2017 Annual Meeting Program
November 3-4, 2017

Murray State University

Thank you to our Platinum Sponsor

Thank you to our Break Sponsors
Thank you to our Silver Sponsors
Online Program, October 30, 2017

Poster presentations are all on Friday

Oral Presentations are all on Saturday

<table>
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<th>Event Description</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
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<tr>
<td>KAS Governing Board meeting</td>
<td>Friday, Nov 3</td>
<td>1:00pm - 3:00pm</td>
<td>Commonwealth Suite</td>
</tr>
<tr>
<td></td>
<td>2017</td>
<td></td>
<td>Open to all KAS members</td>
</tr>
<tr>
<td>Meeting for Section Leaders and Judges</td>
<td>Friday, Nov 3</td>
<td>3:00pm - 4:00pm</td>
<td>The Stables, Curris Center</td>
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<td></td>
<td>2017</td>
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<td>1st floor</td>
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<td>If you are serving as a Judge or Section leader, please attend this meeting for a brief orientation to the student competition process and to pick up materials.</td>
</tr>
<tr>
<td>Practice Room for Oral Presentations</td>
<td>Friday, Nov 3</td>
<td>3:00pm - 9:30pm</td>
<td>Tennessee Room, Curris Center</td>
</tr>
<tr>
<td>Practice Room for Oral Presentations</td>
<td>Friday, Nov 3</td>
<td>3:00pm - 9:30pm</td>
<td>Cumberland Room, Curris Center</td>
</tr>
<tr>
<td>Tour - Hancock Biological Station</td>
<td>Friday, Nov 3</td>
<td>3:00pm - 5:00pm</td>
<td>Meet in front of Curris Center</td>
</tr>
</tbody>
</table>
**Hancock Biological Station** - The Hancock Biological Station (HBS), located on Kentucky Lake less than 20 minutes from the campus, is a year-round teaching and research ecosystem facility where students have unique opportunities to interact with faculty and visiting scientists. A variety of field courses are taught each summer at the Station.

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**Friday, November 3, 2017  4:00pm - 5:00pm**

**KAS Business meeting**

Mississippi Room, Curris Center

President: Darrin Smith

Open to all KAS members. We will announce results of Board Elections, hear an update about the Raymond and Marcia Athey funds that endow our research grants, and provide other updates about KAS activities. Refreshments provided.

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**Friday, November 3, 2017  4:00pm - 5:00pm**

**Poster presenters Check-In**

3rd floor of Curris Center

Chair: Kevin Revell          Co-chair: ANGELA GUYTON

Poster presenters, please check in to verify your poster placement. If you are participating in a student competition you will also receive further instructions here.

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**Friday, November 3, 2017  4:00pm - 5:00pm**

**Tour - Biology Building**

Meet in the lobby

The Biology Building was completed in 2008. It houses 7 teaching labs, several lecture spaces, 712 research labs, office space, the Herbarium, Animal Collection, Animal Care Facility and a Molecular Biology Facility. Additional Biology teaching and research spaces are located in Jones Hall (Chemistry) and the new Engineering Physics Buildings

Campus map

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**Friday, November 3, 2017  4:00pm - 5:00pm**

**Tour - Chemistry Building**

Meet in the lobby
In May 2009, the Department of Chemistry moved into the newly constructed Jesse D. Jones Hall. In our main entryway we feature a Living Periodic Table, built by Mr Jim Barnett, displaying many samples of actual elements. The Chemical Services Laboratory provides state of the art chemical analytical services and expertise in the areas of Environmental Analysis, Organic Synthesis, Inorganic Substance Analysis, Controlled Substance Analysis, Bioassay & Bio-analytical Techniques and much more! The Polymer and Materials Characterization Laboratory houses our Dynamic Mechanical Analyzer (DMA), which was purchased after the Chemistry Department was awarded a highly competitive Major Research Instrumentation grant from the National Science Foundation. In addition to our differential scanning calorimeter, a thermogravimetric analyzer, a gel permeation chromatography system, a density meter, and two viscometers; the DMA makes Murray State the only university in the region to have such capabilities for polymer and materials characterization.

The Chemistry Department provides access to the most advanced instrumentation including a JEOL 400-MHz Nuclear Magnetic Resonance Spectrometer, and major equipment in the areas of chromatography, thermal analysis, and inert atmosphere systems. Much of our instrumentation was purchased through a generous gift from Dr. Jesse D. Jones (Chemistry ’64) and is housed in the Jones/Ross Research Center.

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**Friday, November 3, 2017  4:00pm - 5:00pm**

**Tour - Mapping Applications and Resource Center (MARC)**  
Meet outside of Blackburn  
425

**MARC/Geosciences** - The tour will bring conference attendees to the Mapping Applications and Resource Center (MARC) on the 4th floor of the Blackburn Science Building. We will show our computer classrooms, large-format scanners and printers, and GPS equipment for geospatial technologies. The participants will visit our Terrain Modeling Lab that houses a stream table, an augmented reality sandbox, and a 3D printer. They will also visit our Environmental Monitoring and Modeling lab.

Campus map

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**Friday, November 3, 2017  4:00pm - 5:00pm**

**Tour - New Institute of Engineering facility**  
Meet in the lobby

The Engineering and Physics building was completed in 2017 and houses the Institute of Engineering – mainly programs in Engineering Physics (Mechanical Engineering, Electrical Engineering, Biomedical Instrumentation and Aerospace Engineering) and Physics. Student laboratory spaces associated with these programs include: Physics electricity and magnetism, Physics mechanics, circuits, fluid mechanics, standards/measurement, senior design, rapid prototype, optics, astronomy, and the high-bay research and development lab. In addition, there are lab and research spaces for Biology and Chemistry. Engineering and Physics faculty have dedicated research labs to include: solid state Physics, advanced Physics, astrophysics, swarm systems, automated manufacturing, non-destructive testing, thermos-fluid energy devices, power systems, and laser and photonics.

Campus map

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**Friday, November 3, 2017  5:00pm - 3:00pm**
Judges conference room

Commonwealth Suite, Curris Center

This room is available if judges wish to use it for conference.

Friday, November 3, 2017 5:00pm - 8:00pm

Posters: Agricultural Sciences

Curris Center

Chair: Jean Gumirakiza

effects of excess dietary branched chain amino acids (leucine and isoleucine) on growth and health of Nile tilapi
61.

First Author: Cora Teets
Co-author: Waldemar Rossi
University: Kentucky State

First Author: Vikas Kumar
Co-author: Kentucky State

First Author: Cora Teets
Co-author: Kentucky State
University: University

A Comparison of the Characteristics of Kentucky and Illinois Soils Under Various Land Cover
62.

First Author: Bernedette Chadwick
Co-author: Michael Mercer
University: Murray State

First Author: Bailey Webster
Co-author: Brandon Clark
University: Murray State

First Author: Bailey Webster
Co-author: Bailey Webster

First Author: Brian Parr
Co-author: Murray State
University: University

First Author: Brandon Clark
Co-author: Murray State
University: University

Dehydration of autumn olive berries for human consumption
63.

First Author: Changzheng Wang
Co-author: Lingyu Huang
University: Kentucky State

First Author: Cecil Butler
Co-author: Kentucky State
University: University

First Author: Cecil Butler
Co-author: Kentucky State

Developing cold-hardy perennial ornamentals for Kentucky
64.

First Author: Hideka Kobayashi
Distinguishing Differences of Soil Physical Properties in Irrigated and Non-Irrigated Corn-soybean Rotation and Pastur

**First Author**
Harry Franklin
**Murray State University**

**Co-author**
Duncan Thomas
**Murray State University**

**Co-author**
Connor Raymond
**Murray State University**

**Co-author**
Jacob Flemming
**Murray State University**

**Co-author**
Iin Handayani
**Murray State University**

**Co-author**
Brian Parr
**Murray State University**

Effects of fertilization on growth performance of lotus plants in containers

**First Author**
Changzheng Wang
**Kentucky State University**

Impact of Soil-Set®, Grain-Set®, and Liqui-Plex® Formulations on Hot Pepper Yield

**First Author**
GEORGE ANTONIOUS
**KENTUCKY STATE UNIVERSITY**

**Co-author**
Kirk Pomper
**Kentucky State University**

**Co-author**
Eric Turley
**Kentucky State University**

**Co-author**
Quinn Heist
**Kentucky State University**

**Co-author**
Thomas Trivette
**Kentucky State University**

**Co-author**
Lusekelo Nkuwi
**Kentucky State University**

**Co-author**
Yogendra Upadhyaya
**Kentucky State University**

**Co-author**
Bjesh Mishra
**Kentucky State University**

Online Shoppers; Who Attends Farmers’ Markets, Who Does Not, and Why?

**First Author**
Jean Dominique Gumirakiza
**Western Kentucky University**

**Co-author**
Thomas Kingery
**Western Kentucky University**

**Co-author**
Stephen King
**Western Kentucky University**

Soil Distinguishing Factors in Pasture and Irrigated Soils in Tennessee, Kentucky, and Illinois

**First Author**

Soil Properties in Varying Crop and Non-Crop Areas of Calloway County, Kentucky

First Author
Zack Eells
Murray State University

Co-author
Canaan Wring
Murray State University

Co-author
Clay Smotherman
Murray State University

Co-author
Connor Moore
Murray State University

The Impact of Cropping Systems on Soil properties in Fredonia and Princeton Kentucky

First Author
Bailey Webster
Murray State University

Co-author
Iin Handayani
Murray State University

Co-author
Brian Parr
Murray State University

Yield of Eggplant Grown in Horse Manure and Vermicompost Amended Soil

First Author
Yogendra Upadhyaya
Kentucky State University

Co-author
Thomas Trivette
Kentucky State University

Co-author
Lusekelo Nkuwi
Kentucky State University

Co-author
Bijesh Mishra
Kentucky State University

Co-author
George Antonious
Kentucky State University

Analyzing Quality and Quantity of Binary and Pure Stands of Low Lignin and Standard Alfalfa

First Author
Kelly Hagan
Asbury University

Co-author
Ray Smith
University of Kentucky
<table>
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<tr>
<th>Title</th>
<th>First Author</th>
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<tr>
<td>Is there an association between sex ratio and the level of sex expression among plant populations?</td>
<td>Juliana Silva e Costa</td>
<td>Justin Cornett</td>
<td>University of Kentucky</td>
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<td>Federal University of Juiz de Fora</td>
<td>D. Nicholas McLetchie</td>
<td>University of Kentucky</td>
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<td>Detection of Cryptic Interspecific Hybridization Between Morus rubra and M. alba Using Molecular Markers</td>
<td>Taylor Horton</td>
<td>Dayle Saar</td>
<td>Murray State</td>
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<td>Is wintercreeper's (Euonymus fortunei) success as an invader due to avoidance of herbivory?</td>
<td>Nellie Heitzman</td>
<td>Sarah Bray</td>
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<td>Building an interactive tree map for the Bellarmine University campus.</td>
<td>David Robinson</td>
<td>Kaitlyn Yates</td>
<td>Bellarmine University</td>
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<td>Bellarmine University</td>
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**Friday, November 3, 2017 5:00pm - 8:00pm**

**Posters: Cellular and Molecular Biology**

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<tr>
<th>Title</th>
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<tr>
<td>Assessing the role of the gene, pebbled, in D. melanogaster ASP Invasive Behavior</td>
<td>Hasan Salim</td>
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<tr>
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<td>Elucidating the Relationship Between sox4a and sox4b in the Zebrafish Eye</td>
<td>Hadley Neal</td>
<td>Rebecca Petersen</td>
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<td>KBRIN</td>
<td>University of Kentucky</td>
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<td>Characterizing the role of CP1 in Drosophila melanogaster and its effects</td>
<td>Dane Flinchum</td>
<td>Ajay Srivastava</td>
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<td>Western Kentucky</td>
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<td>Examining Gene Expression during Xenopus Embryonic Development</td>
<td>Maria Stewart</td>
<td>Emily Shifley</td>
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<td>Functional Analysis of Signaling Molecules Involved in Spermiogenesis of</td>
<td>Lee Kendall</td>
<td>Samuel White</td>
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<td>Identifying genetic modifiers in a Drosophila model of Inclusion Body</td>
<td>Amber Follin</td>
<td>Kyla Britson</td>
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<tr>
<td></td>
<td>Biology Department, Berea College</td>
<td>Neuroscience and Neurology,</td>
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<td>Johns Hopkins Medicine</td>
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<td>FGF and RA signaling pathways interact during development of the Xenopus</td>
<td>Sarah Kunkler</td>
<td>Emily Shifley</td>
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<tr>
<td></td>
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<tr>
<td>pharynx</td>
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</tbody>
</table>
The effect of benzo[a]pyrene on motor function in neonatal mice

First Author
Katelyn Dunn
Northern Kentucky University

Co-author
Tamika Chappell
Northern Kentucky University

Co-author
Lisa Massie
Northern Kentucky University

Co-author
Shelby Caudill
Northern Kentucky University

Co-author
Nicholas Brinkman
Northern Kentucky University

Co-author
Rachel Dempsey
Northern Kentucky University

Co-author
Christine Curran
Northern Kentucky University

Co-author
Pamela Dickson
Northern Kentucky University

Role of autophagy-related protein Vps34 in the function of adipose tissues and interactions with the immune system

First Author
Henry Kwan
Vanderbilt University Medical Center

Co-author
Lan Wu
Vanderbilt University Medical Center

Co-author
Luc Van Kaer
Vanderbilt University Medical Center

Co-author
Luke Postoak
Vanderbilt University Medical Center

Co-author
Margaret Sabourin
Vanderbilt University Medical Center

Using gene expression to better understand macrophages’ role in tissue regeneration

First Author
Kendall Collins
KBRIN at University of Kentucky

Co-author
Jennifer Simkin
University of Kentucky

Co-author
Ashely Seifert
University of Kentucky

Visualizing Programmed Genome Arrangement in Live Sea Lamprey Embryos

First Author
Conner Hounshell
Kentucky Biomedical Research Infrastructure Network

Co-author
Courtney Waterbury
University of Kentucky

Co-author
Jeremiah Smith
University of Kentucky

Sex Specific Gene Control of Cardiac Fibrosis

First Author
Bruce Northington
Eastern Kentucky
Annotation of Spock and Inky Mycobacteriophages

First Author | Co-author | Co-author
Brittany Farnsley | Jennifer Doyle | Moria Magre

Direct detection of double-stranded DNA of Staphylococcus aureus using engineered zinc finger proteins

First Author | Co-author | Co-author
Jiyoung Shim | Barnabas Kim | Moon-Soo Kim

Functional and genetic studies of the tRNA modification protein Trm732 in yeast

First Author | Co-author | Co-author | Co-author | Co-author
Hannah Sizemore | Daisy DiVita | Julia Ziebro | Michael Guy

Exploring Small Molecule Drugs Binding To Ribosomal Protein L11

First Author | Co-author | Co-author
Swetaben Patel | Michal Hetman | Lukasz Slomnicki

IDENTIFICATION OF SELECTIVE DDR1 KINASE INHIBITORS USING STRUCTURE ACTIVITY RELATIONSHIP

First Author | Co-author | Co-author | Co-author | Co-author
Issac Domenech | Ambra Pozzi | Corina Borza | Craig Lindsley | Daniel Jeffries

NADPH oxidase-derived ROS regulate TLR2 responses in mouse dendritic cells

Co-author
Lukasz Slomnicki

University of Louisville

University of Louisville
SOCS 1 Role In Manipulation of Neutrophil Signaling By Oral Pathogen, Filifactor alocis

First Author
Morgan Bahnsen
KBRIN

Quantifying Tetracycline resistance genes in swine waste anaerobic digester over a period of 100 days

First Author
Thomas Case
KBRIN

Identification of the enzyme responsible for the acp3U modification in bacteria

First Author
Melanie Couch
Western Kentucky University
Co-author
Getahun Agga
ARS USDA
Co-author
John Loughrin
ARS USDA
Co-author
Rohan Parekh
ARS USDA
Co-author
Eric Conte
Western Kentucky University

Impact of Mutations in the EGO and GSE Complexes on Genomic Instability in Saccharomyces cerevisiae

First Author
Maggie Thomas
Northern Kentucky University
Co-author
Jamison Burchett
Northern Kentucky University
Co-author
Justen Mamaril
Northern Kentucky University
Co-author
Michael Guy
Northern Kentucky University

Friday, November 3, 2017 5:00pm - 8:00pm

Posters: Chemistry: Analytical & Physical
Curris Center
Chair: Harry Fannin
Secretary: Bommanna Loganathan
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<td>Analysis of Protein Conformations Using Computer Simulations</td>
<td>Jonnah McManus</td>
<td>Western Kentucky Chemistry</td>
<td>Gatton Academy</td>
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<td>GC-MS analysis of Volatile Organic Compounds in Metastatic and Non-Metastatic Breast Cancer Cells</td>
<td>Clara Reasoner</td>
<td>Amanda Siegel</td>
<td>Hiroki Yokota</td>
<td>Mangilal Agarwal</td>
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<td>Purdue University Indianapolis</td>
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<td>Anaerobic Degradation of Tetracyclines in Agricultural Manure</td>
<td>Brandon Couch</td>
<td>John Kasumba</td>
<td>John Loughrin</td>
<td>Eric Conte</td>
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<td>Community Usage of Select Illicit and Prescribed Drugs and their Occurrence in the Clarks River</td>
<td>Allie Skees</td>
<td>Katelyn Foppe</td>
<td>Bikram Subedi</td>
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<td></td>
<td>Department of Chemistry, Murray State University</td>
<td>Department of Chemistry, Murray State University</td>
<td>Department of Chemistry, Murray State University</td>
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<td>Towards the creation of turn-on fluorescent Schiff base probes for hydrogen sulfide detection</td>
<td>Maxwell Conte</td>
<td>Ali Abd-Elaal</td>
<td>Aaron Kirtland</td>
<td>Yong-Il Lee</td>
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<td></td>
<td>Western Kentucky University</td>
<td>Department of Petrochemicals, Egypt Petroleum Research Inst.</td>
<td>The Carol Martin</td>
<td>Department of Chemistry, Changwon National University, S.K.</td>
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<td>Polyunsaturated Fatty Acid Profile in Hemp-Fed Chicken Egg</td>
<td>Cole Hulen</td>
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From Halogenated Anthracenes to Bendable Displays: Decoding the Structure-Optical Gap Correlation

7.
First Author
Kevin Pierce
Murray State University

Co-author
Alex Thome
Murray State University

Co-author
Jill Cao
Murray State University

Co-author
Sebastian Jezowski
Murray State University

The Analysis of Contact Lenses as Forensic Evidence Using FT-IR and Refractive Index

8.
First Author
Rachel Bracker
Eastern Kentucky University

Co-author
Lori Wilson
Eastern Kentucky University

Measurement of J-coupling in Mixed Lead and Sodium Pyrophosphate Glasses with PASS and TE-PIETA

9.
First Author
Tomas Flores
Berea College

Co-author
Jay Baltisberger
Berea College

Co-author
Sara Garner
Berea College

Co-author
Shay Steele
College of Wooster

Sedimentation Fractionation

10.
First Author
Michael Greiving
KYSU

Salt-Assisted Ultrasonicated De-aggregation and Advanced Electrochemistry of Detonation Nanodiamond

11.
First Author
Brendan Evans
<table>
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<tr>
<th>University</th>
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<td>Western Kentucky University</td>
<td>Alex Henson</td>
<td>Sanju Gupta</td>
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<td>Murray State University</td>
<td>Henry Pruet</td>
<td>Bikram Subedi</td>
<td>Susan Hendricks</td>
<td>David White</td>
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**Comparison of Inorganic Elemental Concentrations in Water Samples and Occurrence of Zebra Mussels in Kentucky Lake, USA**

12.

**ZrO2-?-Cyclodextrin (CD) catalyzed synthesis of 2,4,5-trisubstituted imidazoles and 1,2-disubstituted benzimidazoles**

13.

**Water Purification using Magnetic Biochar**

14.

**A DRIFT Plus TG Device Revealing Unknown Chemicals Reaction Mechanisms**

16.
First Author
Junjie Xiang
Western Kentucky
University

Heavy Metal Accumulation in Aporrectodea complex and Risk Assessment of Bio Magnification

First Author
Demetrius? Davis
Kentucky State
University/University
of Kentucky

Friday, November 3, 2017  5:00pm - 8:00pm

Posters: Chemistry: Organic/Inorganic
Curris Center

Chair: Kevin Revell
Secretary: Kyle Watson

Application of metal-organic framework materials in dye-sensitized solar cells

First Author
Ryan Boggess
Western Kentucky
University

Co-author
Bangbo Yan
Western Kentucky
University

Effect of Iron charge state on P450 BM3 stability

First Author
Catherine Denning
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Co-author
David Heidary
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Co-author
Edith Glazer
University of Kentucky

Fluorescence properties of metal-organic frameworks containing ruthenium and copper ions.

First Author
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University Department of Chemistry

Co-author
Robert Spears
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University Department of Chemistry

Kinetic analysis of the mechanosyntheses of transition metal complexes and precursors
| Kinetic Studies of High-valent metal(IV)-oxo porphyrins generated by chemical and photochemical methods |
|---|---|
| First Author | Erin O'Donnell |
| Co-author | Rachel Allenbaugh |
| Institution | Murray State University |

| Light Activated Ruthenium Peptide Hybrids |
|---|---|
| First Author | Haiyan Liu |
| Institution | Western Kentucky University |

| N-Heterocyclic Carbene Complexes |
|---|---|
| First Author | Mario Chavarria |
| Co-author | Cheyenne Haynes |
| Institution | Berea College |

| Optimization of lipid extraction from Scenedesmus acutus via in-situ transesterification |
|---|---|
| First Author | Vincent Kelly |
| Co-author | Robert Pace |
| Institution | Kentucky State University |

| Photocatalytic reduction of carbon dioxide by metal-organic framework materials. |
|---|---|
| First Author | Hannah Brooks |
| Co-author | Bangbo Yan |
| Institution | Western Kentucky University |

| Promotional Effect of Platinum on Nickel Catalysts in the Conversion of Lipids to Hydrocarbons in Diesel Range |
|---|---|
| First Author | |
Reduction of Mannich Bases to Form 1,3-Amino Alcohols Using a Knöllker-type Catalyst

27.
First Author
Alexandra Redden
Murray State University
Co-author
Rachel Whittaker
Murray State University
Co-author
Kane Ferguson
Murray State University

Selective C–O bond reductions in carbohydrate derivatives using boron based reagents

28.
First Author
Luis Gonzalez Anguiar
Berea College

Solid-Phase Synthesis of Heteroatom-Activated Antibiotics

29.
First Author
Morgan Uebelacker
Kentucky Wesleyan College
Co-author
Jacob Nanney
Kentucky Wesleyan College
Co-author
Kyle Watson
Kentucky Wesleyan College

Storage of Solar Energy in Strained Bis-Anthracene Cycloadducts and Release as Heat by Mechanical Grinding

30.
First Author
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Co-author
Kasey Clear
Murray State University
Co-author
Sebastian Jezowski
Murray State University

Synthesis and catalytic studies of metalloporphyrin complexes as biomimetic models for cytochrome P450 enzymes

31.
<table>
<thead>
<tr>
<th>First Author</th>
<th>Co-author</th>
<th>Co-author</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benjamin Kash</td>
<td>Haiyan Liu</td>
<td>Rui Zhang</td>
</tr>
<tr>
<td>Gatton Academy,</td>
<td>Western Kentucky</td>
<td>Western Kentucky</td>
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<tr>
<td>Western Kentucky</td>
<td>University</td>
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<td>University</td>
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</table>

Synthesis and Properties of a Ruthenium Polypyridyl Complex

32.

First Author          Co-author             Co-author
Hannah Cope           Bangbo Yan               Western Kentucky
Western Kentucky      Western Kentucky         University
University

Synthesis of Cleavable Acetal Antibody Drug Conjugate

33.

First Author
Luis Salazar Guzman
Western Kentucky
University

Synthesis of Platinum-Malonate-Luteinizing Hormone Releasing Hormone (Pt-Mal-LHRH), an Anti-Cancer Agent

34.

First Author          Co-author             Co-author
Charles Greif          Eastern Kentucky       Eastern Kentucky
University             University             University

Synthesis of Poly(4-hydroxystyrene) by Living Anionic Polymerization for Block Copolymer Lithography

35.

First Author
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University

Synthesizing Cleavable Acetal Antibody Drug Conjugates

36.

First Author          Co-author             Co-author
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Friday, November 3, 2017  5:00pm - 8:00pm

Posters: Computer and Informational Sciences
Curris Center
Incorporating WeBWorK in a Mathematics Classroom

First Author: Haley Replogle
Co-author: Kyle Besing
Institution: Kentucky Wesleyan College

Open Science Grid (OSG) Tier2 Grid Site at Bellarmine University for the LSST (Large Synoptic Survey Telescope) Project

First Author: Russell Sexton
Co-author: Stephen Denny
Co-author: Akhtar Mahmood
Co-author: M. Saleem
Institution: Bellarmine University

Posters: Ecology and Environmental Sciences

American Chestnut restoration in Daniel Boone National Forest: a GIS approach

First Author: Jacob Pease
Institution: Murray State University

Comparative Analysis of Soil Elemental Composition Using Portable X-Ray Fluorescence In Multiple Land Use Practices

First Author: Ellyn Anthony
Co-author: Oguz Sariyildiz
Co-author: Mamata Bashyal
Co-author: Tony Silvernail
Co-author: Shawn Lucas
Co-author: John Sedlacek
Institution: Kentucky State University

Ant communities of temperate tree canopies along an urban-rural gradient
102. 
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Benjamin Adams
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Co-author 
Keegan Thompson
University of Louisville

Co-author 
Chloe Lash
University of Louisville

Co-author 
Stephen Yanoviak
University of Louisville

Is it enough? Passive Restoration in a Western Colorado Stream

103. 
First Author 
Melody Feden
Murray State University

Co-author 
Howard Whitemand
Murray State University

The Mobility of Nickel in Soil and the Efficacy of Sphagnum Peat Moss to Immobilize Nickel with Contaminated Soils

104. 
First Author 
Vanetta Graves
Kentucky State University

Leaf Toughness in Tropical Rainforest Plants Depends on Leaf Age in Dicots but Not Monocots

105. 
First Author 
Shelby Watkins
University of Louisville

Co-author 
Stephen Yanoviak
University of Louisville

Co-author 
Christopher Frost
University of Louisville

Examining the Relationship Between Temperature and Vegetation Phenology: Is Soil a Better Predictor than Air?

106. 
First Author 
Kevin "Austin" Johnessee
Murray State University

Co-author 
Monika Staszczak
Murray State University

Effect of Slope and Packing Ratio on the Behavior of Matchsticks Burnings

107. 
First Author 
Roma Karna
Sunil Karna

Co-author 
Priya Karna
Sunil Karna

Co-author 
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Union College
Site selection by the Jefferson’s and spotted salamanders based on substrate pH

First Author  Co-author
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University  University

Assessing the effects of urban air pollution on lichens

First Author  Co-author
Austin Adam  Roberta Challener
Bellarmine University  Bellarmine University

The Effects of Stream Degradation on Food Web Stability

First Author  Co-author
Hannah Moore  Howard Whiteman
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University  University

Water Levels and Temperatures Define Narrow Window of Larval Fish Phenology in Kentucky Lake.

First Author  Co-author
Spencer Phillips  Nathan Tillotson  Ben Tumolo  Michael Flinn
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University  University  University

Honey Bee Gene Expression Response to Pesticides Under Differential Nutritional Status

First Author  Co-author
Alishea Brown  Farida Olden
Kentucky State  Kentucky State
University  University

Patterns of Herbivory Among Leaves of Tropical Forest Canopy Trees

First Author  Co-author
Maria Shields  Christopher Frost  Stephen Yanoviak
University of Louisville  University of Louisville  University of Louisville

Driver bias in intentional wildlife-vehicle collisions

First Author
Using Hardiness Zones to Determine Phenological Variation

First Author: Whitney Buechler
Co-author: Bassil El Masri
Co-author: Paul Gagnon

Assessing Stormwater Impacts and Hydrogeological Influences on Water Quality in an Urban Karst Lake

First Author: Rachel Kaiser
Co-author: James Shelley

Is aboveground pathogen load influenced by belowground pathogen presence, plant community diversity, or precipitation

First Author: Aspen Workman
Co-author: Claudia Stein
Co-author: Scott Mangan

Insect Pollinator Diversity in Gardens Across an Urban-to-Suburban Gradient

First Author: Jacob Lawson
Co-author: Margaret Carreiro
Co-author: Lindsay Nason
Co-author: Perri Eason
Co-author: Amy Cherry

Sensing and educating the NEXUS to sustain ecosystems (SENSE): A Kentucky-West Virginia partnership.

First Author: David White
Improving Detection and of a Threatened Anuran Species (Lithobates areolatus) in Western Kentucky

First Author
Michaela Lambert
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Exploring the impact of body size variation on trophic cascades using mole salamanders (Ambystoma talpoideum)

First Author
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Co-author
Cy Mott
Eastern Kentucky University

Co-author
Katelyn May
Murray State University

Co-author
Howard Whiteman
Murray State University

Ability of Bald Cypress (Taxodium distichum) to enhance aquatic structure in backwater embayments of reservoirs

First Author
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Dose of a plant-derived volatile cue affects Arabidopsis thaliana defense phenotypes

First Author
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Co-author
Grace Freundlich
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Season fluctuations in Ambystoma barbouri eDNA in central Kentucky streams.

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Sumathi Sankaran-Walters
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Co-author
Mike McGrann
University
Caterpillar Predation Rates Across an Urban-Suburban Gradient

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Jacob Lawson
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Lindsay Nason
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Co-author
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Co-author
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Proliferation of Zebra Mussels (Dreissena polymorpha) in Kentucky Lake during 2017

First Author
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Murray State University

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Detection of Percopsis omiscomaycus (trout-perch) using eDNA in eastern Kentucky streams.

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Co-author
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Co-author
Ben Brammell
Asbury University

Ant tarsal adhesion on oak leaves differing in trichome density

First Author
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Asbury University

Co-author
Harold Brabon
Asbury University
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Institution(s)</th>
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<tbody>
<tr>
<td>Keegan Thompson</td>
<td>University of Louisville</td>
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<tr>
<td>Alyssa Stark</td>
<td>Villanova University</td>
</tr>
<tr>
<td>Steve Yanoviak</td>
<td>University of Louisville</td>
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**Body Size of Leaf-Carrying and Hitchhiking Leafcutter Ants in a Tropical Forest**

129.

<table>
<thead>
<tr>
<th>Author(s)</th>
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<tbody>
<tr>
<td>Virginia Nunamaker</td>
<td>University of Louisville</td>
</tr>
<tr>
<td>Chris Nunamaker</td>
<td>University of Louisville</td>
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<tr>
<td>Steve Yanoviak</td>
<td>University of Louisville</td>
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**Assessing the diet of Perimyotis subflavus and Nycticeius humeralis bats before and after the occurrence of WNS**

130.

<table>
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<tr>
<th>Author(s)</th>
<th>Institution(s)</th>
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<tbody>
<tr>
<td>Summer Wheeler</td>
<td>Murray State University</td>
</tr>
<tr>
<td>Amie Towery</td>
<td>Murray State University</td>
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**Health of the Lee Branch on the Midway University Campus: Biological stream assessments and stream habitat assessments**

131.

<table>
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<tr>
<th>Author(s)</th>
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<tbody>
<tr>
<td>John Delfino</td>
<td>Midway University</td>
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<tr>
<td>Guipsy Lopez</td>
<td>None</td>
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</table>

**Relationship between fish biomass and eDNA in central Kentucky streams.**

132.

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<tr>
<th>Author(s)</th>
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<tr>
<td>Ramon Guivas</td>
<td>Asbury University</td>
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<tr>
<td>Kyle Laufenburger</td>
<td>Asbury University</td>
</tr>
<tr>
<td>Ben Brammell</td>
<td>Asbury University</td>
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</table>

**Effects of Roundup on Feeding Behavior of Larval Blue Dashers, Pachydiplax longipennis.**

133.

<table>
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<th>Author(s)</th>
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<tr>
<td>Kayleen Parker</td>
<td>Murray State University</td>
</tr>
<tr>
<td>Claire Fuller</td>
<td>University</td>
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**Assessing Mussel Condition and Potential Dam Impact on the Green River, KY**

134.

<table>
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<tr>
<th>Author(s)</th>
<th>Institution(s)</th>
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<tbody>
<tr>
<td>Lauren Mayton</td>
<td>Campbellsville University</td>
</tr>
</tbody>
</table>
Herbivory rates of Amazonian melastomes are unaffected by the presence of domatia-inhabiting ants

First Author  Co-author  Co-author
Jeffrey Fox  Chris Frost  Steve Yanoviak
University of Louisville  University of Louisville  University of Louisville

Honeysuckle leaf blight causes a growth decline in Amur honeysuckle seedlings

First Author  Co-author  Co-author  Co-author  Co-author
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Friday, November 3, 2017  5:00pm - 8:00pm

Posters: Engineering  Curris Center

Green Roofs: Synergistic Benefits to Energy and Environmental Building Design

First Author  Emery Ginger
Murray State University

Automated Control System For Photo-bioreactor

First Author  Madankrishna Acharya
Kentucky State University

Biomass Stove Design Project: Automated Fuel Feeder System

First Author  Co-author  Co-author  Co-author  Co-author
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Integrated Computational Design of Tunable 3D CNT/Graphene Hybrid Nanomaterials

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Charles Lu
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Co-author
Johnson Joseph
Fiat Chrysler Automobiles

Quantification of Cast Aluminum Pores using MATLAB (by Rayens, N., Cai, P., and Zhai, T.)

First Author
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University of Kentucky

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Co-author
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Friday, November 3, 2017, 5:00pm - 8:00pm

Posters: Geography

Comparing Vegetation Index and Classification methods for detecting agriculture conservation practice using Landsat imaging

First Author
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Unmarked Burial Identification at the Frankfort, KY Cemetery using Ground Penetrating Radar and LIDAR data

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Co-author
Jordan Wilson
Kentucky State University

Co-author
Jeremy Sandifer
Kentucky State University

Co-author
Ken Bates
Kentucky State University

Land Cover Change Assessment in Five Major Watersheds of Central Kentucky

First Author
Using Sequential LiDAR to Monitor & Catalog Landslides in Kenton and Campbell Counties in Northern Kentucky

47.

First Author: Roger Olson
Northern Kentucky University
Co-author: Benjamin Roenker
Northern Kentucky University
Co-author: Hawkins Warner
Northern Kentucky University
Co-author: Zachary Ivey
Northern Kentucky University
Co-author: Tim Faller
Northern Kentucky University
Co-author: Sarah Johnson
Northern Kentucky University

Variability of Soil Organic Carbon Storage in Alluvial Landforms: A Case Study from Western Kentucky

48.

First Author: Benedict Ferguson
Murray State University
Department of Geosciences
Co-author: Gary Stinchcomb
Murray State University
Department of Geosciences

LATE HOLOCENE PALEOFLOOD DEPOSITIONAL SEQUENCES: MIDDLE TENNESSEE RIVER VALLEY, USA

49.

First Author: Christopher Stewart
Murray State University
Co-author: Gary Stinchcomb
Murray State University
Co-author: Steve Forman
Baylor University
Co-author: Lisa Davis
University of Alabama
SITE FORMATION OF THE MIDDLE PLEISTOCENE FARRE ARCHAEOLOGICAL SITE, NORTHERN KENYA

50.
First Author
Mallory Gerzan
Murray State University

Co-author
Gary Stinchcomb
Murray State University

INVESTIGATION OF OMNIVORY IN THE DRILLING GASTROPOD, UROSALPINX CINEREA, USING STABLE ISOTOPE ANALYSIS

51.
First Author
Molly Karnes
Murray State University

Friday, November 3, 2017 5:00pm - 8:00pm

Posters: Health Sciences
Curris Center
Chair: Bruce Branan
Secretary: Avinash Tope

An Automatic Segmentation Method for the Thigh Muscles and Adipose Tissue of Spinal Cord Injured Patients

137.
First Author
Carter Waugh
Kentucky Biomedical Research Infrastructure Network

Demographic/occupational/tumor characteristics & extent of metastasis melanoma patients diagnosed in Florida, 1996-2010

138.
First Author
Frederick Bebe
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Shasa Hu
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Co-author
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Co-author
Orien Tulp
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Effect of select phytochemicals on salivary and urinary pH

139.
Effects of salt on the textural characteristics of fish meatballs prepared from deboned Asian carp meat

Examining the Expression and Function of Septin Proteins in Human Pancreatic Cancer Cells

Health Impact of a Shared Use Path in Rural Appalachia: A Pilot Study

Immunogenicity of Novel Vaccines for Hepatitis C Virus

Measurement of Influenza Severity in Tennessee Hospitalized Patients, 2016-2017
Secondary Traumatic Stress and Resilience in Emergency Medical Service Providers: A Look at the Adaptive and Maladaptive Response

First Author  Co-author  Co-author  
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University  Research, Mercy and Burn, Mercy  Hospital  Hospital  

The Relationship Between Maternal Physical Activity and Infant Motor Development

First Author  Co-author  
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University  

Urinary 8-OHdG as a Non-Invasive Biomarker of Oxidative Stress in Metabolic Syndrome (MetS)

First Author  Co-author  
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Using engineered zinc finger proteins to detect pathogen-specific DNA

First Author  Co-author  
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Zinc, Dietary Fat, and Sex have Interacting Influences on BTBR Mice in the Open Field Test

First Author  Co-author  
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Bellarmine University University of Louisville  

Friday, November 3, 2017  5:00pm - 8:00pm

Posters: Microbiology  
Curris Center  
Chair: Lingyu Huang  Secretary: Joseph Mester
### Inactivation of Fungal Spores with Heat and UVC

<table>
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<tr>
<th>First Author</th>
<th>Co-author</th>
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<tbody>
<tr>
<td>Colin Hartman</td>
<td>Sarah Goodrich</td>
<td>Mitchel Lange</td>
<td>Zadah Coy</td>
<td>Joseph Mester</td>
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<tr>
<td>Northern Kentucky</td>
<td>University</td>
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### Mycobacteriophages: Inky and Spock

<table>
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<tr>
<th>First Author</th>
<th>Co-author</th>
<th>Co-author</th>
</tr>
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<tbody>
<tr>
<td>Moria Magre</td>
<td>Brittany Farnsley</td>
<td>Jennifer Doyle</td>
</tr>
<tr>
<td>Spalding University</td>
<td>Spalding University</td>
<td>Spalding University</td>
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</table>

### Antifungal Endophytes as a Source of Novel Bioactive Compounds

<table>
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<tr>
<th>First Author</th>
<th>Co-author</th>
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<tbody>
<tr>
<td>Katie Sawvell</td>
<td>John Carmen</td>
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<tr>
<td>Northern Kentucky</td>
<td>University</td>
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### Production of hydrogen peroxide as a virulence factor by Mycoplasma mycoides subspecies capri

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<tr>
<th>First Author</th>
<th>Co-author</th>
<th>Co-author</th>
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<tbody>
<tr>
<td>Zackery Newton</td>
<td>Rachel Pritchard</td>
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<tr>
<td>Kentucky Wesleyan</td>
<td>Kentucky Wesleyan</td>
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<td>College</td>
<td>University</td>
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### The Prevalence of Bacteria Resistant to Vancomycin and Colistin in Waters Around Louisville

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<th>First Author</th>
<th>Co-author</th>
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<tbody>
<tr>
<td>Rachel Mahbubani</td>
<td>Amy Priest</td>
<td>Annie Koenig</td>
<td>Easton Ford</td>
<td>Doug Krauth</td>
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<td>University of Louisi</td>
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</table>

### Isolation and Characterization of the Mycobacteriophage Acquire49

<table>
<thead>
<tr>
<th>First Author</th>
<th>Co-author</th>
<th>Co-author</th>
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<tbody>
<tr>
<td>Deborah Yoder-Himes</td>
<td>University of Louisi</td>
<td>Paul Himes</td>
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<td>University of Louisi</td>
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150.
151.
152.
153.
154.
155.
Extraction and Elucidation of Active Compounds in Antimicrobial Producing Isolates

First Author  
Zaria Elery  
Northern Kentucky University

Co-author  
John Carmen  
Northern Kentucky University

SURVEY OF VANCOMYCIN- AND COLISTIN-RESISTANT BACTERIA IN ENVIRONMENTAL WATER SAMPLES ACROSS LOUISVILLE

First Author  
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University of Louisville

Co-author  
Morgan Robinson  
University of Louisville

Co-author  
Amy Priest  
University of Louisville

Co-author  
Rachel Mahbubani  
University of Louisville

Co-author  
paul himes  
University of Louisville

Co-author  
Deborah Yoder-Himes  
University of Louisville

Non-pathogenic Neisseria sicca ATCC 29256 undergoes natural transformation

First Author  
Mark Sirianno  
Transylvania University

Co-author  
Paul Duffin  
Transylvania University

The Toxic Effects of Chemically Synthesized and Biologically Fabricated Gold Nanoparticles on Caenorhabditis elegans Fit

First Author  
Grayson Fuller  
Western Kentucky University

Targeting Proteolytic Activity using protease inhibitors as natural therapeutics for human metapneumovirus (HMPV)

First Author  
Amber Earlywine
## Comparison of Period Finding Techniques to Identify RR Lyrae Stars

**First Author**
Connor Edwards  
**Northern Kentucky University**

**Co-author**
Logan Hicks  
**Northern Kentucky University**

**Co-author**
Tyler Labree  
**Northern Kentucky University**

**Co-author**
Matthew Buelsing  
**Northern Kentucky University**

**Co-author**
Nathan De Lee  
**Northern Kentucky University**

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## Electromagnetic Wave Motion Around a Black Hole

**First Author**
Amanda Manning  
**Northern Kentucky University**

**Co-author**
Sharmanthie Fernando  
**Northern Kentucky University**

---

## Analyzing Color Relations for RR Lyrae in KELT

**First Author**
Logan Hicks  
**Northern Kentucky University**

**Co-author**
Connor Edwards  
**Northern Kentucky University**

**Co-author**
Tyler Labree  
**Northern Kentucky University**

**Co-author**
Matthew Buelsing  
**Northern Kentucky University**

**Co-author**
Nathan De Lee  
**Northern Kentucky University**

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## Gold and Silver Nanoparticles Decorated Graphene as ‘smart’ Surface Enhanced Raman Scattering (SERS) Platforms
<table>
<thead>
<tr>
<th>First Author</th>
<th>Co-author</th>
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<tbody>
<tr>
<td>Alexander Banaszak</td>
<td>Tyler Smith</td>
<td>Sanju Gupta</td>
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**Large-Area Graphene Membranes and Mesoporous Deionization Electrodes for Water Desalination**

<table>
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<tr>
<th>First Author</th>
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<tbody>
<tr>
<td>Alex Henson</td>
<td>Brendan Evans</td>
<td>Sanju Gupta</td>
</tr>
<tr>
<td>WKU Department of</td>
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<tr>
<td>Physics and Astronomy</td>
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<td>Astronomy</td>
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**Nanoparticles-grafted functionalized graphene coated with nanostructured polyaniline layered nanocomposites as high-perf**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Romney Meek</td>
<td>Sanju Gupta</td>
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**Surface Functionality Of Graphene-family Nanomaterials On Electronic And Phononic Properties For Applied Electrochemistry**

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**Systematic Study of the Effects of Incorporation of Carbon Nanotubes into the GexSe1-x Glass System**

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<tr>
<td>John Adamick</td>
<td>John Rademacher</td>
<td>Chari Ramkumar</td>
<td>Wayne Bresser</td>
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**The Study of Light Paths Around Black Holes**

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<th>First Author</th>
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<tr>
<td>Abigail Campbell</td>
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### Posters: Physiology and Biochemistry

**Curris Center**

**Chair:** Michael Smith  
**Secretary:** Julia Carter

<table>
<thead>
<tr>
<th>Poster</th>
<th>Title</th>
<th>First Author</th>
<th>Co-author</th>
<th>Institution</th>
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<tbody>
<tr>
<td>161</td>
<td>An improved, 'green' tetramethylbenzidine-based assay for the quantification of hemoglobin</td>
<td>Johnathon Hurt</td>
<td>Joan Hembree</td>
<td>University of the Cumberlands</td>
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<tr>
<td>162</td>
<td>Developing TALE proteins as a sensor for detecting pathogens</td>
<td>Kathrine Gaiko</td>
<td></td>
<td>Western Kentucky University</td>
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<tr>
<td>163</td>
<td>Examining the role of muscarinic acetylcholine receptors in regulation of larval Drosophila melanogaster feeding and loc</td>
<td>Meagan Medley</td>
<td></td>
<td>KBRIN</td>
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<tr>
<td>164</td>
<td>Identification of a Drosophila melanogaster model to explore O-GlcNAc signaling</td>
<td>Emily Altman</td>
<td>JoBeth Bingham</td>
<td>Georgetown College University of Pikeville</td>
</tr>
<tr>
<td>165</td>
<td>Inhibition of PDE4 fails to reverse behavioural deficits induced by muscarinic receptor blockage</td>
<td>Samuel Case</td>
<td>Ilsun White</td>
<td>Morehead State University</td>
</tr>
<tr>
<td>166</td>
<td>Investigating Potential Mechanisms of Clove Oil (Eugenol) in Model Systems</td>
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</tbody>
</table>
Investigating the Synergistic Effects of Two Curcuminoids and Cisplatin on Cancer Cell Migration and ROS Release

167.
First Author
Blaine Patty
Western Kentucky University
Co-author
Matthew Millay
Western Kentucky University
Co-author
Jerry Monroe
Western Kentucky University
Co-author
Michael Smith
Western Kentucky University

MK-801, a NMDA antagonist, reverses scopolamine-induced behavioral deficits.

168.
First Author
Elizabeth Collins
Morehead State University
Co-author
Sami Case
Morehead State University
Co-author
Brianna Ward
Morehead State University
Co-author
Ilsun White
Morehead State University

Pharmacological identification of cholinergic receptor subtypes in Drosophilia

169.
First Author
Eashwar Somasundaram
University of Kentucky
Co-author
Aya Omar
University of Kentucky
Co-author
Cole Malloy
NIH
Co-author
Robin Cooper
University of Kentucky

The effects of a ketogenic diet on behavior and synaptic transmission in a Drosophila model.

170.
First Author
Alex Stanback
University of Kentucky
Co-author
Hunter Maxwell
uky
Co-author
Clare Cole
uky
Co-author
Katherine Johnson
uky
Co-author
Jenni Ho
uky
Co-author
La Shay Byrd
uky
Co-author
Samantha Danyi
uky
Co-author
Sushovan Dixit
uky
Co-author
Madan Subheeswar
### Can nicotine improve scopolamine-induced behavioral deficit?

177.

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<th>First Author</th>
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<tr>
<td>Brianna Ward</td>
<td>Elizabeth Collins</td>
<td>Ilsun White</td>
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### Betta fish spontaneously use the combination of numerosity and surface area during discrimination learning

178.

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<tbody>
<tr>
<td>Alicia Bedolla</td>
<td>Evelyne Rivera Perez</td>
<td>Joseph Barger</td>
<td>Jasmine Roman</td>
<td>Sarah Jones</td>
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<td>Berea College</td>
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### What influences recognition of emotion among college students

179.

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<td>Shannon Mapes</td>
<td>Suzanne Savard</td>
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### Dual-task methodology: The use of video games as a surrogate for traditional laboratory tasks

180.

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<tr>
<td>Mark Morris</td>
<td>Vanessa Jones</td>
<td>Stephani Prince</td>
<td>Nicholas Kelling</td>
<td>Gregory Corso</td>
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<tr>
<td>Implicit Gender Bias, Commercials, and Cooperation.</td>
<td>Rick Holland</td>
<td>Berea College</td>
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<tr>
<td>Let's Face It: The Effects of Disclosure Type and Modality on Student Comfort</td>
<td>Caitlin Taulbee</td>
<td>Berea College</td>
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<tr>
<td>Maternal reflective functioning and dyadic synchrony</td>
<td>Madison Raymer</td>
<td>Morehead State University</td>
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<tr>
<td>Maternal trauma and parenting sensitivity: Implications for attachment-based interventions</td>
<td>Ashley Hamm</td>
<td>Morehead State University Psychology Department</td>
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<td>Dr. Shari Kidwell</td>
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<td>The Effect of Noise, Intention, and Time of Day on Memory</td>
<td>Alicia Bedolla</td>
<td>Berea College</td>
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<td>Affect Perseverance or Affect Momentum?</td>
<td>Stephanie Temple</td>
<td>Berea College</td>
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</tbody>
</table>
### Posters: Science Education

**Curris Center**

**Chair:** Shira Rabin  
**Secretary:** Karen Hlinka

**The POGIL Approach to Teaching**

187.

*First Author*  
Lucas Collett  
*Berea College*

**Using the POGIL Approach in Non-Stem Disciplines**

188.

*First Author*  
Miguel Valdes  
*Berea College*  
*Co-author*  
Megan Hoffman  
*Berea College*  
*Co-author*  
Lucas Collet  
*Berea College*  
*Co-author*  
Lucas Collett  
*Berea College*

**Preparing K-8 teachers to utilize learning progressions to teach properties of materials**

189.

*First Author*  
Martin Brock  
*Eastern Kentucky University*

---

### Posters: Zoology

**Curris Center**

**Chair:** Roy Scudder-Davis  
**Secretary:** Oliver Beckers

**Dietary effects on behaviors for Drosophila: behaviors, survival and physiological responses.**

171.

*First Author*  
Maddie Stanback  
*University of Kentucky*  
*Co-author*  
Alexandra Stanback  
*uky*  
*Co-author*  
Tristan Donovan  
*uky*  
*Co-author*  
Priscilla Boachie  
*uky*  
*Co-author*  
Brendon Stockwell  
*uky*  
*Co-author*  
Carly Ballinger-Boone  
*uky*  
*Co-author*  
Emma Higgins  
*uky*  
*Co-author*  
Meaghan Labarre  
*uky*  
*Co-author*  
Alexa Larson
Characterization of mating behaviors and risk of cannibalism in Tigrosa georgicola wolf spiders
172.

First Author: Talon Garman
Murray State University

Co-author: Laura Sullivan-Beckers
Murray State University

Bat Call Monitoring Study and Discrimination Between Species in Taylor County, Kentucky
173.

First Author: Katherine Cappel
Campbellsville University

Comparing inner ear morphologies of globicephaline (Odontoceti: Delphinidae: Globicephalinae) dolphins
174.

First Author: Abigail Glass
Murray State University

Co-author: Rachel Racicot
Vanderbilt University

Co-author: Michelle Casey
Murray State University

Co-author: Simon Darroch
Vanderbilt University

Heritable Behavioral Tendencies of the African Lion
175.

First Author: Natalie Mercer
Kentucky Wesleyan College

Co-author: Shannon Finerty
Kentucky Wesleyan College

The Effect of Chemical Sympathectomy on Mouse Sleep Using Piezoelectric Technology
191.

First Author: Benjamin Conkright
Western Kentucky University

Biology Social
## Corvette Lanes, 1415 Main St.

**Biology Social: Let’s get to know each other a bit better.**
Biologists of all disciplines (incl. students), join us for a round of bowling, arcade games, and/or drinks at Corvette Lanes (1415 Main St -in close walking distance). Half-price bowling specials for the first bowlers in line!

### Saturday, November 4, 2017  7:30am - 10:30am

**Coffee & Tea**
Crows Nest, Curris Center

### Saturday, November 4, 2017  7:30am - 10:30am

**Coffee & Tea**
Blackburn 2nd floor lobby

### Saturday, November 4, 2017  7:30am - 12:00pm

**Practice Room for Oral Presentations**
Cumberland Room, Curris Center

### Saturday, November 4, 2017  7:30am - 2:30pm

**Practice Room for Oral Presentations**
Tennessee Room, Curris Center

### Saturday, November 4, 2017  8:00am - 3:00pm

**Exhibitors tables**
3rd floor of Curris Center

  - KBRIN (Kentucky Biomedical Research Infrastructure Network)
  - Kentucky Organization of Field Stations
  - University of Kentucky Chemistry Department
Oral Presentations: Cellular and Molecular Biology

Chair: Emily Shifley
Secretary: Gary ZeRuth

Section meeting to follow presentations

Characterization of Reagents Developed Against Two Basement Membrane Degraders in Drosophila melanogaster

8:00
First Author: Afolasayo Aromiwiura
Co-author: Ajay Srivastava

Evaluation of endocrine pancreas development and maturation in glis3 mutant zebrafish (Danio rerio)

8:15
First Author: Dylan Hammrich
Co-author: Gary ZeRuth

Using CRISPR/Cas9 to generate transgenic zebrafish to determine the expression pattern of glis3 during development

8:30
First Author: Tyler Hoard
Co-author: Gary ZeRuth
<table>
<thead>
<tr>
<th>Title</th>
<th>Time</th>
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<tbody>
<tr>
<td>Using RNA interference to identify the acp3U tRNA modification enzyme in higher eukaryotes</td>
<td>8:45</td>
</tr>
<tr>
<td>First Author: Jamison Burchett Co-author: Justen Mamaril Co-author: Maggie Thomas Co-author: Regan Bales Co-author: Michael Guy</td>
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<td>Northern Kentucky University</td>
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<tr>
<td>Pancreatic beta cell dysfunction mediated by down regulation of Glis3</td>
<td>9:00</td>
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<tr>
<td>First Author: Erin Clayton Co-author: Gary ZeRuth Co-author: Maggie Thomas Co-author: Regan Bales Co-author: Michael Guy</td>
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<td>Murray State University</td>
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<tbody>
<tr>
<td>Hepatitis C virus entry inhibitor Aryloxazole modulates Autophagy</td>
<td>9:15</td>
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<tr>
<td>First Author: Jazmin Escamilla Co-author: Zongyi Hu Co-author: Jake Liang</td>
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<tr>
<td>Berea College NIDDK-National Institute of Health</td>
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<tr>
<td>Exposure Effects of TiO2 Nanoparticles on the Growth and Physiology of Medicago truncatula</td>
<td>9:30</td>
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<td>First Author: Ahmed Fadil Co-author: Maggie Thomas</td>
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<td>Western Kentucky University</td>
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<tr>
<td>PAM-1 aminopeptidase prevents neurodegeneration in Caenorhabditis elegans.</td>
<td>9:45</td>
</tr>
<tr>
<td>First Author: Brittani Hawkins Co-author: Chris Trzepacz Co-author: Maggie Thomas Co-author: Regan Bales Co-author: Michael Guy</td>
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<td>Murray State University</td>
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<tr>
<td>Collagen IV homology in Nematostella vectensis and Homo sapiens and its implications of regeneration</td>
<td>10:15</td>
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<td>First Author</td>
<td>Co-author</td>
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<tr>
<td>Monica Moran</td>
<td>Billy Hudson</td>
</tr>
<tr>
<td>Vanderbilt University</td>
<td>Vanderbilt University</td>
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<tr>
<td>Division of Nephrology</td>
<td>Division of Nephrology</td>
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<td>and Hypertension</td>
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**Effect of acute sleep fragmentation upon morphology and density of astrocytes in hippocampal and hypothalamic tissue**

10:30

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<tr>
<th>First Author</th>
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<tbody>
<tr>
<td>Keelee Pullum</td>
<td>Noah Ashley</td>
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<tr>
<td>Gatton Academy,</td>
<td>Western Kentucky</td>
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**An Examination of Epigenetic Factors and Methylation Patterns in Promoter Regions of AT1 and ACE**

10:45

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<tr>
<th>First Author</th>
<th>Co-author</th>
<th>Co-author</th>
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<tbody>
<tr>
<td>Dimond Shelton</td>
<td>Nancy Rice</td>
<td>Conner Hounshell</td>
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**Identifying Autophagy-induced phosphorylation sites on the Hsp70 molecular chaperone**

11:00

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<tr>
<th>First Author</th>
<th>Co-author</th>
<th>Co-author</th>
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<tbody>
<tr>
<td>Alexandria Szalanczy</td>
<td>Nitika Nitika</td>
<td>Andrew Truman</td>
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<td>University of North</td>
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<td>Carolina at Charlotte</td>
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**Gene expression differences following early life exposure to polychlorinated biphenyls in three genotypes of mice**

11:15

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<th>Co-author</th>
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<tr>
<td>Yislain Villalona</td>
<td>Kelsey Klinefelter</td>
<td>Breann Colter</td>
<td>Alexandra Dailey</td>
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Curris Center Theatre

Chair: Maheteme Gebremedhin
Secretary: Roberta Challener

Section meeting to follow presentations at 2:30

Techniques in Carbon Footprinting: Achieving a Carbon Neutral Conference
8:00
First Author
Audrey Alexander
Western Kentucky University

Co-author
Leslie North
Western Kentucky University

Assessing the Carbon and Energy Balance of a Grazed Pasture in Central Kentucky Using the Eddy Covariance Method
8:15
First Author
Ian Ries
Kentucky State University

Co-author
Maheteme Gebremedhin
Kentucky State University

Comparison of the Kentucky Vegetation Index of Biotic Integrity (VIBI) to a rapid wetland condition assessment (KY-WRAM)
8:30
First Author
Elizabeth Malloy
Eastern Kentucky University

Co-author
David Brown
Eastern Kentucky University

Co-author
Stephen Richter
Eastern Kentucky University

Co-author
Barbara Scott
US Army Corps of Engineers

Co-author
Michelle Cook
Kentucky Division of Water

Comparative Risk Evaluation of Commercially Available Organic and Conventional Fertilizers for Potential Bacterial Pat
8:45
First Author
Meika Finger-Gray
Kentucky State University

Co-author
Avinash Tope
Kentucky State University

Co-author
shreya Patel
Kentucky State University

Interactive Effects of Animal Manure and Cover Crop Use in Improving Agricultural Soil Quality in Kentucky
9:00
Genomics of dehydration tolerance in the liverwort, Marchantia inflexa
9:15

Policy communication and the Impact of Agricultural Communities on Karst Landscapes: An Example from Phong Nha-Kè Bàng
9:30

Development and Analysis of Avian Index of Biological Integrity for Kentucky Wetlands
9:45

Increased accuracy in population modeling using density-dependent Leslie matrices with steady-state distribution control
10:15

Prey Resource Partitioning Between Sympatric Bat Species
10:30

Factors Affecting the Diversity of Stream Salamanders in Two Watershed Systems in Central Kentucky
<table>
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<tr>
<th>Time</th>
<th>Title</th>
<th>First Author</th>
<th>Co-author</th>
<th>Institution</th>
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<tr>
<td>10:45</td>
<td>Plant-Derived Volatiles Alter Plant Fitness in a Species-Specific Manner</td>
<td>Hannah Elliott</td>
<td>Muntathar Alshimary</td>
<td>Berea College</td>
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<td>Rebecca Klem</td>
<td>Roy Scudder-Davis</td>
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<td>Jeremy Wilde</td>
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<td>Roy Scudder-Davis</td>
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<td>Roy Scudder-Davis</td>
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<td>Berea College</td>
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<tr>
<td>11:00</td>
<td>Memory of seeds: Effect of plant volatile exposure to seeds on plant growth, development and defense across generations</td>
<td>Grace Freundlich</td>
<td>Chris Frost</td>
<td>University of Louisville</td>
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<tr>
<td>11:15</td>
<td>Landscape Genetics of California Tiger Salamanders: Inferences from multiple methods</td>
<td>Abhinav Maurya</td>
<td>Christopher Frost</td>
<td>University of Louisville</td>
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<tr>
<td>11:30</td>
<td>OCCUPANCY AND ALLOCHTHONY THRESHOLD RESPONSES OF PLETHODONTID STREAM SALAMANDERS TO STREAM CONDUCTIVITY</td>
<td>Samantha Thomas</td>
<td>Jarrett Johnson</td>
<td>Western Kentucky</td>
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<td>Western Kentucky</td>
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<td>University of Kentucky</td>
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<tr>
<td>11:45</td>
<td>A Study of Mercury in Bald Eagle Feathers and Quills</td>
<td>Jacob Hutton</td>
<td>Cate Webb</td>
<td>Western Kentucky</td>
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<tr>
<td>1:00</td>
<td>Using Mobile Eye-Tracking to Inform the Development of nature tourism Destinations in Iceland</td>
<td>Wendy Cecil</td>
<td>Cate Webb</td>
<td>Western Kentucky</td>
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<tr>
<td>1:15</td>
<td></td>
<td>Using Mobile Eye-Tracking to Inform the Development of nature tourism Destinations in Iceland</td>
<td>Wendy Cecil</td>
<td>Cate Webb</td>
</tr>
</tbody>
</table>
Who’s the boss: Social dynamics associated with leadership in endangered Toque Macaques.
1:30

First Author
Jeeva Patabendige Rathnaweera
University of Louisville
Co-author
Rajnish Vandercone
Rajarata University of Sri Lanka
Co-author
Perrie Eason
University of Louisville

An examination of fish and macroinvertebrate succession patterns after restoration of a novel stream system
1:45

First Author
Patrick Vrablik
Murray State University
Co-author
Michael B. Flinn
Murray State University

Movement patterns of Silver Carp Hypophthalmichthys molitrix in Kentucky Lake
2:00

First Author
Timothy Spier
Murray State University
Co-author
Michael Flinn
Murray State University
Co-author
Jessica Morris
Kentucky Department of Fish and Wildlife Resources
Co-author
Neal Jackson
U. S. Fish and Wildlife Service
Co-author
Allison DeRose
Murray State University
Co-author
Brad Hartman
Murray State University
Co-author
Dalton Lebeda
Murray State University

Quantifying the Effects of Invasive Species on Fish Communities in Kentucky Lake: A Post-Invasion Approach
2:15

First Author
Bradley Hartman
Murray State
### Oral Presentations: Physics and Astronomy

**Blackburn 312**

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
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<th>Institution</th>
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<tr>
<td>8:00</td>
<td>A Composite View of the Composite Supernova Remnant 3C 396 (G39.2-0.3)</td>
<td>Thomas Pannuti</td>
<td>Morehead State University</td>
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<tr>
<td>8:15</td>
<td>The CREAM instrument on the ISS</td>
<td>Scott Nutter</td>
<td>Northern Kentucky University</td>
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<tr>
<td>8:30</td>
<td>Matching Simulation Data to Calibration Data for the Silicon Charge Detector used in the ISS-CREAM Instrument</td>
<td>Carter Kring</td>
<td>Northern Kentucky University</td>
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<tr>
<td>8:45</td>
<td>Calibration of the CREAM Calorimeter with CERN Beam Tests</td>
<td>Tyler LaBree</td>
<td>Northern Kentucky University</td>
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<tr>
<td>9:00</td>
<td>Analysis of a Current-Mode Detector for the NOPTREX Experiment</td>
<td>Co-author: Scott Nutter</td>
<td>Northern Kentucky University</td>
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<tr>
<td>9:15</td>
<td>Josephson weak links with high characteristic voltage for THz radiation detection.</td>
<td>Daniela Olivera, Danielle Schaper, University of Kentucky</td>
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<tr>
<td>9:30</td>
<td>Investigation of the Kepler Eclipsing Binary Catalog: Analysis of Targets With UNC Flags</td>
<td>Luis Gomez, Garrison Turner, Big Sandy Community and Technical College</td>
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<tr>
<td>9:45</td>
<td>Streamlining Predictions of Temperature-Dependent Changes in Defect Properties of Intermetallic Compounds</td>
<td>Caleb Kirschman, Matthew Zacate, Northern Kentucky University</td>
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<td>10:15</td>
<td>Swift Observations of the Narrow Line Seyfert 1 Galaxy RX J0134.2-4258</td>
<td>Sierra Hauck, Dirk Grupe, Morehead State University</td>
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<td>10:30</td>
<td>The “Hotter” Side of an X-Ray Tube</td>
<td>Ignacio Birriel, Joshua Allen, Anthony Dotson, Morehead State University</td>
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<tr>
<td>10:45</td>
<td>The Changing Look Active Galactic Nucleus IRAS 23226-3843</td>
<td>First Author</td>
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</table>
Understanding the Parameter Space of Keplerian Orbits in APOGEE
11:00
First Author
Nathan De Lee
Northern Kentucky University
Co-author
Kyle Houston
Northern Kentucky University
Co-author
Nicholas Troup
Salisbury University
Co-author
Joleen Carlberg
Space Telescope Science Institute

Redesign of Introductory Physics Labs Using Arduinos
11:15
First Author
Troy Messina
Berea College

Oral Presentations: Chemistry: Analytical & Physical
Blackburn 320
Saturday, November 4, 2017 8:15am - 10:00am
Chair: Harry Fannin
Secretary: Bommanna Loganathan
Section meeting to follow presentations

OIL DRIES A NEW ABSORBENT MATERIAL; FOR COLLECTING IGNITABLE LIQUIDS IN ARSON SCENES
8:15
First Author
Jessica Dove
Eastern Kentucky University

Kinetic Modeling of Relevant Atmospheric Sulfur and Nitrogen Containing Compounds to Understand Particle Formation
8:30
First Author
Jesus Berlanga
Western Kentucky University
Co-author
Matthew Nee
Western Kentucky University
Co-author
Philip J. Silva
USDA - ARS

Monitoring Photocatalytic Reactions Using Surface Enhanced Raman Spectroscopy
8:45
<table>
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<tr>
<td>The removal of organic pollutants through buoyant photocatalyst</td>
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<td>Upconverting Luminescent Nanomaterials Produced Through Liquid-Phase Laser Ablation</td>
<td>9:15</td>
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<td>Oxidative stability of fish oil-in-water emulsions stabilized by protein-polysaccharide complexes: Effect of salt and pH</td>
<td>9:30</td>
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<td>Temperature and electric field dependence of asymmetric stretching of nitrate ion</td>
<td>9:45</td>
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Is Pawpaw Self-Compatible? Determining Compatibility and Its Impact on Fruit and Seed Set in North American Pawpaw
8:15

First Author
Srijana Thapa Magar
Kentucky State University

Co-author
Kirk Pomper
Kentucky State University

Co-author
Jeremiah Lowe
Kentucky State University

Co-author
Sheri Crabtree
Kentucky State University

Enzymes as Indicators of Soil Microbial Activity at three Locations in Kentucky
8:30

First Author
GEORGE ANTONIOUS
KENTUCKY STATE UNIVERSITY

Assessing the nutritional value of novel soybean products in the diet of Atlantic salmon (Salmo salar L.)
8:45

First Author
James Schwartz
Kentucky State University

Co-author
Vikas Kumar
Kentucky State University

Co-author
Waldemar Rossi
Kentucky State University

Co-author
Katerina Kousoulaki
Nofima

Responses of juvenile largemouth bass (Micropterus salmoides) to dietary EPA and DHA rich oils
9:00

First Author
Amit Yadav
Kentucky State University

Co-author
Waldemar Rossi
Kentucky State University

Co-author
Hab Andemichael
Kentucky State University

Co-author
Vikas Kumar
Kentucky State University

Applicability of waste-reared Hermetia illucens as an ingredient in the diet of Nile Tilapia, Oreochromis niloticus
9:15

First Author
Samuel Kessler
Carol Martin Gatton Academy of Mathematics and Science, WKU

Co-author
Vikas Kumar
Kentucky State University

Co-author
Waldemar Rossi
Kentucky State University

Comparing the Effects of Long-term No Till and Conventional Tillage on Soil Properties in Central Kentucky
9:30

First Author
<table>
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<tr>
<th>Time</th>
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<tr>
<td>9:45</td>
<td>Spotted wing Drosophila, Drosophila suzukii, larvae in blackberries bordered by native perennial plants or pasture</td>
<td>Sathya Govindasamy</td>
<td>Kentucky State University</td>
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<td>Co-author</td>
<td>John Sedlacek, Kentucky State University</td>
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<td>Karen Friley, Kentucky State University</td>
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<td>E. Kyle Slusher, Kentucky State University</td>
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<td>Mamata Bashyal, Kentucky State University</td>
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<td>Co-author</td>
<td>Megan McCoun, Kentucky State University</td>
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<td>Comparing the abundance of beneficial insects in blackberry plots bordered by native perennial plants and pasture sp</td>
<td>Mamata Bashyal</td>
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<td>Megan McCoun, Kentucky State University</td>
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<tr>
<td>10:30</td>
<td>Optimizing Hemp Production through Cultivar Selection and Soil Management Practices</td>
<td>Rose Johnson</td>
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<td>10:45</td>
<td>An Assessment of Nutritive Value and Optimization of Soybean Meal-Based Diets for Largemouth Bass</td>
<td>Sathya Govindasamy</td>
<td>Kentucky State University</td>
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<td>11:00</td>
<td>ANTIBIOTIC SUSCEPTIBILITIES OF BACTERIA ISOLATED FROM THE SAME FISH IN CASES EXAMINED AT THE KENTUCKY STATE UNIVERSITY F</td>
<td>Ashmita Poudel</td>
<td>Kathryn Mitchell</td>
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<td>Kentucky State University</td>
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<td>11:15</td>
<td>Investigating the Impact of Low-Cost Organic Fertilizers on Tomato Yield</td>
<td>Lusekelo Nkuwi</td>
<td>George Antonious</td>
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<td>11:30</td>
<td>Evaluation of Density in a Live Holding System for Food Size Channel Catfish, Ictalurus punctatus</td>
<td>Sujan Bhattarai</td>
<td>Ken Semmens</td>
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<tr>
<td>1:00</td>
<td>Are Online Shoppers Aware and/or Interested In Learning About Direct-To-Consumer Market Outlets?</td>
<td>JEAN DOMINIQUE</td>
<td>Stephen King</td>
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<td>1:15</td>
<td>As online shopping becomes popular, will consumers still be interested in direct-to-consumer offline market outlets?</td>
<td>JEAN DOMINIQUE</td>
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</table>
Analyzing the Effects the use of Best Practices for Farm Management has on Farm Financial Position and Profitability

1:30

First Author
Audrey Barnett
Western Kentucky University

Co-author
Dominique Gumirakiza
Western Kentucky University

EVALUATION OF TWO SALT APPLICATIONS FOR HOLDING LARGEMOUTH BASS Micropterus salmoides FOR MARKETING AS A FOOD FISH

1:45

First Author
Thomas Mason
Kentucky State University

Co-author
Ken Semmens
Kentucky State University

Evaluation of Microbial Quality of Agricultural Water from Small Farms in Kentucky

2:00

First Author
Shreya Patel
Kentucky State University

Co-author
Avinash Tope
Kentucky State University

Saturday, November 4, 2017 8:30am - 11:15am

Oral Presentations: Geography

Mississippi Room, Curris Center

Assessment of Vegetation Cover Change and Water Quality in Coal Mine Watersheds

8:30

First Author
Oguz Sariyildiz
Kentucky State University

Co-author
Buddhi Gyawali
Kentucky State University

Chair: Buddhi Gyawali
Secretary: Christopher Day
Section meeting to follow presentations
**Identification of Unmarked Burial Sites at Frankfort Cemetery using LiDAR and Ground Penetrating Radar**

8:45

*First Author*
D'Andre Garrison
*Co-author*
Jarod Jones
*Kentucky State University*

*Co-author*
Jordan Wilson
*Kentucky State University*

*Co-author*
Jeremy Sandifer
*Kentucky State University*

*Co-author*
Ken Bates
*Kentucky State University*

---

**The Urban Heat Island: Environmental Change and the Human Condition in Detroit Michigan**

9:00

*First Author*
Tori Farrow
*Kentucky State University*

*Co-author*
Jeremy Sandifer
*Kentucky State University*

---

**Networks of Sustainability within the Iceland Whale Watching Industry**

9:15

*First Author*
Jason Fox
*Co-author*
Leslie North
*Western Kentucky University*

*Co-author*
Western Kentucky
*University*

---

**Predicting the Adoption of Sustainable Agricultural Practices among Kentucky Farmers and Its Barriers**

9:30

*First Author*
Bijesh Mishra
*Co-author*
Buddhi Gyawali
*Kentucky State University*

*Co-author*
KYSU

---

**Exploring Relationship between community Perception and landscape change in the Eastern Kentucky**

10:00

*First Author*
Buddhi Gyawali
*Kentucky State University*

*Co-author*
Prabisha Shrestha
*Kentucky State University*

*Co-author*
Tilak Shrestha
*Kentucky State University*

*Co-author*
Jeremy Sandifer
*Kentucky State University*

*Co-author*
Tilak Shrestha
*Kentucky State University*

---

**Association of land cover change trend with land ownership size at parcel level data in Breckinridge County, KY**

10:15
Land Cover Classification using LandSat, NAIP images, and Accuracy enhancements
10:30

First Author
Tilak Shrestha
Kentucky State University

Co-author
Buddhi Gyawali
Kentucky State University

Co-author
Kenneth Bates
KYSU

Co-author
Jeremy Sandifer
KYSU

Co-author
Prabisha Shrestha
KYSU

Modeling and Evaluating the Influences of Class V Injection Wells on Urban Karst Hydrology
10:45

First Author
James Shelley
Western Kentucky University

Co-author
Jason Polk
Western Kentucky University

Co-author
Leslie North
Western Kentucky University

Co-author
Nicholas Crawford
Western Kentucky University

Co-author
Matt Powell
City of Bowling Green Department of Public Works

Risk analysis of bedrock collapse sinkholes in Bowling Green, Kentucky
11:00

First Author
Patricia Kambesis
Western Kentucky University

Co-author
Brittiny Moore-Kimmel
Texas State University

Estimating the Approximate Age of Unmarked Burial Sites in The Frankfort Cemetery using Spatial Interpolation
11:15

First Author
Jordan Wilson
Kentucky State University

Co-author
Jeremy Sandifer
Kentucky State University

Co-author
Kenneth Bates
Kentucky State University

Saturday, November 4, 2017  9:00am - 11:00am
Morphological Analysis of Astarte (Class: Bivalvia) using Geometric Morphometrics
9:00
First Author: Randal Roberson
Co-author: Michelle Casey
Murray State University

Geochemical characteristics and storm dynamics of surface waters and groundwater at Eastern Kentucky University’s Meadow
9:15
First Author: Reid Buskirk
Co-author: Walter Borowski, Jonathan Malzone
Eastern Kentucky University

Patterns of nutrient export for a typical non-point source, Meadowbrook Farm, Madison County, Kentucky.
9:30
First Author: James Winter
Eastern Kentucky University

How Does Spatial Heterogeneity Influence Groundwater Flow on Ridgetops in Kentucky's Daniel Boone National Forest?
10:00
First Author: Selsey Stribling
Co-author: Jonathan Malzone
Eastern Kentucky University

Modeling the groundwater storage and the groundwater recharge rate of an ephemeral wetland with Hydrus-1D
10:15
First Author: Addison Bell
Co-author: Jonathan Malzone
Eastern Kentucky University
Hydrograph Separation of Storm Flows in a Landscape with Thin Soil, Meadowbrook Farm, KY
10:30

First Author
Laura Kelley
Eastern Kentucky University

Co-author
Sophia Chan
Eastern Kentucky University

Co-author
Jonathan Malzone
Eastern Kentucky University

Co-author
Walter Borowski
Eastern Kentucky University

Runoff generation in an ephemeral agricultural watershed with thin soil
10:45

First Author
Sophia Chan
Eastern Kentucky University

Co-author
Laura Kelley
Eastern Kentucky University

Co-author
Jonathan Malzone
Eastern Kentucky University

Co-author
Walter Borowski
Eastern Kentucky University

Oral Presentations: Psychology
Blackburn 155
Section meeting to follow presentations

Saturday, November 4, 2017  9:00am - 11:15am

Staying behind: The effect of stereotype threat on unhelpful perseverant behaviors.
9:00

First Author
Aaron Clark
Berea College

Co-author
Dave Porter
Berea College

Breaking the Prejudice Habit: A Longitudinal Assessment of Reducing Implicit Racial Bias
9:15

First Author
Laura Hopkins
Centre College

Co-author
Nicole Stumpp
Centre College

The Effects of Gender, Task Difficulty, and Emotional Arousal on Perceptual Sensitivity
9:30

First Author
Enkhjin Enkhbold
Berea College

Children's emotion understanding and regulation: Links with psychological symptoms
9:45

First Author
Karina Cole
Morehead State
<table>
<thead>
<tr>
<th>Title</th>
<th>Time</th>
<th>First Author</th>
<th>Co-author 1</th>
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<th>Co-author 5</th>
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<td><strong>Initial Validation of the Hexaflex Process Assessment Instrument</strong></td>
<td>10:15</td>
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<td></td>
<td></td>
<td>Aaron Ellis</td>
<td>John Blackledge</td>
<td>Shelby Humphrey</td>
<td>Kellen Crager</td>
<td>Isabella Gearhart</td>
<td>Rebecca Ashley</td>
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<td>Morehead State University</td>
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<td></td>
<td></td>
<td>Co-author</td>
<td>Ashley Ball</td>
<td>Kory Phelps</td>
<td>Shari Kidwell</td>
<td>Morehead State University</td>
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<td>Rebecca Ashley</td>
<td>Morehead State</td>
<td>Shari Kidwell</td>
<td>Isabella Gearhart</td>
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<td><strong>The Association of Parents' Emotion Philosophy with Adolescents' Mindful Approach to Affect</strong></td>
<td>10:30</td>
<td>First Author</td>
<td>Co-author</td>
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<td>Joseph Reese</td>
<td>Mary Blanton</td>
<td>Ashley Ball</td>
<td>Kory Phelps</td>
<td>Shari Kidwell</td>
<td>Rebecca Ashley</td>
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<td>Kory Phelps</td>
<td>Shari Kidwell</td>
<td>Isabella Gearhart</td>
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<td><strong>What does your Tinder profile say about you? Correlates of Tinder profile features and extroversion</strong></td>
<td>10:45</td>
<td>First Author</td>
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<td>Hunter Gatewood</td>
<td>Lynn Haller</td>
<td>Robin Zhang</td>
<td>Echo Wu</td>
<td>Steve Cobb</td>
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<td><strong>Peer Mentoring Circles for Women STEM Faculty at Murray State University</strong></td>
<td>11:00</td>
<td>First Author</td>
<td>Co-author</td>
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<td>Co-author</td>
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<td>Maeve McCarthy</td>
<td>Paula Waddill</td>
<td>Robin Zhang</td>
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</table>
Oral Presentations: Science Education
Blackburn 249

Data Mining in Astronomy Using Exoplanet Data from the Space and Ground-based Telescopes
9:00
First Author
Joseph Erskine
Bellarmine University
Co-author
Jordan Dowdy
Bellarmine University
Co-author
Stephen Denny
Bellarmine University
Co-author
M Saleem
Bellarmine University
Co-author
Akhtar Mahmood
Bellarmine University

Characterizing Epistemic Beliefs Among Scientists: Applying the Q-Method to Science Epistemology
9:15
First Author
Katherine Ray King
University of Louisville
Co-author
Linda Fuselier
University of Louisville
Co-author
Justin McFadden
University of Louisville

Hearing eclipses: Making astronomy events accessible to visually-impaired students.
9:30
First Author
Wilson Gonzalez-Espada
Morehead State University
Co-author
Laura Parker
Kentucky School for the Blind
Co-author
Adam Stockhausen
Kentucky School for the Blind
Co-author
Wanda Diaz-Merced
Office of Astronomy for Development
Co-author
Allyson Bieryla
Dept. of Astronomy, Harvard University
Co-author
Robert Hart
Dept. of Physics, Harvard University
Co-author
Daniel Davis
Natural Sciences Lecture Demonstrations, Harvard University

Should We Lie To Our Students?
10:00
<table>
<thead>
<tr>
<th>Time</th>
<th>Session Description</th>
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<tbody>
<tr>
<td>10:15</td>
<td>Adaptive Learning Courseware in Majors Biology Course</td>
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<tr>
<td>10:30</td>
<td>Strengthening Student Foundations: Strategies for Active-Learning Classrooms</td>
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<tr>
<td>10:45</td>
<td>LOW-COST STUDENT RESEARCH IN A NON-MAJORS BIOLOGY LABORATORY CLASS</td>
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</table>

**Breaks**
Staggered in sessions - check schedule

**Oral Presentations: Engineering**
Ohio Room, Curris Center
Chair: Aaron Daley
Secretary: shen liu
Section meeting to follow presentations

<table>
<thead>
<tr>
<th>Time</th>
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<tr>
<td>10:00</td>
<td>Characterization of Mechanical Properties of 3D Printed Thermoplastic Parts</td>
</tr>
</tbody>
</table>

Saturday, November 4, 2017  9:30am - 10:30am

Saturday, November 4, 2017  10:00am - 11:15am
Imaging of the spinal cord in pediatric patients.
10:15
First Author
Bhavesh Ramkorun
Berea College
Co-author
Samantha By
Vanderbilt University
Co-author
Aashim Bhatia
Vanderbilt University
Children's Hospital
Co-author
Bryson Reynolds
Vanderbilt University
Institute of Imaging Science
Co-author
Seth Smith
Vanderbilt University
Institute of Imaging Science

Hands-on Robotics Lab at Bellarmine University
10:30
First Author
Christopher Steitz
Bellarmine University
Co-author
Stephen Brown
Bellarmine University
Co-author
Akhtar Mahmood
Bellarmine University

Flaw Characterization through Nonlinear Ultrasonics and Wavelet Cross-Correlation Algorithms
10:45
First Author
Andrew Yee
Murray State University
Co-author
Dylan Stewart
Murray State University
Co-author
Gheorghe Bunget
Murray State University

Novel Approach of Wavelet Analysis for Nonlinear Ultrasonic Measurements and Fatigue Assessment of Jet Engine Components
11:00
First Author
Cavir Gongora
Murray State University
Co-author
Steven Treadaway
Murray State University
Co-author
Chance Glass
Murray State University
Co-author
Andrew Yee
Murray State University
Co-author
Brevin Tilmon
Murray State University
Saturday, November 4, 2017 12:00pm - 1:00pm

**Mentor-Matching**

**Winslow Dining Hall**

**Mentor matching: Looking for a future graduate advisor?**
If you are a biology undergraduate/graduate student and looking for a future biology advisor for your M.S. or Ph.D., please come to Winslow dining on Saturday at lunch time. Biology faculty who are interested in recruiting students will be present in the cafeteria (look for signs on the tables) and will be happy to talk to you about possibilities in their labs.

Saturday, November 4, 2017 1:00pm - 2:45pm

**KAS-KCTCS Science Faculty meeting**

**Blackburn 249**

An annual meeting of KCTCS Science faculty. A general meeting of all disciplines is followed by break-out meetings for faculty in Biology, Chemistry, and Physics. Breakouts will be in Blackburn 249 and 320.

Saturday, November 4, 2017 1:00pm - 1:15pm

**Oral Presentations: Botany**

**Mississippi Room, Curris Center**

Chair: Lawrence Alice

Secretary: Maggie Whitson

Botany and Zoology Section meetings to follow presentations, at 2:30

Far-Red light can induce sex structure development in the liverwort Marchantia inflexa Nees et Mont.

1:00

First Author

Nicholas McLetchie

University of Kentucky

Co-author

Maddison Hatton

University of Kentucky

Saturday, November 4, 2017 1:00pm - 2:30pm

**Oral Presentations: Chemistry: Organic/Inorganic**

**Blackburn 135**
Section meeting to follow presentations

A general fabrication approach on spinel MCo2O4 (M= Co, Mn, Fe, Mg and Zn) submicron prisms as advanced positive materia

1:00

First Author
Hongyan Gao
CHEMISTRY
DEPARTMENT,
WESTERN
KENTUCKY
UNIVERSITY

Co-author
Yan Cao
CHEMISTRY
DEPARTMENT,
WESTERN
KENTUCKY
UNIVERSITY

Chemical and photo generation of high-valent manganese-oxo porphyrins

1:15

First Author
Mike Winchester
Western Kentucky
University

Multiple Oxidation Pathways for Photo-generated Manganese(V)-Oxo Corroles

1:30

First Author
Ngo Fung Lee
Western Kentucky
University

Recent Progress in the Investigation of the Bonding and Electronic Structure in Metal Chalcogenide Complexes

1:45

First Author
Jessie Brown
Transylvania
University

Co-author
Ameila Dickey
Transylvania
University

Co-author
Elias Hanna
Transylvania
University

Co-author
Christopher Samaan
Transylvania
University

Co-author
Hannah Williams
Transylvania
University

Co-author
Christine Phipps
Transylvania
University

Co-author
Ashley Montgomery
Transylvania
University

The Synthesis of Heteroatom-activated Antibiotics: ?-lactams

2:00

First Author
Visible Light Generation of High-Valent Iron-Oxo Intermediates
2:15

First Author
Malone Jonathan
WKU

Co-author
dharmesh Patel
WKU

Co-author
Tse-hong Chen
Purdue University

Co-author
Ka Wai Kwong
WKU

Oral Presentations: Health Sciences
Saturday, November 4, 2017 1:00pm - 1:30pm

Blackburn 155

Determining a reference interactome for stable heart disease utilizing molecular structure for informed model selection
1:00

First Author
Patrick Trainor
University of Louisville

Co-author
Samantha Carlisle
University of Louisville

Co-author
Shesh Rai
University of Louisville

Co-author
Andrew DeFilippis
University of Louisville

Transcriptomics Evaluation of MDA-MB-231 Breast Cancer Cells Reveals NAT2 Transcript Production Following NAT1 Knockout
1:15

First Author
Samantha M. Carlisle
University of Louisville

Co-author
Patrick J. Trainor
University of Louisville

Co-author
Mark A. Doll
University of Louisville

Co-author
David W. Hein
University of Louisville

Oral Presentations: Mathematics
Saturday, November 4, 2017 1:00pm - 2:00pm

Blackburn 228

Open Coverings of the Rationals Need Not Cover The Reals
1:00

Chair: R. Douglas Chatham

Secretary: Andy Martin

Section meeting to follow presentations
The Cubic Equation
1:15

First Author
Andy Martin
Kentucky state University

A Perturbation Method for Determination of an Approximate Analytical Solution of a Nonlinear System of ODEs.
1:30

First Author
Dwight Smith
Big Sandy CTC

The n+k kings problem
1:45

First Author
R. Douglas Chatham
Morehead State University

Saturday, November 4, 2017 1:00pm - 1:45pm

Oral Presentations: Microbiology
Cumberland Room, Curris Center

Chair: Lingyu Huang
Secretary: Joseph Mester
Section meeting to follow presentations

Antimicrobial activity from bacteria found around downtown Cincinnati
1:00

First Author
Kory Stuessel
Northern Kentucky University

Co-author
John Carmen
Northern Kentucky University

Inhibition of Fungal Colony Growth by UVC
Emergence and divergence of influenza virus: A current perspective
1:30

First Author
Alexander Lai
Kentucky State University

Identification of tRNA modification enzymes in higher eukaryotes via primer extension
1:00

First Author
Justen Mamaril
Northern Kentucky University

Physiological Characteristics of Five Bladder Cancer Cell Lines
1:15

First Author
Kyle Damen
Wood Hudson Cancer Research Laboratory

Saturday, November 4, 2017 1:00pm - 2:00pm

Oral Presentations: Physiology and Biochemistry
Barkley Lecture Room, Curris Center

Chair: Michael Smith
Secretary: Julia Carter

Section meeting to follow presentations
Cell proliferation and Cathepsin L expression are inversely correlated during bladder cancer progression

1:30

First Author
Dan Stelzer
Wood Hudson Cancer Research Laboratory

Co-author
Michelle Robillard
Wood Hudson Cancer Research Laboratory

Co-author
Mariah Dooley
Wood Hudson Cancer Research Laboratory

Co-author
James Deddens
Wood Hudson Cancer Research Laboratory

Co-author
Larry Douglass
Wood Hudson Cancer Research Laboratory

Co-author
Julia Carter
Wood Hudson Cancer Research Laboratory

The fluorescence quenching ability of graphene oxide as a platform for pathogenic double-stranded DNA sensing

1:45

First Author
Dat Thinh Ha
Western Kentucky University

Oral Presentations: Anthropology and Sociology
Ohio Room, Curris Center

Saturday, November 4, 2017  1:00pm - 2:00pm

LGBTQ+ Suicide: A review of the literature on social services for the queer community
1:00

First Author
Mason Gibson
Western Kentucky University

The Effects of Parental Guidance and Internet Use on Teenagers Experiencing Cyberbullying
1:15

First Author
Hannah Ridner
Western Kentucky University

Challenges and coping strategies of Chinese exchange students attending a university in Eastern Kentucky: A case study
1:30

**First Author**  
Wilson Gonzalez-Espada  
Morehead State University

**Co-author**  
Shanshan Li  
Xingjian College of Science and Liberal Arts, Guangxi Univ.

**Co-author**  
Jun Peng  
Xingjian College of Science and Liberal Arts, Guangxi Univ.

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**Malaria in the Prehistoric Caribbean: The Hunt for Hemozoin**

1:45

**First Author**  
Mallory Cox  
University of Louisville

---

2:00

**First Author**  
Benjamin Freed  
Eastern Kentucky University

**Co-author**  
Nathanael Bartosch  
Eastern Kentucky University

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Saturday, November 4, 2017  1:15pm - 2:15pm

**Oral Presentations: Computer and Informational Sciences**  
Blackburn 312

Chair: Jerzy Jaromczyk  
Secretary: Muzaffar Ali

Section meeting to follow presentations

---

**Cloud Computing for Hands-On Bioinformatics Education**

1:15

**First Author**  
Harrison Inocencio  
University of Kentucky

**Co-author**  
Deavin Hester  
University of Kentucky

**Co-author**  
Laura Lodder  
University of Kentucky

**Co-author**  
Justin Moore  
University of Kentucky

**Co-author**  
Bailey Phan  
University of Kentucky

**Co-author**  
Andrew Tapia  
University of Kentucky

**Co-author**  
Neil Moore  
University of Kentucky

**Co-author**  
Mark Farman  
University of Kentucky

**Co-author**  
Jerzy Jaromczyk  
University of Kentucky

**Co-author**  
Luke Decastro  
University of Kentucky

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**Adaptive Topic Mining from Social Media Streams**

1:30
BayesianGLasso: software for integrating a priori knowledge and empirical data utilizing a graphical model framework

First Author
Gopi Chand Nutakki
University of Louisville
Co-author
Olfa Nasraoui
University of Louisville

Password cracking performance testing comparing GPU vs CPU performance using Hashcat

First Author
Patrick Trainor
University of Louisville
Co-author
Andrew DeFilippis
University of Louisville
Co-author
Shesh Rai
University of Louisville

Saturday, November 4, 2017 1:15pm - 2:30pm

Oral Presentations: Zoology

Mississippi Room, Curris Center

Chair: Roy Scudder-Davis
Secretary: Oliver Beckers

Botany and Zoology Section meetings to follow presentations

Phenotypic plasticity of mating calls in the katydid Neconocephalus triops

First Author
Oliver Beckers
Department of Biological Sciences, Murray State University

Exploring selection on the complex mating displays of wolf spiders in the genus Tigrosa

First Author
Samuel White
Murray State University
Co-author
Talon Garman
Murray State University
Co-author
Laura Sullivan-Beckers
Murray State University

Biology of the Cercaria of Leuceruthrus micropteri (Trematoda: Azygiidae) Recovered from the Snail,
Pleurocera semicarin
1:45
First Author: Chi Peng
Berea College
Co-author: Hanna Abe
Yale University
Co-author: Ron Rosen
Berea College
Co-author: Brian Traw
Berea College
Co-author: Emma Reasoner
Berea College
Co-author: Marah Zeidan
Berea College

Potential detection and utilization of substrate-borne vibrations by chameleons (Chamaeleo calyptratus).
2:00
First Author: Kathryn Laslie
Western Kentucky University
Co-author: Emily Hamilton
Western Kentucky University
Co-author: Michael Smith
Western Kentucky University

Transcriptomic Response to Immune Challenge in Zebra Finch (Taeniopygia guttata) using RNA-seq.
2:15
First Author: Cassandra Scalf
Western Kentucky University
Co-author: Noah Ashley
Western Kentucky University

Saturday, November 4, 2017 2:30pm - 4:30pm
Coffee & Tea
Crow's Nest, Curris Center

Saturday, November 4, 2017 3:00pm - 4:00pm
Keynote Jeffrey Bennett: Communicating Science to the Public
Introduced by President-Elect Curris Center Ballroom
Jennifer Birriel
Jeffrey Bennett holds a B.A. in Biophysics from the University of California at San Diego and an M.S. and Ph.D. in Astrophysics from the University of Colorado at Boulder. He specializes in mathematics and science education, writing for and speaking to audiences ranging from elementary school children to college faculty. His extensive teaching experience, which spans all levels from preschool through graduate school, includes having founded and run a private science summer school for elementary and middle school children and teaching more than fifty college classes in astronomy, physics, mathematics, and education. He has received numerous awards for his teaching and writing, including the American Institute of Physics Science Communication Award.

Among his other major endeavors, Dr. Bennett served two years as a Visiting Senior Scientist at NASA Headquarters, where he was the first scientist hired within a science division specifically to leverage science missions for education. Working closely with NASA’s Education Division and teams working with the Hubble Space Telescope and other science missions, he was credited with helping bridge the cultural divide between education and science. In addition, he created the Initiative to Develop Education through Astronomy (originally IDEA, later called IDEAS), developed the Perspectives From Space concept (and creating its poster set) that was ultimately adopted as the global theme for International Space Year, and helped start the program known as Flight Opportunities for Science Teacher EnRichment (FOSTER), which flew teachers on the Kuiper Airborne Observatory and evolved to become the Airborne Astronomy Ambassadors program that now flies teachers on the SOFIA airborne observatory.

Perhaps his most visible achievements have been his work in developing educational scale models of the solar system. He proposed the idea for and helped develop both the Colorado Scale Model Solar System (on the University of Colorado campus) and the Voyage Scale Model Solar System on the National Mall in Washington, DC. The Voyage model is now being replicated (through the Voyage National Program) in many other cities around the United States.
• Kim Hunter, Chief Program Officer at the Kentucky Science Center
• Richard Gelderman, Professor of Physics at WKU, recipient of 2016 KAS Science Education & Outreach Award
• Robin Q. Zhang, Ph.D., Professor and Chair, Department of Geosciences, Murray State University
• David White, Commonwealth Endowed Chair, Professor, Biological Sciences & Director, Hancock Biological Station
• Gerry Harris, Hancock Biological Station, Murray State University
More Information

- Guidelines for the Research Paper
- Preparing the Presentation
- Abstract Guidelines
- Plagiarism Policy
- Rules and Policies for Kentucky Junior Academy
- Junior Academy Scoring rubric
- Download the 2020 Waiver- required for participation (word file)
- Publish your Research
- Video tips: Giving a good Scientific talk

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