2018 Annual Meeting Program
November 2-3, 2018

Western Kentucky University

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Thank you to our Gold Sponsor

American Society for Biochemistry and Molecular Biology

Thank you to our Morning Break Sponsor

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SCHOOL OF INTERDISCIPLINARY & GRADUATE STUDIES

Thank you to our Afternoon Break Sponsor

SULLIVAN UNIVERSITY
COLLEGE OF PHARMACY
Thank you to our Bronze Sponsor

Thank you to our In-Kind partners

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
<table>
<thead>
<tr>
<th>Event</th>
<th>Location</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kick off the KAS Meeting with a Science-themed mini-film festival,</td>
<td>Downing Student Union 3020</td>
<td>Friday,</td>
<td>9:00am - 11:00am</td>
</tr>
<tr>
<td>complete with popcorn! We've collected a few favorites, including</td>
<td></td>
<td>November 2,</td>
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<tr>
<td>Science in Exile; Short films will change the way you see slime</td>
<td></td>
<td>2018</td>
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<tr>
<td>molds, bats, and the mighty coelacanth!</td>
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<tr>
<td>KAS Governing Board Meeting</td>
<td>Downing Student Union 3029</td>
<td>Friday,</td>
<td>9:00am - 11:00am</td>
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<tr>
<td>Kentucky Organization of Field Stations meeting</td>
<td>Downing Student Union 3004</td>
<td>November 2,</td>
<td>9:30am - 11:30am</td>
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<tr>
<td>Registration Open</td>
<td>Third Floor, Downing Student Union</td>
<td>November 2,</td>
<td>11:30am - 5:00pm</td>
</tr>
<tr>
<td>Poster Presenters check-in</td>
<td>Third Floor, Downing Student Union</td>
<td>November 2,</td>
<td>12:00pm - 2:30pm</td>
</tr>
<tr>
<td>Science Policy &amp; Advocacy workshop</td>
<td>Cupola Room (inside Fresh Dining Hall)</td>
<td>November 2,</td>
<td>12:00pm - 1:00pm</td>
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<tr>
<td>What do scientists need to know about public policy? Do you want</td>
<td></td>
<td>November 2,</td>
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<td>to advocate for science but aren't sure how to start? This workshop</td>
<td></td>
<td>2018</td>
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<td>is for everyone – students and faculty - regardless of discipline,</td>
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<td>who are interested in learning more about the role of science in</td>
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<td>policy-making and in becoming empowered to be a voice for science.</td>
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<td>Our colleagues at the American Society for Biochemistry and</td>
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<td>Molecular Biology will provide practical guidance on how to engage</td>
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<td>in advocacy initiatives at local, state and national levels.</td>
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<td>This event is FULL.</td>
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<tr>
<td>Featured Speakers:</td>
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</table>
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

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<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>First Author</th>
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<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</td>
<td>Rachel Morgeson</td>
<td>Jenna Kappes</td>
<td>Daisy Davita</td>
<td>Kaylee Fox</td>
<td>Northern Kentucky University</td>
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<td>Olivia Gilliam</td>
<td>Jenna Kappes</td>
<td>Daisy Davita</td>
<td>Kaylee Fox</td>
<td>Northern Kentucky</td>
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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</td>
<td>Anschutz Medical</td>
<td>University</td>
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<td>1:45</td>
<td>Investigating How EF-24 and Cisplatin Effect Cancer and Renal Cells</td>
<td>Denis Hodzic</td>
<td>Western Kentucky</td>
<td>University</td>
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<td>2:00</td>
<td>Oxidative stress mediated downregulation of transcription factor Glis3 results in beta cell dysfunction</td>
<td>Erin Clayton</td>
<td>Murray State</td>
<td>Murray State</td>
<td>University</td>
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</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 ß 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
Friday, November 2, 2018 1:15pm - 3:00pm

Engineering - Oral Presentations

DSU 2123  
Section meeting follows talks at 2:30pm

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

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 - 3:15pm

**Environmental Science - Oral Presentations**

**DSU 1037**  
Section meeting follows talks at 3:15

**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**

First Author  
Jason Fox  
Western Kentucky University

Co-author  
Leslie North  
Western Kentucky University

Co-author  
Jason Polk  
Western Kentucky University

Co-author  
Sydney Herndon  
Western Kentucky University

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

First Author  
Evan Hendrickson  
Western Kentucky University

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

First Author  
Brandon Preece  
Kentucky State University

Co-author  
Richard Cristan  
Kentucky State University
2:30 - Comparison of Benthic Macroinvertebrate Sampling Methods on Non-Wadeable Waters: A Study Proposal

First Author | Co-author
--- | ---
Ed Wilcox | Richard Cristan
Kentucky State | Kentucky State
University | University

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

First Author | Co-author | Co-author | Co-author
--- | --- | --- | ---
Ian Ries | Maheteme | Martin Matisoff | Ken Andries
Kentucky State | Gebremedhin | Kentucky State | University
University | Kentucky State | University | University

3:00 - Opportunities for collaborative research and education at a network of field stations in Kentucky

First Author
Stephen Richter
Eastern Kentucky
University

Friday, November 2, 2018 1:15pm - 3:15pm
Geology - Oral Presentations

DSU 3002 | Section meeting follows talks at 3:15

1:15 - A Geochemical Comparison of two Telogenetic Karst Springs During Reverse Flow, Mammoth Cave, Kentucky

First Author | Co-author | Co-author
--- | --- | ---
Chelsey Kipper | Patricia Kambesis | Jason Polk
Western Kentucky | Western Kentucky | University
University | University | University

1:30 - Do Radioactive Black Shales Potentially Affect Human Health as well as Water Quality of Streams in Eastern Kentucky?

First Author | Co-author | Co-author | Co-author | Co-author
--- | --- | --- | --- | ---
Mitchell Grothaus | Elizabeth Hereford | Robert Grigsby | Geoffrey Gearer | Timothy Hare
Morehead State | Morehead State | Morehead State | Morehead State | Morehead State
University | University | University | University | University

Co-author
Charles Mason
Morehead State
University

1:45 - Fate of Indirect greenhouse gases in Karst Landscapes Associated with Land Use

First Author
<table>
<thead>
<tr>
<th>Time</th>
<th>Presentation 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>
</tr>
</thead>
<tbody>
<tr>
<td>2:00</td>
<td>Incision timing and its relationship to tectonic uplift and climate change: using thermochronology to unravel Ethiopia's</td>
<td>Shelby Bowden</td>
<td>Nahid Gani</td>
<td>Matthijs Van Soest</td>
<td>Royhan Gani</td>
<td>Paul O'Sullivan</td>
</tr>
<tr>
<td>2:15</td>
<td>Mass-Transport Deposits in the Northern Gulf of Mexico and Their Implications to Hydrocarbon Exploration</td>
<td>Michael Arthur</td>
<td>M. Royhan Gani</td>
<td>Western Kentucky</td>
<td>University</td>
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<tr>
<td>2:30</td>
<td>Spectral Analysis of Analog Lunar and Martian Mineral Samples</td>
<td>Madison Howard</td>
<td>Marianne Peterson</td>
<td>Prabhakar Misra</td>
<td>St. Olaf</td>
<td>Howard University</td>
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<tr>
<td>2:45</td>
<td>Stratigraphic Controls on Cave Passage Development of Dogwood Cave, Hart, County, Kentucky</td>
<td>Patricia Kambesis</td>
<td>Western Kentucky</td>
<td>St. Olaf</td>
<td>Howard University</td>
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<tr>
<td>3:00</td>
<td>Tekeze River Incision Constrained from Apatite (U-Th)/He Dating</td>
<td>Jacob Grigsby</td>
<td>Nahid Gani</td>
<td>Shelby Bowden</td>
<td>Institution</td>
<td>Institution</td>
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Friday, November 2, 2018  1:15pm - 3:00pm

Microbiology - Oral Presentations

DSU 3006  Section meeting follows talks
1:15 * - Effect of Growth Temperature on Mycoplasma iowae Pathogenicity

First Author
Brittany Boyken
Kentucky Wesleyan College

Co-author
Justin Fraizer
Kentucky Wesleyan College

Co-author
Rachel Pritchard
Kentucky Wesleyan College

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

First Author
Colin Hartman
Northern Kentucky University

Co-author
Riley James
Northern Kentucky University

Co-author
Joseph Mester Ph.D.
Northern Kentucky University

Co-author
Alan Cohen M.D.
Northern Kentucky University

2:00 * - Potential Use of Essential oils as Alternative Treatment for Bacterial Skin Infections

First Author
Clarissa Gearner
Western Kentucky University

Co-author
Simran Banga
Western Kentucky University

2:15 - UV Treatment of Environmental Fungi

First Author
Ashley Wentworth
Northern Kentucky University

Co-author
Joseph Mester
Northern Kentucky University

Co-author
Colin Hartman
Northern Kentucky University

Co-author
Alan Cohen
Northern Kentucky University

2:30 * - Metal and antibiotic cross-resistance among bacteria isolated from the Kentucky River

First Author
William Fenske
Eastern Kentucky University

Co-author
William Staddon
Eastern Kentucky University

Co-author
Valerie Peters
Eastern Kentucky University

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.

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**Poster Session and Social Hour**

Asterisk* denotes student research competition

Downing Student Union, Second & Third floors

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

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.

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**Agricultural Science - Poster Presentations**

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

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

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<tr>
<th>First Author</th>
<th>Co-author</th>
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<tr>
<td>ERIC TURLEY</td>
<td>George Antonious</td>
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<tr>
<td>Kentucky State</td>
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WITHDRAWN - Applicability of waste-reared black soldier fly larvae as an ingredient in the diet of Nile tilapia


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<td>Nathan Folz</td>
<td>Iin Handayani</td>
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4. * - Assessing Soil Quality Indicators in No-Till and Conventional Tillage Systems: Study Case: IL, IN, and KY

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<tr>
<td>Riley Mabe</td>
<td>Kaeden Mollett</td>
<td>Riley Mabe</td>
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5. * - Assessing the Rising Plate Meter Method to Determine Forage Production on Organic Dairies

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<tr>
<td>Sarah Rhodes</td>
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<td>Asbury University</td>
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<td>6. * - Comparing Characteristics of Soil under Various Management Conditions in Western Kentucky</td>
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<td>River Dowell</td>
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<td>University</td>
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<td>First Author</td>
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<td>Jake Owen</td>
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<td>Murray State</td>
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<td>8. * - Economic Viability of Municipal Compost and Equine Stall Waste as Media Amendments in an In-Ground Pot-in-Pot Production</td>
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<td>Ashley Robert</td>
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<td>Murray State</td>
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<td>University</td>
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<td>9. * - Effects of live yeast supplementation on rumen bacterial diversity of beef cattle</td>
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<td>First Author</td>
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<tr>
<td>Kyle Cannon</td>
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<tr>
<td>Kentucky State</td>
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<td>University</td>
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<td>10. * - Effects of live yeast supplementation on rumen fluid metabolome of beef cattle</td>
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<td>First Author</td>
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<td>Megan Mccoun</td>
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<td>University</td>
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<td>11. - Effects of water soluble fertilizers on growth performance of lotus plants in containers</td>
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<tr>
<td>Changzheng Wang</td>
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<td>12. * - Evaluation of Soil Response to the Applications of Ammonium Nitrate and Horse Manures</td>
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<td>Sarah Forden</td>
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<td>13. - Food Safety Perceptions and Behaviors of Kentucky Farmer Market Consumers</td>
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<td>14. - Grafting success of eleven pawpaw cultivars and advanced selections using four grafting methods</td>
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<td>15. * - Growth of Pawpaw (Asimina triloba) Seedlings in Two Commercially Available Potting Mixes</td>
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<td>16. - Impact of aerobic compost tea on growth of Lactuca sativa</td>
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<td>17. - Impact of integrated crop-livestock rotation including small ruminants on nitrate and phosphorus concentrations in water</td>
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<td>18. - Investigating the Impact of Soil Amendments on Eggplant Production</td>
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<td>George Antonious</td>
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<td>Thomas Trivette</td>
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19. - Longitudinal Histological Study of Nosema ceranae in Honey Bees

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<td>Alix Shultz</td>
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21. - The Effect of Sulfur and Copper Fungicides on June Drop of Pawpaw Fruit.

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<td>Sheri B Crabtree</td>
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22. - Variation in annonaceous acetogenins activity in twig tissues of pawpaw varieties and new advanced selections using.....

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<td>Sheri Crabtree</td>
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23. - Yield Performance of 'Prime-Ark® 45' and 'Black Magic' Grown Organically in Kentucky

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

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

First Author
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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

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<td>31. * - Characterization of a Basement Membrane Associated Protein</td>
<td>Krista Dunn</td>
<td>Dena Weinberger</td>
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<td>Apoorva Vashist</td>
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<td>Carmen Bandy</td>
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<td>32. - Cloning Lectins for the Detection of Flavivirus Nonstructural Protein 1</td>
<td>Aref Ranjbar</td>
<td>Ajay Srivastava</td>
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<td>33. - Cysteine Thiol Directed Chemical Modification of a KCNE1 Protein N-Terminus</td>
<td>Natalie Mercer</td>
<td>Krystal Hamorsky</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>
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<td>35. * - De Novo Prediction of the Tail and Capsid Structure of Mycobacteriophage 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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<td>Ryan Oates</td>
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<td>Jacob Adler</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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<td>Elizabeth Wilke</td>
<td>Emily Shifley</td>
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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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<td>Autumn Graves</td>
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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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<td>44. * - Integrin $\beta_1$ Promotes Kras-Mutated Lung Cancer Proliferation Via Mapk-Indepependent Mechanism</td>
<td>Kateryna Nabukhotna</td>
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<td>45. * - Investigating a transient expression system in Nicotiana Benthamiana for the production of Novel TALE Proteins</td>
<td>Colleen Jackson</td>
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<td>46. * - Platinum Leaving Ligand Effects on Mammalian Cells</td>
<td>Emily Nole</td>
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<td>47. * - Potential for the green alga Chlamydomonas reinhardtii to degrade lignin</td>
<td>Meg Dillingham</td>
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<td>48. * - Role of Shear Stress on Endothelial Insulin Sensitivity</td>
<td>Areli Medina Hernandez</td>
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<td>49. - Spinal Cord Injury and its effect on Circadian Rhythm</td>
<td>Charles Thaler KBRIN</td>
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<td>50. * - The Bioinformatics of Mycobacteriophage Drake94</td>
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</table>
51. * - The effect of light pollution on immunoresponse and neurogenesis in zebra finches

First Author
Matthew Knerr
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52. * - The Effects of Acute Sleep Fragmentation on Microglial Cells

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Co-author
Noah Ashley
Western Kentucky University
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Noah Ashley
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53. * - The effects of oxidative stress on p75NTR signaling in dopaminergic neurons.

First Author
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54. - The FGF signaling pathway plays an important role regulating gene expression in developing Xenopus laevis embryos

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Co-author
Emily Shifley
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55. - The Role of Polarity Genes in Esophageal Adenocarcinoma Metaplasia

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Young Koh
Asbury University
Co-author
Pei Guo Ding
University of Texas Southwestern
Co-author
David Wang
University of Texas Southwestern
Co-author
Malinda Stull
Asbury University

56. * - Therapeutic and toxicity profile of Pt-Mal-LHRH, a target direct chemotherapeutic for triple negative breast cancer.

First Author
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EKU
Co-author
Emily McCord
EKU
Co-author
Lindsay Calderon
EKU
Co-author
Margaret Ndinguri
EKU
### Chemistry: Analytical/Physical - Poster Presentations

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

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<td>Rebecca Jenkins</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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<td>Anne Carlisle</td>
<td>Keerthi Appala</td>
<td>Eric Conte</td>
<td>John Kasumba</td>
<td>Getahun Agga</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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<td>Daisy Sullivan</td>
<td>Dr. R. Kenneth</td>
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#### 62. * - Application of an Analytical Assay for Quantification of Polyphosphate Using Silicon Photonic Microring Resonators

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<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
### 64. Detection of Polyions with Pulsed Chronopotentiometry - Screening Antidotes for the Anticoagulants Low Molecular Heparin

**First Author**
Sean Greer

**University**
Eastern Kentucky University

**Co-author**
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Kebede Gemene
Northern Kentucky University

### 65. Determination of Ochratoxin A in Kentucky Black Walnuts

**First Author**
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**University**
Asbury University

**Co-author**
Bruce Branan
Asbury University

### 66. Investigating the Diffusion Behavior of Analytes subjected Peak Parking Capillary Electrophoresis

**First Author**
Lauren Rigg

**University**
Northern Kentucky University

### 67. Predicted Protein Structure and Function of the Bacteriophage: Mithril

**First Author**
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**University**
Spalding University

**Co-author**
John Burden
Spalding University

### 68. Modeling Molecular Relaxation Dynamics for Diatom Clathrates

**First Author**
Levi Curtis

**University**
Western Kentucky University

**Co-author**
Jeremy Maddox
Western Kentucky University

### 69. Protocols for UHF and UCCSD Potential Energy Curves

**First Author**
Elizabeth Hedrick

**University**
Western Kentucky University

### 69.5 Unraveling Subtle Intermolecular Interactions in Crystals of a Solar Thermal Fuel.

**First Author**
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**University**
Murray State University

**Co-author**
Erin Calvert
Kasey Clear
Sebastian Jezowski

**University**
Murray State University
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<td>The Effectiveness of Thin Layer Spin Coating Sodium Acetate</td>
<td>Corey Mattic, Jr.</td>
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<td>Sergio Perez Cruz</td>
<td>Tessa Calhoun</td>
<td>Lindsey Miller</td>
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<td>Avidin Functionalized Coverslips for Model Membrane Imaging</td>
<td>Sergio Perez Cruz</td>
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<td>The University of Tennessee, Knoxville</td>
<td>Tessa Calhoun</td>
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<td>Madisyn Hayes</td>
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<td>Eric Milner</td>
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<td><strong>77. * - Synthesis of metal-organic frameworks mimicking carbonic anhydrase enzyme.</strong></td>
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<td><strong>77.5. - An in vitro Study on Skin Protection Across the UV Spectra</strong></td>
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<td><strong>78. * - Phosphonium-containing Poly(ionic liquid) Networks Prepared From Thiol-ene 'Click' Photopolymerization</strong></td>
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<td><strong>81. * - Investigating the Synthesis of LMA-P2</strong></td>
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<td>Sarah Little</td>
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<td>82. * - Palladium-Catalyzed Heteroarylation Under Microwave Irradiation</td>
<td>Adrianna Goodwin</td>
<td>Claire Poling</td>
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<td>83. * - Generation and kinetic studies of porphyrin-manganese(IV)-oxo intermediates</td>
<td>Seth Klaine</td>
<td>Mike Winchester</td>
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<td>84. * - Synthesis and photocatalytic properties of three metal-organic framework materials</td>
<td>Hannah Brooks</td>
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<td>85. * - The Syntheses of Heteroatom-activated Antibiotics</td>
<td>Kiah Gledhill</td>
<td>Sydney Goff</td>
<td>Kyle Watson</td>
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<td>86. * - Iron Catalyzed Oxidation of Amines to Imines</td>
<td>Rachel Chute</td>
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<td>87. * - Solid Phase Organic Synthesis of an Antibody Drug Conjugate Linker</td>
<td>Levi Blevins</td>
<td>Ominica Crockett</td>
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<td>88. * - Phenylethynyloxacalixarenes Synthesis</td>
<td>Jacolby Gardner</td>
<td>KC Russell</td>
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<td>89. * - Synthesis and Mechanism study of Isoucoumarin Analogues</td>
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</table>
90. * - Annulene-Oxacalixarene Hybrids

First Author  Co-author  Co-author
Elizabeth Osifalujo  Andrew Quillen  Lili Ma
Northern Kentucky University  Northern Kentucky University  Northern Kentucky University

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

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Emily Brown  Nicholas Spark  Eli Biedenbender
Berea College  colleague  colleague
Western Kentucky University  Western Kentucky University

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

First Author  Co-author
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Berea College  Berea College


First Author  Co-author
Amanda Hansford  Heba Elgazzar
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94. - Encoding and Decoding Messages in Android Applications

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Richard Pike
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95. * - Smart Routing Schemes for Dynamic Spectrum Access Network Architectures

First Author
Brian Luciano
University of Kentucky

96. * - Neighborhood Graphs for Cities in Kentucky: comparison for two distance measures

First Author
## Ecology - Poster Presentations

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

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<th>First Author</th>
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<tr>
<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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<td>Jacob Becraft</td>
<td>Amy Braccia</td>
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<td>Eastern Kentucky University</td>
<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>
<td>Joseph Baecher</td>
<td>Amy Braccia</td>
<td>Stephen Richter</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>Ramon Guivas</td>
<td>Kyle Laufenburger</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>
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### 103. * - Detection of species using eDNA in high elevation habitats in the Sierra Nevada in Sequoia-
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<td><strong>104. - Effect of Plastic Microbeads in Two Face Washes on Zebrafish Reproductive Success</strong></td>
<td>Autumn Holley</td>
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<td><strong>105. - Accessing the Direct Toxicity of the Plant Volatile Indole on Herbivores</strong></td>
<td>Rakhi Patel</td>
<td>Abhinav Maurya</td>
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<td><strong>106. * - Honeysuckle leaf blight increases leaf loss in Amur honeysuckle</strong></td>
<td>Natalie Holtsclaw</td>
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<td><strong>107. - Ecosystem functional consequences of top predator amphibian mortality due to the invasive shrub, Lonicera maackii</strong></td>
<td>Josey Berta</td>
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<td><strong>108. * - Elevated Resistance to AITC in Wild Bacterial Endophytes of Arabidopsis thaliana</strong></td>
<td>Yohannes Amsalu</td>
<td>Matalynn Shealy</td>
<td>Esther Abiara</td>
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<td><strong>109. - Differences in plant communities at natural and constructed upland-embedded wetlands in the Daniel Boone National Forest</strong></td>
<td>Rachel Fedders</td>
<td>Stephen Richter</td>
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</table>
111. * - Trophic effects of intraspecific body size variation among exploitative and interference competitors

First Author
Renae Steinberger
Eastern Kentucky University

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

First Author
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University of Louisville

Co-author
Grace Freundlich
University of Louisville

Co-author
Christopher Frost
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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
Chris Frost
University of Louisville

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

First Author
Austin Farson
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Co-author
Cy Mott
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Co-author
Howard Whiteman
Murray State University

115. - Does Life History Variation Mediate the Effects of Disease?

First Author
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Howard Whiteman
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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
Keith Philips
Western Kentucky University

117. - The Effect of Malathion Toxicity on Zebrafish Caudal Fin Regeneration

First Author
Indigo Thoman
### Engineering - Poster Presentations

118. - Comparison Study of Various CNN AI architectures for Prediction of Metal Sample Failure based on SEM images

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<td>Lawrence Madriaga</td>
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119. - Using NASA’s Land Information System (LIS) for hydrological and land-atmosphere coupling studies and as a lower boundary

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### Environmental Science - Poster Presentations

120. - A Karst Disturbance Index Map for Hidden River Cave

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<td>Anna Harris</td>
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121. * - A Synoptic Analysis of the 2012 Ohio Valley Heat Wave and an Investigation of the Effect on Public Health in Kentucky

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<td>Christopher Padgett</td>
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122. - Can remote sensing be used to accurately predict beaver activity?

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

**First Author**
Eric Rappin  
**Co-author**
Stuart Foster  
**Co-author**
Megan Schargorodski  
**Co-author**
Andrew Quilligan  
**Co-author**
Patrick Collins  

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Western Kentucky  
**WKU, Kentucky Climate Center, Kentucky Mesonet**  

**Co-author**
Charles O'Connell  
**WKU, Kentucky Climate Center, Kentucky Mesonet**

# 125. - The Kentucky Forecasting System

**First Author**
Eric Rappin  

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

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**Co-author**
Katherine Kamminga  
**Co-author**
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# 127. * - Mercury Bioaccumulation in Bats from Mammoth Cave National Park

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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**
Tamara Sluss  

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**University**
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# 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.

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**Co-author**  
Philip Silva  
*USDA-ARS*

**Co-author**  
Anna Wilkin  
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### Friday, November 2, 2018  3:00pm - 6:00pm

#### Geography - Poster Presentations

**131.** * - A high-wind climatology for the eastern U.S. during 1973-2015

**First Author**  
Josh Durkee  
*Western Kentucky University*

**Co-author**  
Tori Murley  
*ECTC*

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**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*

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

**First Author**  
Caitlin Mullins  
*Kentucky State University*

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

**First Author**  
Jarod Jones  
*Kentucky State University*

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

**First Author**  
Megan Paule  
*Murray State University*

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**136.** * - Comparing Accuracy of Supervised Image Classification of Wetlands in the Kentucky River Basin to the NLCD
137. * - The spatial distribution of local and organic food availability in Kentucky

First Author
Ariel Smith
Kentucky State University

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

First Author
Marie White
Murray State University

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

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

First Author
Colton Sanders
Murray State University

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

First Author
Adam Mattson
Western Kentucky University
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<tr>
<th>Session</th>
<th>Title</th>
<th>First Author</th>
<th>Co-author 1</th>
<th>Co-author 2</th>
<th>Co-author 3</th>
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<tbody>
<tr>
<td>142. *</td>
<td>Altered Immune Cell Profile Contributes to Increase Risk of Heart Disease in Aging Mice</td>
<td>Aubrey Melton</td>
<td>Renee Donahue</td>
<td>Marlene Starr</td>
<td>Ahmed Abdel-Latif</td>
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<td>Saha Cardiovascular Research Center</td>
<td>Nutritional Sciences and Pharmacology</td>
<td>Saha Cardiovascular Research Center</td>
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<td>143. *</td>
<td>Glutamate-Induced Apoptosis on Olfactory Neuroepithelial Progenitors Derived from Bipolar and Non-Bipolar Subjects</td>
<td>Kristen Miller</td>
<td>Yonglin Gao</td>
<td>Rifaat El-Mallakh</td>
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<td>144. *</td>
<td>Relationship between boneless meat yield and the size of Asian carp</td>
<td>Kaitlyn Sudd</td>
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<td>145. *</td>
<td>Parasite load as an indicator for zoonotic disease prevalence in feral cats versus shelter cats</td>
<td>Nicole Creeden</td>
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<td>146. *</td>
<td>Physical Activity and Health Patterns of Berea Trail Town Users</td>
<td>Jaden Johnson</td>
<td>Louisa Summers</td>
<td>Glendy Pineda</td>
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<td>147. *</td>
<td>Effects of corn starch on the textural characteristics of fish meatballs prepared from deboned Asian carp meat.</td>
<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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<thead>
<tr>
<th>First Author</th>
<th>Co-author</th>
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<tr>
<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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<tr>
<td>Elvin Irihamye</td>
<td>Satya Moolani</td>
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151. * - Role of Gonadal Hormones in Cognitive Impairment Due to Hypovolemic Dehydration

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

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<tr>
<td>K.N. Thimmaiah</td>
<td>Mark Montgomery</td>
<td>Larry Sylvester</td>
<td>Padma Thimmaiah</td>
<td>Ashish Pagare</td>
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<td>Co-author</td>
<td>Paul Grisham</td>
<td>Lindsay Massie</td>
<td>Piya Adris</td>
<td>Sarah Holt</td>
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<td>Co-author</td>
<td>Darrell Barnes</td>
<td>University</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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<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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</table>
155. * - The Health and Economic Impact of the Pinnacle Trails in a Kentucky Trail Town

First Author  Co-author  Co-author
Glendy Pineda  Louisa Summers  Jaden Johnson
Berea College  Berea College  Berea College

156. * - Vitreous Syneresis in the Human Eye

First Author  Co-author
Meg Glenn  Douglas Borchman
KBRIN (UofL)  University of Louisville

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Mathematics - Poster Presentations

157. - Investigating Tire Tracks to Determine a Vehicles Direction

First Author
Richard Cyrus
Morehead State
University

158. - Predictive MLS Soccer Ratings

First Author
Taylor Ray
Morehead State

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Microbiology - Poster Presentations

159. - A Close Look at the K1 Bacteriophages Capricorn and Dalmuri, Including Similarities and Differences

First Author  Co-author  Co-author  Co-author  Co-author
Harrison Gover  Claire Rinehart  Anmol Sandhu  Sahil Chhabra  Samuel Chang
Western Kentucky  Western Kentucky  Western Kentucky  Western Kentucky  Western Kentucky
University  University  University  University  University

160. * - An Introduction to the Forms and Functions of the A4 Mycobacteriophage Wizard007

First Author
Samuel Chang
Western Kentucky
University
<table>
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<tr>
<th>161.</th>
<th>Characterization of Mycobacteriophage MooMoo</th>
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<tr>
<td><strong>First Author</strong></td>
<td>Amanda Staples</td>
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<td><strong>Co-author</strong></td>
<td>Rodney A. King</td>
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<td><strong>University</strong></td>
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<th>162. *</th>
<th>Clostridium isolate growth in a zinc-limited environment</th>
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<td><strong>First Author</strong></td>
<td>Kamila Nurmakova</td>
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<td><strong>Co-author</strong></td>
<td>Christopher Lopez</td>
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<td><strong>University</strong></td>
<td>Vanderbilt University Medical Center</td>
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<th>163. *</th>
<th>Effect of Growth Temperature on Mycoplasma iowae Pathogenicity</th>
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<td><strong>First Author</strong></td>
<td>Christopher Frazier</td>
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<td>Brittany Boyken</td>
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<td>Kentucky Wesleyan College</td>
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<th>164. *</th>
<th>Immunity Repressor Gene Regional Difference May Control Gene Expression of Lytic and Lysogenic Life Cycles</th>
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<td><strong>First Author</strong></td>
<td>Sahil Chhabra</td>
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<td>Harrison Gover</td>
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<th>165.</th>
<th>Role of tRNA modifications in the regulation of pseudohyphal growth in yeast</th>
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<td><strong>First Author</strong></td>
<td>Kaylee Fox</td>
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<td>John Carmen</td>
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<th>166. *</th>
<th>Ruin Genome</th>
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<td><strong>First Author</strong></td>
<td>Anmol Sandhu</td>
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<td>Claire Rinehart</td>
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<th>167.</th>
<th>The House Sparrow as a Better Model for the Human Gut Microbiome</th>
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<td><strong>First Author</strong></td>
<td>Joshua Nowacki</td>
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<td>Jordan Stacy</td>
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<tr>
<td><strong>Institution</strong></td>
<td>KBRIN</td>
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<td><strong>168. * - Contemporaneous Ground-Based Observations of Blazars Observed with NASA's K2 Mission</strong></td>
<td>Zoe Ward</td>
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<td>Western Kentucky</td>
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<td>University of Las Vegas</td>
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<td><strong>170. * - Electrochemical Desulfurization and Electroactivity of Molybdenum Disulfide (MoS2) Nanocatalysts on Reduced Graphene</strong></td>
<td>Taylor Robinson</td>
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<td>University of Western Kentucky</td>
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<td><strong>171. * - Engineered Nanocomposite Materials Properties through Embedding of Smaller Nanoparticles in a Polymer Matrix</strong></td>
<td>Alex Henson</td>
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<td><strong>173. * - Graphene-Polymer Thin Film Composite Membranes as Efficient and Anti-fouling Membranes for Water Purification</strong></td>
<td>Brendan Evans</td>
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</table>
174. * - Hydrothermally Synthesis and Properties of Mesoporous Molybdenum Disulfide (MoS2) Reduced Graphene Oxide Composites

First Author
Jacob Dobler
Western Kentucky University

Co-author
Sanju Gupta
Western Kentucky University

175. * - Improving Accuracy of Parity Violation Measurements for NOPTREX Experiment at LANL

First Author
Daniela Olivera Velarde
Berea College

Co-author
Danielle Schaper
University of Kentucky

Co-author
Christopher Crawford
University of Kentucky

176. * - Investigating the Efficacy of Histotripsy on Drug Delivery

First Author
Heather Thompson
Berea College

Co-author
Benjamin Wollant
St. Olaf College

Co-author
Kenneth Bader
University of Chicago

177. * - Microstructure and Properties of Layered Transition Metal Carbides (Ti3C2Tx) MXenes Phases

First Author
Wyatt Ringo
Western Kentucky University

Co-author
Sanju Gupta
Western Kentucky University

178. * - Phase transitions in charged black holes

First Author
Emily Frame
Northern Kentucky University

Co-author
Sharmanthie Fernando
Northern Kentucky University

179. * - Photon Simulation Studies for the Dark Energy Science Collaboration (DESC) at LSST (Large Synoptic Survey Telescope)

First Author
Sean Lawless
Bellarmine University

Co-author
Carlos Galindo
Bellarmine University

Co-author
Akhtar Mahmood
Bellarmine University

Co-author
Muhammad Saleem
Bellarmine University

180. * - Robotics with Humanoid Robot NAO and Hexapod (Robotic Spider)

First Author
Carlos Galindo
Bellarmine University

Co-author
Muhammad Saleem
Bellarmine University

Co-author
Akhtar Mahmood
Bellarmine University
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
John Adamick
Northern Kentucky University
Co-author
John Rademacher
Northern Kentucky University
Co-author
Wayne Bresser
Northern Kentucky University
Co-author
Chari Ramkumar
Northern Kentucky University

183. * - XMM-Newton Observations of the Galactic Supernova Remnants G5.9+3.1 and G32.4+0.1

First Author
Lori Porter
Craft Academy
Co-author
Thomas Pannuti
Morehead State University

184. - Time series analysis of the rapid optical variability observed in Blazars with NASA’s K2 Mission.

First Author
Kennedy Pendleton
2001
Co-author
Michael Carini
Department of Physics and Astronomy
Western Kentucky University

185. - Procedure improvement for FAPbI3 perovskite solar cells

First Author
Valeria Rosa Rocha
Berea College
Co-author
Somin Park
University of Kentucky

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

First Author
Eli Prater
Berea College
Co-author
Martin Veillette
Berea College
Co-author
Brian Leist
Berea College
Co-author
Mothi Ghimire
Berea College

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Physiology and Biochemistry - Poster Presentations

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

First Author
Muntathar Alshimary
Berea College
Co-author
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-κB activity

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<th>First Author</th>
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<td>JT Toebbe</td>
<td>Michael Merchant</td>
<td>Daniel Wilkey</td>
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<td>Imelda Saintilma</td>
<td>Jeremy Rotty</td>
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<td>Berea College</td>
<td>Uniformed Services University of the Health Sciences</td>
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### 190. * - Disruption of choline acetyltransferase (ChAT) by congenital mutations: Screening potential therapeutic leads

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<td>Abigail Whitaker</td>
<td>David Rodgers</td>
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### 191. * - Dose-dependent induction of circulating SAA, and pulmonary inflammation after ozone exposure: Alzheimer’s Disease Link

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<td>Helina Asrat</td>
<td>Michelle Erickson</td>
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<td>Berea College</td>
<td>US Department of Veterans Affairs</td>
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### 192. * - Effects of TEA and 4-AP on Firing Frequency of Proprioceptive Neurons in Crustaceans

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<td>Emma Higgins</td>
<td>Allison Lane</td>
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<td>Bernardo Aguzzoli Heberle University of Kentucky</td>
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<td>Co-author</td>
<td>Aaron Silverstein University of Kentucky</td>
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<td>Bennett Collis University of Kentucky</td>
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<td>Bharath Chithrala University of Kentucky</td>
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| Co-author | |
|-----------| |
| Robin Cooper University of Kentucky | |

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

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<td>Nyasha Gombami</td>
<td>Alexandria Oviatt</td>
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<td>Vanderbilt University</td>
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| Co-author | |
|-----------| |
| Co-author | Neil Osheroff Vanderbilt University |
| Co-author | Medical Center |

### 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
Umair Bhutto
University of Kentucky

Co-author
Eashwar Somasundaram
University of Kentucky

Co-author
Robin Cooper
University of Kentucky

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

First Author
Allison Harper
Berea College

Co-author
Shajila Siricilla
Vanderbilt University

Co-author
Raymond Johnson
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Co-author
Lauren Lambert
Vanderbilt University

Co-author
Jennifer Herington
Vanderbilt University

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

First Author
Zackery Hill
University of Pikeville

Co-author
Karthik Suresh
Johns Hopkins Div of Pulmonary and Critical Medicine

Co-author
Xin Yan
Johns Hopkins Div of Pulmonary and Critical Care Medicine

Co-author
Laura Servinsky
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Co-author
Haiyang Jiang
Johns Hopkins Div of Pulmonary and Critical Care Medicine
### Psychology - Poster Presentations

**200. * - Appraisal: The Effect of Electronic Media on Decision Making**

*First Author*
Yabsira Ayele  
*Berea College*

**201. * - Sustaining Attention: The Effects of Fidgeting and Break type**

*First Author*
briana beckler  
*berea college*

**202. * - User Acceptance of Automated Vehicles**

<table>
<thead>
<tr>
<th>First Author</th>
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<td>Vanessa Jones</td>
<td>Emily Lush</td>
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<td>Gregory Corso</td>
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**203. * - The independence of implicit and explicit sequence learning**

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<td>Allison Ludwig</td>
<td>Brandi Carey</td>
<td>Gilbert Remillard</td>
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**204. * - Amazon Mechanical Turk Responses vs. Student Responses**

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**205. - Emphasis and "only" influence sentence interpretation**

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<th>First Author</th>
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<td>Victoria Nash</td>
<td>David Potter</td>
<td>Katy Carlson</td>
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<td>Science Education - Poster Presentations</td>
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<tr>
<td><strong>206.</strong> - An Interactive Earth: Augmented Reality and Hands-On Earth Science Inquiry in Schools</td>
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</tbody>
</table>
| 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 |

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<tr>
<th>Zoology - Poster Presentations</th>
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<td><strong>208</strong> * - Effects of Foraging Enrichment Predictability on the Behavior and Space Use of Zoo-housed Elephants</td>
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</tbody>
</table>
| 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  
Maddie Stanback  
University of Kentucky |
| Co-author  
Alexandra Stanback  
University of Kentucky  
Co-author  
Kelsi Vela  
University of Kentucky |
| Co-author  
Ross Basham  
University of Kentucky  
Co-author  
Heberle  
University of Kentucky  
Co-author  
Bernardo Aguzzoli  
University of Kentucky |
| Co-author  
Aaron Silverstein  
University of Kentucky  
Co-author  
Allison Lane  
University of Kentucky |
| Co-author  
Bennett Collis  
University of Kentucky  
Co-author  
Bharath Chithrala  
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.
Saturday, November 3, 2018  7:00am - 4:00pm

Registration Open
Third Floor, Downing Student Union

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

Posters on Display
Downing Student Union, Second & Third floors

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

Oral Presentations - Saturday morning
Asterisk * denotes student research competition

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

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  8:00am - 11:00am

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
08:15 - A Cyanide Group Reduced Cypermethrin Half-Lives on Cucumber Grown Under Greenhouse Conditions

First Author
George Antonious
Kentucky State University

08:30 - Quantification of tylosin antibiotics and antibiotic resistance genes in cattle waste.

First Author
Keerthi Appala
Western Kentucky University

Co-author
Eric Conte
Western Kentucky University

Co-author
John Kasumba
Western Kentucky University

Co-author
Getahun Agga
USDA

Co-author
John H Loughrin
USDA

Co-author
Anne Carlisle
Western Kentucky University

08:45 - Evaluation of Stocking Density in a Live Holding Recirculating System for Food-size Largemouth Bass, Micropterus salmoid

First Author
Sujan Bhattarai
Kentucky State University

Co-author
Kenneth Semmens
Kentucky State University

09:00 - Rove beetles in blackberry plots bordered by native perennials or pasture and treated with biological insecticides.

First Author
Sathya Govindasamy
Kentucky State University

Co-author
John Sedlacek
Kentucky State University

Co-author
Karen Friley
Kentucky State University

Co-author
Mamata Bashyal
Kentucky State University

Co-author
Jill Fisk
Kentucky State University

Co-author
Krystin Moody
Kentucky State University

Co-author
Katherine Buckler
Kentucky State University

09:15 - Parental gender preference as a factor in population sustainability

First Author
Elmer Gray
Western Kentucky University

Co-author
Sai Pavan Adigarla
Western Kentucky University

Co-author
Sravya Patil Bagli
Western Kentucky University

09:30 - Yield of zucchini, Cucurbita pepo, grown in various soil amendments

First Author
Quinn Heist
Kentucky State University

Co-author
George Antonious
Kentucky State University

Co-author
Eric Turley
Kentucky State University
09:45 * - Do Online Shoppers Have Knowledge on Community Supported Agriculture Programs?

First Author
Wyatt Lucas

Western Kentucky University, Dept. of Agriculture

Co-author
Dominique Gmurakiza

Western Kentucky University, Dept. of Agriculture

10:15 * - Evaluation of drug-resistant Enterobacteriaceae on produce from small farms.

First Author
Tavin Marshall

Kentucky State University

Co-author
Shreya Patel

Kentucky State University

Co-author
Avinash Tope

Kentucky State University

10:30 - Optimizing Non-Phytate Phosphorus in Soybean Meal-Based Diets for Largemouth Bass Micropterus salmoides

First Author
Kasondra Miller

1994

Co-author
Gagan Kolimadu

Kentucky State University

Co-author
Habte-Michael Habitetsion

Kentucky State University

Co-author
Waldemar Rossi

Kentucky State University

1:00 - Assessing the Use of Biochar for Immobilization of Trace Elements in Sewage Sludge

First Author
Lusekelo Nkuwi

Kentucky State University

Co-author
George Antonious

Kentucky State University

Co-author
Eric Turley

Kentucky State University

Co-author
Quinn Quinn Heist

Kentucky State University

Co-author
Yogendra Yogendra Upadhyaya

Kentucky State University

Co-author
Thomas Trivette

Kentucky State University

11:00 - Efficacy of a fertilization solution created with testes extraction and maceration in largemouth bass

First Author
Amit Sharma

Kentucky State University

Co-author
Kenneth Semmens

Kentucky State University


First Author
Thomas Trivette

Kentucky State University

Co-author
George Antonious

Kentucky State University

Co-author
Eric Turley

Kentucky State University

Co-author
Quinn Heist

Kentucky State University

Co-author
Lusekelo Nkuwi

Kentucky State University
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

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

DSU 3007

Section meeting follows talks at 10:30

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

08:00 * - 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

Co-author
Loganathan

Co-author
Susan Hendricks

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 Voziyan
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

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 University

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
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<tr>
<td>08:30</td>
<td>Verification of a Vegetation Index of Biotic Integrity (KY-VIBI) and a Rapid Wetland Assessment (KY-WRAM) in western KY</td>
<td>Elizabeth Malloy</td>
<td>Stephen Richter</td>
<td>David Brown</td>
<td>Kelly Watson</td>
<td>Michelle Cook</td>
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<td>Kentucky Division of Water</td>
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<td>08:45</td>
<td>Does increasing food-web stability mediate the effects of cattle grazing in aquatic ecosystems?</td>
<td>Hannah Moore</td>
<td>Howard Whiteman</td>
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<tr>
<td>09:00</td>
<td>Population Dynamics and Foraging Ecology of Copperheads in the Red River Gorge, KY.</td>
<td>Josh Hendricks</td>
<td>Jesse Sockman</td>
<td>Kyle Muenrich</td>
<td>Austin Owens</td>
<td>Stephen Richter</td>
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<td>09:15</td>
<td>The Kentucky Arboreal Ant Survey: ant communities among forests and urban greenspaces</td>
<td>Daniella Prince</td>
<td>Benjamin Adams</td>
<td>Stephen Yanoviak</td>
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<td>University of Louisville</td>
<td>Natural History</td>
<td>Department of Biology, University of Louisville</td>
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<td>Museum of Los Angeles County</td>
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<td>09:30</td>
<td>Soil function assessment of urban prairie restoration.</td>
<td>Sarah Benton</td>
<td>Sarah Emery</td>
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<td>University of Louisville</td>
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<td>09:45</td>
<td>Beaver-mediated restoration in a degraded desert ecosystem</td>
<td>Melody Feden</td>
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<td>Murray State</td>
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</table>
10:15 - Varying duration periods of the herbivore-associated cue differentially affect fitness in P. lunatus and C. anuum

First Author
Grace Freundlich
University of Louisville

Co-author
Howard Whiteman
Murray State University

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

10:30 - Assessment of Native Pollinator Habitat Planting Densities and Site Preparation Treatments on Abandoned Agriculture Land

First Author
Louis Ross
Kentucky State University

Co-author
Richard Cristan
Kentucky State University

Co-author
Bruce Schulte
Western Kentucky University

10:45 - New methods utilized to deter elephant (Loxodonta Africa) from crop raiding in the Kasigau Wildlife Corridor, Kenya

First Author
R. Lynn Von Hagen
Western Kentucky University

Co-author
Bruce Schulte
Western Kentucky University

11:00 - 2018 State of the Resource: Mammoth Cave National Park

First Author
Autumn Turner
Western Kentucky University, Crawford Hydrology Laboratory

Co-author
Lee Anne Bledsoe
Western Kentucky University

Co-author
Chris Groves
Western Kentucky University, Crawford Hydrology Laboratory

Co-author
Cate Webb
Western Kentucky University

Co-author
Rickard Toomey III
National Park Service, Mammoth Cave National Park

Co-author
Bobby Carson
National Park Service, Mammoth Cave National Park

Co-author
Katie Algeo
Western Kentucky University

11:15 * - Impact of season, game fencing, moon phase, and vegetation on activity overlap of ungulate species in Namibia

First Author
Emma Reasoner
### Physics and Astronomy - Oral Presentations

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<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>First Author</th>
<th>Co-authors</th>
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<tr>
<td>08:00</td>
<td>Thermoelectric Properties of Graphene-Carbon Nanotube Aerogels as 'Organic' Energy Harvesters</td>
<td>Romney Meek</td>
<td>Sanju Gupta, Western Kentucky University</td>
</tr>
<tr>
<td>08:15</td>
<td>High Amplitude variable Active Galactic Nuclei</td>
<td>Dirk Grupe</td>
<td>Morehead State University</td>
</tr>
<tr>
<td>08:30</td>
<td>Citizen CATE: citizen scientist observations of 2017 total solar eclipse</td>
<td>Richard Gelderman</td>
<td>Western Kentucky University</td>
</tr>
<tr>
<td>08:45</td>
<td>Nanosecond pulsed laser deposition of Pb thin film on Si (111)</td>
<td>Devon Loomis</td>
<td>Bektur Abdisatarov, Ilhom Saidjafarzoda, Donald Price, Ali Er, Mikhail Khenner</td>
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<td>Western Kentucky University, Western Kentucky University, Western Kentucky University</td>
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<tr>
<td>09:00</td>
<td>NGC 1566: A Temperamental Changing Look AGN</td>
<td>Rebecca Mikula</td>
<td>Dirk Grupe, Morehead State University</td>
</tr>
<tr>
<td>09:15</td>
<td>Fabrication of Aluminum Nanoparticles via Pulsed Laser Ablation for Bacterial Deactivation</td>
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<td>Time</td>
<td>Title</td>
<td>First Author</td>
<td>Co-author</td>
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<tr>
<td>09:30</td>
<td>Computer Simulation of Atomic-Scale Defects in Intermetallic Compounds</td>
<td>Christopher Weaver</td>
<td>Matthew Zacate</td>
</tr>
<tr>
<td>09:45</td>
<td>Effects of Plastic Deformation and Tensile Strain on Polycrystalline Solids</td>
<td>Jesse Tapp</td>
<td>Dylan Weaver</td>
</tr>
<tr>
<td>10:15</td>
<td>Dependence of Helium Atmospheric Pressure Plasma Jet-Induced DNA Damage on Voltage Pulse Frequency and Irradiation Time.</td>
<td>Kemo Jammeh</td>
<td>Sylwia Ptasinska</td>
</tr>
<tr>
<td>10:30</td>
<td>Blue Light and UV Blocking Lenses</td>
<td>Marissa Walls</td>
<td>Jennifer Birriel</td>
</tr>
<tr>
<td>10:45</td>
<td>Investigating the Anode Heel Effect at 75kV and 140kV</td>
<td>Casey Christian</td>
<td>Ignacio Birriel</td>
</tr>
<tr>
<td>11:00</td>
<td>Modular Bootstrap Bounds at Finite Central Charge</td>
<td>Casey Christian</td>
<td>Joshua Qualls</td>
</tr>
<tr>
<td>11:15</td>
<td>Energy Determination in the ISS-CREAM Instrument Using Simulations</td>
<td>Tyler LaBree</td>
<td></td>
</tr>
</tbody>
</table>
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

Co-author: Austin Schmier  
University of Tennessee

Co-author: Jerrica Wilson  
University of Tennessee

Co-author: Mariah McCreary  
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
Western Kentucky University

Co-author
Bobby Carson
Mammoth Cave National Park

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
Thomas More College

Co-author
Stephen Williams
United States Naval Observatory

Co-author
Terri Perrino
Thomas More College

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
Morehead State University

Co-author
Jennifer Birriel
Morehead State University

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

Physiology and Biochemistry - Oral Presentations

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

First Author
Daisy DiVita
Northern Kentucky University

Co-author
Michael Guy
Northern Kentucky University

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

First Author
Issac Domenech
Berea College

Co-author
Mark Krasnow
Stanford University

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
<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>First Author</th>
<th>Co-author</th>
<th>Co-author</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:45</td>
<td>Early Detection of Breast Cancer Through Changes in Amino Acid Metabolism</td>
<td>David Kelley</td>
<td>Kyle Damen, James Deddens, Larry Douglass, Leila Valanejad</td>
<td>Julia Carter, Kyle Damen, Wood Hudson Cancer Research Laboratory</td>
</tr>
<tr>
<td>09:00</td>
<td>Expression of Cathepsin L, HSP-90, and MAP kinase pathway proteins in bladder cancer characterized by physiology</td>
<td>Ryan Moore</td>
<td>Kyle Damon, Zachary Taylor, Julia Carter, Larry Douglass</td>
<td>Wood Hudson Cancer Research Laboratory</td>
</tr>
<tr>
<td>09:15</td>
<td>Mapping the Binding Sites of FATTY ACID SYNTHASE on Chikungunya Viral RNA</td>
<td>Clara Reasoner</td>
<td>Yuqi Bian, Jeffrey Jian, Byungil Kim, Manuel Ascano</td>
<td>Vanderbilt University, Vanderbilt University</td>
</tr>
<tr>
<td>09:45</td>
<td>Developing engineered zinc finger proteins immobilized on acrylamide gel surface as diagnostic probes for detecting path</td>
<td>Co-author</td>
<td>James Dedden, Larry Douglass, Julia H. Carter, Grace Restle</td>
<td>Wood Hudson Cancer Research Laboratory</td>
</tr>
</tbody>
</table>
### Zoology and Botany - Oral Presentations

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

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>First Author</th>
<th>Co-author</th>
<th>Co-author</th>
<th>Co-author</th>
</tr>
</thead>
<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>WKU</td>
<td>Section meetings follow talks at 11:15</td>
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<td></td>
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<td>Oliver Beckers</td>
<td>Nicholas Norman</td>
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<td>Murray State</td>
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<td>University</td>
<td>University</td>
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<tr>
<td>08:15</td>
<td>The kinematics of envenomation by the yellow stingray, Urobatis jamaicensis</td>
<td>Steve Huskey</td>
<td>WKU</td>
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<tr>
<td></td>
<td></td>
<td>Steve Huskey</td>
<td>University of Notre Dame</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>Western Kentucky</td>
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<td>Brett Hodinka</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>Western Kentucky</td>
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<td>Olivia Gearner</td>
<td>Western Kentucky</td>
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<td>Western Kentucky</td>
<td>University</td>
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<tr>
<td>09:00</td>
<td>Heritable Behavioral Tendencies of the African Lion</td>
<td>Natalie Mercer</td>
<td>Western Kentucky</td>
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<td>Natalie Mercer</td>
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<td>Kentucky Wesleyan</td>
<td>Life Sciences Prague</td>
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<td>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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<td></td>
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<td>Samuel White</td>
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</tr>
</tbody>
</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!

---

**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.

---

**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.

---

**Oral Presentations - Saturday Afternoon**

Asterisk * denotes student research competition

---

**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 [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>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>13:15</td>
<td>Inadvertent local climate modification at a regional university in Kentucky, USA</td>
<td>First Author: Donald Yow</td>
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<tr>
<td></td>
<td></td>
<td>Co-author: Matthew Ruggless</td>
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<tr>
<td></td>
<td></td>
<td>Eastern Kentucky University</td>
</tr>
<tr>
<td>13:30</td>
<td>URBAN HEAT AND DEMOGRAPHIC CHANGE: A COMPARATIVE ANALYSIS OF THE</td>
<td>First Author: Tori Farrow</td>
</tr>
<tr>
<td></td>
<td>LARGEST 100 CITIES OF THE TEMPERATE-FORESTED ECOREGION</td>
<td>Co-author: Jeremy Sandifer</td>
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<tr>
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<td>Kentucky State University</td>
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<tr>
<td>13:45</td>
<td>Analyzing sanitary sewer overflow event response to storm frequency</td>
<td>First Author: Christopher Andrew</td>
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<td></td>
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<td>Co-author: University of Louisville</td>
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<tr>
<td>14:00</td>
<td>Comparing Sediment Yield of Selected Forest Ecosystems Using SWAT in Bell Watershed, Kentucky</td>
<td>First Author: Aman Bhatta</td>
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<td></td>
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<td>Co-author: Buddhi Gyawali</td>
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<td>Kentucky State University</td>
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<tr>
<td>14:15</td>
<td>Land cover classification and change detection using remote sensing imagery in Morgan County, Kentucky</td>
<td>First Author: Saaruj Khadka</td>
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<td>Co-author: Buddhi Gyawali</td>
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<td>Kentucky State University</td>
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<td></td>
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<td>Co-author: Tilak Shrestha</td>
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<td>Kentucky State University</td>
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<tr>
<td>14:30</td>
<td>How economic geography might have saved the Mammoth Cave Mushroom Company</td>
<td>First Author: Katie Algeo</td>
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<td>Co-author: Western Kentucky</td>
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<td></td>
<td></td>
<td>University</td>
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<tr>
<td>14:45</td>
<td>Observing Boundary Layer Heights over Mountainous Terrain Using Aircraft Vertical Profiles</td>
<td>First Author</td>
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<tr>
<td>Time</td>
<td>Session Title</td>
<td>First Author</td>
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<tr>
<td>15:00</td>
<td>Mapping Opioid Epidemic in Kentucky’s Counties</td>
<td>Dallas McKinney</td>
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<td>Brent Messmer</td>
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<td>Hunter Morgan</td>
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<td>Ryan Fitzpatrick</td>
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<td>Joseph Mester</td>
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<tr>
<td>13:30</td>
<td>Prevalence of Dyslipidemia in Young African Americans</td>
<td>Bisola Asaolu</td>
</tr>
<tr>
<td>13:45</td>
<td>Epidemiology of HPV-Associated Cancers: Changing Trends and Future Burden</td>
<td>Yeongha Oh</td>
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<td>Berea College</td>
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<tr>
<td>14:00</td>
<td>Bacterial deactivation by using Graphene quantum dot as an effective photodynamic therapy agent</td>
<td>Ermek Belekov</td>
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<td>Lauren Cooper</td>
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<td>Khomidkhodzha</td>
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<td>Ilhom Saidjafarzoda</td>
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<td>Ilhom Saidjafarzoda</td>
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<tr>
<td></td>
<td></td>
<td>Michael Smith</td>
</tr>
</tbody>
</table>
14:15 - Effects of alpha & beta-adrenergic receptor blockade upon inflammatory responses & microglia activation to sleep loss.

First Author
Nicholas Wheeler
Western Kentucky University

Co-author
Noah Ashley
Western Kentucky University

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

First Author
Ethan Caudill
Morehead State University

Co-author
Jennifer Birriel
Morehead State University

13:30 * - Using Topology to find Copyright Infringement

First Author
Jeremiah Halter

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

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

Science Education - Oral Presentations

13:15 - Death Knell for le Grand K.
<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>13:30</td>
<td>Why do students leave quantitative STEM majors?</td>
<td>Andy Martin, Kentucky State University, Hannah Brewer, Morehead State University, Wilson Gonzalez-Espada, Morehead State University, Robert Boram, Morehead State University</td>
</tr>
<tr>
<td>13:45</td>
<td>Evaluating the effectiveness of a concept-map oriented curriculum in a flipped chemistry classroom</td>
<td>Bharath Kumar, Midway University</td>
</tr>
<tr>
<td>14:00</td>
<td>PowerPoint Reimagined: Enhancing Lessons to Guide Reasoning, Foster Collaboration, and Promote Active Learning</td>
<td>Kevin Revell, Murray State University</td>
</tr>
<tr>
<td>14:15</td>
<td>Science Seminar Series of WKCTC: Going Strong for 33 Years</td>
<td>Karen Hlinka, Kentucky Community and Technical College System</td>
</tr>
<tr>
<td>14:30</td>
<td>Middle School Investigation of Global Climate Change</td>
<td>Shira Rabin, University of Louisville, Bennet Kolb, Jefferson County Public Schools, Bronwyn Williams, University of Louisville, Adam Stieglitz, University of Louisville, Mary Brydon-Miller, University of Louisville</td>
</tr>
</tbody>
</table>
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