentucky Community and Technical
College System

Bill Staddon, Secretary
Eastern Kentucky University

SATURDAY, NOVEMBER 9, 2013
LAPPIN HALL 307

- 8:00 a.m. **Jumping the gun: Teaching NGSS ETS1-A and ETS2-B by analyzing historical lessons and contemporary technologies.** Wilson Gonzalez-Espada - Morehead State University, Rosa E. Carrasquillo - College of the Holy Cross, Worcester, MA
- 8:15 a.m. **Use of CAM therapies among college students in Eastern Kentucky: A pilot study.**¹ Janie L. Knell, Andrea P. Wilhoite, Wilson J. Gonzalez-Espada - Morehead State University
- 8:30 a.m. **Teaching NGSS ETS1-A using a hands-on approach: Designing and building a mousetrap glider.**¹ Sarah M. Francis, Wilson J. Gonzalez-Espada - Morehead State University
- 8:45 a.m. **SpaceTrek: A space camp for high school girls.** Jennifer Carter, Lana Swartz - Morehead State University
- 9:00 a.m. **The impact of blending guided inquiry and service learning in the classroom.**¹ Alicia Klein and Miriam Steinitz Kannan - Northern Kentucky University
- 9:15 a.m. **C3Lab Project: Development of students' science process skills in the general chemistry laboratory.**¹ Kevin Beers and Kereen Monteyne - Northern Kentucky University
- 9:30 a.m. **Refreshment Break** - ADUC 1st floor & Lappin Hall 1st Floor
- 9:45 a.m. **Integration of web-assisted laboratories for Anatomy and Physiology courses results in slightly better student learning outcomes.** Jay Kirchner and Steve Tankersley - Galen College of Nursing - Cincinnati
- 10:00 a.m. **A Place-based service-learning science course for honors students.** Martin Brock and Bill Staddon - Eastern Kentucky University
- 10:15 a.m. **Mathematics Bridge from High School to College.** Dora Ahmadi - Morehead State University

¹Undergraduate Research Competition

²Graduate Research Competition

- 10:30 a.m. **An Innovation for Pre-Service Teacher Training: Designing a College-Level Earth Science Course Using The Next Generation Science Standards.** Dr. Katherine V. Bulinski and Dr. Kristin Cook - Bellarmine University
- 10:45 a.m. **The PEACK Summer Teacher Institute at Morehead State University: Bringing Space Science into Middle School.** Eric Jerde, Robert Kroll, Roger McNeil, William Roach, John Curry, Rachel Jo Rogers-Blackwell - Morehead State University, Cindy Combs and Angela McNabb - Simons Middle School
- 11:00 a.m. **Engaging Students with Practical Uses of “Academic” Skills: Linking Classroom Learning to Community Needs.** Mary Anne Carletta - Georgetown College
- 1:00 p.m. **Using Technology to Teach Chemical Equilibrium.**² Bharath Sampath Kumar - University of Kentucky
- 1:15 p.m. **A Nuclear Science Lab Manual For An Advanced Physics Course Has Been Developed to Target a Wide Variety of Majors.**² Daniel W. Burton, Ignacio Birriel - Morehead State University
- 1:30 p.m. **Photo-activation of flight and jump motor neurons in adult flies: A teaching lab to investigate synaptic transmission and action potential waveforms.**² Josh Titlow and Robin Cooper - University of Kentucky

¹Undergraduate Research Competition

²Graduate Research Competition

ZOOLOGY

Lindsey Walters, Chair
Northern Kentucky University

SATURDAY, NOVEMBER 9, 2013
LLOYD-CASSITY 317

- 2:30 p.m. **Niche occupancy, behavioral activities and physiological capacities of an introduced urban lizard, *Podarcis muralis*.**¹ Wesley Parsons, Logan A. Fehrenbach, Richard D. Durtsche - Northern Kentucky University
- 2:45 p.m. **Incubation patterns of Carolina chickadees (*Poecile carolinensis*) measured with remote temperature data analysis.**¹ Brittany Jones, Cassie Volker, Lindsey Walters - Northern Kentucky University
- 3:00 p.m. **Dispersal ability of the Frecklebelly Darter (*Percina stictogaster*).**¹ Brooke Washburn, Carol-Rose Gingras, Jacob Patrick, David J. Eisenhour - Morehead State University
- 3:15 p.m. **Evidence for reproductive Interference on native white bass by introduced yellow bass and hybrid striped bass in Barren River Lake, Kentucky.**² Jacob Fose and Philip Lienesch - Western Kentucky University
- 3:30 p.m. **Prevalence of *Baylisascaris procyonis* in Raccoons (*Procyon lotor*) in Kentucky.**² Kayla Pittman , Benjamin Wielgus , Carl Dick , Cheryl Davis - Western Kentucky University
- 3:45 p.m. **Using RAD-sequencing to illuminate population genetic structure of the meltwater stonefly (*Lednia tumana*) in Glacier National Park, Montana.**² Scott Hotaling - University of Kentucky, Clint C. Muhfeld and J. Joseph Giersch - United States Geologic Survey, West Glacier, MT, Michael R. Miller - UC Davis, David W. Weisrock - University of Kentucky, Steve Jordan - Bucknell University, Omar A. Ali - UC Davis, Gordon Luikart - University of Montana

¹Undergraduate Research Competition

²Graduate Research Competition

¹Undergraduate Research Competition

²Graduate Research Competition

POSTER PRESENTATIONS

Poster presentations are divided into a morning (A.M.) session and an afternoon (P.M.) session according to sections. Each presenter will be provided with an easel and a poster board. Each poster board will be identified with a number that matches the presenter's number in the poster portion of the program booklet. Poster presenters must check in at the Poster Table on the 3rd floor of the ADUC building.

A.M. SESSION

<i>Lloyd- Cassity 304</i>	Chemistry: Analytical/Physical, Chemistry: Organic/Inorganic
<i>ADUC Room 301</i>	Physics & Astronomy
<i>ADUC Room 312</i>	Zoology
<i>ADUC Eagle Meeting Room</i>	Geology, Geography, Microbiology, Science Education
<i>ADUC Eagle Dining Room</i>	Cellular & Molecular Biology

These posters will be set up between 7:30 - 8:00 a.m. With the exception of the Chemistry Sections (see below), students entering the URC will have their posters judged starting at 9:00 a.m. and the presenters **must be present** in order to have their posters judged. It is very important that the posters are removed at this time in order to allow the P.M. session to set up.

CHEMISTRY SECTIONS ONLY: Chemistry sections posters will remain all day, and **Chemistry sections will be judged at 1:00 p.m.** Presenters must be present to have their posters judged.

P.M. SESSION

<i>ADUC Room 301</i>	Agricultural Sciences, Anthropology and Sociology, Botany, Engineering, Health Sciences, Physiology and Biochemistry,
<i>ADUC Room 312</i>	Psychology
<i>Eagle Meeting Room</i> (overflow in 3rd fl. Hall)	
<i>Eagle Dining Room</i>	Ecology and Environmental Science

These posters will be set up between 12:00 - 1:00 p.m. The URC posters will be judged starting at 1:30 p.m. during which time the **presenters must be at their posters.** These posters can be removed at 4:00 p.m.



LLOYD- CASSITY, ROOM 304

CHEMISTRY: ANALYTICAL / PHYSICAL

1. **A Single Step Synthesis and Characterization of Nanowires & Nanospheres for Catalytic Applications.**¹ Fenil Chavda, Yogesh Kherde, Monic Shah, Will Hamilton - Western Kentucky University

2. **A Forensic Analysis of Nail Polish Performed with DART Mass Spectrometry.** Jennifer Naumovitz - Eastern Kentucky University
3. **Calcium Concentrations in Kentucky Lake Waters: Possible Contributing Factor for Non-establishment of Zebra Mussel Population.** Bommana Loganathan, Subhash Dasari, David White - Murray State University
4. **The Solvent Dependent Fluorescence of Fluoxetine.**¹ Brooke Siegel, Patrick M. Hare - Northern Kentucky University
5. **Paleontological Study of the Mercury Levels in Bats.** Stephanie Hagan - Western Kentucky University
6. **A photocatalytic reactor for use with Raman spectroscopy to analyze photocatalytic degradation of iodinated X-ray contrast media.**¹ Isaac J. Kresse, Matthew J. Nee - Western Kentucky University
7. **Kinetic selectivity Enhancement of hydrophilic anions by pulsed chronopotentiometry with asymmetric cellulose triacetate membrane electrode.**¹ Jeremy Meyers, Kebede Gemene - Northern Kentucky University
8. **The Photodegradation of Estrone with 17 β -estradiol or Estriol.**¹ Krista Loose, Patrick M. Hare - Northern Kentucky University
9. **Spinning Sideband Analysis of Phosphate Glasses using scaled and unscaled correlation experiments.**¹ Mikiyas Kurabachew Assefa, Jay Baltisberger - Berea College
10. **Measurement of fluoride ions in drinking water and environmental samples by pulsed chronopotentiometry with ion-selective electrodes.**¹ Kaitlin Cahill, Kebede Gemene - Northern Kentucky University
11. **Characterization of Magnesium Stearate.**¹ Daniel S. Pardue - Berea College. Eric Munson, Matthew J. Nethercott - University of Kentucky
12. **Coherence Pathways for CPMG and PIETA NMR Experiments.**¹ Anna Tribble - Berea College
13. **Sugar Saccharification Analysis for Biomass Samples Using UPLC-CAD: A Biomass Storage Comparison.** Casey Howdieshell - Eastern Kentucky University
14. **Electrochemistry and the Enhancement of latent fingerprints.**¹ Armanda Pennington, Connor Smith - Eastern Kentucky University. David Cunningham, Ph.D.
15. **Development of crystallization and extraction methods for trace illicit drugs to support ion mobility spectrometry analysis.** Daniel Wicker, Alexandria Combs, Leonard Demoranville - Centre College
Timothy Brewer - National Institute of Standards and Technology

16. **Detection of Compounds in Purple Sweet Potato Extract using HPLC with Charged Aerosol Detector and Photodiode Array Detector in tandem.** Lingyu Huang, Cecil Butler, Changzheng Wang - Kentucky State University

CHEMISTRY: ORGANIC / INORGANIC

17. **Green Synthesis of Tetracycline Derivative Doxycycline Capped Gold Nanoparticles and Evaluation of its Antimicrobial Activity.**¹ Ashley McDade, Varavoot Siriyutwatana, Jason Payne - Western Kentucky University
18. **NKU Fullerene Research: NMR and LC-MS studies that support the synthesis of novel ligands to connect fullerene and transition metal subunits for supramolecular applications.**¹ Zach Ewing, Keith A. Walters - Northern Kentucky University
19. **NKU Fullerene Polymer Research: Continued studies on polymeric systems containing both fullerenes and transition metals – building block challenges and spectroscopy.**¹ Corinne E. Basinger, Keith A. Walters - Northern Kentucky University
20. **NKU Fullerene Research: Initial efforts for solar cell production using fullerene-transition metal systems as sensitizers.**¹ Hannah Hearn, Keith A. Walters - Northern Kentucky University
21. **NKU Fullerene Research: New advances in the functionalization of fullerene and coronene for organometallic supramolecular systems.**¹ Chad Beneker, Keith A. Walters - Northern Kentucky University
22. **NKU Fullerene Research: Synthesis of fullerene and corannulene-bipyridine ligands via “traditional” and novel one pot methods for solar cell applications.**¹ Jessica Horn, Keith A. Walters - Northern Kentucky University
23. **Synthesis and catalytic studies of iron(III) corrole for selective oxidation of organic sulfides.** Aaron Carver - Western Kentucky University
24. **Synthesis of a β -Ketoester with high enantioselectivity through ketene-Claisen condensation.**¹ Travis Clay, Chyna Johnson - Berea College
25. **Mercury Adsorption by a Porous Metal-Organic Framework.**¹ Tiffany Noe, Bangbo Yan, Yan Cao, Weiping Pan - Western Kentucky University
26. **Selective oxidation of sulfides to sulfoxides catalyzed by manganese (III) porphyrin complexes with different axial ligands.** weilong lu, rui zhang - Western Kentucky University
27. **Computational investigation of the stability of octahedral and square planar Ni(II) model complexes related to the active site of the E. coli GlxI enzyme.**¹ Jesus A. Berlanga, Christopher S. Mullins - Campbellsville University

28. **Preparation of 1,5-diols via a Titanium Chloride Mediated Allylation.**¹ Samantha Penwell, Bruce Branan - Asbury University
Aymara Albury, Michael Jennings - University of Alabama, Tuscaloosa
29. **Docking of a Cyclic Peptide Agonist to an Active State Homology Model of the μ Opioid Receptor.** John E. Burden - Spalding University
30. **Synthesis of novel tridentate ligands for use in targeted chemotherapeutic drug delivery mechanisms.**¹ Carrie A. Black Johnson, Margaret W. Ndinguri - Eastern Kentucky University
31. **[Ru(bpy)₂dppz-idzo]²⁺ a molecular light switch and stabilizer for G-quadruplex DNA.** Kaitlyn Grunder - Georgetown College
32. **Visible Light-driven Aerobic Oxidation Catalyzed by A Diiron(IV) μ -Oxo-bisporphyrin Complex.** Tse-Hong Chen, Eric Vanover, Helen Thompson, Rui Zhang - Western Kentucky University
33. **Structure Based QSAR of Pyrido[2,3-d]pyrimidine Inhibitors of *Toxoplasma Gondii* Dihydrofolate Reductase.** Celeste Atchison, Rodrick Millner, John E. Burden - Spalding University
34. **A Retrospective Virtual Screen for Agonists and Inverse Agonists of the β 2-Adrenergic Receptor.** Jason Goff, Krystina Perez, John E. Burden - Spalding University
35. **Preparation of Asymmetric Hydroquinone SERCA Inhibitors.** Andres Gasper, Dr. K.C. Russell - Northern Kentucky University
36. **Dehydroheteroarylannulenes: Synthesis of asymmetric [14]annulene isomers.**¹ Andrew Blank, Hillary Anderson, Roman Oundirenko, Le Dao, Ryan Field, KC Russell - Northern Kentucky University
37. **Synthesis of new antioxidants using gallic acid.**¹ Benjamin Shaw, Margaret Ndinguri - Eastern Kentucky University
38. **Heteronuclear Niobium-Lanthanide Oxo Clusters: Syntheses, Structures and Properties.** Brady D. Garabato, Xin Liu, Bango Yan - Western Kentucky University
39. **Novel Flavopolyethynylphenylenes.**¹ Matt Miles, Dr. KC Russell - Northern Kentucky University
40. **Towards the Synthesis of BSA Macroinitiator for Polymerization via ATRP.**¹ Emily Lancaster - Kentucky State University
41. **Synthesis of Intermediates of Loline Biosynthesis Pathway.** Minakshi Bhardwaj, Robert B. Grossman, Christopher L. Schardl, Juan Pan - University of Kentucky
42. **The unorthodox reaction rates of anti-cancer familial platinum compounds with methionine and guanosine monophosphate.**¹ Suhaib Mahmood - Western Kentucky University

43. **A Multi-Step Synthesis of the Lactone 3,6-dihydro-2H-pyran-2-one.** Brad Cundiff - Georgetown College

ADUC, RM 301

PHYSICS AND ASTRONOMY

44. **Equivalent Dosage from Neutron Radiation Produced by Deuterium-Palladium Plasma in the NTF Zebra Chamber** Tom Kvale, Rick Irving - University of Toledo, Ohio; Erik Mckee, Tim Darling - Nevada Terawatt Facility
45. **Bistable pneumatic actuators for soft robotics.** Fidel Tewelde - Berea College
46. **Measuring Ground Reflectance with the Alta II Spectrometer: Implications for Light Pollution.**¹ Lauren Duffy, Dr. Jennifer Birriel - Morehead State University
47. **Spatially Resolved Spectral Analysis of the Galactic Supernova Remnant G1.9 0.3.**¹ Alekzander Kosakowski, Dr. Thomas Pannuti - Morehead State University
48. **Time Variability in the X-ray Emission from the Discrete Source Population of the Nearby Spiral Galaxies NGC 45 and NGC 6946.** William Moffitt, Thomas Pannuti - Morehead State University
49. **Search for the Z-Prime Boson using the ATLAS Detector at the Large Hadron Collider (LHC) at CERN.**¹ Bryan Fagan, Tyler Martinez, Dr. Akhtar Mahmood - Bellarmine University
50. **Examining Rifle Recoil Using Wireless Acceleration Devices.** Kathleen Mulligan - Morehead State University
51. **Searching for Time Variability in the X-ray Emission from the Discrete Source Population of the Nearby Galaxy NGC 55 as Revealed by the Chandra X-ray Observatory.** Jared Napier, Thomas G. Pannuti - Morehead State University
52. **Determination of Fiegenbaum Invariant for a Nonlinear Field Representation of Blazar Optical Microvariability.**¹ Keith Andrew, Mitchell Harmon, Benjamin Guthrie, Andrew Brown, Cameron Hubbard, Michael Carini - Western Kentucky University
53. **Equestrian Physics: Using Wireless Accelerometers to Investigate Dynamics.**¹ L. Cody Howard, Ignacio Birriel, Jennifer Birriel - Morehead State University
54. **An Update on the Cosmic Ray Telescope Project At Morehead State University.** Braccini, Christopher T., Birriel, Ignacio - Morehead State University

55. **Video Analysis of Momentum Conservation in Billard Ball Collisions Using Tracker.** Eric Riddle- Morehead State University
56. **Implementation of New DSLR Camera at the Berea College Observatory for Use in Variable Star Observations.**¹ Preston Tucker - Berea College
57. **A Model to Reduce Light Pollution on MSU's Campus** BRYAN ALLEN CONN, JENNIFER BIRRIEL, IGNACIO BIRRIEL - Morehead State University
58. **The Non-Stochastic Nature of Ferromagnetic Switching in an Artificial Quasicrystal Lattice.** Nathan Smith - Georgetown College; Vinayak Bhat, Eric Teipel, Barry Farmer, Lance DeLong, PhD - University of Kentucky

ADUC, RM 312

ZOOLOGY

59. **Investigating Introgression Between Types A and B in the Marine Broadcast Spawner, *Ciona intestinalis*.** Sarah Bialik, Grant Nation - Centre College; Marie Nydam - Professor/Mentor
60. **ZOOLOGY Genetic Introgression of Ciona Type A and B, *Ciona intestinalis*.** Grant Nation, Sarah Bialik, Marie Nydam - Centre College
61. **Abundance and diversity of fungi carried by cave crickets from the Cumberland Plateau as a product of outside foraging.**¹ Andrew J. Jajack, Andrew E. Rosselot, Jay A. Yoder, Horton H. Hobbs III - Wittenberg University
62. **Investigation of pre-pubertal sex differences in wheel running and social behavior in mice.** Elizabeth Gordon, Cynthia Corbitt - University of Louisville
63. **Spermatogenesis in an Illinois Population of *Eurycea longicauda*.**¹ Caroline Matchett, Sarah Wilson, Kevin Gribbins - Wittenberg University; Dustin Siegel - Southeastern Missouri State University
64. **Ease of establishment by lone star ticks in regions previously occupied by other tick species.**¹ Allison L. Dunn, William S. Cornacchione, Andrew J. Jajack - Wittenberg University; Jay A. Yoder - Wittenberg University
65. **Use of relict mussel shells by benthic fishes of the upper Green River, KY.** Caitlin Dressing, Richard K. Kessler - Campbellsville University
66. **Distribution records of crayfishes (Cambaridae) in 3 counties in Eastern Kentucky.** Verlon Z. Taylor, Byron C. Meade, Mathys J. Meyer - University of Pikeville

67. **Population genetics of the western toad in the central valley of California.**¹ Morgan M. Murrell, Dr. Jarrett R. Johnson, PhD. - Western Kentucky University
68. **Evidence of male parental care in green salamanders, *Aneides aeneus*.** Paul V. Cupp, Jr. - Eastern Kentucky University
69. **Are Carolina chickadee nestlings affected by parasitic bird blowfly larvae?**¹ Zachary Holtkamp, Lindsey Walters - Northern Kentucky University
70. **Carolina chickadees' parental provisioning rates do not predict nestling size.**¹ Danielle Frevola, Elizabeth Nickell, Amy Wing, Lindsey Walters - Northern Kentucky University
71. **Relationship between blood hemoglobin concentration and size in Carolina chickadee nestlings.**¹ Amy Wing, Elizabeth Nickell, Danielle Frevola, Lindsey Walters - Northern Kentucky University
72. **Impacts of invasive species on amphibian colonization of newly formed ephemeral ponds.**¹ Logan A. Fehrenbach, Wesley S. Parsons, Richard D. Durtsche - Northern Kentucky University
73. **A preliminary inventory of the butterfly fauna of Creasey Mahan Nature Preserve, Oldham County, Kentucky.** James Evans - Stantec Consulting

EAGLE MEETING ROOM

GEOGRAPHY

74. **Mapping Stormwater Drainage Features on Eastern Kentucky University's Richmond Campus.** T.E. Anderson, B.D. Auxier, J.L. Dodson, E.F. Dorsey, D.D. Durham, B.R. Gabbard, C.T. Hale, W.T. Maynard, T.J. McNaughton, N.C. Middleton, D.J. Mullins, K.M. Peace, J.R. Peake, G.N. Petrey, T.E. Pike, K.J. Soto, H.A. Spurlock, A.T. VanHook, B.R. Walk, D.M. Yow - Eastern Kentucky University

GEOLOGY

75. **Emergency Response to a Collapse Roadway on Karst Topography to Determine Hazards Using Electrical Resistivity.** Sarah Lott, Ash Eyler - Northern Kentucky University

MICROBIOLOGY

76. **Inactivation of unstressed or acid-stress adapted *Listeria monocytogenes* in ham extract by hops beta acids**¹ Alyssa Huff, Kelsey Carter, Cangliang Shen - Western Kentucky University

77. **Single Step, Aminoglycoside Mediated Synthesis of Gold Nanoparticles with Potent Antimicrobial Activity.**¹ Hannah Rodgers, Rammohan Paripelly, Rajalingam Dakshinamurthy - Western Kentucky University
78. **Obesity Induced Leptin Mediated Notch Signaling in Breast Cancer.**¹ Kaamilah Wilson - Berea College; Monica Battle, Corey Gillespie, Tia Harmon, Viola Lanier, Ruben Gonzalez-Perez - Morehouse School of Medicine
79. **PCR Detection of Antibiotic Resistance Genes in DNA Extracted Directly from Stream Samples.**¹ Kasey Reed, Natasha Whitt, Geoffrey W. Gearner - Morehead State University; Marisa Kamelgarn - University of Kentucky
80. **Isolation and characterization of naturally-occurring plasmids from non-pathogenic human gut *Escherichia coli*.**¹ Ray I. Mirembo, Mahlon M. Kirk, Dawn J. Anderson - Berea College
81. **Role of Metabolism in the Activation and Synthesis of the PrfA-Mediated Protein Listeriolysin O in Pathogenic *Listeria monocytogenes*.** Frazier, Hilaree - Eastern Kentucky University
82. **Seroprevalence of *Trypanosoma cruzi* and Other Vector-Borne Pathogens in Kentucky Canines.**¹ Luke Bosse, Aaron Gingerich, Naomi Rowland, Cheryl Davis - Western Kentucky University; Jean Miller, Debbie Reed - Breathitt Veterinary Center, Murray State University
83. **Identification of genes involved in high-level zinc resistance in *Pseudomonas aeruginosa*.**¹ Austin T Knippenberg*, Tyler Wilkin, Matthew Ellison - Morehead State University
84. **Identifying a possible regulatory mechanism for 4 regulons of DNA damage induced genes in *Acinetobacter baylyi* ADP1.**¹ Travis A. Witkowski, Alison N. Grice, Joshua C. Ferrell, James A. Bradley, Janelle M. Hare - Morehead State University
85. **Characterization of the Archaea Community in Sediments Affected by Acid Mine Drainage.** Elizabeth Watts - Eastern Kentucky University
86. **Utilization of eDNA as carbon, nitrogen and phosphate resources by *Pseudomonas aeruginosa*.** David Brown, Ogochukwu Onyiri - University of Louisville

SCIENCE EDUCATION

87. **The seed beetle is a relatively hygienic, allergy-free means of hands-on classroom instruction for science experiments.**¹ William S Cornacchione, Allison L. Dunn, Andrew J. Jajack - Wittenberg University; Jay A. Yoder - Wittenberg University

88. **Extension, education, and outreach strategies utilized by Kentucky State University Pawpaw Research and Extension Program.** Sheri B. Crabtree, Kirk W. Pomper, Jeremiah D. Lowe - Kentucky State University
89. **The understanding and attitudes of Eastern Kentucky students towards the theory of evolution after directed teaching.** Mathysmeyer - University of Pikeville
90. **Parallel Programmatic Efforts at Northern Kentucky University Increase Student Opportunities and Retention for STEM Majors** Diana McGill, Brooke Buckley, Gail Mackin, John Filaseta, Maureen Doyle, Bethany Bowling, Kristi Haik, Bethany Noblitt - Northern Kentucky University
91. **SCALARS: An NSF S-STEM Program at Georgetown College** Homer S. White, Tracy Livingston, Christine Leverenz - Georgetown College
92. **POGIL in General Biology: Introduction and Analysis of Process Oriented Guided Inquiry Learning¹** Joshua Wedding, Melanie Keil - Berea College
93. **A Novel Approach In Teaching Aerobic Respiration¹** Melanie Keil, Dr. Megan Hoffman, Josh Wedding - Berea College
94. **Comparison of sample and population students's abilities to record quantitative data in a general chemistry laboratory** Nicole Bashall, Kereen Monteyne - Northern Kentucky University

EAGLE DINING ROOM

CELLULAR AND MOLECULAR BIOLOGY

95. **The action adenylyl cyclase within motor nerve terminals of Drosophila and crayfish in synaptic transmission.** Yanzhu, Wen-Hui Wu, Robin L Cooper - University of Kentucky
96. **Investigation into the Mechanism of Ouabain-Induced Na/K-ATPase Activity.** Maddy DuPlessis- Centre College; Kavita Patel, Rebecca Murray, Syed J. Khundmiri - University of Louisville
97. **The role of residue K752 in $\beta 1$ integrin homodimerization.**¹ Kaitlyn Reasoner - Berea College; John Chen, Roy Zent, Charles R. Sanders - Vanderbilt University
98. **Standardizing Cellular Analysis: Establishing an ASTM Standard through the application of ColonyzeTM**¹ Wendell Bliss - Berea College; Phil Zaveri, Cynthia Boehm, Edward Kwee, Dr. George Muschler - The Cleveland Clinic

99. **Lipid exposure elicits differential responses in gene expression and DNA methylation in the skeletal muscle of severely obese individuals.** Jill M. Maples - Biotechnology Center; Jeffrey J. Brault, Carol A. Witczak, Todd M. Weber, Joseph A. Houmard, Brian M. Shewchuk - East Carolina University, Greenville, NC; Monica J. Hubal - Children's National Medical Center, Washington DC
100. **Molecular Level Interaction of Human Fibroblast Growth Factor-1 (hFGF-1) with Anti-Diabetic Drug.** ¹ Tori Buckley, Hitesh Kumar Waghvani, Tulsi Modi, Rammohan Paripelly - Western Kentucky University
101. **Virus Populations in Plasma and Tissues are Well-Mixed in RT-SHIV-Infected Macaques.** ¹ Charles A. Coomer - Western Kentucky University; Mary F. Kearney - National Cancer Institute; Zandrea Ambrose - University of Pittsburgh
102. **Proprotein Convertase Processing of Peroxidasin.** ¹ Ericka Berg - Berea College; Billy Hudson, Gautam Bhawe - Division of Nephrology, Vanderbilt University Medical Center, Nashville, TN
103. **Regulation of Signaling Sphingolipids: The Role of Sec61 β in Inhibition of De Novo Ceramide Synthesis.** ¹ Sarah Bugg - Centre College; Deanna Siow, Villius Stribinski, Brian Wattenberg - University of Louisville
104. **Temporal Pattern of Trimethylated Lysine 4 on Histone 3 at Rhythmically Active Promoters in *Chlamydomonas reinhardtii*.** Robyn Wilson - Western Kentucky University
105. **Measuring TOR Activity and the Impact on Genomic Instability.** ¹ Eon Chilson, Patrick Pocsatko, Erin D. Strome, PhD - Northern Kentucky University
106. **Effects of flow through cell culture system on avian pineal cells and rhythmic melatonin secretion.** Hannah Logsdon - Lindsey Wilson College; Ye Li, Jiffin Paulose, Vincent Cassone - University of Kentucky
107. **A Genome-Wide Association Study to Identify Factors Regulating Reproductive Aging in Male *Drosophila melanogaster*.** Rebecca Petersen, Shannon Brady, Casey Clark, Sandra Onekhena, Victoria Thompson, Michelle Giedt, and Douglas Harrison - University of Kentucky
108. **A Putative Antimicrobial Defense Mechanism in Basement Membranes.** ¹ Philip Palumbo - Berea College; Christopher F. Cummings, Billy Hudson - Vanderbilt University
109. **Toward defining the oncogenic activities in Aurora Kinase A that transform pre-malignant keratinocytes.** ¹ Jenna Rufer - Berea College; Justin Thompson - University of Colorado Boulder; Enrique Torchia, Dennis Roop - Anschutz Medical Campus, University of Colorado Denver

110. **Ultra-structural Analysis of Lipofuscin Accumulation in Atp13a2-Deficient Mice.**¹ Christina Basinger, Dr. Steve Linn, Dr. Patrick Schultheis - Northern Kentucky University
111. **Morphological Characterization of Male Reproductive Aging in *Drosophila melanogaster*** ¹Chelsea Weaver, Connor Appelman, Andrea Gonzalez, Megan Weaver, Michelle Giedt, Douglas Harrison - University of Kentucky; Rebecca Petersen - Bellarmine University
112. **Examining the Effect of Conjugated Linoleic Acid Treatment on Dendritic Cell Cytokine Production.**¹ Hsuan Peng - Berea College; Xue Qun Xu, Jenny Gumperz - University of Wisconsin
113. **Role of Exosomes in Tumor Growth and Metastasis.**¹ Cameron Campbell - Campbellsville University; Radha Munagala, Ramesh Gupta - University of Louisville
114. **Cordon-Bleu and IRTKS protein interaction in microvillar brush border formation.**¹ William Assan - Berea College; Nathan Grega Larson, Matthew J. Tyska- Vanderbilt University
115. **Investigating Increases in Genomic Instability due to Combined Mutations in *msh5* and *rad9*.**¹ John G. Crum Jr., Olivia Davis, Arianna Cabrales, Dr. Erin D. Strome - Northern Kentucky University
116. **Expression and modulation of Lysyl Oxidase-Like 2 in PFHR9 mouse endodermal cell line.** Amber Crabtree - Berea College; Billy G. Hudson, Carolina Anazco, Roberto Vanacore - Vanderbilt University
117. **Investigation of Genome Instability Due to Mutations in the *SAM1* and *SAM2* Genes and Checkpoint-Deficiencies in *Saccharomyces cerevisiae*.**¹ Justin T. Gibson, Chelsie L. Foster, Erin D. Strome - Northern Kentucky University
118. **Repressor mutations restore function to weakly associated AcrB trimer.** Zhaoshuai Wang, Meng Zhong, Wei Lu - University of Kentucky
119. **The role of myocyte-enriched calcineurin-inhibiting protein (MCIP1) in estrogen mediated repression of cardiac hypertrophy.** Courtney Turpin, Rebekah Waikel Ph.D. - Eastern Kentucky University
120. **Mechanism study of pyrophosphatase from *Staphylococcus aureus*.** Xinyi Zhang, Wei Lu, Yinan Wei - University of Kentucky
121. **Impact of mutations in branched-chain amino acid availability genes on genome stability in *Saccharomyces cerevisiae*.**¹ Gabrielle Remy I. Sevilla, Fatima Mohmoud, Erin D. Strome - Northern Kentucky University
122. **Preliminary characterization of a novel gene indentified in a genetic screen for basement membrane degraders in *Drosophila melanogaster*.**¹ Christopher Fields, Ajay Srivastava - Western Kentucky University

123. **A microRNA signature of response to erlotinib is controlled by the epithelial-mesenchymal transition-inducing cytokine TGF β 1.** ¹ Lauren Combs - Georgetown College; Rebecca Astley, Andrew Stacey, Esther P Black - University of Kentucky
124. **Molecular differentiation of *Nosema apis* and *Nosema ceranae* based on species-specific sequence differences in 16S rRNA and RPB1 genes.** LI LU, Ngoentra Leelachantachot, Thomas C. Webster - Kentucky State University
125. **Investigating Sex-Specific Molecular Regulators in Estrogen Mediated Protection of Cardiac Hypertrophy.** Tyler Burton, Audrey Baute, Payton Malone, Dr. Rebekah Waikel - Eastern Kentucky University
126. **Effect of localized adaptation on pyocin production in *Pseudomonas aeruginosa*.** Thomas D. Bourne, Susanna K. Remold - University of Louisville



LLOYD- CASSITY, RM 304

CHEMISTRY: ANALYTICAL / PHYSICAL
(See page 43)

CHEMISTRY: ORGANIC/INORGANIC
(See page 45)

ADUC ROOM 301

AGRICULTURAL SCIENCES

127. **Heavy Metal Concentrations in Edible Plants.** Regina Hill, George Antonious, Eric Turley - Kentucky State University
128. **Exploring Soil Amendments in Agricultural Production.** Catherine Croft, George Antonious, Eric Turley, Regina Hill - Kentucky State University

129. **Soil Organic Matter and Aggregation Associated with Common Agricultural Practices.**¹ Hannah Robbins, Dr. Iin Handayani - Murray State University
130. **Lethal chalkbrood infection in honey bees is not caused by sugar syrups, antibiotics, or miticides.**¹ Andrew E. Rosselot, Andrew J. Jajack, Jay. A. Yoder - Wittenberg University
131. **An Effective and Quick Procedure for Glucosinolate Quantification.** Marie Blacksmith, George Antonious, Regina Hill, Eric Turley - Kentucky State University
132. **Strategies for developing temperature tolerant epiphytic orchid hybrids.** Hideka Kobayashi, Kirk W. Pomper - Kentucky State University
133. **Three years of production data from Prime-Ark[®] 45 and Prime-Jan[®] primocane fruiting blackberries grown organically in Kentucky.** Jeremiah D. Lowe, Kirk W. Pomper, Sheri B. Crabtree - Kentucky State University; John R. Clark - University of Arkansas; John G. Strang - University of Kentucky
134. **Production of Locally Adapted Nucleus Hives as a Microenterprise in Central Kentucky.** CAITLIN THOMAS, Department of Agriculture and Natural Resources, Berea, KY, 40404 Caitlin Thomas - Berea College
135. **Photodormancy of annual vinca (*Catharanthus hybrid*) seed during germination.**¹ Gregory E Shanley, William Lucas, D. Johnson, C. Brent Rogers - Morehead State University
136. **Effects of acidic electrolyzed water on aerobic bacteria count on hybrid striped bass meat.** Jiashuo Ma, Changzheng Wang, Robert Durborow, Steven Mims, Lingyu Huang, Cecil Butler - Kentucky State University
137. **The effects of tobacco extracts on *Nosema ceranae* infection of honey bee.**¹ Sarah Young, Thomas C. Webster, Li Lu - Kentucky State University
138. **New Selections in the Kentucky State University Pawpaw Breeding Program.** Kirk W. Pomper, Sheri B. Crabtree, Jeremiah D. Lowe - Kentucky State University

ANTHROPOLOGY AND SOCIOLOGY

139. **Slag: Evidence for Understanding Prehistoric Metallurgical Practices and Health Concerns**¹ Alexandra Ivers, Dr. Judy Voelker, Dr. Grant Edwards - Northern Kentucky University

BOTANY

140. **Baseline floristic data used to assess conservation priorities of ecological management in Garrard County, Kentucky.** Will W. Overbeck, Ron L. Jones - Eastern Kentucky University
141. **Correlation of acetogenin activity in twig and ripe fruit of six pawpaw [*Asimina triloba* (L.) Dunal] varieties as determined by the brine shrimp test.**¹ Rebecca Graves, Jeremiah Lowe, Kirk Pomper, Sheri Crabtree - Kentucky State University
142. **A preliminary herbaceous plant species floristic inventory of Carter Caves State Resort Park, Carter County, KY.**¹ Mary D. Webb, Allen C. Risk - Morehead State University
143. **Dendroclimatological comparison of white oak (*Quercus alba*) and red maple (*Acer rubrum*) near Eagle Lake, Morehead, KY.**¹ Benjamin Rasp, Allen C. Risk - Morehead State University
144. **Seed Germination Ecology and Seedling Survivorship of the endangered cream gentian, *Gentiana flavida* A. Gray (Gentianaceae).** Sophia Al-Maamary, Lauren A. Ballou, John F. Darling, Alanna M. Wentworth, Christopher A. Adams - Berea College

ENGINEERING

145. **Detection of Sand Boil Locations Along the Mississippi River in Fulton County Kentucky.**¹ Nolan Mark - Murray State University
146. **Study of Green Building Technology in Eastern Kentucky Region.**¹ Robert Spencer, Sanjeev Adhikari - Morehead State University
147. **Rapid Identification of the Systemic Variation in Multivariate Production Processes.** Jayson Minix, Dr. Hans Chapman - Morehead State University
148. **Assessment of Construction Waste Recycling in Eastern Kentucky.** Stephen Glossner, Dr. Sanjeev Adhikari - Morehead State University
149. **Development of Low Cost, Efficient CZTS Thin Films and Solar Cells.** Denzell Barnett, Diedra Hdoges - Southern Polytechnic State University

HEALTH SCIENCES

150. **The Physiology of Obesity A primer toward a better understanding of the “Nature of the Beast.”** Walter W. Gearheart, PhD - University of Pikeville; A.S. Gearheart, BA, MAT - Morehead State University

151. **Inverted Formin 2(INF2), A Fetal Risk Gene for Preterm Birth, is Highly Expressed in Mouse and Human Placentas.**¹ Amber Boothe - Berea College; Katherine Bezold - University of Cincinnati; Louis J. Muglia - Cincinnati Children's Hospital
152. **Sleep deprivation increases cytokine gene expression and plasma corticosterone levels in a murine model: a possible link between stress and inflammation?**¹ Audrey C. Brown, David W. Sams, Noah T. Ashley - Western Kentucky University
153. **Effects of Pet Therapy on the Stress Level of Therapy Dogs.**¹ Kaitlyn Whitewood, Chesika Crump, Terry Derting - Murray State University
154. **Comparative analysis of different types of colorectal cancer surgeries.**¹ Dipendra Sharma Chapagain - Berea College; Giovanni Begossi, Ajaya Upadhyaya - Alta Bates Summit Medical Hospital, Oakland, CA, 94705
155. **Sleep quality effect on immune response throughout pregnancy.**¹ Brittany U'Wren, Bobby R. Baldrige - Asbury University; Kristen B. Ashford - University of Kentucky
156. **Herpes Simplex Virus Alters the Expression of Genes Involved in Alzheimer's Disease.**¹ Sean Shumate, Joseph Mester - Northern Kentucky University
157. **Chemopreventative influence of *Ganoderma lucidum* extracts on male and female lung cancer cells.** David L. Robinson, Sanda Zolj, Jillian C. Goines, Melissa Pawley Smith, T'Shura S.A. Ali, Mary O. Huff, Joann M. Lau - Bellarmine University
158. **The experimental analysis of the effects of pet therapy on the blood pressure and stress levels of first-year college females.**¹ Chesika J. Crump, Kaitlyn Whitewood, Terry Derting - Murray State University

ADUC ROOM 312

PHYSIOLOGY AND BIOCHEMISTRY

159. **Additive stimulatory effects of octopamine and serotonin on *Drosophila melanogaster* heart rate.** Kayla King, Zana R. Majeed, Josh Titlow, Robin Cooper - University of Kentucky
160. **The effects of K⁺ on skeletal muscle and the relationship with deep tissue injury of muscle.**¹ E. Burns, S. Bigdeliazari, E.E. Dupont-Versteegden, R.L.Cooper - University of Kentucky

161. **The pharmacological profile and actions of cholinergic system in larval *Drosophila*: Behavior, development, CNS activity, and heart.** Chan-Ung Wang, Jessica Hill, Wen-Hui Wu, Robin L. Cooper - University of Kentucky
162. **The Role of Dopamine Homeostasis on Dopaminergic Neuron Morphology, Function, and Fate in *Drosophila*.**¹ Douglas Potts, Josh Titlow, Robin Cooper - University of Kentucky
163. ***Drosophila* testing used to determine role of genetic variation in dopamine drug treatments.**¹ Emily Holsopple, Josh Titlow, Robin L. - University of Kentucky; Emily Rayens - Wittenberg University; Jordan Rice - Transylvania University
164. **Role of 5-HT2B in *Drosophila* development and behavior.**¹ Esra A Abdeljaber, Zana R. Majeed, Robin L. Cooper - University of Kentucky
165. **Studying the role of serotonin in neural circuit modulation and behavior in *Drosophila melanogaster*.** Aubrey Bankemper, Zana R. Majeed, Robin L. Cooper - University of Kentucky
166. **Analysis of various physiological salines for heart rate, CNS function, and synaptic transmission at neuromuscular junctions in *Drosophila melanogaster* larvae.** Clara de Castro - Sayre School, Upper School; Zana R. Majeed, Josh Titlow, Robin L. Cooper - University of Kentucky
167. **Serotonin and heart: How serotonin modulates the heart rate in *Drosophila* larvae.**¹ Audra Stacy, Zana Majeed, Robin Cooper - University of Kentucky
168. **Expression and Purification of Human Fibroblast Growth Factor-1 and Its In Vitro Interaction Studies with Aminoglycoside.**¹ Tori Buckley, Gabrielle Ison, Rammohan Paripelly, Rajalingam Dakshinamurthy - Western Kentucky University
169. **Investigations of thermostable enzymes in ionic liquids.**¹ Malcolm White, Keely Frazier, Saioa Osoz - Eastern Kentucky University
170. **Embryonic development of cardiac parasympathetic ganglia in normal and neurturin knockout mice.**¹ Taylor Johnson - University of Pikeville; Lucas Cantwell - Assumption College; Donald Hoover - East Tennessee State University
171. **The effect of the Rho-kinase inhibitor Y-27632 on the alpha-actin and the beta-actin cytoskeletal domains in resting and stimulated smooth muscle cells.**¹ Sarah M. McClanahan, Josie Maione, Michael Fultz - Morehead State University
172. **Quantification and cell-type identification of miR-133b expression after spinal cord injury in *Xenopus laevis*.**¹ Minus R. Helton, Mackenzie Hamilton, Kurt M. Gibbs - Morehead State University
173. ***C. elegans*: a Model for Whole Organism Drug Transport.**¹ Joanna Campbell - Centre College; Jennifer P. Cecile - Appalachian State University

174. **Assessing Genetic Susceptibility to Motor Function Deficits Following Developmental Exposure to Polychlorinated Biphenyls.**¹ Mindy Stegman, Kelsey Taylor, Molly Kromme, Smitha Infante, Christine Perdan Curran - Northern Kentucky University
175. **Assessing expression and activity of CYP1A1 following developmental exposure to polychlorinated biphenyls.**¹ Collin Johnson, Anna Lang, Amy Ashworth - Cincinnati Children's Research Foundation; Smitha Infante, Christine Perdan Curran - Northern Kentucky University
176. **Effects of developmental PCB exposure on energy metabolism in adult mice.**¹ Greg Harding, Breann Hays, Collin Johnson, Christine Perdan Curran - Northern Kentucky University; Justin Branham - University of South Florida; Austin Brown - University of Louisville
177. **Investigation of the Chmp1A protein network and post-translational modifications in human pancreatic cancer development.** Maiyon Park - University of Pikeville
178. **Optimizing PCR of randomized oligonucleotide template for RNA libraries.** Ellen M. Kolb, Haley E. Dyer - Morehead State University
179. **Effects Of Pulsatile Melatonin Application on the Growth of Ishikawa Cells.**¹ Kelsey Williams, Makenna Williams, Emily Gumm, Homer White, Tracy Livingston - Georgetown College
180. **Effects of melatonin on human endometrial cancer cells.** Emily Gumm, Kelsey Williams, Makenna Williams, Homer White, Tracy Livingston - Georgetown College
181. **Optimization of synthesis for internally-quenched, fluorescently labeled peptide substrates.** Richard Payton, Garrett Cairo, Andrew Norris - Berea College

EAGLE MEETING ROOM

PSYCHOLOGY

182. **Acute effects of alcohol mixed with energy drinks on behavioral control and balance tasks.** Sarah Maloney, Amy Stamates, Cecile Marczynski - Northern Kentucky University
183. **Effects of age of first use of alcohol and age of first intoxication on impulsivity and behavioral control in young college students.** Renee Meister, Cecile Marczynski - Northern Kentucky University

184. **Motivational disposition, priming, and congruency effects on EEG anterior frontal asymmetry and perceived stress.**¹ Rachele Johnson - Berea College
185. **Physiology of Meditation.** Jenna Trost, Andrew Holmgren, Harry Meisner, Lydia Prevost, Sam Walker, Aaron Godlaski, Ph.D. - Centre College
186. **The Associations between Contingencies of Self-Worth and Compassionate and Self-Image Goals and the Moderating Role of Culture.** Tao Jiang - Eastern Kentucky University
187. **The congruency hypothesis: Testing the effects of sociotropy and autonomy after romantic betrayal.** Laura J. Secord, Nolan R. Williams, Laurie L. Couch, David R. Olson - Morehead State University
188. **Developmental Changes in Joint Attention in Typically Developing Children and Children with Autism Spectrum Disorders.**¹ Kimberly Ellison - Eastern Kentucky University; Dr. Letitia Naigles - University of Connecticut; Saime Tek - Kennedy Krieger Institute
189. **The Effects of Repetitive Transcranial Magnetic Stimulation on Major Depression Disorder.**¹ Qinpu He - Centre College; Zhong Zheng - West China Medical School of Sichuan University
190. **Help, I need somebody! An analysis of help-seeking patterns in men and women after a romantic betrayal.**¹ Kalinda Cade, Macy Kootz, Laurie L. Couch - Morehead State University
191. **The Fear of Failing and its effects on one's Self Evaluation.** Josef Katzman - Eastern Kentucky University
192. **Detremental Effects of Spousal Bereavement on Widowers.** Ashley Dickey - Eastern Kentucky University
193. **Construction of an Ethogram for Galápagos Sea Lion Play Behavior: Issues with Interrater Reliability.** Mary Ann Kincer, Jenipher A. Dennis, Robert W. Mitchell, Roseanne Lorden - Eastern Kentucky University; Richard Sambrook - Eastern Michigan University
194. **The Real Self and the Virtual Self: Understanding the Relationships between These Identities among Gamers.** Justyn Bigam, Adrienne Coffey, Darrin Greene, Rachel Vargas, Janet B. Dean, Ph.D. - Asbury University
195. **D1 receptor activation by amphetamine contributes to symptoms of acute withdrawal in rats.**¹ Justine Griesenauer, Wesley White - Morehead State University
196. **Stress and Discrimination of Emotion.** Rachel Pelgen - Morehead State University; Mikayla Branham, Katharine Higgins, Kayli Fannin, Chase Gilliland, William Vance, Christopher Henderson, Ilsun M. White

197. **How Does Constant Light-Dark Exposure Affect Activity?**¹ Zoe Becerra, Will Douglas, Matthew I. Bowman, Curry Haertzen, Jackie Blackburn, Tristan Lewis, Brandon Brown, Michael Cunningham - Morehead State University
198. **Effects of Music on Performance on a Maze Task in Rats.**¹ Gabriel Lewis, Jeremy Gentry, Allison Holliday, Cameron Hammon, Ilsun M. White - Morehead State University
199. **Blocking Muscarinic Receptors Disrupts Memory After Learning.**¹ Kate Hula, Haley Wells, Kalena Gross, Spencer Sledd, Austin Burke, Brandon Muncy, Michael Cunningham, Ilsun M. White - Morehead State University
200. **Effects of Ecstasy on Aggression in Adolescent Rats.** Emily Lange - Morehead State University; Allison Johnston, Jeffrey Hensley, Katherine Gibson, Jordan Daniels, Mahlon White, Larry Adkins, Ilsun M. White
201. **ADHD and the ABC's.** Chelsea Kennedy, Michelle Rossi - Eastern Kentucky University
202. **Attachment, sensitivity, and children's vulnerability: A look inside children's internal working model of self.**¹ Morgan Blevins, Michelle Deaton - Morehead State University
203. **Mindfulness, Meditation, Prayer, and Mental Health Among Christian Undergraduates.**¹ Megan Kuhl, Nicole Woolls, Hannah Wolgamot, Aurora Pullar - Asbury University
204. **Parental attachment is associated with children's behavior during discussions of sadness.** Natalie Justice, Makinzee Tatman, Tina Ward, Katelyn Fugate, Medina Jackson, Oriana Reed, Brittany Weeks - Morehead State University; Kayla Sizemore
205. **Autism and Attachment Security.**¹ Rachel Merriman - Eastern Kentucky University
206. **The Effect of Inversion on Adult Attention Disengagement from Faces.** Samantha M. Dinga- University of Louisville

EAGLE DINING ROOM

ECOLOGY AND ENVIRONMENTAL SCIENCE

207. **Electrical Resistivity of Trees and Vines.** Evan M Gora, Marilyn E Feil, Steve P Yanoviak - University of Louisville
208. **Tree community responses five years after invasive vine and shrub honeysuckle removal in an urban park woodland.** Eric Moore, Brittany Taylor, Margaret Carreiro - University of Louisville; Major Waltman - Louisville Olmsted Parks Conservancy

209. **Effect of Sunlight Exposure on *Narcissus psuedonarcissus* Colony Size and Bloom Totals in Eastern Kentucky.** Angel Bevins - University of Pikeville
210. **Characteristics and Habitat Associations of Cricket Frogs (*Acris spp.*) in a Hybridization Zone.** Nick Spalsbury, Dr. Richard Phillips - Wittenberg University
211. **Soil microbial analysis of differing spoil types from Bent Mountain surface mine in Pike Co., KY.**¹ Reena Martin, Yoshua Reece, Sarah Hall - Berea College
212. **High prevalence of ranavirus infection in permanent constructed wetlands in eastern Kentucky, USA.** Jennifer Strong, Chelsea Kross, Stephen Richter - Eastern Kentucky University; Andrea Drayer
213. **Effects of atrazine on the chemical alarm cue response in longear sunfish (*Lepomis megalottis*).**¹ Benjamin Adams, Ben Brammell - Asbury University
214. **Using avifauna to assess the functional success of restored Beaver Creek wetlands near Cave Run Lake, Menifee County, KY.** Brian D. Wulker, Brian C. Reeder - Morehead State University
215. **Water fertility and fish production in small (0.04 ha) earthen walleye (*Sander vitreus* Mitchell) hatchery ponds at Minor Clark Fish Hatchery during the 2013 growing season.** Seth H. Bromagen, Robyn F. Whitted, Jessica E. Lemley, Brian C. Reeder - Morehead State University; Roderick J. Middleton - Minor Clark Fish Hatchery
216. **Examining the association between ecology and morphology in the Pecos pupfish (*Cyprinodon pecosensis*) in an altered and ecologically diverse landscape.**¹ Meghan E. Hall, Melissa D. Smith, Michael L. Collyer - Western Kentucky University; Chris W. Hoagstrom - Weber State University
217. **Host Selection of *Trametes versicolor*: Preference for Tree Health.** Matthew Baker - University of Pikeville
218. **Plankton communities in plastic-lined and earthen walleye (*Sander vitreus* Mitchell) hatchery ponds at Minor Clark Fish Hatchery.**¹ Jessica E. Lemley, Robyn F. Whitted, Seth H. Bromagen, Brian C. Reeder - Morehead State University
219. **Absence of *Sarcocystis neurona* in Virginia o'possums (*Didelphis virginiana*) in Calloway County.**¹ Carlynn Rekosh, Barbara Papajeski, Terry Derting - Murray State University
220. **Effects of variation in hunger levels on begging behavior of nestlings and the provisioning behavior of adult Eastern Phoebes (*Sayornis phoebe*).** C. Adam Heist, Gary Ritchison - Eastern Kentucky University

221. **Assessing the Importance of Riparian Habitat to Foraging Bats in the Bluegrass Region.**¹ Shelby A. Fulton, Luke E. Dodd - University of Kentucky
222. **Using Science Camps to Convey the Importance of Water Quality Monitoring.** Julie Moses - Northern Kentucky University
223. **Differential effects of bis-phenol A on the germination and growth of wheat *Triticum aestivum*L., (Graminaceae) cultivars containing high and low polyphenol oxidase activity in their seed coats.**V. Patrice Doyle - Kentucky Community and Technical College System
224. **The prevalence of Chytrid fungus in Bullfrog populations of South Central Kentucky.**¹ Kevin Ziegler - Western Kentucky University
225. **Assessing Bat Activity Across Common Habitats in Yellowstone National Park.** Mary M. McKenna, Luke E. Dodd, Michael J. Lacki - University of Kentucky
226. **A Biodiversity Survey of Switchgrass Fields using Wildlife Cameras, Birdwatchers, and Microbial Testing.**¹ Kristen A. Cory, Bobby R. Baldrige - Asbury University; Tom Keene, Ray Smith - University of Kentucky
227. **Agricultural Herbicides and Trace Metals in Selected Areas of the Kentucky River Watershed.**¹ Andrew Nagel, David Thompson, Kristy Hopfensperger - Northern Kentucky University
228. **Adventure into the microbial world that nurtures brittle stars in a Bahamian cave.**¹MILLICENT FRIMPONG-MANSO, Miriam Steinitz Kannan - Northern Kentucky University
229. **Nutrient Concentrations of AJ Jolly Lake and its Tributaries.** Sarah Hayley Shaw, Dr. Kristine Hopfensperger - Northern Kentucky University
230. **Effect of Amur Honeysuckle on Greenhouse Gas Release.** Cody Schumacher, Jessica Morgan, James Brown, Dr. Kristine Hopfensperger - Northern Kentucky University
231. **Bird in Window Collision Project.** Elizabeth Wiener, Sarah Hayley Shaw, Cody Schumacher, James Brown, Dr. Kristine Hopfensperger, Dr. Lindsey Walters - Northern Kentucky University
232. **Lead levels in soils of Berea, Kentucky attributed to roadside gasoline exhaust and pesticide usage.**¹ Christina Kolsto, Phyo Phyo Kyaw Zin, Paul C. Smithson - Berea College
233. **Analysis of soil lead in Berea, Kentucky derived from leaded paint.**¹ Phyo Phyo Kyaw Zin, Christina Kolsto, Paul C. Smithson - Berea College

234. **Ecological effects of crayfish disturbance on the only known population of the carnivorous dwarf sundew in Kentucky.** Kevin Hopper - Bluegrass Community and Technical College; Jim Krupa - University of Kentucky'; Monica Nguyen - Chapman University
235. **Use of eDNA to detect non-native species in small lentic systems.** Samantha J. Burr, Joshua M. Lusk, Ben F. Brammell - Asbury University; David K. Peyton - Morehead State University
236. **Assessing the effects of Amur honeysuckle control on native plant communities at Woodland Mound Park: Year 8** Alaina D.M. Holbrook, Richard L. Boyce - Northern Kentucky University
237. **Prevalence of toxic cyanobacteria in residential ponds in the Northern Kentucky: investigating patterns, and correlations with environmental parameters**¹ Stefania Guglielmi, Alexis Rice, Stuart Oehrle, Miriam Steinitz-Kannan - Northern Kentucky University
238. **Landscape genetics of the endangered California tiger salamander in the Central Valley of California.**¹ Ryan N Vincent, Jarrett R Johnson - Western Kentucky University
239. **Honeysuckle presence within the property of the Cincinnati Nature Center** Kaitlyn Osborn - Georgetown College
240. **Interactions between species of different communities in a ridge-top wetland ecosystem in eastern Kentucky, USA.** Chelsea S. Kross, Stephen C. Richter - Eastern Kentucky University
241. **Earthworm and macroinvertebrate activity responses after invasive shrub removal from an urban woodland park.** Robert P Pipal, Margaret Carreiro - University of Louisville
242. **Habitat Use of the Michigan Bog Grasshopper, *Appalachia arcana*, in Huron-Manistee National Forest.**¹ Cady Gannon, Nicholas Spalsbury, Stephen Zumdick, Richard Phillips - Wittenberg University; Kim Piccolo - US Forest Service

Past Presidents of the Kentucky Academy of Science

1914-1915	Joseph H. Kastle	1963-1964	R.A. Chapman
1915-1916	N.F. Smith	1964-1965	C.B. Hamann
1916-1917	A.M. Miller	1965-1966	John M. Carpenter
1917-1918	R.C. Ballard	1966-1967	Robert M. Boyer
1918-1919	J.E. Barton	1967-1968	Paul G. Sears
1919-1920	Paul P. Boyd	1968-1969	Orville Richardson
1920-1921	W.H. Coolidge	1969-1970	Lloyd Alexander
1921-1922	George D. Smith	1970-1971	Karl Hussung
1922-1923	Lucien Becker	1971-1972	Louis Krumholz
1923-1924	W.R. Jillson	1972-1973	Marvin W. Russell
1924-1925	Cloyd M. McAllister	1973-1974	Donald Batch
1925-1926	Austin R. Middleton	1974-1975	Ellis V. Brown
1926-1927	W.G. Burroughs	1975-1976	Frederick M. Brown
1927-1928	W.D. Valleau	1976-1977	Charles Payne
1928-1929	G.D. Buckner	1977-1978	Charles Kupchella
1929-1930	Frank L. Rainey	1978-1979	Sanford Jones
1930-1931	V.F. Payne	1979-1980	Rudolph Prins
1931-1932	Anna A. Schnieb	1980-1981	John Philley
1932-1933	George Roberts	1981-1982	Ted M. George
1933-1934	John S. Bangson	1982-1983	J.G. Rodriguez
1934-1935	Alfred M. Peter	1983-1984	Gary Boggess
1935-1936	J.S. McHargue	1984-1985	Joe Winstead
1936-1937	Robert T. Hinton	1985-1986	Charles V. Covell
1937-1938	L.Y. Lancaster	1986-1987	Larry Giesmann
1938-1939	W.R. Allen	1988	William P. Hettinger, Jr.
1939-1940	A.W. Homberger	1989	Richard N. Hannan.
1940-1941	Charles Hire	1990	Debra K. Pearce
1941-1942	G.B. Pennebaker	1991	W. Blaine Early, III
1942-1943	J.T. Skinner	1992	Douglas L. Dahlman
1943-1944	L.A. Brown	1993	Charles N. Boehms
1944-1945	L.A. Brown	1994	Larry P. Elliott
1945-1946	P.J. Kolachov	1995	Robert O. Creek
1946-1947	Ward Sumter	1996	William S. Bryant
1947-1948	Alfred Brauer	1997	Marcus McEllistrem
1948-1949	Morris Scherago	1998	Patricia K. Doolin
1949-1950	W.E. Blackburn	1999	Gordon K. Weddle
1950-1951	E.P. Penrod	2000	Blaine R. Ferrell
1951-1952	Harvey B. Lovell	2001	Ron Rosen
1952-1953	Thomas Herndon	2002	Jerry Warner
1953-1954	C.B. Hamann	2003	Robert Barney
1954-1955	R.H. Weaver	2004	Robert Kingsolver
1955-1956	J.G. Black	2005	Bruce Mattingly
1956-1957	A.M. Wolfson	2006	Miriam Kannan
1957-1958	William M. Clay	2007	Nigel Cooper
1958-1959	William B. Owsley	2008	John Mateja
1959-1960	Pete Panzera	2009	Robin Cooper
1960-1961	H.H. LaFuze	2010	Nancy Martin
1961-1962	Charles Whittle	2011	Dawn Anderson
1962-1963	Lyle Dawson	2012	Cheryl Davis

Past Meeting Locations of the Kentucky Academy of Science

1914-33	No records available	1970	Georgetown College
1935	University of Kentucky	1971	Eastern Kentucky University
1936	Western Kentucky State College	1972	Morehead State University
1937	University of Louisville	1973	Transylvania College
1938	Morehead College	1974	Centre College
1939	Murray State College	1975	University of Louisville
1940	University of Kentucky	1976	University of Kentucky
1941	Eastern Kentucky State College	1977	Western Kentucky University
1942	University of Kentucky	1978	Eastern Kentucky University
1943	University of Louisville	1979	Northern Kentucky University
1944	University of Kentucky	1980	Transylvania University
1945	No annual meeting	1981	Murray State University
1946	University of Louisville	1982	Ashland Oil, Inc.
1947	Western Kentucky State College	1983	University of Louisville
1948	University of Kentucky	1984	Kentucky State University
S1949	Cumberland Falls State Park	1985	Morehead State University
F1949	Eastern Kentucky State College	1986	Lexington, Ky (with SSMA)
1950	University of Louisville	1987	Western Kentucky University
1951	University of Kentucky	1988	Eastern Kentucky University
1952	Georgetown College	1989	University of Kentucky
S1953	Ashland	1990	Northern Kentucky University
F1953	University of Kentucky	1991	Owensboro
S1954	Berea College	1992	Ashland Community College
F1954	University of Louisville	1993	Georgetown College
S1955	Cumberland Falls State Park	1994	Paducah Community College
F1955	Kentucky State College	1995	Western Kentucky University (Joint Meeting with TAS)
1956	Eastern Kentucky State College	1996	Kentucky State University
1957	Western Kentucky State College and Mammoth Cave State Park	1997	Morehead State University
F1957	Berea College	1998	Jefferson Community College, S.W.
S1958	National Bridge State Park	1999	Eastern Kentucky University
F1958	University of Kentucky	2000	University of Kentucky
S1959	Lake Cumberland State Park	2001	Middle Tennessee State (Joint Meeting with TAS)
F1959	Western Kentucky State College	2002	Northern Kentucky University
S1960	Murray State College	2003	Western Kentucky University
F1960	University of Louisville	2004	Murray State University
S1961	Morehead State College	2005	Eastern Kentucky University
F1961	University of Kentucky	2006	Morehead State University
1962	Eastern Kentucky State College	2007	University of Louisville
1963	University of Kentucky	2008	University of Kentucky
1964	Morehead State College	2009	Northern Kentucky University
1965	University of Kentucky	2010	Western Kentucky University
1966	Kentucky Wesleyan College	2011	Murray State University
1967	University of Louisville	2012	Eastern Kentucky University with Berea College
1968	Western Kentucky University		
1969	Murray State University		

**100th Annual Meeting of the Kentucky Academy of Science
Hosted by University of Kentucky
November 14-16, 2014**



**The next Annual Meeting of the Kentucky
Academy of Science
will be the 100th Annual meeting**

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