2018 Annual Meeting Program
November 2-3, 2018

Western Kentucky University

Thank you to our Platinum Sponsor

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ECM Biosciences

Thank you to our In-Kind partners

WKU Office of Research and Creative Activity

Thank you our Local Arrangements Team at WKU:
Ryanne Gregory, Leslie North, Cheryl Davis, Claire Rinehart, Kerrie McDaniel, Richard Gelderman and Rodney King.

Online Program, 2018

Poster presentations are Friday from 3-6 pm and Posters will all remain in place through Saturday.

Oral Presentations are Friday from 1:15-3 pm and Saturday 8am-4pm

Thursday, November 1, 2018 6:30pm - 9:00pm

KAS Science Film Festival
Kick off the KAS Meeting with a Science-themed mini-film festival, complete with popcorn! We've collected a few favorites, including Science in Exile; Short films will change the way you see slime molds, bats, and the mighty coelacanth!

Friday, November 2, 2018 9:00am - 11:00am

KAS Governing Board Meeting
Downing Student Union 3029

Friday, November 2, 2018 9:30am - 11:30am

Kentucky Organization of Field Stations meeting
Downing Student Union 3004

Friday, November 2, 2018 11:30am - 5:00pm

Registration Open
Third Floor, Downing Student Union
Check-in will also be available at the National Corvette Museum after 6:30pm, during the Reception & Plenary.

Friday, November 2, 2018 12:00pm - 2:30pm

Poster Presenters check-in
Third Floor, Downing Student Union
After checking in at Registration, we ask Poster presenters to check in at the Posters table for further instructions. All posters should be setup by 2:30pm

Friday, November 2, 2018 12:00pm - 1:00pm

Science Policy & Advocacy workshop
Cupola Room (inside Fresh Dining Hall)

What do scientists need to know about public policy? Do you want to advocate for science but aren't sure how to start? This workshop is for everyone – students and faculty - regardless of discipline, who are interested in learning more about the role of science in policy-making and in becoming empowered to be a voice for science. Our colleagues at the American Society for Biochemistry and Molecular Biology will provide practical guidance on how to engage in advocacy initiatives at local, state and national levels.

This event is FULL.

Featured Speakers:
Kentucky and Chair, Public Affairs Advisory Committee, American Society of Biochemistry and Molecular Biology

Dr. Matthew Gentry received his B.S. from the University of Evansville in 1996. He then studied yeast cell cycle regulation via protein phosphatase 2A at Syracuse University in Dr. Richard Hallberg’s lab, receiving his Ph.D. in 2003. He was a postdoctoral fellow at UC-San Diego with Dr. Jack Dixon where he discovered glycogen and starch phosphatases and how they are integral for both human and plant energy metabolism.

He began his independent career in 2008 and he is currently a Professor in the College of Medicine at the University of Kentucky where he oversees projects on both Lafora disease and biofuels research. The lab focuses on the regulation of specific phosphatases and E3 ubiquitin ligases in both human glycogen and plant starch metabolism utilizing in vitro biochemical and structural techniques; in situ cell culture models; and in vivo mouse, algal and plant models. Dr. Gentry has been continuously funded by NINDS since 2006, he is an NIH K99/R00 Pathway to Independence Award recipient, he received the NIH Young Investigator IDeA Maciag Award, the 2018 NINDS Landis Award, he is an NSF CAREER awardee, and PI of both a NINDS R01 and P01. He is a Journal of Biological Chemistry Editorial Board member, Director of the NIH-funded Lafora Epilepsy Cure Initiative, and Chair of the ASBMB Public Action Advisory Committee (PAAC).

Dr. Trent Garrison, Assistant Professor, Environmental Geoscience, Northern Kentucky University, and Co-Chair, Education and Advocacy Committee, Kentucky Academy of Science

Dr. Trent Garrison grew up in Hyden, Kentucky where he attended Leslie County High School. With an interest in science, he later went on to attend Eastern Kentucky University (BS and MS in hydrogeology), Kentucky State University (Public Administration), and then University of Kentucky (PhD – Environmental Geology). Dr. Garrison is now an Assistant Professor of Environmental Geoscience at Northern Kentucky University, where he studies a variety of environmental geology issues that affect Kentuckians, such as water issues and dye tracing techniques, as well as soil, air, and water quality in areas affected by coal fires in the state. In addition, Dr. Garrison has a strong passion for teaching, science advocacy, outreach, and interdisciplinary networking between students and professionals.

As Physical Science Representative and Education & Advocacy Co-Chair of KAS, Dr. Garrison was actively involved in research during the 2018 state legislative session, frequently reporting how HB 200 and other legislation would impact higher education. With input from others in KAS, he authored the letters to our state legislators opposing cuts to higher education, which, along with other groups’ advocacy efforts, led to education cuts not being as severe as originally proposed. He also assisted with KAS’s involvement in the March For Science and spoke about the importance of science outreach and involvement in policy.

Ms. Alexa Johnson, Ph.D. Candidate, Rehabilitation Sciences, University of Kentucky and past participant in the American Association for the Advancement of Science - Catalyzing Advocacy for Science and Engineering (CASE) workshop

Alexa is currently studying biomechanics of the lower extremity in military personnel with low back pain, as well as lower extremity loading mechanics in athletes with anterior cruciate ligament reconstruction. She previously completed her Master’s degree (MS in Kinesiology) at the University of Michigan and her Bachelor’s degree (BS in Kinesiology) at California State University Fullerton. Not only is she passionate about biomechanics and sports medicine but she is also passionate about how to translate our jargon science language to the public so everyone can understand it, aka science communication, as well as advocating for women in STEM. These passions have led to her interest in science policy, where she is now trying to figure out how she can pair a career in research and science policy simultaneously. Last March she was selected by UK to attend a workshop called Catalyzing Advocacy for Science and Engineering (CASE) put on by the American Association for the Advancement of Science (AAAS) where she learned not only about science communication and
science policy but also spent a day on the Hill meeting with Kentucky Congress members advocating for science funding.

Friday, November 2, 2018  1:14pm - 3:00pm

Oral Presentations- Friday Afternoon

Asterisk * denotes student research competition

Friday, November 2, 2018  1:15pm - 3:00pm

Cellular and Molecular Biology - Oral Presentations

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:15</td>
<td>Analysis of effects on tRNA modifications and hyphal growth by the elongator complex in C. albicans.</td>
<td>Justin Rabe, Rachel Morgeson, Jenna Kappes, Daisy Davita, Kaylee Fox, Northern Kentucky University</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Co-author: Olivia Gilliam, Co-author: John Carmen, Co-author: Michael Guy, Northern Kentucky University</td>
</tr>
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<tr>
<td>1:30</td>
<td>Comparison of differentiation capacity between cell lines using the trilineage differentiation assay.</td>
<td>Priscila Garcia, Anschutz Medical Campus</td>
</tr>
<tr>
<td>1:45</td>
<td>Investigating How EF-24 and Cisplatin Effect Cancer and Renal Cells</td>
<td>Denis Hodzic, Western Kentucky University</td>
</tr>
<tr>
<td>2:00</td>
<td>Oxidative stress mediated downregulation of transcription factor Glis3 results in beta cell dysfunction</td>
<td>Erin Clayton, Gary ZeRuth, Murray State University</td>
</tr>
</tbody>
</table>
2:15 * - Targeted integration of fluorescent reporters into iPSCs using CRISPR/Cas9

First Author
Chann Han
Berea College

Co-author
Dennis Roop
University of Colorado Denver - Anschutz Medical Campus

Co-author
Igor Kogut
University of Colorado Denver - Anschutz Medical Campus

Co-author
Ganna Bilousova
University of Colorado Denver - Anschutz Medical Campus

Co-author
Partick Sean McGrath
University of Colorado Denver - Anschutz Medical Campus

Co-author
Kiel Carson Butterfield
University of Colorado Denver - Anschutz Medical Campus

2:30 - The involvement of JAK/STAT signaling during air sac primordium development in Drosophila melanogaster

First Author
Nathan Powers
Western Kentucky University

Co-author
Ajay Srivastava
Western Kentucky University

2:45 * - Transcription factor Gli-similar 3 in pancreatic β cell development and insulin expression

First Author
Lesley Golden
Murray State University

Co-author
Gary ZeRuth
Murray State University

Friday, November 2, 2018 1:15pm - 3:00pm

Computer & Informational Sciences - Oral Presentations

DSU 2113 Section meeting follows talks at 3:00

1:15 - Application of Huffman Coding in Cryptographic hash function SHA-1

First Author
Mustafa Atici
Western Kentucky University

1:30 * - Optically-Linked Raspberry Pi Beowulf Cluster

First Author
Christopher Harton
Murray State University

1:45 * - Analyzing Telomere Sequences: Telomere sequence identification and analysis in fungal genomics

First Author
2:00 * - Analysis of the vulnerabilities of Point of Sale (PoS) systems in the Internet of Things

First Author
Bryan Kirshe
University of Kentucky
Co-author
Sherali Zeadally
University of Kentucky

2:15 * - Utilizing Genome Assembly and Search Tools to Track Evolution of Magnaporthe Oryzae

First Author
Michael Murray
University of Kentucky
Co-author
Kelsey Cole
University of Kentucky
Co-author
Jerzy Jaromczyk
University of Kentucky

2:30 * - Game Prediction in Professional League of Legends using Neural Networks

First Author
Stephen Goins
Bellarmine University

Friday, November 2, 2018 1:15pm - 3:00pm

Engineering - Oral Presentations

1:15 * - High-Throughput Microfluidics to Characterize Subtle Synaptic Phenotypes in C. elegans.

First Author
Jean-Pierre Amoakon
Georgetown College
Co-author
Farhan Kamili
Georgia Institute of Technology

1:30 * - Implementation of the SPICE Observation Geometry System for the Lunar IceCube Mission

First Author
Jacob Schabert
Morehead State University

1:45 * - Safety Engineering for a CubeSat: Hazards and Verifications

First Author
Katerina Winters
Morehead State University

2:00 * - Safety Engineering for a CubeSat: Materials and Usage Requirements
<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:15</td>
<td>The ThinSat Program: Flight Opportunities and the Future of Small Satellites</td>
<td>Akira King, Christopher Coleman, Robert Twiggs, Aaron Zucherman, Jose Garcia, Matt Craft, Amin Djamshidpour, Regan Smith, Hank Voss, Jeff Dailey, Matt Orvis</td>
</tr>
</tbody>
</table>

**Environmental Science - Oral Presentations**

Friday, November 2, 2018  1:15pm - 3:15pm

**WITHDRAWN - A synoptic focus on the January 2016 blizzard and tornado event using satellite and radar imagery**

**WITHDRAWN - American Chestnut Reintroduction in Kentucky: a GIS Approach**

**1:45 - An Index-Based Assessment of Tourism Development Impacts on Cold-Climate Hydrologically-Dominant Landscapes**

Jason Fox, Leslie North, Jason Polk, Sydney Herndon

**2:00 * - Analysis of the Bioaccumulation of Methylmercury in the Organs and Tissues of Bald Eagles**

Evan Hendrickson

**2:15 - Assessment of Emerald Ash Borer Related Canopy Gaps in Kentucky Using Drone-Based Remote Sensing and Plot-Level Data**

Brandon Preece, Richard Cristan
## 2:30 - Comparison of Benthic Macroinvertebrate Sampling Methods on Non-Wadeable Waters: A Study Proposal

<table>
<thead>
<tr>
<th>First Author</th>
<th>Co-author</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ed Wilcox</td>
<td>Richard Cristan</td>
</tr>
<tr>
<td>Kentucky State University</td>
<td>Kentucky State University</td>
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</table>

## 2:45 - Ecosystem Exchange of Carbon Dioxide of a Grazed Pasture in Central Kentucky

<table>
<thead>
<tr>
<th>First Author</th>
<th>Co-author</th>
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</thead>
<tbody>
<tr>
<td>Ian Ries</td>
<td>Maheteme</td>
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<tr>
<td>Kentucky State University</td>
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<td>Kentucky State University</td>
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## 3:00 - Opportunities for collaborative research and education at a network of field stations in Kentucky

<table>
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<tr>
<th>First Author</th>
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<tr>
<td>Stephen Richter</td>
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<tr>
<td>Eastern Kentucky University</td>
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**Friday, November 2, 2018  1:15pm - 3:15pm**

#### Geology - Oral Presentations

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>First Author</th>
<th>Co-author</th>
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<tbody>
<tr>
<td>1:15</td>
<td>A Geochemical Comparison of two Telogenetic Karst Springs During Reverse Flow, Mammoth Cave, Kentucky</td>
<td>Chelsey Kipper</td>
<td>Patricia Kambesis, Jason Polk, Western Kentucky University, Western Kentucky University</td>
</tr>
<tr>
<td>1:30</td>
<td>Do Radioactive Black Shales Potentially Affect Human Health as well as Water Quality of Streams in Eastern Kentucky?</td>
<td>Mitchell Grothaus</td>
<td>Elizabeth Hereford, Robert Grigsby, Geoffrey Gearner, Geoffrey Gearner, Timothy Hare</td>
</tr>
<tr>
<td>1:45</td>
<td>Fate of Indirect greenhouse gases in Karst Landscapes Associated with Land Use</td>
<td></td>
<td>Co-author</td>
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<tr>
<th>Title</th>
<th>First Author</th>
<th>Co-author 1</th>
<th>Co-author 2</th>
<th>Co-author 3</th>
<th>Co-author 4</th>
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<tbody>
<tr>
<td>2:00 - Incision timing and its relationship to tectonic uplift and</td>
<td>Shelby Bowden</td>
<td>Nahid Gani</td>
<td>Matthijs Van Soest</td>
<td>Royhan Gani</td>
<td>Paul O'Sullivan</td>
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<tr>
<td>climate change: using thermochronology to unravel Ethiopia's</td>
<td>Western Kentucky University</td>
<td>Western Kentucky University</td>
<td>Arizona State University</td>
<td>Western Kentucky University</td>
<td>GeoSeps Services LLC</td>
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<td>2:15 - Mass-Transport Deposits in the Northern Gulf of Mexico and</td>
<td>Michael Arthur</td>
<td>M. Royhan Gani</td>
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<td>Their Implications to Hydrocarbon Exploration</td>
<td>Western Kentucky University</td>
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<td>2:30 * - Spectral Analysis of Analog Lunar and Martian Mineral</td>
<td>Madison Howard</td>
<td>Marianne Peterson</td>
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<tr>
<td>Samples</td>
<td>Morehead State University</td>
<td>St. Olaf</td>
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<td>Howard University</td>
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<tr>
<td>2:45 - Stratigraphic Controls on Cave Passage Development of Dogwood</td>
<td>Patricia Kambesis</td>
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<td>Cave, Hart, County, Kentucky</td>
<td>Western Kentucky University</td>
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<td>3:00 - Tekeze River Incision Constrained from Apatite (U-Th)/He</td>
<td>Jacob Grigsby</td>
<td>Nahid Gani</td>
<td>Shelby Bowden</td>
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<td>Dating</td>
<td>Western Kentucky University</td>
<td>Institution</td>
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</table>
### 1:15 * - Effect of Growth Temperature on Mycoplasma iowae Pathogenicity

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<thead>
<tr>
<th>First Author</th>
<th>Co-author</th>
<th>Co-author</th>
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<tbody>
<tr>
<td>Brittany Boyken</td>
<td>Justin Fraizer</td>
<td>Rachel Pritchard</td>
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<td>Kentucky Wesleyan</td>
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### 1:30 - Host range shift of H3N8 canine influenza virus: A phylodynamics approach to delineate its origin and its adaptation

First Author
Alexander Lai
**Kentucky State University**

### 1:45 * - Novel Inactivation of the Causative Fungus of White Nose Syndrome with Methoxsalen and Ultraviolet A Light

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<tr>
<th>First Author</th>
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<tbody>
<tr>
<td>Colin Hartman</td>
<td>Riley James</td>
<td>Joseph Mester Ph.D.</td>
<td>Alan Cohen M.D.</td>
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<tr>
<td>Northern Kentucky</td>
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<td>University</td>
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### 2:00 * - Potential Use of Essential oils as Alternative Treatment for Bacterial Skin Infections

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<th>First Author</th>
<th>Co-author</th>
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<tbody>
<tr>
<td>Clarissa Gearner</td>
<td>Simran Banga</td>
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<tr>
<td>Western Kentucky</td>
<td>Western Kentucky</td>
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<td>University</td>
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### 2:15 - UV Treatment of Environmental Fungi

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<th>First Author</th>
<th>Co-author</th>
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<th>Co-author</th>
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<tbody>
<tr>
<td>Ashley Wentworth</td>
<td>Joseph Mester</td>
<td>Colin Hartman</td>
<td>Alan Cohen</td>
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<td>Northern Kentucky</td>
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### 2:30 * - Metal and antibiotic cross-resistance among bacteria isolated from the Kentucky River

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<thead>
<tr>
<th>First Author</th>
<th>Co-author</th>
<th>Co-author</th>
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<tbody>
<tr>
<td>William Fenske</td>
<td>William Staddon</td>
<td>Valerie Peters</td>
</tr>
<tr>
<td>Eastern Kentucky</td>
<td>Eastern Kentucky</td>
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**Friday, November 2, 2018 1:15pm - 6:00pm**

**Practice Room**

**DSU 2081**

This space is available for speakers to practice their presentations.
Practice Room

DSU 3004

This room is available for speakers to practice their presentations.

Friday, November 2, 2018 1:15pm - 6:00pm

Poster Session and Social Hour

Asterisk* denotes student research competition

Downing Student Union, Second & Third floors

Light refreshments will be served. Poster presenters will be at their posters during the session, and posters will remain up until the end of the day on Saturday.

Friday, November 2, 2018 2:59pm - 6:00pm

Agricultural Science - Poster Presentations

1. - Accumulation of Heavy Metals in Fruits of Plants Grown in Recycled Sewage Sludge

First Author    Co-author
ERIC TURLEY    George Antonious
Kentucky State    Kentucky State
University    University

WITHDRAWN - Applicability of waste-reared black soldier fly larvae as an ingredient in the diet of Nile tilapia


First Author    Co-author
Nathan Folz    Iin Handayani
Murray State    Murray State
University    University

4. * - Assessing Soil Quality Indicators in No-Till and Conventional Tillage Systems: Study Case: IL, IN, and KY

First Author    Co-author
Riley Mabe    Kaeden Mollett
Murray State    Murray State
University    University

5. * - Assessing the Rising Plate Meter Method to Determine Forage Production on Organic Dairies

First Author
### 6. * - Comparing Characteristics of Soil under Various Management Conditions in Western Kentucky

First Author: River Dowell  
Co-author: Iin Handayani  
Murray State: Murray State  
University: University

### 7. * - Comparing Soil Properties between Corn and Soybean Conventional Tillage Practices

First Author: Jake Owen  
Co-author: Alex Fichter  
Murray State: Murray State  
University: University

### 8. * - Economic Viability of Municipal Compost and Equine Stall Waste as Media Amendments in an In-Ground Pot-in-Pot Production

First Author: Ashley Robert  
Co-author: Alyx Shultz  
Murray State: Murray State  
University: University

### 9. * - Effects of live yeast supplementation on rumen bacterial diversity of beef cattle

First Author: Kyle Cannon  
Co-author: Megan Mccoun  
Kentucky State: Kentucky State  
University: University

### 10. * - Effects of live yeast supplementation on rumen fluid metabolome of beef cattle

First Author: Megan Mccoun  
Co-author: Kyle Cannon  
Kentucky State: Kentucky State  
University: University

### 11. - Effects of water soluble fertilizers on growth performance of lotus plants in containers

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

### 12. * - Evaluation of Soil Response to the Applications of Ammonium Nitrate and Horse Manures

First Author: Sarah Forden  
Co-author: Kyle Hanenberger  
Murray State: Murray State  
University: University
13. - Food Safety Perceptions and Behaviors of Kentucky Farmer Market Consumers

First Author
Hanna(John) Khouryieh
Western Kentucky University

Co-author
Marlain Khouryieh
Western Kentucky University

14. - Grafting success of eleven pawpaw cultivars and advanced selections using four grafting methods

First Author
Sheri Crabtree
Kentucky State University

Co-author
Jeremy Lowe
Kentucky State University

Co-author
Kirk Pomper
Kentucky State University

Co-author
Kirk Pomper
Kentucky State University

15. * - Growth of Pawpaw (Asimina triloba) Seedlings in Two Commercially Available Potting Mixes

First Author
Aidan Thompson
Kentucky State University

16. - Impact of aerobic compost tea on growth of Lactuca sativa

First Author
Ella Potts
Murray State University

Co-author
Jessica Stoner
Murray State University

Co-author
Lin Handayani
Murray State University

Co-author
Alyx Shultz
Murray State University

17. - Impact of integrated crop-livestock rotation including small ruminants on nitrate and phosphorus concentrations in water

First Author
Ellyn Anthony
Kentucky State University

Co-author
Shawn Lucas
Kentucky State University

Co-author
Derek Law
Kentucky State University

Co-author
Tony Silvernail
Beyond the Bridge Organic Farm

Co-author
Blake Van Sanford
Kentucky State University

18. - Investigating the Impact of Soil Amendments on Eggplant Production

First Author
Yogendra Upadhyaya
Kentucky State University
**19. - Longitudinal Histological Study of Nosema ceranae in Honey Bees**

*First Author*
Katherine Kamminga  
Kentucky State University  

*Co-author*
Thomas Webster  
Kentucky State University

*Co-author*
Martin Matisoff  
Kentucky State University


*First Author*
Samantha Peterson  
Murray State University  

*Co-author*
Lin Handayani  
Murray State University

*Co-author*
Alix Shultz  
Murray State University

*Co-author*
Brian Parr  
Murray State University

**21. - The Effect of Sulfur and Copper Fungicides on June Drop of Pawpaw Fruit.**

*First Author*
Sijan Pandit  
Kentucky State University  

*Co-author*
Jeremiah Lowe  
Kentucky State University

*Co-author*
Sheri B Crabtree  
Kentucky State University

*Co-author*
Kirk William Pomper  
Kentucky State University

**22. - Variation in annonaceous acetogenins activity in twig tissues of pawpaw varieties and new advanced selections using.....**

*First Author*
HARRY MOMO  
Kentucky State University  

*Co-author*
Jeremiah Lowe  
Kentucky State University

*Co-author*
Sheri Crabtree  
Kentucky State University

*Co-author*
Kirk Pomper  
Kentucky State University

**23. - Yield Performance of 'Prime-Ark® 45' and 'Black Magic' Grown Organically in Kentucky**

*First Author*
Jeremiah Lowe  
Kentucky State University  

*Co-author*
Kirk Pomper  
Kentucky State University

*Co-author*
Sheri Crabtree  
Kentucky State University

**Anthropology and Sociology - Poster Presentations**

**24. - Ethnographic Study of Ohio River Barge Deckhands**

*First Author*
25. - Preliminary Results From 2017 NKU Excavations at the Glacken Site (15BE272), Big Bone Lick State Historic Site

First Author
Alessa Rulli
Northern Kentucky University

26. * - Multidisciplinary Approaches to Research and Abolitionism Through the Parker Academy

First Author
Andrea Shiverdecker
Northern Kentucky University
Co-author
Samantha Hamilton
Northern Kentucky University
Co-author
Cooper Pfalz
Northern Kentucky University

27. * - Uncovering the Women of Parker Academy

First Author
Delaney Gilliam
Northern Kentucky University
Co-author
Lyndsey McNabb
Northern Kentucky University

Friday, November 2, 2018 3:00pm - 6:00pm

Botany - Poster Presentations

28. * - Cultivation of Peanuts in Oak Tree Saw Dust to Increase Resveratrol

First Author
Wendy Cecil
Western Kentucky University

Friday, November 2, 2018 3:00pm - 6:00pm

Cellular and Molecular Biology - Poster Presentations

29. - A Genetic Screen for Proteins Involved in ASP Invasion of the Wing Disc of Drosophila melanogaster

First Author
Anas Gondal
Western Kentucky University
Co-author
Hasan Salim
Western Kentucky University
Co-author
Ajay Srivastava
Western Kentucky University

30. * - Cerebellar gene expression of cabin1

First Author
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<th>Title</th>
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<th>Institution</th>
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<tr>
<td>31. * - Characterization of a Basement Membrane Associated Protein</td>
<td>Aref Ranjbar</td>
<td>Ajay Srivastava</td>
<td>Western Kentucky University</td>
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<td>32. - Cloning Lectins for the Detection of Flavivirus Nonstructural Protein 1</td>
<td>Natalie Mercer</td>
<td>Krystal Hamorsky</td>
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<td>33. - Cysteine Thiol Directed Chemical Modification of a KCNE1 Protein N-Terminus</td>
<td>Sharman N</td>
<td>Keenan Taylor</td>
<td>Berea College</td>
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<td>34. * - Damage to Danio Rerio’s Developing Neuromuscular Junction Could Lead to Expanded Synaptic Plasticity</td>
<td>Diana Schweitzer</td>
<td>Dena Weinberger</td>
<td>Murray State University</td>
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<td>35. * - De Novo Prediction of the Tail and Capsid Structure of Mycobacteria Phage MooMoo</td>
<td>Alexander Stewart</td>
<td>Claire Rinehart</td>
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<td>36. - Detection of antibiotic resistance genes using engineered zinc finger proteins immobilized on the silane polymer-coated</td>
<td>Jiyoung Shim</td>
<td>Moon-Soo Kim</td>
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<td>37. * - Effect of HER2 expression on NUPL2 protein in cervical cancer cells</td>
<td>Tristan Haight</td>
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38. - Evaluation of Genes that May Mediate Individualization in Spermatogenesis

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<td>Olivia Honaker</td>
<td>Darren Paris</td>
<td>Douglas Harrison</td>
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39. - Examining how the FGF signaling pathway effects gene expression within the pharynx during embryonic development

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40. - Examining the Role that Iroquois Genes Play During Embryonic Development

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41. - Fishing for fertility: Creating a PAM-1 substrate trap to isolate novel fertility-governing proteins

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42. - Generation of a transgenic beta cell line for study of Glis3 using CRISPR/Cas9 technology

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43. - Generation of transgenic zebrafish line by CRISPR/Cas9 to evaluate pancreas development and function

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44. * - Integrin $\beta1$ Promotes Kras-Mutated Lung Cancer Proliferation Via Mapk-Independent Mechanism

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<td>Kateryna Nabukhotna</td>
<td>Scott Haake</td>
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<td>Vanderbilt University</td>
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45. * - Investigating a transient expression system in Nicotiana Benthamiana for the production of Novel TALE Proteins

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46. * - Platinum Leaving Ligand Effects on Mammalian Cells

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<td>B.Blairanne Williams</td>
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47. * - Potential for the green alga Chlamydomonas reinhardtii to degrade lignin

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48. * - Role of Shear Stress on Endothelial Insulin Sensitivity

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<td>Thaysa Ghiarone</td>
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49. - Spinal Cord Injury and its effect on Circadian Rhythm

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<td>Charles Thaler</td>
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<td>KBRIN</td>
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50. * - The Bioinformatics of Mycobacteriophage Drake94

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<td>51. * - The effect of light pollution on immunoresponse and neurogenesis in zebra finches</td>
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<td>52. * - The Effects of Acute Sleep Fragmentation on Microglial Cells</td>
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<td>53. * - The effects of oxidative stress on p75NTR signaling in dopaminergic neurons.</td>
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<td>54. - The FGF signaling pathway plays an important role regulating gene expression in developing Xenopus laevis embryos</td>
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<td>55. - The Role of Polarity Genes in Esophageal Adenocarcinoma Metaplasia</td>
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<tr>
<td>56. * - Therapeutic and toxicity profile of Pt-Mal-LHRH, a target direct chemotherapeutic for triple negative breast cancer.</td>
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### Chemistry: Analytical/Physical - Poster Presentations

#### 57. * - The Chemical Characterization of Kentucky Honeys

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<td>Rebecca Jenkins</td>
<td>Chelsea Fitzpatrick</td>
<td>Brandon Van Ness</td>
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#### 58. * - Profiling whiskey fungus using the gas chromatography/mass spectrometry and laboratory serial dilutions methods

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<td>Amber Persons</td>
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#### 59. * - Solid Phase Extraction of Tylosin from Cattle Waste With Determination by Liquid Chromatography Mass Spectrometry

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<tr>
<td>Anne Carlisle</td>
<td>Keerthi Appala</td>
<td>Eric Conte</td>
<td>John Kasumba</td>
<td>Getahun Agga</td>
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<td>John Loughrin</td>
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#### 60. * - Temporal Trend of Illicit and Neuropsychiatric Drug Consumption

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<td>Brittney Nelson</td>
<td>Tara Croft</td>
<td>Bikram Subedi</td>
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#### 61. * - Using the Liquid Sampling-Atmospheric Pressure Glow Discharge with Capillary Channeled Polymer Fibers for Analysis of Pr

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<tr>
<td>Daisy Sullivan</td>
<td>Dr. R. Kenneth</td>
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<td>Berea College</td>
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<td>Clemson University</td>
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#### 62. * - Application of an Analytical Assay for Quantification of Polyphosphate Using Silicon Photonic Microring Resonators

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<tr>
<td>Beau Schweitzer</td>
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<td>University of Michigan</td>
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#### 63. * - Purification and Analysis of LHRH using HPLC
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<th>Co-author</th>
<th>Institution</th>
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<tr>
<td>64. - Detection of Polyions with Pulsed Chronopotentiometry - Screening Antidotes for the Anticoagulants Low Molecular Heparin</td>
<td>Sean Greer</td>
<td>Kebede Gemene</td>
<td>Eastern Kentucky University</td>
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<tr>
<td>65. * - Determination of Ochratoxin A in Kentucky Black Walnuts</td>
<td>Kyle Rowe</td>
<td>Bruce Branan</td>
<td>Asbury University</td>
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<tr>
<td>66. * - Investigating the Diffusion Behavior of Analytes subjected Peak Parking Capillary Electrophoresis</td>
<td>Lauren Rigg</td>
<td>John Burden</td>
<td>Northern Kentucky University</td>
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<tr>
<td>67. * - Predicted Protein Structure and Function of the Bacteriophage: Mithril</td>
<td>Moria Magre</td>
<td>Kasey Clear</td>
<td>Spalding University</td>
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<td>68. * - Modeling Molecular Relaxation Dynamics for Diatom Clathrates</td>
<td>Levi Curtis</td>
<td>Jeremy Maddox</td>
<td>Western Kentucky University</td>
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<td>69. * - Protocols for UHF and UCCSD Potential Energy Curves</td>
<td>Elizabeth Hedrick</td>
<td>Sebastian Jezowski</td>
<td>Murray State University</td>
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<td>69.5 * - Unraveling Subtle Intermolecular Interactions in Crystals of a Solar Thermal Fuel.</td>
<td>Alexander Thome</td>
<td>Kasey Clear</td>
<td>Murray State University</td>
</tr>
</tbody>
</table>
70. - The Effectiveness of Thin Layer Spin Coating Sodium Acetate

First Author
Corey Mattic, Jr.
Kentucky State University

71. * - Avidin Functionalized Coverslips for Model Membrane Imaging

First Author
Sergio Perez Cruz
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Co-author
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Co-author
Lindsey Miller
The University of Tennessee, Knoxville

72. * - Effects of Various Buffers and Parameters on the Structure and Behavior of Stimuli-Responsive Polymers

First Author
Madisyn Hayes
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Co-author
Eric Milner
Northern Kentucky University

73. - A Dispersed REU Program on Theoretically Interesting Molecules (TIM)

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KC Russell
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Co-author
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Grand Valley State University

Co-author
Shannon Biros
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Co-author
Peter Iovine
University of San Diego

Co-author
Jeff Katz
Colby College

Co-author
Kristine Nolin
University of Richmond

Co-author
Ellen Ellen Yezirski
Miami University

74. - Synthesis of Oxacalixarenes from Silyl Protected Precursors

First Author
KC Russell
Northern Kentucky University

Co-author
Kimberly Richards
Northern Kentucky University

Co-author
Bailey Hardey
Northern Kentucky University

Co-author
Rachel Holland
Northern Kentucky University

75. - Catalytic Bis(imino)pyridine Iron Complexes for Carbene Reactions of Diazo Compounds

First Author
Ban Wang
Western Kentucky University

Co-author
Isaac Howard
Western Kentucky University

76. - Interaction of a platinum tri-amine complex having a seven-membered chelate ring with 5'-GMP and N-AcMet
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<td>Synthesis of metal-organic frameworks mimicking carbonic anhydrase enzyme.</td>
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<td>Jae Ko</td>
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<td>An in vitro Study on Skin Protection Across the UV Spectra</td>
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<td>78. *</td>
<td>Phosphonium-containing Poly(ionic liquid) Networks Prepared From Thiol-ene 'Click' Photopolymerization</td>
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<td>Highly efficient and selective oxidation of sulfides catalyzed by manganese corroles with iodosobenzene diacetate</td>
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<td>80. *</td>
<td>Enantioselective Cross Aldol Reactions of Aldehydes</td>
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<td>Chase Slone</td>
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<td>81. *</td>
<td>Investigating the Synthesis of LMA-P2</td>
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<td>Sarah Little</td>
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82. * - Palladium-Catalyzed Heteroarylation Under Microwave Irradiation

**First Author**
Adrianna Goodwin

**Co-author**
Claire Poling

**Northern Kentucky University**

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83. * - Generation and kinetic studies of porphyrin-manganese(IV)-oxo intermediates

**First Author**
Seth Klaine

**Co-author**
Mike Winchester

**Western Kentucky University**

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84. * - Synthesis and photocatalytic properties of three metal-organic framework materials

**First Author**
Hannah Brooks

**Co-author**
Bangbo Yan

**Western Kentucky University**

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85. * - The Syntheses of Heteroatom-activated Antibiotics

**First Author**
Kiah Gledhill

**Co-author**
Sydney Goff

**Kentucky Wesleyan College**

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86. * - Iron Catalyzed Oxidation of Amines to Imines

**First Author**
Rachel Chute

**Co-author**
Rachel Whittaker

**Murray State University**

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87. * - Solid Phase Organic Synthesis of an Antibody Drug Conjugate Linker

**First Author**
Levi Blevins

**Co-author**
Ominica Crockett

**Berea College**

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88. * - Phenylethynyloxacalixarenes Synthesis

**First Author**
Jacolby Gardner

**Co-author**
KC Russell

**University of Kentucky**

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89. * - Synthesis and Mechanism study of Isocoumarin Analogues
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<td>Elizabeth Osifalujo</td>
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<td>Lili Ma</td>
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**90. * - Annulene-Oxacalixarene Hybrids**

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**91. * - Synthesis and reactivity of platinum(II) anticancer drug analogs with unsymmetrical ligands**

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**92. * - Solid Phase Organic Synthesis of an Antibody Conjugate Linker?**

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<tr>
<td>Ominica Crockett</td>
<td>Levi Blevins</td>
<td>Berea College</td>
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**Computer & Informational Sciences - Poster Presentations**

**93. * - Machine Learning in Breast Cancer Detection**

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<tr>
<td>Amanda Hansford</td>
<td>Heba Elgazzar</td>
<td>Morehead State University</td>
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**94. - Encoding and Decoding Messages in Android Applications**

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<tr>
<td>Richard Pike</td>
<td>Western Kentucky University</td>
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**95. * - Smart Routing Schemes for Dynamic Spectrum Access Network Architectures**

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<tr>
<td>Brian Luciano</td>
<td>University of Kentucky</td>
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**96. * - Neighborhood Graphs for Cities in Kentucky: comparison for two distance measures**

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### Ecology - Poster Presentations

#### 97. * - Nutrient Export of the Kentucky River to Detect Possible Eutrophication

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<td>Ieisha Hopwood</td>
<td>Kazi Javed</td>
<td>Tamara Sluss</td>
<td>Li Lu</td>
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#### 98. - Litter Breakdown and Invertebrate Detritivores from a Hydrologically Restored Stream

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<tr>
<td>Jacob Becraft</td>
<td>Amy Braccia</td>
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<td>Graduate Advisor</td>
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#### 99. * - Influence of Salamanders on Leaf Litter Decomposition in Appalachian Headwater Streams

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<td>Emily Jones</td>
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<td>Amy Braccia</td>
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#### 100. - The Effects of Salinity on the Juvenile Freshwater Crayfish Procambarus clarkii

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<td>Alexandra Ghinn</td>
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#### 101. * - Evaluation of biomass and filtration method on eDNA detection of fantail darters (Etheostoma flabellare).

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<td>Kyle Laufenburger</td>
<td>Ben Brammell</td>
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#### 102. * - Use of eDNA in detection of multiple salamander species in eastern Kentucky streams

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<td>Angie Flores</td>
<td>Florene Bell</td>
<td>Kenton Sena</td>
<td>Thomas Maigret</td>
<td>Chi Jing Leow</td>
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#### 103. * - Detection of species using eDNA in high elevation habitats in the Sierra Nevada in Sequoia-
### 104. - Effect of Plastic Microbeads in Two Face Washes on Zebrafish Reproductive Success

**First Author**
Autumn Holley  
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**Co-author**
Indigo Thoman  
**Georgetown College**

**Co-author**
Tracy Livingston  
**Georgetown College**

### 105. - Accessing the Direct Toxicity of the Plant Volatile Indole on Herbivores

**First Author**
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**Co-author**
Abhinav Maurya  
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**Co-author**
Christopher Frost  
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### 106. * - Honeysuckle leaf blight increases leaf loss in Amur honeysuckle

**First Author**
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**Co-author**
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**Co-author**
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### 107. - Ecosystem functional consequences of top predator amphibian mortality due to the invasive shrub, Lonicera maackii

**First Author**
Josey Berta  
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**Co-author**
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### 108. * - Elevated Resistance to AITC in Wild Bacterial Endophytes of Arabidopsis thaliana

**First Author**
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**Co-author**
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### 109. - Differences in plant communities at natural and constructed upland-embedded wetlands in the Daniel Boone National Forest

**First Author**
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**Co-author**
Stephen Richter  
**Eastern Kentucky University**

### 110. - Ecosystem functional consequences of body size variation in an apex predator
111. * - Trophic effects of intraspecific body size variation among exploitative and interference competitors

First Author
Renae Steinberger
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112. * - Determining the Cyanogenic Potential of Two Land Races of Lima Bean, Phaseolus lunatus

First Author
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Co-author
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113. * - Do Drip Tips Benefit Leaves in Both the Understory and Canopy of a Neotropical Rainforest?

First Author
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Co-author
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114. * - Do phenotypically plastic apex predators exhibit discrete patterns of local adaption to their invertebrate prey?

First Author
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Co-author
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115. - Does Life History Variation Mediate the Effects of Disease?

First Author
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Co-author
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116. - A phylogenetic examination of the Pseudanophthalmus cave beetles (Carabidae) of western Kentucky.

First Author
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Co-author
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117. - The Effect of Malathion Toxicity on Zebrafish Caudal Fin Regeneration

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Georgetown College  Co-author  Co-author
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Georgetown College  Georgetown College

Friday, November 2, 2018  3:00pm - 6:00pm

**Engineering - Poster Presentations**

118. - Comparison Study of Various CNN AI architectures for Prediction of Metal Sample Failure based on SEM images
**First Author**
Lawrence Madriaga
**Co-author**
Ivan Novikov
**Co-author**
Morteza Nurcheshmeh

**First Author**
Charles O'Connell
**Co-author**
Eric Rappin

Friday, November 2, 2018  3:00pm - 6:00pm

**Environmental Science - Poster Presentations**

120. - A Karst Disturbance Index Map for Hidden River Cave
**First Author**
Anna Harris
**Co-author**
Patricia Kambesis

**First Author**
Christopher Padgett
**Co-author**
Patricia Kambesis

121. * - A Synoptic Analysis of the 2012 Ohio Valley Heat Wave and an Investigation of the Effect on Public Health in Kentucky

122. - Can remote sensing be used to accurately predict beaver activity?
**First Author**
Melody Feden
**Co-author**
Haluk Cetin

123. * - Case Study of the Significant Cold Temperatures February 14th-20th, 2015
124. - Deriving Climate Statistics based on Kentucky Mesonet Observations

First Author
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125. - The Kentucky Forecasting System

First Author
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Western Kentucky University

126. - Evaluation of gluconic acid for the control of Nosema ceranae, a microsporidian infecting honey bees, Apis mellifera

First Author
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Co-author
Katherine Kamminga
Kentucky State University

Co-author
Thomas Webster
Kentucky State University

127. * - Mercury Bioaccumulation in Bats from Mammoth Cave National Park

First Author
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128. * - Testing Nutrient Levels of Water Kentucky River for Harmful Algae Bloom Forecasting

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Co-author
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Co-author
Javed Kazi
Kentucky State University

Co-author
Tamara Sluss
Kentucky State University

129. * - Use of a Reduced Sulfur Gas Chromatograph with Custom-made Permeation Tube for Analysis of Sulfur Compounds

First Author
Spencer Toms
130. * - Using remote sensing and GIS to study the development of Harmful Algal Blooms in Lake Erie.

First Author
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Co-author
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Co-author
Anna Wilkin
USDA-ARS

Friday, November 2, 2018  3:00pm - 6:00pm

Geography - Poster Presentations


First Author
Josh Durkee
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Co-author
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ECTC

132. * - The Impact of Urban Heat Island Magnitude on Organized Convective Systems

First Author
Logan Twohey
University of Louisville

Co-author
Jason Naylor
University of Louisville

133. * - Comparing water quality variables between first order streams located in agricultural and heavily forested communities

First Author
Caitlin Mullins
Kentucky State University

134. - Trends in Total Suspended Solids (TSS) Discharge of Headwater Streams in Agricultural and Forested Watersheds

First Author
Jarod Jones
Kentucky State University

135. * - Observing Trends in Foodborne Illnesses and Health and Food Codes in the United States

First Author
Megan Paule
Murray State University

136. * - Comparing Accuracy of Supervised Image Classification of Wetlands in the Kentucky River Basin to the NLCD
### Geology - Poster Presentations

**137. * - The spatial distribution of local and organic food availability in Kentucky**

**First Author**
Ariel Smith  
**Kentucky State University**

**Co-author**
Stephen Richter  
**Eastern Kentucky University**

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**138. * - Anthropogenic Impacts on Encrusters in Association with Mercenaria mercenaria in Long Island Sound**

**First Author**
Marie White  
**Murray State University**

**Co-author**
Michelle Casey  
**Murray State University**

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**139. * - Dye Trace Study of Karst Groundwater Flow at Mystery Spring and Wildcat Culvert in Lexington, Fayette County, Kentucky**

**First Author**
Constance Brown  
**Northern Kentucky University**

**Co-author**
Daniel Martin  
**Northern Kentucky University**

**Co-author**
Trende (Trent) Marc Garrison  
**Northern Kentucky University**

**Co-author**
Benjamin Currens  
**University of Kentucky**

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**140. * - Quantifying Hyporheic Flow in Beaver Ponds of Varying Size and Stream Morphology**

**First Author**
Colton Sanders  
**Murray State University**

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**141. - Seismic Interpretation of the North-Central Gulf of Mexico: Implications for Salt Tectonic Modeling**

**First Author**
Adam Mattson  
**Western Kentucky University**
### Health Science - Poster Presentations

**142. * - Altered Immune Cell Profile Contributes to Increase Risk of Heart Disease in Aging Mice**

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<td>Aubrey Melton</td>
<td>Renee Donahue</td>
<td>Marlene Starr</td>
<td>Ahmed Abdel-Latif</td>
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<td>and Pharmacology</td>
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**143. * - Glutamate-Induced Apoptosis on Olfactory Neuroepithelial Progenitors Derived from Bipolar and Non-Bipolar Subjects**

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<td>Kristen Miller</td>
<td>Yonglin Gao</td>
<td>Rifaat El-Mallakh</td>
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**144. * - Relationship between boneless meat yield and the size of Asian carp**

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<td>Kaitlyn Sudd</td>
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**145. * - Parasite load as an indicator for zoonotic disease prevalence in feral cats versus shelter cats**

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<td>Nicole Creeden</td>
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**146. * - Physical Activity and Health Patterns of Berea Trail Town Users**

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<td>Jaden Johnson</td>
<td>Louisa Summers</td>
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<td>Berea College</td>
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**147. * - Effects of corn starch on the textural characteristics of fish meatballs prepared from deboned Asian carp meat.**

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<td>Changzheng Wang</td>
<td>Lingyu Huang</td>
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WITHDRAWN - Assessment of learning styles and learning retention among the elderly population in Frankfort, Kentucky

149. * - Sterilization of Staphylococcus aureus and Pseudomonas aeruginosa using Sanitrol

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<td>Riley James</td>
<td>Joseph Mester</td>
<td>Jonathan Schneider</td>
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150. * - L-Serine Reduces Reactive Oxygen Species Yield in Cisplatin Treated Zebrafish Utricles

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151. * - Role of Gonadal Hormones in Cognitive Impairment Due to Hypovolemic Dehydration

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<td>Evy Perler-Tomboly</td>
<td>University of Kentucky</td>
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152. - Loss of plasmid in plasmid-carrying strains of Escherichia coli treated with phenoxazines

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<td>Larry Sylvester</td>
<td>Padma Thimmaiah</td>
<td>Ashish Pagare</td>
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<td>Paul Grisham</td>
<td>Lindsay Massie</td>
<td>Piya Adris</td>
<td>Sarah Holt</td>
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<td>Darrell Barnes</td>
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153. - Survival time distribution of advanced stage metastatic melanoma among Whites and Minority populations in Florida

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<td>Frederick Bebe</td>
<td>Shasa Hu</td>
<td>Tony Brown</td>
<td>Orien Tulp</td>
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<tr>
<td>Kentucky State</td>
<td>University of Miami, Miller College of Medicine</td>
<td>NIH, National Cancer Institute</td>
<td>University of Science, Arts and Technology</td>
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154. * - The Effect of Chronic Sleep Fragmentation and 6-OHDA on Microglia Activation

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<td>Kristen Eads</td>
<td>Ila Mishra</td>
<td>Noah Ashley</td>
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<td>Western Kentucky</td>
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</table>
155. * - The Health and Economic Impact of the Pinnacle Trails in a Kentucky Trail Town
First Author
Glendy Pineda
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Co-author
Louisa Summers
Berea College

Co-author
Jaden Johnson
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156. * - Vitreous Syneresis in the Human Eye
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Friday, November 2, 2018 3:00pm - 6:00pm

Mathematics - Poster Presentations

157. - Investigating Tire Tracks to Determine a Vehicles Direction
First Author
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Friday, November 2, 2018 3:00pm - 6:00pm

Microbiology - Poster Presentations

158. - Predictive MLS Soccer Ratings
First Author
Taylor Ray
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Friday, November 2, 2018 3:00pm - 6:00pm

159. - A Close Look at the K1 Bacteriophages Capricorn and Dalmuri, Including Similarities and Differences
First Author
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Western Kentucky University

Co-author
Anmol Sandhu
Western Kentucky University

Co-author
Sahil Chhabra
Western Kentucky University

Co-author
Samuel Chang
Western Kentucky University

160. * - An Introduction to the Forms and Functions of the A4 Mycobacteriophage Wizard007
First Author
Samuel Chang
Western Kentucky University

### 161. - Characterization of Mycobacteriophage MooMoo

<table>
<thead>
<tr>
<th>First Author</th>
<th>Co-author</th>
<th>University</th>
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<tr>
<td>Amanda Staples</td>
<td>Rodney A. King</td>
<td>Western Kentucky</td>
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<td>University</td>
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### 162. * - Clostridium isolate growth in a zinc-limited environment

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<th>First Author</th>
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<th>Co-author</th>
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<tbody>
<tr>
<td>Kamila Nurmakova</td>
<td>Christopher Lopez</td>
<td>Eric Skaar</td>
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### 163. * - Effect of Growth Temperature on Mycoplasma iowae Pathogenicity

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<tr>
<td>Christopher Frazier</td>
<td>Brittany Boyken</td>
<td>Rachel Pritchard</td>
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### 164. * - Immunity Repressor Gene Regional Difference May Control Gene Expression of Lytic and Lysogenic Life Cycles

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<td>Sahil Chhabra</td>
<td>Harrison Gover</td>
<td>Samuel Chang</td>
<td>Anmol Sandhu</td>
<td>Claire Rinehart</td>
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### 165. - Role of tRNA modifications in the regulation of pseudohyphal growth in yeast

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<th>First Author</th>
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<td>Kaylee Fox</td>
<td>John Carmen</td>
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<tr>
<td>Northern Kentucky</td>
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### 166. * - Ruin Genome

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<td>Anmol Sandhu</td>
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<td>WKU</td>
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### 167. - The House Sparrow as a Better Model for the Human Gut Microbiome

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<th>First Author</th>
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<tr>
<td>Joshua Nowacki</td>
<td>Jordan Stacy</td>
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<tr>
<td>KBRIN</td>
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</table>
### Physics and Astronomy - Poster Presentations

#### 168. * - Contemporaneous Ground-Based Observations of Blazars Observed with NASA's K2 Mission

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<tr>
<td>Zoe Ward</td>
<td>Michael Carini</td>
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<td>Western Kentucky</td>
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<td>University Dept. of</td>
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#### 169. * - Development of a LabView Controlled Rotational Support System for the Dual Radiation Rotating Scattering Mask

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<tr>
<td>Devon Loomis</td>
<td>Alexander Barzilov</td>
<td>Lawrence Madriaga</td>
<td>Ivan Novikov</td>
<td>Seth Harper</td>
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<td>University of Nevada, Las Vegas</td>
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#### 170. * - Electrochemical Desulfurization and Electroactivity of Molybdenum Disulfide (MoS2) Nanocatalysts on Reduced Graphene

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<th>First Author</th>
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<tr>
<td>Taylor Robinson</td>
<td>Jacob Dobler</td>
<td>Sanju Gupta</td>
<td>Western Kentucky University</td>
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#### 171. * - Engineered Nanocomposite Materials Properties through Embedding of Smaller Nanoparticles in a Polymer Matrix

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<td>Alex Henson</td>
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<td>Alexander Banaszak</td>
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#### 173. * - Graphene-Polymer Thin Film Composite Membranes as Efficient and Anti-fouling Membranes for Water Purification

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<td>Brendan Evans</td>
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<tr>
<td>Molybdenum Disulfide (MoS2) Reduced Graphene Oxide Composites</td>
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<td>175. * - Improving Accuracy of Parity Violation Measurements for</td>
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<td>NOPTREX Experiment at LANL</td>
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<td>176. * - Investigating the Efficacy of Histotripsy on Drug Delivery</td>
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<td>177. * - Microstructure and Properties of Layered Transition</td>
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<td>Metal Carbides (Ti3C2Tx) MXenes Phases</td>
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<td>178. * - Phase transitions in charged black holes</td>
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<td>179. * - Photon Simulation Studies for the Dark Energy Science</td>
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<td>Collaboration (DESC) at LSST (Large Synoptic Survey Telescope)</td>
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<td>180. * - Robotics with Humanoid Robot NAO and Hexapod (Robotic Spider)</td>
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181. * - Self-Assembly of Spheres on a Cone Surface

First Author
Talha Rehman
Berea College

182. * - Systematic Study of the Effect of Incorporation of Carbon Nanotubes into GexSe1-x Glass System

First Author
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Co-author
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Northern Kentucky University
Co-author
Wayne Bresser
Northern Kentucky University
Co-author
Chari Ramkumar
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183. * - XMM-Newton Observations of the Galactic Supernova Remnants G5.9+3.1 and G32.4+0.1

First Author
Lori Porter
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Co-author
Thomas Pannuti
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184. - Time series analysis of the rapid optical variability observed in Blazars with NASA’s K2 Mission.

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185. - Procedure improvement for FAPbI3 perovskite solar cells

First Author
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186. - Measurements of the entanglement of quantum of lights due to spontaneous parametric down conversion

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Co-author
Brian Leist
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Co-author
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Friday, November 2, 2018 3:00pm - 6:00pm

Physiology and Biochemistry - Poster Presentations

187. * - A functional module for a response to low nutrients in Arabidopsis

First Author
Muntathar Alshimary
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DeQuantarius Speed
University of Chicago
Co-author
Jean Greenberg
University of Chicago

188. * - Computational and experimental approaches to study the role of protein modifications by urea
189. * - Disruption of cell adhesion, loss of Arp2/3 complex function in macrophages are not sufficient to induce NF-kB activity

First Author
Imelda Saintilma
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Co-author
Jeremy Rotty
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190. * - Disruption of choline acetyltransferase (ChAT) by congenital mutations: Screening potential therapeutic leads

First Author
Abigail Whitaker
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Co-author
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University of Kentucky

191. * - Dose-dependent induction of circulating SAA, and pulmonary inflammation after ozone exposure: Alzheimer' Disease Link

First Author
Helina Asrat
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192. * - Effects of TEA and 4-AP on Firing Frequency of Proprioceptive Neurons in Crustaceans

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193. * - Mechanism of quinolone resistance in Escherichia coli type II topoisomerases

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Co-author
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194. - P. gingivalis infection debilitates anti-viral immune responses in gingival epithelial cells
195. * - Pharmacological identification of cholinergic receptor subtypes in modulation of neural circuits in D. melanogaster

First Author
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Somasundaram
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196. * - Placental Transfer and Metabolism of FDA-approved Drugs Repurposed for Novel Tocolytic Use

First Author
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Co-author
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Co-author
Lauren Lambert
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Co-author
Jennifer Herington
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197. - Regulation of Programmed Genome Rearrangement in the Sea Lamprey

First Author
Taylor Stewart
Centre College

Co-author
Gena Wilson
Murray State University

Co-author
Cody Saraceno
University of Kentucky

Co-author
Jeramiah Smith
University of Kentucky

198. - TBF-B Pathway in relation to down regulation of PTTG gene expression

First Author
Alanis Morgan
Kentucky Biomedical Research Infrastructure Network

199. * - The Role of Reactive Oxygen Species in Regulating TRPV4 Responses to Stimuli

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Co-author
Larissa Shimoda
Johns Hopkins Div of Pulmonary and Critical Care Medicine
## Psychology - Poster Presentations

<table>
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<tr>
<th>Presentation Title</th>
<th>First Author</th>
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<td>200. * - Appraisal: The Effect of Electronic Media on Decision Making</td>
<td>Yabsira Ayele</td>
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<td>201. * - Sustaining Attention: The Effects of Fidgeting and Break type</td>
<td>briana beckler</td>
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<td>202. * - User Acceptance of Automated Vehicles</td>
<td>Vanessa Jones</td>
<td>Emily Lush</td>
<td>Jorden Crowe</td>
<td>Abigail Mohr</td>
<td>Sydney Young</td>
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<td>203. * - The independence of implicit and explicit sequence learning</td>
<td>Allison Ludwig</td>
<td>Brandi Carey</td>
<td>Gilbert Remillard</td>
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<td>204. * - Amazon Mechanical Turk Responses vs. Student Responses</td>
<td>Emily Lush</td>
<td>Jorden Crowe</td>
<td>Vanessa Jones</td>
<td>Abigail Mohr</td>
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<td>205. - Emphasis and &quot;only&quot; influence sentence interpretation</td>
<td>Victoria Nash</td>
<td>David Potter</td>
<td>Katy Carlson</td>
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206. - An Interactive Earth: Augmented Reality and Hands-On Earth Science Inquiry in Schools

First Author
Olivia Santangelo
Western Kentucky University

207. * - Impact of Problem Based Team Learning on Underserved Students in Introductory Biology and Genetics Courses

First Author
Shelby Diener
Northern Kentucky University

208 * - Effects of Foraging Enrichment Predictability on the Behavior and Space Use of Zoo-housed Elephants

First Author
Cassondra Perkins
Kentucky Wesleyan College

Co-author
Greg Vicino
San Diego Zoo Global

Co-author
Angela Mackey
Kentucky Wesleyan College

209. - Zebrafish Spawning Conditions and Their Effects on Egg Success and Clutch Size

First Author
Sydni Anderson
Murray State University

Co-author
Dena Weinberger
Murray State University

210. * - The Influence of Endotoxic LPS on Primary Sensory Neurons in Crustaceans

First Author
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University of Kentucky

Co-author
Alexandra Stanback
University of Kentucky

Co-author
Kelsi Vela
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Co-author
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Co-author
Allison Lane
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Co-author
Bennett Collis
University of Kentucky

Co-author
Robin Cooper
University of Kentucky

211. - Do Males Adjust Courtship Displays According to Female Feedback?

First Author
Jonathan Eisenhour
Morehead State University

Co-author
Matthew Fossett
Morehead State University

Co-author
David Eisenhour
Morehead State University

213. - Polyandry and polygyny in green salamanders, Aneides aeneus

First Author
Paul Cupp Jr
Eastern Kentucky University

214. * - Comparing the seasonal variation in distribution and abundance of anuran species in Daviess Co, KY.

First Author
Jordan Danflous
Kentucky Wesleyan College

Co-author
Shannon Finerty
Kentucky Wesleyan College

215. * - Overwintering implications for the cercaria of the diagenetic trematode, Proterometra macrostoma

First Author
Sarah Tabor
Berea College

Reception and Plenary at National Corvette Museum
Facilitated by President-Elect Leslie North
Free Shuttles to Corvette Museum begin at 6:30

"Behind the Scenes at the Corvette Cave-In"

Get the inside story from scientists on the now-famous sinkhole at the National Corvette Museum and find out how an interdisciplinary team of scientists and technicians came together to study and repair the sinkhole, as well as develop the Corvette Cave-In Sinkhole Exhibit at the museum.

The reception and plenary are included in your meeting registration, and entrance to the museum is included with this event. Tour the exhibit with your fellow scientists and learn about the cars and the karst!

The 2018 Science Education & Outreach Award will be presented at this program.
available between Downing Student Union, the National Corvette Museum and the Hyatt Place beginning at 6:30pm.

Bring a guest- Guest tickets for this Friday night event are available for $25

**Featured Speakers**

**Jason S. Polk, Ph.D.**  
Associate Professor of Geography and Geology, Western Kentucky University  
He also is the Director of the Center for Human-GeoEnvironmental Studies (CHNGES) and HydroAnlaytical Lab. Dr. Polk earned his doctorate degree from the University of South Florida in Geography and Environmental Science and Policy. His current research investigates climate change, karst landscapes and processes, water resources and sustainability, isotope hydrology and geochemistry, and global climate dynamics. Dr. Polk is a Fellow of the National Speleological Society, Chair of the Geological Society of America Karst Division, and conducts research in various places all over the world, including the Caribbean, Vietnam, Iceland, and elsewhere. Dr. Polk will be speaking about the science of sinkholes and how the team used a variety of geoscience methods to study the NCM sinkhole and plan its remediation.

**Katie Ellison**  
Marketing & Communications Manager, National Corvette Museum & NCM Motorsports Park  
Katie Ellison joined the National Corvette Museum team in 2009 after serving as Marketing Director of the Bowling Green Area Convention and Visitors Bureau. A graduate of Western Kentucky University and Leadership Bowling Green, Katie serves on the boards of the Professional Marketing Association, Bowling Green Area Lodging Association and The Center for Gifted Studies at WKU.

**Ric Federico, PG, CHMM, HEM**  
EnSafe Business Lead and Branch Manager  
Ricardo (Ric) Federico graduated from Western Kentucky University in Bowling Green,
Kentucky in 1994 with a B.S. in Geography and an emphasis in karst hydrogeology. Ric has 24 years of environmental consulting experience, the last 17 of them with EnSafe where he serves as the Branch Manager and Business Lead in their Bowling Green, Kentucky office. Ric’s practice specialties include soil and groundwater investigation & remediation; merger and acquisition support including environmental site assessment; vapor intrusion assessment; and brownfields redevelopment. Ric will talk about EnSafe’s primary contribution to the project, which was vetting assessment options and methods, then designing and conducting a karst geophysical survey of the SkyDome collapse area using microgravity. He will discuss challenges – perceptual, physical, and logistical – to project approval and implementation, discuss hurdles along the way, and summarize the results and excellent correlation with the WKU cave survey data.

S. Craig Smith, PE,
Senior Project Manager, Hayward Baker Inc.

Mr. Smith joined Hayward Baker in 2005 as an Area Manager overseeing the geotechnical construction markets in Tennessee and Kentucky. Currently, he is a Senior Project Manager based in the Knoxville, TN office where he manages Hayward Baker’s large and/or high-risk projects throughout the southeastern United States. Mr. Smith’s primary area of focus is in the drilling and grouting sector consisting of micropile installation, anchored retaining walls, landslide repair, structural underpinning, and grouting techniques for ground improvement including karst mitigation.

Prior to joining Hayward Baker, Mr. Smith worked for a large site development contractor overseeing large bulk earth moving projects, landfill construction projects, and landslide repair projects throughout the southeastern United States. Mr. Smith started his career working for a geotechnical design firm specializing in the design of coal tailing impoundments in the eastern coal fields, landslide mitigation design, and performing design work for various Hayward Baker offices.

Mr. Smith is a Geotechnical Engineer with more than 20 years of experience receiving both his B.S. and M.S. degrees from the University of Tennessee Knoxville in 1992 and 1994 respectively.
Registration Open

Third Floor, Downing Student Union

Saturday, November 3, 2018  7:00am - 4:00pm

Posters on Display

Downing Student Union,
Second & Third floors

Saturday, November 3, 2018  7:58am - 4:00pm

Oral Presentations - Saturday morning

Asterisk * denotes student research competition

Saturday, November 3, 2018  7:59am - 12:00pm

Practice Room

DSU 2081
This room is available for speakers to practice their presentations.

Saturday, November 3, 2018  7:59am - 4:00pm

Practice Room

DSU 3004
This room is available for speakers to practice their presentations.

Saturday, November 3, 2018  7:59am - 4:00pm

Agricultural Science - Oral Presentations

DSU 3005
Section meeting follows talks at 11:45

08:00 - Monensin alters the functional and metabolomic profile of rumen microbiota in beef cattle

First Author  Co-author  Co-author
James Adeyemi  Hank Schweickart  Ibukun Ogunade
Kentucky State  Kentucky State  Kentucky State
University  University  University
<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>First Author</th>
<th>Co-authors</th>
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<tr>
<td>08:15</td>
<td>A Cyanide Group Reduced Cypermethrin Half-Lives on Cucumber Grown Under Greenhouse Conditions</td>
<td>George Antonious</td>
<td>Kentucky State University</td>
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<tr>
<td>08:30</td>
<td>Quantification of tylosin antibiotics and antibiotic resistance genes in cattle waste.</td>
<td>Keerthi Appala</td>
<td>Western Kentucky University</td>
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<td>Eric Conte</td>
<td>Western Kentucky University</td>
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<td>John Kasumba</td>
<td>Western Kentucky University</td>
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<td>Getahun Agga</td>
<td>USDA</td>
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<td>John H Loughrin</td>
<td>USDA</td>
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<td>Anne Carlisle</td>
<td>Western Kentucky University</td>
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<td>08:45</td>
<td>Evaluation of Stocking Density in a Live Holding Recirculating System for Food-size Largemouth Bass, Micropterus salmoid</td>
<td>Sujan Bhattarai</td>
<td>Kentucky State University</td>
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<td>Kenneth Semmens</td>
<td>Kentucky State University</td>
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<tr>
<td>09:00</td>
<td>Rove beetles in blackberry plots bordered by native perennials or pasture and treated with biological insecticides.</td>
<td>Sathya Govindasamy</td>
<td>Kentucky State University</td>
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<td>Karen Friley</td>
<td>Kentucky State University</td>
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<td>Mamata Bashyal</td>
<td>Kentucky State University</td>
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<td>Megan McCoun</td>
<td>Kentucky State University</td>
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<td>Jill Fisk</td>
<td>Kentucky State University</td>
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<td>Krystin Moody</td>
<td>Kentucky State University</td>
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<td>Katherine Buckler</td>
<td>Kentucky State University</td>
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<td>09:15</td>
<td>Parental gender preference as a factor in population sustainability</td>
<td>Elmer Gray</td>
<td>Western Kentucky University</td>
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<td>Sai Pavan Adigarla</td>
<td>Western Kentucky University</td>
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<td>Sravya Patil Bagli</td>
<td>Western Kentucky University</td>
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<td>09:30</td>
<td>Yield of zucchini, Cucurbita pepo, grown in various soil amendments</td>
<td>Quinn Heist</td>
<td>Kentucky State University</td>
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<td>George Antonious</td>
<td>Kentucky State University</td>
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<td>Eric Turley</td>
<td>Kentucky State University</td>
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<td>George Antonious</td>
<td>Kentucky State University</td>
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<td>09:45</td>
<td>Do Online Shoppers Have Knowledge on Community Supported Agriculture Programs?</td>
<td>Wyatt Lucas</td>
<td>Dominique Gumirakiza</td>
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<tr>
<td>10:15</td>
<td>Evaluation of drug-resistant Enterobacteriaceae on produce from small farms.</td>
<td>Tavin Marshall</td>
<td>Shreya Patel</td>
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<td>10:30</td>
<td>Optimizing Non-Phytate Phosphorus in Soybean Meal-Based Diets for Largemouth Bass Micropterus salmoides</td>
<td>Kasondra Miller</td>
<td>Gagan Kolimadu</td>
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<td>10:45</td>
<td>Assessing the Use of Biochar for Immobilization of Trace Elements in Sewage Sludge</td>
<td>Lusekelo Nkuwi</td>
<td>George Antonious</td>
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<td>11:00</td>
<td>Efficacy of a fertilization solution created with testes extraction and maceration in largemouth bass</td>
<td>Amit Sharma</td>
<td>Kenneth Semmens</td>
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</tbody>
</table>
11:30 - Low-Tech hydroponics for beginning and limited resource farmers

First Author
Nanaaishat umar
Kentucky State University

Co-author
Siddhartha Dasgupta
Kentucky State University

Co-author
Richard Bryant
Kentucky State University

Saturday, November 3, 2018 8:00am - 12:00pm

Chemistry: Analytical/Physical - Oral Presentations

08:00 * - Consumption Profiles of Illicit and Neuropsychiatric Drugs in Urban and Rural Communities Using Sewage Epidemiology

First Author
Tara Croft
Murray State University

Co-author
Bikram Subedi
Murray State University

08:15 - Investigating caffeine levels in water sources in Morehead, Kentucky

First Author
Brandon VanNess
Morehead State University

Co-author
Melanie West
Morehead State University

Co-author
Sarah Little
Morehead State University

08:30 * - Various Tools for Quantifying Diffusion of a Model Analyte Set via Capillary Electrophoresis

First Author
Corbin Arrasmith
Northern Kentucky University

08:45 * - Temporal Changes in Dissolved Calcium Levels in Stream and River Waters in Western Kentucky

First Author
Adam Martin
Student

Co-author
Bommanna
Professor

Co-author
Loganathan
Professor

09:00 * - Effect of kappa-carrageenan on the Stability of Oil-in-water Emulsions

First Author
Andrew Ballard
09:30 * - Identifying Fecal Biomarkers of Obesity in Mouse Model Using Proton Nuclear Magnetic Resonance Metabolomics

**First Author**
Yacine Choutri

**Berea College**

**Co-author**
Paul Voziyian

**Vanderbilt University**

**Medical Center**

**Co-author**
Donald Stec

**Vanderbilt University**

**Institute of Chemical Biology**


**First Author**
Ryan Lamb

**Western Kentucky University**

**Co-author**
Matthew Nee

**Western Kentucky University**

10:00 - Incorporation of metal oxides into a polymer substrate for buoyant photocatalysts

**First Author**
Lovence Ainembabazi

**Western Kentucky University**

10:15 - Electrochemical Method for Fabrication of Metal Nanostructures Across Micron Gap Electrodes

**First Author**
Krista Riggins

**Eastern Kentucky University**

**Co-author**
Radhika Dasari

**Eastern Kentucky University**

Saturday, November 3, 2018  8:00am - 12:00pm

**Ecology - Oral Presentations**

**DSU 1037**

**Section meeting follows talks at 11:30**

08:00 - Towards rapid assessment of wetland biological condition using indicator species

**First Author**
Suneeti Jog

**Murray State University**

**Co-author**
Jason Bried

**Murray State**

**Co-author**
Tommi Fouts

**Northeastern State University**

08:15 - Experts and models can agree on species sensitivity values for wetland assessments

**First Author**
Jason Bried
08:30 - Verification of a Vegetation Index of Biotic Integrity (KY-VIBI) and a Rapid Wetland Assessment (KY-WRAM) in western KY

First Author
Elizabeth Malloy
Eastern Kentucky University

Co-author
Stephen Richter
Eastern Kentucky University

Co-author
David Brown
Eastern Kentucky University

Co-author
Kelly Watson
Eastern Kentucky University

Co-author
Michelle Cook
Kentucky Division of Water

08:45 - Does increasing food-web stability mediate the effects of cattle grazing in aquatic ecosystems?

First Author
Hannah Moore
Murray State University

Co-author
Howard Whiteman
Murray State University

09:00 - Population Dynamics and Foraging Ecology of Copperheads in the Red River Gorge, KY.

First Author
Josh Hendricks
Eastern Kentucky University

Co-author
Jesse Sockman
Eastern Kentucky University

Co-author
Kyle Muennich
Eastern Kentucky University

Co-author
Austin Owens
Eastern Kentucky University

Co-author
Stephen Richter
Eastern Kentucky University

09:15 - The Kentucky Arboreal Ant Survey: ant communities among forests and urban greenspaces

First Author
Daniella Prince
University of Louisville

Co-author
Benjamin Adams
Natural History Museum of Los Angeles County

Co-author
Stephen Yanoviak
Department of Biology, University of Louisville

09:30 * - Soil function assessment of urban prairie restoration.

First Author
Sarah Benton
University of Louisville

Co-author
Sarah Emery
University of Louisville

09:45 - Beaver-mediated restoration in a degraded desert ecosystem

First Author
Melody Feden
Murray State
10:15 - Varying duration periods of the herbivore-associated cue differentially affect fitness in P.lunatus and C.annuum

First Author
Grace Freundlich
University of Louisville

Co-author
Liana Greenburg
Wageningen University

Co-author
Sarah Bissmeyer
University of Louisville

Co-author
Carly Nunamaker
University of Louisville

Co-author
Chris Frost
University of Louisville
| Time  | Title                                                                 | First Author                      | University                      | Co-author | University                      | Co-author | University                      | Co-author | University                      | Co-author | University                      | Co-author | University                      |
|-------|----------------------------------------------------------------------|-----------------------------------|---------------------------------|-----------|---------------------------------|-----------|---------------------------------|-----------|---------------------------------|-----------|---------------------------------|-----------|---------------------------------|-----------|---------------------------------|
| 08:00 | Thermoelectric Properties of Graphene-Carbon Nanotube Aerogels as 'Organic' Energy Harvesters | Romney Meek                       | Western Kentucky University      | Sanju Gupta | Western Kentucky University      |           |                                  |           |                                 |           |                                 |           |                                 |           |                                 |
| 08:15 | High Amplitude variable Active Galactic Nuclei                        | Dirk Grupe                        | Morehead State University       |           |                                 |           |                                  |           |                                 |           |                                 |           |                                 |           |                                 |
| 08:30 | Citizen CATE: citizen scientist observations of 2017 total solar eclipse | Richard Gelderman                 | Western Kentucky University      |           |                                 |           |                                  |           |                                 |           |                                 |           |                                 |           |                                 |
| 08:45 | Nanosecond pulsed laser deposition of Pb thin film on Si (111)         | Devon Loomis                      | Western Kentucky University      | Bektur Abdisatarov               | Western Kentucky University      | Ilhom Saidjafarzoda | Western Kentucky University      | Donald Price | Western Kentucky University      | Ali Er       | Western Kentucky University      |           |                                 |           |                                 |
|       |                                                                      |                                   |                                 |           |                                 |           | Mikhail Khenner                  |           |                                 |           |                                 |           |                                 |           |                                 |
| 09:00 | NGC 1566: A Temperamental Changing Look AGN                            | Rebecca Mikula                    | Morehead State University       |           |                                 |           |                                 |           |                                 |           |                                 |           |                                 |           |                                 |
| 09:15 | Fabrication of Aluminum Nanoparticles via Pulsed Laser Ablation for Bacterial Deactivation |                                   |                                 |           |                                 |           |                                 |           |                                 |           |                                 |           |                                 |           |                                 |
09:30 * - Computer Simulation of Atomic-Scale Defects in Intermetallic Compounds

First Author
Christopher Weaver
Northern Kentucky University

Co-author
Matthew Zacate
Northern Kentucky University

09:45 * - Effects of Plastic Deformation and Tensile Strain on Polycrystalline Solids

First Author
Jesse Tapp
Murray State University

Co-author
Dylan Weaver
Murray State University

10:15 * - Dependence of Helium Atmospheric Pressure Plasma Jet-Induced DNA Damage on Voltage Pulse Frequency and Irradiation Time.

First Author
Kemo Jammeh
Berea College

Co-author
Sylwia Ptasinska
University of Notre Dame

10:30 * - Blue Light and UV Blocking Lenses

First Author
Marissa Walls
Morehead State University

Co-author
Jennifer Birriel
Morehead State University

10:45 * - Investigating the Anode Heel Effect at 75kV and 140kV

First Author
Casey Christian
Morehead State University

Co-author
Ignacio Birriel
Morehead State University

Co-author
Michael Gossman
Tri-State Regional Cancer Center

11:00 - Modular Bootstrap Bounds at Finite Central Charge

First Author
Casey Christian
Morehead State University

Co-author
Joshua Qualls
Morehead State University

11:15 * - Energy Determination in the ISS-CREAM Instrument Using Simulations

First Author
Tyler LaBree
Northern Kentucky
11:30 * - Analyses of Jet measurements in Relativistic Heavy Ion Collisions

First Author
Ricardo Santos
Berea College

Co-author
Christine Nattrass
University of Tennessee

Co-author
Soren Sorensen
University of Tennessee

Co-author
Redmer Bertens
University of Tennessee

Co-author
James Neuhaus
University of Tennessee

11:45 * - Nylon or Steel?

First Author
Tanner Tackett
Morehead State University

Co-author
Ignacio Birriel
Morehead State University

13:15 * - X-ray Diffractometry and Compression of Materials

First Author
Hayden Johnson
Murray State University

Co-author
Jacob Hall
Murray State University

13:30 - TESS: Initial Results and Follow-Up Work at the University of Louisville

First Author
Garrison Turner
Big Sandy Community and Technical College

13:45 - A look at Swift observations of the highly variable Active Galactic Nucleus RX J0148-2758

First Author
Parker Poulos
Morehead State University

Co-author
Dirk Grupe
Morehead State University

14:00 - Long term X-Ray and UV monitoring of the Narrow Line Seyfert 1 Galaxy, RXJ2217.9-5941

First Author
Alanna Cavins
Morehead State University

14:15 - An XMM-Newton Observation of the Galactic Supernova Remnant CTB 1 (G116.9+0.2)

First Author
Thomas Pannuti
Morehead State University
14:30 - Night Sky Quality at Mammoth Cave National Park

First Author: Chris Groves  
Co-author: Bobby Carson  
Western Kentucky University  
Co-author: Barclay Trimble  
Mammoth Cave National Park  
Co-author: Vickie Carson  
Mammoth Cave National Park  
Co-author: Dave Spence  
Mammoth Cave National Park

14:45 - System Parameters for the Eclipsing B-star Binary BD+11 3569

First Author: Wesley Ryle  
Co-author: Stephen Williams  
Thomas More College  
Co-author: Terri Perrino  
United States Naval Observatory  
Co-author: Sierra O'Bryan  
Thomas More College

15:00 * - Design and Implementation of a Data Processing and Statistical Analysis Tool for the Unihedron Sky Quality Meter

First Author: Zachary Pater  
Co-author: Jennifer Birriel  
Morehead State University  
Co-author:  

Saturday, November 3, 2018 8:00am - 12:00pm

Physiology and Biochemistry - Oral Presentations

DSU 2123  
Section meeting follows talks at 10:00

08:00 * - Identification of conserved motifs important for Trm732 function in yeast

First Author: Daisy DiVita  
Co-author: Michael Guy  
Northern Kentucky University  
Co-author: Northern Kentucky University

08:15 * - Characterization of the Molecular Diversity of Pulmonary Sensory Neurons

First Author: Issac Domenech  
Co-author: Mark Krasnow  
Berea College  
Co-author: Yin Liu  
Stanford University

08:30 - Graphene oxide-based sensing technology for screening antibiotic resistance genes utilizing zinc finger proteins

First Author: Dat Thinh Ha
08:45 * - Early Detection of Breast Cancer Through Changes in Amino Acid Metabolism

First Author
David Kelley

Co-author
Kyle Damen
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
Leila Valanejad
Wood Hudson Cancer Research Laboratory

Co-author
Julia Carter
Wood Hudson Cancer Research Laboratory

09:00 * - Expression of Cathepsin L, HSP-90, and MAP kinase pathway proteins in bladder cancer characterized by physiology

First Author
Ryan Moore
Northern Kentucky University

Co-author
Kyle Damon
Wood Hudson Cancer Research Laboratory

Co-author
Zachary Taylor
Wood Hudson Cancer Research Laboratory

Co-author
Julia Carter
Wood Hudson Cancer Research Laboratory

Co-author
James Deddens
University of Cincinnati

Co-author
Larry Douglass
Wood Hudson Cancer Research Laboratory

Co-author
Julia H. Carter
Wood Hudson Cancer Research Laboratory

09:15 * - Mapping the Binding Sites of FATTY ACID SYNTHASE on Chikungunya Viral RNA

First Author
Clara Reasoner
Berea College

Co-author
Yuqi Bian
Vanderbilt University

Co-author
Jeffrey Jian
Vanderbilt University

Co-author
Katherine Rothamel
Vanderbilt University

Co-author
Byungil Kim
Vanderbilt University

Co-author
Manuel Ascano
Vanderbilt University

09:30 * - Expression of translation initiation factor eIF4E and phospho eIF4E is increased in human ovarian cancer.

First Author
Kalin Russell
Wood Hudson Cancer Research Laboratory

Co-author
James Deddens
University of Cincinnati

Co-author
Larry Douglass
Wood Hudson Cancer Research Laboratory

Co-author
Julia H. Carter
Wood Hudson Cancer Research Laboratory

Co-author
Grace Restle
Wood Hudson Cancer Research Laboratory

09:45 * - Developing engineered zinc finger proteins immobilized on acrylamide gel surface as diagnostic probes for detecting path
# Zoology and Botany - Oral Presentations

<table>
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<tr>
<th>Time</th>
<th>Title</th>
<th>First Author</th>
<th>Co-author</th>
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<tbody>
<tr>
<td>08:00</td>
<td>Seasonal variation in the communication system of the field cricket Gryllus rubens (Orthoptera: Gryllinae)</td>
<td>Caleb Sedlak</td>
<td>Oliver Beckers</td>
<td>Nicholas Norman</td>
<td>Jacob Pease</td>
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<td>08:15</td>
<td>The kinematics of envenomation by the yellow stingray, Urobatis jamaicensis</td>
<td>Steve Huskey</td>
<td>Ruth Hughes</td>
<td>Kristen Pedersen</td>
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<td>WKU</td>
<td>University of Notre Dame</td>
<td>University of Southern California</td>
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<tr>
<td>08:30</td>
<td>Effect of sleep loss on cognitive function and baseline plasma corticosterone levels in an arctic-breeding songbird</td>
<td>Brett Hodinka</td>
<td>Noah Ashley</td>
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<td>Western Kentucky</td>
<td>University</td>
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<tr>
<td>08:45</td>
<td>New Discoveries of Relationships in Spider Beetles and Related Families Using Molecular Phylogenetics</td>
<td>Olivia Gearner</td>
<td>Keith Philips</td>
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<td>09:00</td>
<td>Heritable Behavioral Tendencies of the African Lion</td>
<td>Natalie Mercer</td>
<td>Milan Lstibárek</td>
<td>Jan Stejskal</td>
<td>Shannon Finerty</td>
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<td>Kentucky Wesleyan</td>
<td>Czech University of Life Sciences Prague</td>
<td>Czech University of Life Sciences Prague</td>
<td>Kentucky Wesleyan College</td>
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<tr>
<td>09:15</td>
<td>Courtship behavior, communication, and copulation in Tigrosa annexa</td>
<td>Samuel White</td>
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</table>
WITHDRAWN - Genealogical history and admixture proportion of tiger salamanders in Black Lake, Mono County, California.

09:45 * - Bioenergetic measurements of macroinvertebrates in northern temperate streams using digital technologies.

First Author
Rachel Prokopius
Northern Kentucky University

Co-author
John Piccolo
Karlstad Universitet

Co-author
Eva Bergman
Karlstad Universitet

Co-author
Larry Greenberg
Karlstad Universitet

Co-author
Denis Lafage
Karlstad Universitet

Co-author
Richard Durstche
Northern Kentucky University

10:15 - Growth and Reproduction of the Bigeye Shiner, Notropis boops

First Author
Matthew Fossett
Morehead State University

Co-author
Jon Eisenhour
Morehead State University

Co-author
David Eisenhour
Morehead State University

10:30 - Canopy Conditions and Light Availability as Predictors of Running Buffalo Clover Population Trajectories

First Author
Jessica King
Eastern Kentucky University

Co-author
Jennifer Koslow
Eastern Kentucky University

10:45 * - Molecular analysis of glyceraldehyde 3-phosphate dehydrogenase genes in Ragweed (Asteraceae).

First Author
Kiana Mattingly
Bellarmine University

Co-author
Robert Day
Bellarmine University

Co-author
Joann Lau
TLH

Co-author
David Robinson
Bellarmine University

11:00 - A Statistical Approach to Defining the Typical Herbarium

First Author
Maggie Whitson
Northern Kentucky University

Saturday, November 3, 2018 9:00am - 3:00pm
### Exhibitors Tables

Third Floor, Downing Student Union

Visit our Exhibitors to find out about career opportunities, graduate schools, and to connect to great services & resources!

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### Statistics consultations

**DSU 3018**

Calling all researchers! Take advantage of the experts at UK's Applied Statistics Lab, courtesy of KBRIN! If you have data you're working with now, or if you're still designing a project, let the statistics experts help you sort out your data analysis. Find out more and make an appointment in advance: [https://www.kyscience.org/statistics_consults_at_kas.php](https://www.kyscience.org/statistics_consults_at_kas.php)

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### Student Competition Awards

Third Floor, Downing Student Union

All day Saturday we'll be announcing student competition winners. Come check the screen by the registration desk to see winners. Student winners, we'll be taking your photos to post on our website.

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### Past Presidents Lunch & Annual Business Meeting

Cupola Room (inside Fresh Dining Hall)

All KAS members are welcome to this meeting. At this time there are no more lunch tickets available but we are making arrangements for anyone to attend the meeting who wishes to join us.

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### Oral Presentations - Saturday Afternoon

Asterisk * denotes student research competition

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### Chemistry: Organic/Inorganic - Oral Presentations

DSU 3007

Section meeting follows talks at 3:00

*First Author*
Junhao Huang
*Western Kentucky University*

**13:30** - Heteroaryl Isocoumarins as Potential Aromatase Inhibitors: Substrate Scope Investigation

*First Author*
Quynh Nguyen
*Northern Kentucky University*
*Co-author*
William Renzenbrink
*Northern Kentucky University*
*Co-author*
Stephen Ramirez
*Northern Kentucky University*
*Co-author*
Lili Ma
*Northern Kentucky University*

**13:45** - Discovery of New Heteroaryl Aromatase Inhibitors through Computer Modeling

*First Author*
Ayanav Roy
*Northern Kentucky University*
*Co-author*
Matthew Neiser
*Northern Kentucky University*
*Co-author*
Stephen Ramirez
*Northern Kentucky University*
*Co-author*
Andrew Quillen
*Northern Kentucky University*
*Co-author*
Lili Ma
*Northern Kentucky University*

WITHDRAWN - Pyridine N-Oxide Assisted Activation of Alkynes by Visible Light Photo-Redox Catalysis

**14:15** - Synthesis and structures of a 3D porous metal-organic framework \([\text{Fe(bpc)}]\)

*First Author*
Cristina Throckmorton
*Western Kentucky University*

**14:30** - Synthesis and Biological Evaluation of Heteroaryl Ketones

*First Author*
Stephen Ramirez
*Northern Kentucky University*
*Co-author*
Quynh Nguyen
*Northern Kentucky University*
*Co-author*
Alexander Rosen
*Northern Kentucky University*
*Co-author*
Matthew Neiser
*Northern Kentucky University*
*Co-author*
Ayanov Roy
*Northern Kentucky University*
*Co-author*
Lili Ma
*Northern Kentucky University*

**14:45** - Synthesizing Cleavable Antibody Drug Conjugates via Solid Phase Organic Synthesis

*First Author*
Michael James
*Berea College*
*Co-author*
Levi Blevins
*Berea College*
*Co-author*
Ominica Crockett
*Berea College*
*Co-author*
Elizabeth Thomas
*University of Pikeville*
<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>First Author</th>
<th>Co-author</th>
</tr>
</thead>
<tbody>
<tr>
<td>13:15</td>
<td>Inadvertent local climate modification at a regional university in Kentucky, USA</td>
<td>Donald Yow</td>
<td>Matthew Ruggless</td>
</tr>
<tr>
<td>13:30</td>
<td>URBAN HEAT AND DEMOGRAPHIC CHANGE: A COMPARATIVE ANALYSIS OF THE LARGEST 100 CITIES OF THE TEMPERATE-FORESTED ECOREGION</td>
<td>Tori Farrow</td>
<td>Jeremy Sandifer</td>
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<td>13:45</td>
<td>Analyzing sanitary sewer overflow event response to storm frequency</td>
<td>Christopher Andrew Day</td>
<td>University of Louisville</td>
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<td>14:00</td>
<td>Comparing Sediment Yield of Selected Forest Ecosystems Using SWAT in Bell Watershed, Kentucky</td>
<td>Aman Bhatta</td>
<td>Buddhi Gyawali</td>
</tr>
<tr>
<td>14:15</td>
<td>Land cover classification and change detection using remote sensing imagery in Morgan County, Kentucky</td>
<td>Saaruj Khadka</td>
<td>Buddhi Gyawali</td>
</tr>
<tr>
<td>14:30</td>
<td>How economic geography might have saved the Mammoth Cave Mushroom Company</td>
<td>Katie Algeo</td>
<td>University of Western Kentucky</td>
</tr>
<tr>
<td>14:45</td>
<td>Observing Boundary Layer Heights over Mountainous Terrain Using Aircraft Vertical Profiles</td>
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</tbody>
</table>
Dallas McKinney
Western Kentucky
University

15:00 - Mapping Opioid Epidemic in Kentucky’s Counties

First Author
Charlie Zhang
University of Louisville

Saturday, November 3, 2018 1:15pm - 4:00pm

Health Science - Oral Presentations

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>First Author</th>
<th>Institution</th>
<th>Co-author</th>
<th>Institution</th>
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</thead>
<tbody>
<tr>
<td>13:15 *</td>
<td>Activation of Human Immune Responses by Novel Vaccines for Hepatitis C Virus</td>
<td>Samuel Adams</td>
<td>Northern Kentucky University</td>
<td>Brett Messmer</td>
<td>Northern Kentucky University</td>
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<td></td>
<td></td>
<td>Co-author</td>
<td></td>
<td>Hunter Morgan</td>
<td>Northern Kentucky University</td>
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<td>Co-author</td>
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<td>Ryan Fitzpatrick</td>
<td>Northern Kentucky University</td>
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<td></td>
<td></td>
<td>Co-author</td>
<td></td>
<td>Joseph Mester</td>
<td>Northern Kentucky University</td>
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</tbody>
</table>

13:30 - Prevalence of Dyslipidemia in Young African Americans

First Author
Bisola Asaolu
Kentucky State University

13:45 * - Epidemiology of HPV-Associated Cancers: Changing Trends and Future Burden

First Author
Yeongha Oh
Berea College

14:00 - Bacterial deactivation by using Graphene quantum dot as an effective photodynamic therapy agent

First Author
Ermek Belekov
Western Kentucky University Physics and Astronomy Department

Co-author
Lauren Cooper
Western Kentucky University Physics and Astronomy Department

Co-author
Kholidkhodzha
Western Kentucky University Physics and Astronomy Department

Co-author
Ilhom Saidjafarzoda
Western Kentucky University Physics and Astronomy Department

Co-author
Michael Smith
14:15 - Effects of alpha & beta-adrenergic receptor blockade upon inflammatory responses & microglia activation to sleep loss.

First Author  Co-author
Nicholas Wheeler  Noah Ashley
Western Kentucky University  Western Kentucky University

Saturday, November 3, 2018  1:15pm - 4:00pm

Mathematics - Oral Presentations

13:15 * - A Study of Non-Linearity in a Simple Pendulum

First Author  Co-author
Ethan Caudill  Jennifer Birriel
Morehead State University  Morehead State University

13:30 * - Using Topology to find Copyright Infringement

First Author
Jeremiah Halter
1997

13:45 - From the Hardwood to the Spreadsheet

First Author
Christopher Napier
Morehead State University

14:00 - Dr. Strangelog or: How I Learned to Stop Worrying and Love the Slide Rule

First Author
Dwight Smith
Kentucky Community and Technical College System

14:15 - Additive 3-Choosability of Planar Graphs with Girth 20

First Author
**14:30 - Rational Points on Circles and the Birch and Swinnerton-Dyer Conjecture**

*First Author*
Andy Martin  
*Kentucky State University*

**14:45 - Applying the Hastings-Metropolis algorithm to chessboard placement problems**

*First Author*
Doug Chatham  
*Morehead State University*

**15:00 - An Examination of Discrete Least Squares Approximation Techniques**

*First Author*
Mark Robinson  
*Western Kentucky University*

**15:15 - Random Operators and Dynamical Localization**

*First Author*
Kyle Besing  
*Kentucky Wesleyan College*

**15:30 - PDE Model for Solid-State Dewetting of a Binary Alloy Thin Film**

*First Author*
Mikhail Khenner  
*Western Kentucky University*

**15:45 - A Deeper Look into Open Coverings of the Rationals that do not Cover the Reals**

*First Author*
Justin Trulen  
*Kentucky Wesleyan College*

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**Saturday, November 3, 2018  1:15pm - 4:00pm**

**Science Education - Oral Presentations**

*DSU 3006*  
Section meeting follows talks at 2:45

**13:15 - Death Knell for le Grand K.**
13:30 - Why do students leave quantitative STEM majors?

First Author
Hannah Brewer
Morehead State University

Co-author
Wilson Gonzalez-Espada
Morehead State University

Co-author
Robert Boram
Morehead State University

13:45 - Evaluating the effectiveness of a concept-map oriented curriculum in a flipped chemistry classroom

First Author
Bharath Kumar
Midway University

14:00 - PowerPoint Reimagined: Enhancing Lessons to Guide Reasoning, Foster Collaboration, and Promote Active Learning

First Author
Kevin Revell
Murray State University

14:15 - Science Seminar Series of WKCTC: Going Strong for 33 Years

First Author
Karen Hlinka
Kentucky Community and Technical College System

14:30 - Middle School Investigation of Global Climate Change

First Author
Shira Rabin
University of Louisville

Co-author
Bennet Kolb
Jefferson County Public Schools

Co-author
Bronwyn Williams
University of Louisville

Co-author
Adam Stieglitz
University of Louisville

Co-author
Mary Brydon-Miller
University of Louisville
13:15 * - Haptic Distance Ratios: The Geometry of Space within the Hands

First Author
Sydney Wheeler
Western Kentucky University

Co-author
Farley Norman
Western Kentucky University

Co-author
Lauren Pederson
Western Kentucky University

Co-author
Catherine Dowell
Western Kentucky University

13:30 * - Water Deposits Connection to Decreased Evidence of Burial Practices in Iron Age Britain and Ireland.

First Author
Amanda Lilly
Northern Kentucky University

1:45 - Five minute presentations

First Author
Poster Presenters

Saturday, November 3, 2018  2:00pm - 5:00pm

Physics Teaching Workshop - Ky Association of Physics Teachers
Ogden College Hall Room 1007

This workshop is open to any registered KAS meeting participant.

Quick links

Guidelines for the Research Paper
Preparing the Presentation
Kentucky Junior Academy of Science Plagiarism Policy
Rules and Policies for Kentucky Junior Academy
Junior Academy Scoring rubric
Video tips: Giving a good Scientific talk
KSU Campus Map
Kentucky State University
Chronicle of the New Researcher publishes research from young scientists