2018 Annual
Meeting Program
November 2-3, 2018

Western Kentucky University

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Thank you to our Afternoon Break Sponsor
Thank you to our Bronze Sponsor

Thank you to our In-Kind partners

WKU Office of Research and Creative Activity

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

Online Program, 2018

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

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

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

KAS Science Film Festival
### Downing Student Union 3020

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

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

### KAS Governing Board Meeting

**Downing Student Union 3029**

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

### Kentucky Organization of Field Stations meeting

**Downing Student Union 3004**

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

### Registration Open

**Third Floor, Downing Student Union**

Check-in will also be available at the National Corvette Museum after 6:30pm, during the Reception & Plenary.

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

### Poster Presenters check-in

**Third Floor, Downing Student Union**

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

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

### Science Policy & Advocacy workshop

**Cupola Room (inside Fresh Dining Hall)**

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

This event is FULL.

**Featured Speakers:**

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

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

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

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

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

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

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

**Oral Presentations- Friday Afternoon**
Asterisk * denotes student research competition

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

**Cellular and Molecular Biology - Oral Presentations**

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>First Author</th>
<th>Co-author 1</th>
<th>Co-author 2</th>
<th>Co-author 3</th>
<th>Co-author 4</th>
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<tbody>
<tr>
<td>1:15</td>
<td>Analysis of effects on tRNA modifications and hyphal growth by the elongator complex in C. albicans.</td>
<td>Justin Rabe (Asterisk)</td>
<td>Rachel Morgeson</td>
<td>Jenna Kappes</td>
<td>Daisy Davita</td>
<td>Kaylee Fox</td>
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<td></td>
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<td>Olivia Gilliam</td>
<td>John Carmen</td>
<td>Michael Guy</td>
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<td>Erin Clayton</td>
<td>Gary ZeRuth</td>
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<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>
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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>
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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>Gary ZeRuth</td>
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</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

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

First Author
Mustafa Atici
Western Kentucky University

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

First Author
Christopher Harton
Murray State University

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

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

First Author
Bryan Kirshe
University of Kentucky

Co-author
Sherali Zeadally
University of Kentucky

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

First Author
Michael Murray
University of Kentucky

Co-author
Kelsey Cole
University of Kentucky

Co-author
Jerzy Jaromczyk
University of Kentucky

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

First Author
Stephen Goins
Bellarmine University

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

Engineering - Oral Presentations

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

First Author
Jean-Pierre Amoakon
Georgetown College

Co-author
Farhan Kamili
Georgia Institute of Technology

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

First Author
Jacob Schabert
Morehead State University

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

First Author
Katerina Winters
Morehead State University

2:00 * - Safety Engineering for a CubeSat: Materials and Usage Requirements
2:15 - The ThinSat Program: Flight Opportunities and the Future of Small Satellites

First Author
Christopher Coleman
Morehead State University

Co-author
Robert Twiggs
Morehead State University

Co-author
Aaron Zucherman
Morehead State University

Co-author
Jose Garcia
Morehead State University

Co-author
Matt Craft
Twiggs Space Lab

Co-author
Amin Djamshidpour
Twiggs Space Lab

Co-author
Regan Smith
Virginia Space

Co-author
Hank Voss
Near Space Launch

Co-author
Jeff Dailey
Near Space Launch

Co-author
Matt Orvis
Near Space Launch

Environmental Science - Oral Presentations

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

DSU 1037

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
<table>
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<th>Co-author</th>
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<tr>
<td>2:30</td>
<td>Comparison of Benthic Macroinvertebrate Sampling Methods on Non-Wadeable Waters: A Study Proposal</td>
<td>Ed Wilcox</td>
<td>Richard Cristan</td>
<td>Kentucky State University</td>
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<td>2:45</td>
<td>Ecosystem Exchange of Carbon Dioxide of a Grazed Pasture in Central Kentucky</td>
<td>Ian Ries</td>
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<tr>
<td>3:00</td>
<td>Opportunities for collaborative research and education at a network of field stations in Kentucky</td>
<td>Stephen Richter</td>
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<td>Eastern Kentucky University</td>
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<tr>
<td>1:15</td>
<td>A Geochemical Comparison of two Telogenetic Karst Springs During Reverse Flow, Mammoth Cave, Kentucky</td>
<td>Chelsey Kipper</td>
<td>Patricia Kambesis</td>
<td>Western Kentucky University</td>
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<td>1:30</td>
<td>Do Radioactive Black Shales Potentially Affect Human Health as well as Water Quality of Streams in Eastern Kentucky?</td>
<td>Mitchell Grothaus</td>
<td>Elizabeth Hereford</td>
<td>Morehead State University</td>
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<td>1:45</td>
<td>Fate of Indirect greenhouse gases in Karst Landscapes Associated with Land Use</td>
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</table>
2:00 - Incision timing and its relationship to tectonic uplift and climate change: using thermochronology to unravel Ethiopia’s

First Author
Shelby Bowden
Western Kentucky University

Co-author
Nahid Gani
Western Kentucky University

Co-author
Matthijs Van Soest
Arizona State University

Co-author
Royhan Gani
Western Kentucky University

Co-author
Paul O’Sullivan
GeoSeps Services LLC

2:15 - Mass-Transport Deposits in the Northern Gulf of Mexico and Their Implications to Hydrocarbon Exploration

First Author
Michael Arthur
Western Kentucky University

Co-author
M. Royhan Gani
Western Kentucky University

2:30 * - Spectral Analysis of Analog Lunar and Martian Mineral Samples

First Author
Madison Howard
Morehead State University

Co-author
Marianne Peterson
St. Olaf

Co-author
Prabhakar Misra
Howard University

2:45 - Stratigraphic Controls on Cave Passage Development of Dogwood Cave, Hart, County, Kentucky

First Author
Patricia Kambesis
Western Kentucky University

3:00 - Tekeze River Incision Constrained from Apatite (U-Th)/He Dating

First Author
Jacob Grigsby
Western Kentucky University

Co-author
Nahid Gani

Co-author
Shelby Bowden

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

Microbiology - Oral Presentations

DSU 3006
Section meeting follows talks
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<tr>
<td>1:15 pm</td>
<td>Effect of Growth Temperature on Mycoplasma iowae Pathogenicity</td>
<td>Brittany Boyken</td>
<td>Justin Fraizer</td>
<td>Rachel Pritchard</td>
<td>Kentucky Wesleyan</td>
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<td>1:30 pm</td>
<td>Host range shift of H3N8 canine influenza virus: A phylodynamics approach to delineate its origin and its adaptation</td>
<td>Alexander Lai</td>
<td>Kentucky State University</td>
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<td>1:45 pm</td>
<td>Novel Inactivation of the Causative Fungus of White Nose Syndrome with Methoxsalen and Ultraviolet A Light</td>
<td>Colin Hartman</td>
<td>Riley James</td>
<td>Joseph Mester Ph.D.</td>
<td>Norther Kentucky University</td>
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<td>2:00 pm</td>
<td>Potential Use of Essential oils as Alternative Treatment for Bacterial Skin Infections</td>
<td>Clarissa Gearner</td>
<td>Simran Banga</td>
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<td>Western Kentucky University</td>
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<tr>
<td>2:15 pm</td>
<td>UV Treatment of Environmental Fungi</td>
<td>Ashley Wentworth</td>
<td>Joseph Mester</td>
<td>Colin Hartman</td>
<td>Alan Cohen</td>
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<td>2:30 pm</td>
<td>Metal and antibiotic cross-resistance among bacteria isolated from the Kentucky River</td>
<td>William Fenske</td>
<td>William Staddon</td>
<td>Valerie Peters</td>
<td>Eastern Kentucky University</td>
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Friday, November 2, 2018  1:15pm - 6:00pm

Practice Room

DSU 2081

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

This room is available for speakers to practice their presentations.

Poster Session and Social Hour

Asterisk* denotes student research competition

Downing Student Union, Second & Third floors

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

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

First Author
ERIC TURLEY
Kentucky State University

Co-author
George Antonious
Kentucky State University

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


First Author
Nathan Folz
Murray State University

Co-author
Iin Handayani
Murray State University

Co-author
Brian Parr
Murray State University

Co-author
I. P. Handayani
Murray State University

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

First Author
Riley Mabe
Murray State University

Co-author
Kaeden Mollett
Murray State University

Co-author
Riley Mabe
Murray State University

Co-author
I. P. Handayani
Murray State University

Co-author
Brian Parr
Murray State University

Co-author
I. P. Handayani
Murray State University

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

First Author
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<th>Co-author 2</th>
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<tr>
<td>6. * - Comparing Characteristics of Soil under Various Management Conditions in Western Kentucky</td>
<td>River Dowell</td>
<td>Lin Handayani</td>
<td>Alex Fichter</td>
<td>Ashley Robert</td>
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<tr>
<td>8. * - Economic Viability of Municipal Compost and Equine Stall Waste as Media Amendments in an In-Ground Pot-in-Pot Production</td>
<td>Ashley Robert</td>
<td>Alyx Shultz</td>
<td>Alex Fichter</td>
<td>Ashley Robert</td>
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<td>9. * - Effects of live yeast supplementation on rumen bacterial diversity of beef cattle</td>
<td>Kyle Cannon</td>
<td>Megan McCoun</td>
<td>Hank Schweickart</td>
<td>Ibukun Ogunade</td>
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<tr>
<td>10. * - Effects of live yeast supplementation on rumen fluid metabolome of beef cattle</td>
<td>Megan McCoun</td>
<td>Kyle Cannon</td>
<td>Hank Schweickart</td>
<td>Ibukun Ogunade</td>
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<td>11. - Effects of water soluble fertilizers on growth performance of lotus plants in containers</td>
<td>Changzheng Wang</td>
<td>Changzheng Wang</td>
<td>Lingyu Huang</td>
<td>Kentucky State University</td>
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<tr>
<td>12. * - Evaluation of Soil Response to the Applications of Ammonium Nitrate and Horse Manures</td>
<td>Sarah Forden</td>
<td>Lin Handayani</td>
<td>Kyle Hanenberger</td>
<td>Ethan Knolhoff</td>
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<tr>
<td>Hanna (John) Khouryieh</td>
<td>Marlain Khouryieh</td>
<td>Western Kentucky University</td>
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14. - Grafting success of eleven pawpaw cultivars and advanced selections using four grafting methods

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<tr>
<td>Sheri Crabtree</td>
<td>Jeremy Lowe</td>
<td>Kirk Pomper</td>
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15. * - Growth of Pawpaw (Asimina triloba) Seedlings in Two Commercially Available Potting Mixes

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<td>Aidan Thompson</td>
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16. - Impact of aerobic compost tea on growth of Lactuca sativa

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<tr>
<td>Ella Potts</td>
<td>Jessica Stoner</td>
<td>lin Handayani</td>
<td>Alex Shultz</td>
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17. - Impact of integrated crop-livestock rotation including small ruminants on nitrate and phosphorus concentrations in water

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<tr>
<td>Ellyn Anthony</td>
<td>Shawn Lucas</td>
<td>Derek Law</td>
<td>Tony Silvermail</td>
<td>Blake Van Sanford</td>
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<td>University</td>
<td>Organic Farm</td>
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18. - Investigating the Impact of Soil Amendments on Eggplant Production

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<td>Yogendra Upadhyaya</td>
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<td>Kentucky State</td>
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</tbody>
</table>
19. - Longitudinal Histological Study of Nosema ceranae in Honey Bees

**First Author**  
Katherine Kamminga  
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**Co-author**  
Thomas Webster  
*Kentucky State University*

**Co-author**  
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**Co-author**  
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**First Author**  
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*Murray State University*

**Co-author**  
Alix Shultz  
*Murray State University*

**Co-author**  
Brian Parr  
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---

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

**First Author**  
Sijan Pandit  
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**Co-author**  
Jeremiah Lowe  
*Kentucky State University*

**Co-author**  
Sheri Crabtree  
*Kentucky State University*

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

---

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

**First Author**  
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**Co-author**  
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*Kentucky State University*

**Co-author**  
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*Kentucky State University*

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

---

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

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**Co-author**  
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*Kentucky State University*

**Co-author**  
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*Kentucky State University*

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

---

**Anthropology and Sociology - Poster Presentations**

24. - Ethnographic Study of Ohio River Barge Deckhands

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

First Author
Alessa Rulli
Northern Kentucky University

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

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

27. * - Uncovering the Women of Parker Academy

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

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

Botany - Poster Presentations

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

First Author
Wendy Cecil
Western Kentucky University

Cellular and Molecular Biology - Poster Presentations

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

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

30. * - Cerebellar gene expression of cabin1

First Author
31. * - Characterization of a Basement Membrane Associated Protein

**First Author**
Aref Ranjbar

**Co-author**
Ajay Srivastava

**Institution**
Western Kentucky University

32. - Cloning Lectins for the Detection of Flavivirus Nonstructural Protein 1

**First Author**
Natalie Mercer

**Co-author**
Krystal Hamorsky

**Institution**
Kentucky Wesleyan College

33. - Cysteine Thiol Directed Chemical Modification of a KCNE1 Protein N-Terminus

**First Author**
Sharman N Sugumaran

**Co-author**
Keenan Taylor

**Institution**
Berea College

34. * - Damage to Danio Rerio’s Developing Neuromuscular Junction Could Lead to Expanded Synaptic Plasticity

**First Author**
Diana Schweitzer

**Co-author**
Dena Weinberger

**Institution**
Murray State University

35. * - De Novo Prediction of the Tail and Capsid Structure of Mycobacteriophage MooMoo

**First Author**
Alexander Stewart

**Co-author**
Claire Rinehart

**Institution**
Western Kentucky University

36. - Detection of antibiotic resistance genes using engineered zinc finger proteins immobilized on the silane polymer-coated

**First Author**
Jiyoung Shim

**Co-author**
Moon-Soo Kim

**Institution**
Western Kentucky University

37. * - Effect of HER2 expression on NUPL2 protein in cervical cancer cells

**First Author**
Tristan Haight
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<th>Co-author</th>
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<td>Centre College</td>
<td>Murray State University</td>
<td>University of Kentucky</td>
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<td>39. * Examining how the FGF signaling pathway effects gene expression within the pharynx during embryonic development</td>
<td>Elizabeth Wilke</td>
<td>Emily Shifley</td>
<td>Northern Kentucky University</td>
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<td>Northern Kentucky University</td>
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<tr>
<td>40. * Examining the Role that Iroquois Genes Play During Embryonic Development</td>
<td>Maria Stewart</td>
<td>Emily Shifley</td>
<td>Northern Kentucky University</td>
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<tr>
<td>41. * Fishing for fertility: Creating a PAM-1 substrate trap to isolate novel fertility-governing proteins</td>
<td>Autumn Graves</td>
<td>Chris Trzepacz</td>
<td>Murray State University</td>
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<tr>
<td>42. * Generation of a transgenic beta cell line for study of Glis3 using CRISPR/Cas9 technology</td>
<td>NancyAnn Webster</td>
<td>Gary ZeRuth</td>
<td>Murray State University</td>
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<td>Murray State University</td>
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<tr>
<td>43. * Generation of transgenic zebrafish line by CRISPR/Cas9 to evaluate pancreas development and function</td>
<td>LilyAnne Grieve</td>
<td>Gary ZeRuth</td>
<td>Murray State University</td>
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</table>
44. * - Integrin β1 Promotes Kras-Mutated Lung Cancer Proliferation Via Mapk-Indepedendent Mechanism

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

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<tr>
<td>Colleen Jackson</td>
<td>Wendy Cecil</td>
<td>Kibum Kim</td>
<td>Moon-Soo Kim</td>
<td>Kisung Ko</td>
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<td>Western Kentucky</td>
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46. * - Platinum Leaving Ligand Effects on Mammalian Cells

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<tr>
<td>Emily Nole</td>
<td>Jessica Schlabach</td>
<td>Brooke Duke</td>
<td>B.Blairanne Williams</td>
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47. * - Potential for the green alga Chlamydomonas reinhardtii to degrade lignin

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<td>Meg Dillingham</td>
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48. * - Role of Shear Stress on Endothelial Insulin Sensitivity

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<td>Areli Medina Hernandez</td>
<td>Lauren Walsh</td>
<td>Thaysa Ghiarone</td>
<td>Luis Martinez-Lemus</td>
<td>Jaume Padilla</td>
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49. - Spinal Cord Injury and its effect on Circadian Rhythm

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

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This document contains a list of poster presentations at an analytical/physical chemistry conference. Each presentation includes the title, authors, and institutions. The presentations cover a range of topics, from honey characterization to drug consumption trends and analytical techniques for measuring various compounds.
64. - Detection of Polyions with Pulsed Chronopotentiometry - Screening Antidotes for the Anticoagulants Low Molecular Heparin

First Author
Sean Greer
Eastern Kentucky University

First Author
Kyle Rowe
Northern Kentucky University

First Author
Bryce Forry
Asbury University

First Author
Lauren Rigg
Northern Kentucky University

First Author
Moria Magre
Spalding University

First Author
Levi Curtis
Western Kentucky University

First Author
Elizabeth Hedrick
Western Kentucky University

First Author
Alexander Thome
Murray State University

First Author
Erin Calvert
Murray State University

First Author
Kasey Clear
Murray State University

First Author
Sebastian Jezowski
Murray State University

65. * - Determination of Ochratoxin A in Kentucky Black Walnuts

First Author
Bryce Forry
Asbury University

First Author
Bruce Branan
Asbury University

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

First Author
Lauren Rigg
Northern Kentucky University

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

First Author
Moria Magre
Spalding University

First Author
John Burden
Spalding University

68. * - Modeling Molecular Relaxation Dynamics for Diatom Clathrates

First Author
Levi Curtis
Western Kentucky University

First Author
Jeremy Maddox
Western Kentucky University

69. * - Protocols for UHF and UCCSD Potential Energy Curves

First Author
Elizabeth Hedrick
Western Kentucky University

69.5 * - Unraveling Subtle Intermolecular Interactions in Crystals of a Solar Thermal Fuel.
## 70. - The Effectiveness of Thin Layer Spin Coating Sodium Acetate

**First Author**  
Corey Mattic, Jr.  
*Kentucky State University*

## 71.* - Avidin Functionalized Coverslips for Model Membrane Imaging

**First Author**  
Sergio Perez Cruz  
*Berea College*

**Co-authors**  
Tessa Calhoun  
The University of Tennessee, Knoxville  
Lindsey Miller  
The University of Tennessee, Knoxville

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

**First Author**  
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*Northern Kentucky University*

**Co-authors**  
Eric Milner  
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Shannon Biros  
Grand Valley State University  
Jeff Katz  
Colby College  
Kristine Nolin  
The University of Richmond  
Ellen Ellen Yezirski  
Miami University

## Chemistry: Organic/Inorganic - Poster Presentations

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

**First Author**  
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John Benber  
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Shannon Biros  
Grand Valley State University  
Peter Iovine  
The University of San Diego  
Kristine Nolin  
The University of Richmond  
Ellen Ellen Yezirski  
Miami University

### 74. - Synthesis of Oxacalixarenes from Silyl Protected Precursors

**First Author**  
KC Russell  
*Northern Kentucky University*

**Co-authors**  
Kimberly Richards  
Northern Kentucky University  
Bailey Hardey  
Northern Kentucky University  
Rachel Holland  
Northern Kentucky University  
Rachel Holland  
Northern Kentucky University

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

**First Author**  
Ban Wang  
*Western Kentucky University*

**Co-authors**  
Isaac Howard  
Western Kentucky University  
Northern Kentucky University  
University

### 76. - Interaction of a platinum tri-amine complex having a seven-membered chelate ring with 5'-GMP and N-AcMet
77. * - Synthesis of metal-organic frameworks mimicking carbonic anhydrase enzyme.

First Author
Simrat Kaur
WESTERN KENTUCKY UNIVERSITY
Co-author
BANGBO YAN
WESTERN KENTUCKY UNIVERSITY

77.5. - An in vitro Study on Skin Protection Across the UV Spectra

First Author
Cheyenne Boone
Kentucky State University/University of Kentucky

78. * - Phosphonium-containing Poly(ionic liquid) Networks Prepared From Thiol-ene 'Click' Photopolymerization

First Author
Samantha Sims
Murray State University
Co-author
Rachel Whittaker
Murray State University
Kevin Miller
Murray State University

79. * - Highly efficient and selective oxidation of sulfides catalyzed by manganese corroles with iodobenzene diacetate

First Author
Ben Willis
Western Kentucky University
Co-author
Davis Ranburger
Western Kentucky University
Benjamin Kash
Western Kentucky University
Christian Alcantar
Western Kentucky University
Rui Zhang
Western Kentucky University

80. * - Enantioselective Cross Aldol Reactions of Aldehydes

First Author
Samantha Bradley
Morehead State University
Co-author
Chase Slone
Morehead State University
Brandon Vanness
Morehead State University

81. * - Investigating the Synthesis of LMA-P2

First Author
Sarah Little
<table>
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<tr>
<th>Title</th>
<th>First Author</th>
<th>Co-author</th>
<th>University</th>
<th>Co-author</th>
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<tr>
<td>82. * - Palladium-Catalyzed Heteroarylation Under Microwave Irradiation</td>
<td>Adrianna Goodwin</td>
<td>Claire Poling</td>
<td>Western Kentucky University</td>
<td>Mike Winchester</td>
<td>Western Kentucky University</td>
</tr>
<tr>
<td>83. * - Generation and kinetic studies of porphyrin-manganese(IV)-oxo intermediates</td>
<td>Seth Klaine</td>
<td>Bangbo Yan</td>
<td>Western Kentucky University</td>
<td>Kyle Watson</td>
<td>Western Kentucky University</td>
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<tr>
<td>84. * - Synthesis and photocatalytic properties of three metal-organic framework materials</td>
<td>Hannah Brooks</td>
<td>Sydney Goff</td>
<td>Kentucky Wesleyan College</td>
<td>Ominica Crockett</td>
<td>Berea College</td>
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<tr>
<td>85. * - The Syntheses of Heteroatom-activated Antibiotics</td>
<td>Kiah Gledhill</td>
<td>Sydney Goff</td>
<td>Kentucky Wesleyan College</td>
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<td>86. * - Iron Catalyzed Oxidation of Amines to Imines</td>
<td>Rachel Chute</td>
<td>Rachel Whittaker</td>
<td>Murray State University</td>
<td>University</td>
<td>Murray State University</td>
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<tr>
<td>87. * - Solid Phase Organic Synthesis of an Antibody Drug Conjugate Linker</td>
<td>Levi Blevins</td>
<td>Ominica Crockett</td>
<td>Berea College</td>
<td>University</td>
<td>Berea College</td>
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<td>88. * - Phenylethynyloxacalixarenes Synthesis</td>
<td>Jacolby Gardner</td>
<td>KC Russell</td>
<td>Northern Kentucky University</td>
<td>University</td>
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<tr>
<td>89. * - Synthesis and Mechanism study of Isocoumarin Analogues</td>
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</table>
90. * - Annulene-Oxacalixarene Hybrids

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

Co-author: Lili Ma
University: Northern Kentucky

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

First Author: Emily Brown
Co-author: Nicholas Spark
University: Western Kentucky

Co-author: Eli Biedenbender

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

First Author: Ominica Crockett
Co-author: Levi Blevins
University: Berea College


First Author: Amanda Hansford
Co-author: Heba Elgazzar
University: Morehead State

94. - Encoding and Decoding Messages in Android Applications

First Author: Richard Pike
University: Western Kentucky

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

First Author: Brian Luciano
University: 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
First Author
Ieisha Hopwood
Kentucky State University
Co-author
Kazi Javed
Kentucky State University
Co-author
Tamara Sluss
Kentucky State University
Co-author
Li Lu
Kentucky State University

98. - Litter Breakdown and Invertebrate Detritivores from a Hydrologically Restored Stream
First Author
Jacob Becraft
Eastern Kentucky University
Co-author
Amy Braccia
Graduate Advisor

99. * - Influence of Salamanders on Leaf Litter Decomposition in Appalachian Headwater Streams
First Author
Emily Jones
Eastern Kentucky University
Co-author
Joseph Baecher
Eastern Kentucky University
Co-author
Amy Braccia
Eastern Kentucky University
Co-author
Stephen Richter
Eastern Kentucky University

100. - The Effects of Salinity on the Juvenile Freshwater Crayfish Procambarus clarkii
First Author
Alexandra Ghinn
Bellarmine University

101. * - Evaluation of biomass and filtration method on eDNA detection of fantail darters (Etheostoma flabellare)
First Author
Ramon Guivas
Asbury University
Co-author
Kyle Laufenburger
Asbury University
Co-author
Ben Brammell
Asbury University

102. * - Use of eDNA in detection of multiple salamander species in eastern Kentucky streams
First Author
Angie Flores
Asbury University
Co-author
Florene Bell
Asbury University
Co-author
Kenton Sena
University of Kentucky
Co-author
Thomas Maigret
University of Kentucky
Co-author
Chi Jing Leow
Asbury University

103. * - Detection of species using eDNA in high elevation habitats in the Sierra Nevada in Sequoia-
104. - Effect of Plastic Microbeads in Two Face Washes on Zebrafish Reproductive Success
First Author
Autumn Holley
Georgetown College
Co-author
Indigo Thoman
Georgetown College
Co-author
Tracy Livingston
Georgetown College

105. - Accessing the Direct Toxicity of the Plant Volatile Indole on Herbivores
First Author
Rakhi Patel
University of Louisville
Co-author
Abhinav Maurya
University of Louisville
Co-author
Christopher Frost
University of Louisville

106. * - Honeysuckle leaf blight increases leaf loss in Amur honeysuckle
First Author
Natalie Holsclaw
Northern Kentucky University
Co-author
Allison Jones
Northern Kentucky University
Co-author
Richard Boyce
Northern Kentucky University

107. - Ecosystem functional consequences of top predator amphibian mortality due to the invasive shrub, Lonicera maackii
First Author
Josey Berta
Eastern Kentucky University
Co-author
Cy Mott
Eastern Kentucky University

108. * - Elevated Resistance to AITC in Wild Bacterial Endophytes of Arabidopsis thaliana
First Author
Yohannes Amsalu
Berea College
Co-author
Matalynn Shealy
Berea College Biology Dept.
Co-author
Esther Abiara
Berea College Biology Dept.
Co-author
Brian Traw
Berea College

109. - Differences in plant communities at natural and constructed upland-embedded wetlands in the Daniel Boone National Forest
First Author
Rachel Fedders
Eastern Kentucky University
Co-author
Stephen Richter
Eastern Kentucky University

110. - Ecosystem functional consequences of body size variation in an apex predator
<table>
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<th>Title</th>
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<tr>
<td>111. * - Trophic effects of intraspecific body size variation among exploitative and interference competitors</td>
<td>David Smith</td>
<td>Cy Mott</td>
<td>Eastern Kentucky University</td>
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<tr>
<td>112. * - Determining the Cyanogenic Potential of Two Land Races of Lima Bean, Phaseolus lunatus</td>
<td>Renae Steinberger</td>
<td>Grace Freundlich</td>
<td>University of Louisville</td>
</tr>
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<td>113. * - Do Drip Tips Benefit Leaves in Both the Understory and Canopy of a Neotropical Rainforest?</td>
<td>Maria Shields</td>
<td>Christopher Frost</td>
<td>University of Louisville</td>
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<td>114. * - Do phenotypically plastic apex predators exhibit discrete patterns of local adaption to their invertebrate prey?</td>
<td>Austin Farson</td>
<td>Howard Whiteman</td>
<td>Eastern Kentucky University</td>
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<td>115. - Does Life History Variation Mediate the Effects of Disease?</td>
<td>Alex Woolen</td>
<td>Howard Whiteman</td>
<td>Murray State University</td>
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<td>116. - A phylogenetic examination of the Pseudanophthalmus cave beetles (Carabidae) of western Kentucky.</td>
<td>Jedidiah Nixon</td>
<td>Keith Philips</td>
<td>Western Kentucky University</td>
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<td>117. - The Effect of Malathion Toxicity on Zebrafish Caudal Fin Regeneration</td>
<td>Indigo Thoman</td>
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### 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>
<td>Ivan Novikov</td>
<td>Morteza Nurcheshmeh</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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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

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### 125. The Kentucky Forecasting System

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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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<td>Jacob Vincent</td>
<td>Katherine Kamminga</td>
<td>Thomas Webster</td>
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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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<td>Li Lu</td>
<td>Javed Kazi</td>
<td>Tamara Sluss</td>
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### 129. Use of a Reduced Sulfur Gas Chromatograph with Custom-made Permeation Tube for Analysis of Sulfur Compounds

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<td>Spencer Toms</td>
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<td>130.</td>
<td>Using remote sensing and GIS to study the development of Harmful Algal Blooms in Lake Erie.</td>
<td>Steven Collett</td>
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<td>131.</td>
<td>A high-wind climatology for the eastern U.S. during 1973-2015</td>
<td>Josh Durkee</td>
<td>Tori Murley</td>
<td>Western Kentucky University ECTC</td>
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<td>132.</td>
<td>The Impact of Urban Heat Island Magnitude on Organized Convective Systems</td>
<td>Logan Twohey</td>
<td>Jason Naylor</td>
<td>University of Louisville</td>
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<td>133.</td>
<td>Comparing water quality variables between first order streams located in agricultural and heavily forested communities</td>
<td>Caitlin Mullins</td>
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<td>134.</td>
<td>Trends in Total Suspended Solids (TSS) Discharge of Headwater Streams in Agricultural and Forested Watersheds</td>
<td>Jarod Jones</td>
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<td>135.</td>
<td>Observing Trends in Foodborne Illnesses and Health and Food Codes in the United States</td>
<td>Megan Paule</td>
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<td>136.</td>
<td>Comparing Accuracy of Supervised Image Classification of Wetlands in the Kentucky River Basin to the NLCD</td>
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</table>
137. * - The spatial distribution of local and organic food availability in Kentucky

First Author
Ariel Smith
Kentucky State University

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

Geology - Poster Presentations

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
### Health Science - Poster Presentations

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

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

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

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

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

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

| First Author       | Co-author                      |                                |                                |
|--------------------|--------------------------------|--------------------------------|                                |
| Changzheng Wang    | Lingyu Huang                   | Kentucky State                 | University                     |
| Kentucky State     |                                  |                                |                                |
| University         |                                  |                                |                                |
### 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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<tr>
<td>Riley James</td>
<td>Joseph Mester</td>
<td>Jonathan Schneider</td>
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<td>Northern Kentucky University</td>
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### 150. * - L-Serine Reduces Reactive Oxygen Species Yield in Cisplatin Treated Zebrafish Utricles

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

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<td>Padma Thimmaiah</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>
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<td>Tony Brown</td>
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<td>Kentucky State University</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>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: Glendy Pineda
Co-author: Louisa Summers
Co-author: Jaden Johnson
Berea College

156. * - Vitreous Syneresis in the Human Eye

First Author: Meg Glenn
Co-author: Douglas Borchman
KBRIN (UofL)

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

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

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

Microbiology - Poster Presentations

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

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

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

First Author: Samuel Chang
Western Kentucky University
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<th>161. - Characterization of Mycobacteriophage MooMoo</th>
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<td>Amanda Staples</td>
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<td>Kamila Nurmakova</td>
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<td>Berea College</td>
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<th>163. * - Effect of Growth Temperature on Mycoplasma iowae Pathogenicity</th>
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<tr>
<td><strong>First Author</strong></td>
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<tr>
<td>Christopher Frazier</td>
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<td>Kentucky Wesleyan College</td>
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<tr>
<th>164. * - Immunity Repressor Gene Regional Difference May Control Gene Expression of Lytic and Lysogenic Life Cycles</th>
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<tr>
<td><strong>First Author</strong></td>
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<td>Sahil Chhabra</td>
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<td>Western Kentucky University</td>
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<th>165. - Role of tRNA modifications in the regulation of pseudohyphal growth in yeast</th>
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<td><strong>First Author</strong></td>
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<tr>
<td>Kaylee Fox</td>
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<td>Northern Kentucky University</td>
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<th>166. * - Ruin Genome</th>
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<td><strong>First Author</strong></td>
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<td>Anmol Sandhu</td>
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<td>WKU</td>
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<tr>
<th>167. - The House Sparrow as a Better Model for the Human Gut Microbiome</th>
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<td><strong>First Author</strong></td>
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<tr>
<td>Joshua Nowacki</td>
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<td>168. * - Contemporaneous Ground-Based Observations of Blazars</td>
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<tr>
<td>Observed with NASA's K2 Mission</td>
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<td>for the Dual Radiation Rotating Scattering Mask</td>
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<td>170. * - Electrochemical Desulfurization and Electroactivity of</td>
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<tr>
<td>Molybdenum Disulfide (MoS2) Nanocatalysts on Reduced Graphene</td>
</tr>
<tr>
<td>171. * - Engineered Nanocomposite Materials Properties through</td>
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<tr>
<td>Embedding of Smaller Nanoparticles in a Polymer Matrix</td>
</tr>
<tr>
<td>Detection of Biomolecules and Monitoring DNA Hybridization</td>
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<tr>
<td>173. * - Graphene-Polymer Thin Film Composite Membranes as Efficient</td>
</tr>
<tr>
<td>and Anti-fouling Membranes for Water Purification</td>
</tr>
</tbody>
</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
Co-author: Taylor Robinson
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
Co-author: Kenneth Bader
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

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

Physiology and Biochemistry - Poster Presentations

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

First Author
Muntathar Alshimary
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

First Author
Imelda Saintilma
Berea College

Co-author
Jeremy Rotty
Uniformed Services University of the Health Sciences

190. * - Disruption of choline acetyltransferase (ChAT) by congenital mutations: Screening potential therapeutic leads

First Author
Abigail Whitaker
Berea College

Co-author
David Rodgers
University of Kentucky

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

First Author
Helina Asrat
Berea College

Co-author
Michelle Erickson
US Department of Veterans Affairs

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

First Author
Emma Higgins
University of Kentucky

Co-author
Allison Lane
University of Kentucky

Co-author
Alexandra Stanback
University of Kentucky

Co-author
Maddie Stanback
University of Kentucky

Co-author
Ross Basham
University of Kentucky

Co-author
Bernardo Aguzzoli
Heberle University of Kentucky

Co-author
Aaron Silverstein
University of Kentucky

Co-author
Bennett Collis
University of Kentucky

Co-author
Bharath Chithrala
University of Kentucky

Co-author
Robin Cooper
University of Kentucky

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

First Author
Nyasha Gombami
Berea College

Co-author
Alexandria Oviatt
Vanderbilt University

Co-author
Neil Osheroff
Vanderbilt University Medical Center

194. - P. gingivalis infection debilitates anti-viral immune responses in gingival epithelial cells
<table>
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<tr>
<th>Title</th>
<th>First Author</th>
<th>Co-author</th>
<th>Co-author</th>
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<tbody>
<tr>
<td>195. * - Pharmacological identification of cholinergic receptor subtypes in modulation of neural circuits in D. melanogaster</td>
<td>Umair Bhutto</td>
<td>Eashwar</td>
<td>Robin Cooper</td>
<td>University of Kentucky</td>
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<td>University of Kentucky</td>
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<tr>
<td>196. * - Placental Transfer and Metabolism of FDA-approved Drugs Repurposed for Novel Tocolytic Use</td>
<td>Allison Harper</td>
<td>Shajila Siricilla</td>
<td>Raymond Johnson</td>
<td>Lauren Lambert</td>
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<td>Vanderbilt University</td>
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<td>197. - Regulation of Programmed Genome Rearrangement in the Sea Lamprey</td>
<td>Taylor Stewart</td>
<td>Gena Wilson</td>
<td>Cody Saraceno</td>
<td>Jeremiah Smith</td>
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<td>Centre College</td>
<td>Murray State University</td>
<td>University of Kentucky</td>
<td>University of Kentucky</td>
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<td>198. - TBF-B Pathway in relation to down regulation of PTTG gene expression</td>
<td>Alanis Morgan</td>
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<td>Kentucky Biomedical Research Network</td>
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<td>199. * - The Role of Reactive Oxygen Species in Regulating TRPV4 Responses to Stimuli</td>
<td>Zackery Hill</td>
<td>Karthik Suresh</td>
<td>Xin Yan</td>
<td>Laura Servinsky</td>
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<td>University of Pikeville</td>
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<td>Haiyang Jiang</td>
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<td>200. *</td>
<td>Appraisal: The Effect of Electronic Media on Decision Making</td>
<td>Yabsira Ayele</td>
<td>Berea College</td>
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<td>201. *</td>
<td>Sustaining Attention: The Effects of Fidgeting and Break type</td>
<td>briana beckler</td>
<td>berea college</td>
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<td>Gregory Corso, Vanesa Jones, Abigail Mohr, Sydney Young, Gregory Corso</td>
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<td>203. *</td>
<td>The independence of implicit and explicit sequence learning</td>
<td>Allison Ludwig</td>
<td>Brandi Carey, Gilbert Remillard</td>
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<td>Katy Carlson</td>
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<td>204. *</td>
<td>Amazon Mechanical Turk Responses vs. Student Responses</td>
<td>Emily Lush</td>
<td>Jorden Crowe, Vanessa Jones, Abigail Mohr, Sydney Yoyng, Gregory Corso</td>
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<td>205.</td>
<td>Emphasis and &quot;only&quot; influence sentence interpretation</td>
<td>Victoria Nash</td>
<td>David Potter, Katy Carlson</td>
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<td>Gregory Corso, Vanesa Jones, Abigail Mohr, Sydney Young, Gregory Corso</td>
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</table>
Science Education - Poster Presentations

206. - An Interactive Earth: Augmented Reality and Hands-On Earth Science Inquiry in Schools

First Author
Olivia Santangelo
Western Kentucky University

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

First Author
Shelby Diener
Northern Kentucky University

Zoology - Poster Presentations

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

First Author
Cassondra Perkins
Kentucky Wesleyan College

Co-author
Greg Vicino
San Diego Zoo Global

Co-author
Angela Mackey
Kentucky Wesleyan College

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

First Author
Sydni Anderson
Murray State University

Co-author
Dena Weinberger
Murray State University

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

First Author
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
Bernardo Aguzzoli Heberle
University of Kentucky

Co-author
Bharath Chithrala
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
Robin Cooper
University of Kentucky

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

First Author: Jonathan Eisenhour  
Co-author: Matthew Fossett  
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  
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  

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**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 HydroAnalytical 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

Co-author
Katherine Buckler
Kentucky State University
<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
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<tbody>
<tr>
<td>09:45</td>
<td>Do Online Shoppers Have Knowledge on Community Supported Agriculture Programs?</td>
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<tr>
<td>First Author</td>
<td>Wyatt Lucas</td>
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<tr>
<td>First Author</td>
<td>Western Kentucky University, Dept. of Agriculture</td>
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<tr>
<td>10:15</td>
<td>Evaluation of drug-resistant Enterobacteriaceae on produce from small farms.</td>
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<tr>
<td>First Author</td>
<td>Tavin Marshall</td>
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<td>First Author</td>
<td>Kentucky State University</td>
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<td>10:30</td>
<td>Optimizing Non-Phytate Phosphorus in Soybean Meal-Based Diets for Largemouth Bass Micropterus salmoides</td>
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<td>First Author</td>
<td>Kasondra Miller</td>
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<td>Kentucky State University</td>
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<tr>
<td>Co-author</td>
<td>Habte-Michael Habte-Tsion</td>
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<td>Co-author</td>
<td>Waldemar Rossi</td>
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<tr>
<td>10:45</td>
<td>Assessing the Use of Biochar for Immobilization of Trace Elements in Sewage Sludge</td>
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<td>First Author</td>
<td>Lusekelo Nkuwi</td>
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<td>Kentucky State University</td>
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<td>Co-author</td>
<td>Eric Turley</td>
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<tr>
<td>Co-author</td>
<td>Quinn Quinn Heist</td>
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<tr>
<td>Co-author</td>
<td>Yogendra Yogendra Upadhyaya</td>
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<tr>
<td>11:00</td>
<td>Efficacy of a fertilization solution created with testes extraction and maceration in largemouth bass</td>
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<td>First Author</td>
<td>Amit Sharma</td>
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<td>Kentucky State University</td>
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<td>First Author</td>
<td>Thomas Trivette</td>
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<td>Lusekelo Nkuwi</td>
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</table>
11:30 - Low-Tech hydroponics for beginning and limited resource farmers

First Author
Nanaaishat umar
Kentucky State University

Co-author
Siddhartha Dasgupta
Kentucky State University

Co-author
Richard Bryant
Kentucky State University

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

Chemistry: Analytical/Physical - Oral Presentations
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

08:15 - 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
Morehead State University

Co-author
Bommanna Loganathan
Professor
Morehead State University

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

Co-author
Donald Stec
Vanderbilt University

Western Kentucky University


First Author
Ryan Lamb
Western Kentucky University

Co-author
Matthew Nee
Western Kentucky University

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

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

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
<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>First Author</th>
<th>Co-author 1</th>
<th>Co-author 2</th>
<th>Co-author 3</th>
<th>Co-author 4</th>
<th>Co-author 5</th>
</tr>
</thead>
<tbody>
<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>Eastern Kentucky</td>
<td>University</td>
</tr>
<tr>
<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 Muenich</td>
<td>Austin Owens</td>
<td>Eastern Kentucky</td>
<td>University</td>
</tr>
<tr>
<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>
<td>Department of Biology, University of Louisville</td>
<td></td>
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</tr>
<tr>
<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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<tr>
<td>09:45</td>
<td>Beaver-mediated restoration in a degraded desert ecosystem</td>
<td>Melody Feden</td>
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</tbody>
</table>
### 10:15 - Varying duration periods of the herbivore-associated cue differentially affect fitness in *P. lunatus* and *C. annuum*

**First Author**
Grace Freundlich  
*University of Louisville*

**Co-author**
Liana Greenburg  
*Wageningen University*

Sarah Bissmeyer  
*University of Louisville*

Carly Nunamaker  
*University of Louisville*

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*

### 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, Crawford Hydrology Laboratory*

Chris Groves  
*Western Kentucky University*

Cate Webb  
*Western Kentucky University*

Rickard Toomey III  
*National Park Service, Mammoth Cave National Park*

Bobby Carson  
*National Park Service, Mammoth Cave National Park*

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

**DSU 3020**  
Section meeting follows talks at 3:15

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>First Author</th>
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<th>Co-author 4</th>
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<tbody>
<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</td>
<td>Western Kentucky University</td>
<td>Western Kentucky University</td>
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<tr>
<td>08:15</td>
<td>High Amplitude variable Active Galactic Nuclei</td>
<td>Dirk Grupe</td>
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<tr>
<td>08:30</td>
<td>Citizen CATE: citizen scientist observations of 2017 total solar eclipse</td>
<td>Richard Gelderman</td>
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<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</td>
<td>Ilhom Saidjafarzoda</td>
<td>Donald Price</td>
<td>Ali Er</td>
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<td>Western Kentucky University</td>
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<td>Mikhail Khenner</td>
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<td>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>
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<tr>
<td>09:15</td>
<td>Fabrication of Aluminum Nanoparticles via Pulsed Laser Ablation for Bacterial Deactivation</td>
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<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>Northern Kentucky University</td>
<td>Matthew Zacate</td>
<td>Northern Kentucky University</td>
<td></td>
</tr>
<tr>
<td>09:45</td>
<td>* - Effects of Plastic Deformation and Tensile Strain on Polycrystalline Solids</td>
<td>Jesse Tapp</td>
<td>Murray State University</td>
<td>Dylan Weaver</td>
<td>Murray State University</td>
<td></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>Berea College</td>
<td>Sylwia Ptasinska</td>
<td>University of Notre Dame</td>
<td></td>
</tr>
<tr>
<td>10:30</td>
<td>* - Blue Light and UV Blocking Lenses</td>
<td>Marissa Walls</td>
<td>Morehead State University</td>
<td>Jennifer Birriel</td>
<td>Morehead State University</td>
<td></td>
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<tr>
<td>10:45</td>
<td>* - Investigating the Anode Heel Effect at 75kV and 140kV</td>
<td>Casey Christian</td>
<td>Morehead State University</td>
<td>Ignacio Birriel</td>
<td>Morehead State University</td>
<td></td>
</tr>
<tr>
<td>11:00</td>
<td>Modular Bootstrap bounds at Finite Central Charge</td>
<td>Casey Christian</td>
<td>Morehead State University</td>
<td>Joshua Qualls</td>
<td>Morehead State University</td>
<td></td>
</tr>
<tr>
<td>11:15</td>
<td>* - Energy Determination in the ISS-CREAM Instrument Using Simulations</td>
<td>Tyler LaBree</td>
<td>Northern Kentucky</td>
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</tbody>
</table>
## 11:30 * - Analyses of Jet measurements in Relativistic Heavy Ion Collisions

<table>
<thead>
<tr>
<th>First Author</th>
<th>Co-author</th>
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<tbody>
<tr>
<td>Ricardo Santos</td>
<td>Christine Nattrass</td>
<td>Soren Sorensen</td>
<td>Redmer Bertens</td>
<td>James Neuhaus</td>
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<tr>
<td>Berea College</td>
<td>University of Tennessee</td>
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<td>University of Tennessee</td>
<td>University of Tennessee</td>
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<td>Co-author</td>
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<td></td>
<td>Austin Schmier</td>
<td>Jerrica Wilson</td>
<td>Mariah McCreary</td>
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<td></td>
<td>University of Tennessee</td>
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</table>

## 11:45 * - Nylon or Steel?

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<tr>
<th>First Author</th>
<th>Co-author</th>
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<tbody>
<tr>
<td>Tanner Tacket</td>
<td>Ignacio Birriel</td>
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<td>Morehead State</td>
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<td>University</td>
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## 13:15 * - X-ray Diffractometry and Compression of Materials

<table>
<thead>
<tr>
<th>First Author</th>
<th>Co-author</th>
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<tbody>
<tr>
<td>Hayden Johnson</td>
<td>Jacob Hall</td>
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<tr>
<td>Murray State</td>
<td>Murray State</td>
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<tr>
<td>University</td>
<td>University</td>
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## 13:30 - TESS: Initial Results and Follow-Up Work at the University of Louisville

<table>
<thead>
<tr>
<th>First Author</th>
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<tbody>
<tr>
<td>Garrison Turner</td>
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<tr>
<td>Big Sandy Community</td>
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<td>and Technical College</td>
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</table>

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

<table>
<thead>
<tr>
<th>First Author</th>
<th>Co-author</th>
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<tr>
<td>Parker Poulos</td>
<td>Dirk Grupe</td>
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<td>Morehead State</td>
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<td>University</td>
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## 14:00 - Long term X-Ray and UV monitoring of the Narrow Line Seyfert 1 Galaxy, RXJ2217.9-5941

<table>
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<tr>
<th>First Author</th>
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<tbody>
<tr>
<td>Alanna Cavins</td>
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<td>Morehead State</td>
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<td>University</td>
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</table>

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

<table>
<thead>
<tr>
<th>First Author</th>
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<tr>
<td>Thomas Pannuti</td>
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<tr>
<td>Morehead State</td>
</tr>
</tbody>
</table>
14:30 - Night Sky Quality at Mammoth Cave National Park

First Author
Chris Groves
Western Kentucky University

Co-author
Bobby Carson

Co-author
Barclay Trimble

Co-author
Vickie Carson

Co-author
Dave Spence

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

Co-author
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
### 08:45 * - Early Detection of Breast Cancer Through Changes in Amino Acid Metabolism

**First Author**
David Kelley  
**Co-author**
Kyle Damen (Thomas More College)  
James Deddens (Wood Hudson Cancer Research Laboratory)  
Larry Douglass (Wood Hudson Cancer Research Laboratory)  
James Deddens (Wood Hudson Cancer Research Laboratory)  
Leila Valanejad (Wood Hudson Cancer Research Laboratory)  
Julia Carter (Wood Hudson Cancer Research Laboratory)

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

**First Author**
Ryan Moore  
**Co-author**
Kyle Damon (Northern Kentucky University)  
Zachary Taylor (Wood Hudson Cancer Research Laboratory)  
Julia Carter (Wood Hudson Cancer Research Laboratory)  
James Deddens (University of Cincinnati)  
Larry Douglass (Wood Hudson Cancer Research Laboratory)  
Julia Carter (Wood Hudson Cancer Research Laboratory)  
Leila Valanejad (Wood Hudson Cancer Research Laboratory)  
Grace Restle (Wood Hudson Cancer Research Laboratory)

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

**First Author**
Clara Reasoner  
**Co-author**
Yuqi Bian (Berea College)  
Jeffrey Jian (Vanderbilt University)  
Katherine Rothamel (Vanderbilt University)  
Byungil Kim (Vanderbilt University)  
Manuel Ascano (Vanderbilt University)

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

**First Author**
Kalin Russell  
**Co-author**
James Dedden (Wood Hudson Cancer Research Laboratory)  
Larry Douglass (Wood Hudson Cancer Research Laboratory)  
Julia H. Carter (Wood Hudson Cancer Research Laboratory)  
Grace Restle (Wood Hudson Cancer Research Laboratory)  
Julia Carter (Wood Hudson Cancer Research Laboratory)  
James Deddens (University of Cincinnati)  
Larry Douglass (Wood Hudson Cancer Research Laboratory)  
Julia Carter (Wood Hudson Cancer Research Laboratory)  
Grace Restle (Wood Hudson Cancer Research Laboratory)

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

**DSU 2113**

Section meetings follow talks at 11:15

<table>
<thead>
<tr>
<th>Time</th>
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<th>First Author</th>
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</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, WKU</td>
<td>Oliver Beckers, Murray State University</td>
<td>Nicholas Norman, Murray State University</td>
<td>Jacob Pease, Murray State University</td>
</tr>
<tr>
<td>08:15</td>
<td>The kinematics of envenomation by the yellow stingray, Urobatis jamaicensis</td>
<td>Steve Huskey, WKU</td>
<td>Steve Huskey, WKU</td>
<td>Ruth Hughes, University of Notre Dame</td>
<td>Kristen Pedersen, University of Southern California</td>
</tr>
<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 Hodinika, Western Kentucky University</td>
<td>Brett Hodinika, Western Kentucky University</td>
<td>Noah Ashley, Western Kentucky University</td>
<td></td>
</tr>
<tr>
<td>08:45</td>
<td>New Discoveries of Relationships in Spider Beetles and Related Families Using Molecular Phylogenetics</td>
<td>Olivia Gearner, Western Kentucky University</td>
<td>Olivia Gearner, Western Kentucky University</td>
<td>Keith Philips, Western Kentucky University</td>
<td></td>
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<tr>
<td>09:00</td>
<td>Heritable Behavioral Tendencies of the African Lion</td>
<td>Natalie Mercer, Kentucky Wesleyan College</td>
<td>Natalie Mercer, Kentucky Wesleyan College</td>
<td>Milan Lstibýrek, Czech University of Life Sciences Prague</td>
<td>Jan Stejskal, Czech University of Life Sciences Prague</td>
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<tr>
<td>09:15</td>
<td>Courtship behavior, communication, and copulation in Tigrosa annexa</td>
<td>Samuel White</td>
<td>Samuel White</td>
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*Indicates presentation may be embargoed for publication.*
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!

Saturday, November 3, 2018 9:00am - 3:00pm

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

Saturday, November 3, 2018 9:00am - 4:00pm

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.

Saturday, November 3, 2018 12:00pm - 1:00pm

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.

Saturday, November 3, 2018 1:14pm - 4:00pm

Oral Presentations - Saturday Afternoon

Asterisk * denotes student research competition

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

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>Presentation</th>
<th>First Author</th>
<th>Co-author</th>
</tr>
</thead>
<tbody>
<tr>
<td>13:15</td>
<td>Inadvertent local climate modification at a regional university in Kentucky, USA</td>
<td>Donald Yow, Eastern Kentucky University</td>
<td>Matthew Ruggless, Eastern Kentucky University</td>
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<tr>
<td>13:30</td>
<td>URBAN HEAT AND DEMOGRAPHIC CHANGE: A COMPARATIVE ANALYSIS OF THE LARGEST 100 CITIES OF THE TEMPERATE-FORESTED ECOREGION</td>
<td>Tori Farrow, Kentucky State University</td>
<td>Jeremy Sandifer, 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>Christopher Andrew, 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>Aman Bhatta, Kentucky State University</td>
<td>Buddhi Gyawali, 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>Saaruj Khadka, Kentucky State University</td>
<td>Buddhi Gyawali, University ; Tilak Shrestha, Kentucky State University</td>
</tr>
<tr>
<td>14:30</td>
<td>How economic geography might have saved the Mammoth Cave Mushroom Company</td>
<td>Katie Algeo, Western Kentucky University</td>
<td></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>
<td></td>
</tr>
</tbody>
</table>
Dallas McKinney
Western Kentucky
University

15:00 - Mapping Opioid Epidemic in Kentucky’s Counties
First Author
Charlie Zhang
University of Louisville

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

Health Science - Oral Presentations

DSU 3005
Section meeting follows talks at 2:30

13:15 * - Activation of Human Immune Responses by Novel Vaccines for Hepatitis C Virus
First Author
Samuel Adams
Northern Kentucky University
Co-author
Brett Messmer
Northern Kentucky University
Co-author
Hunter Morgan
Northern Kentucky University
Co-author
Ryan Fitzpatrick
Northern Kentucky University
Co-author
Joseph Mester
Northern Kentucky University

13:30 - Prevalence of Dyslipidemia in Young African Americans
First Author
Bisola Asaolu
Kentucky State University

13:45 * - Epidemiology of HPV-Associated Cancers: Changing Trends and Future Burden
First Author
Yeongha Oh
Berea College

14:00 - Bacterial deactivation by using Graphene quantum dot as an effective photodynamic therapy agent
First Author
Ermek Belekov
Western Kentucky University Physics and Astronomy Department
Co-author
Lauren Cooper
Western Kentucky University Physics and Astronomy Department
Co-author
Khomidkhodzha Kholikov
Western Kentucky University Physics and Astronomy Department
Co-author
Ilhom Saidjafarzoda
Western Kentucky University Physics and Astronomy Department
Co-author
Michael Smith
14:15 - Effects of alpha & beta-adrenergic receptor blockade upon inflammatory responses & microglia activation to sleep loss.

First Author
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
1997

13:45 - From the Hardwood to the Spreadsheet

First Author
Christopher Napier
Morehead State University

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

First Author
Dwight Smith
Kentucky Community and Technical College System

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

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

First Author
Andy Martin
Kentucky State University

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

First Author
Doug Chatham
Morehead State University

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

First Author
Mark Robinson
Western Kentucky University

15:15 - Random Operators and Dynamical Localization

First Author
Kyle Besing
Kentucky Wesleyan College

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

First Author
Mikhail Khenner
Western Kentucky University

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

First Author
Justin Trulen
Kentucky Wesleyan College

Science Education - Oral Presentations

DSU 3006
Section meeting follows talks at 2:45

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

First Author
Sydney Wheeler
Western Kentucky University

Co-author
Farley Norman
Western Kentucky University

Co-author
Lauren Pederson
Western Kentucky University

Co-author
Catherine Dowell
Western Kentucky University

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

First Author
Amanda Lilly
Northern Kentucky University

1:45 - Five minute presentations

First Author
Poster Presenters
.

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

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

This workshop is open to any registered KAS meeting participant.

Quick Links

Annual Meeting Overview
Welcome to Berea College
Registration & Abstract Submission
Keynote Speaker
Statistics Consults at KAS
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Campus Map & Logistics
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