2018 Annual Meeting Program
November 2-3, 2018

Western Kentucky University

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KENTUCKY SCIENCE CENTER

WKU Office of Research and Creative Activity

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

Online Program, 2018

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

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

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

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

### KAS Governing Board Meeting

**Downing Student Union 3029**

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

### Kentucky Organization of Field Stations meeting

**Downing Student Union 3004**

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

### Registration Open

- **Third Floor, Downing Student Union**
- **Friday, November 2, 2018 11:30am - 5:00pm**
  - Check-in will also be available at the National Corvette Museum after 6:30pm, during the Reception & Plenary.

### Poster Presenters check-in

- **Third Floor, Downing Student Union**
- **Friday, November 2, 2018 12:00pm - 2:30pm**
  - 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.

### Science Policy & Advocacy workshop

- **Cupola Room (inside Fresh Dining Hall)**
- **Friday, November 2, 2018 12:00pm - 1:00pm**
  - What do scientists need to know about public policy? Do you want to advocate for science but aren't sure how to start? This workshop is for everyone – students and faculty - regardless of discipline, who are interested in learning more about the role of science in policy-making and in becoming empowered to be a voice for science. Our colleagues at the American Society for Biochemistry and Molecular Biology will provide practical guidance on how to engage in advocacy initiatives at local, state and national levels.

  - This event is FULL.

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

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

He began his independent career in 2008 and he is currently a Professor in the College of Medicine at the University of Kentucky where he oversees projects on both Lafora disease and biofuels research. The lab focuses on the regulation of specific phosphatases and E3 ubiquitin ligases in both human glycogen and plant starch metabolism utilizing in vitro biochemical and structural techniques; in situ cell culture models; and in vivo mouse, algal and plant models. Dr. Gentry has been continuously funded by NINDS since 2006, he is an NIH K99/R00 Pathway to Independence Award recipient, he received the NIH Young Investigator JDeA 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.

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

**Oral Presentations- Friday Afternoon**

Asterisk * denotes student research competition

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**Cellular and Molecular Biology - Oral Presentations**

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>First Author</th>
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<tbody>
<tr>
<td>1:15 *</td>
<td>Analysis of effects on tRNA modifications and hyphal growth by the elongator complex in C. albicans.</td>
<td>Justin Rabe</td>
<td>Rachel Morgeson</td>
<td>Jenna Kappes</td>
<td>Daisy Davita</td>
<td>Kaylee Fox</td>
<td>Northern Kentucky University</td>
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<td>Olivia Gilliam</td>
<td>John Carmen</td>
<td>Michael Guy</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>
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<td>Anschutz Medical Campus</td>
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<tr>
<td>1:45</td>
<td>Investigating How EF-24 and Cisplatin Effect Cancer and Renal Cells</td>
<td>Denis Hodzic</td>
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<tr>
<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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<td>Murray State University</td>
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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
Patrick Sean McGrath
University of Colorado Denver - Anschutz Medical Campus

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

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

First Author
Nathan Powers
Western Kentucky University

Co-author
Ajay Srivastava
Western Kentucky University

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

First Author
Lesley Golden
Murray State University

Co-author
Gary ZeRuth
Murray State University

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

Computer & Informational Sciences - Oral Presentations
DSU 2113
Section meeting follows talks at 3:00

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

First Author
Mustafa Atici
Western Kentucky University

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

First Author
Christopher Harton
Murray State University

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

First Author
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**

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<th>First Author</th>
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<td>Aaron Zucherman</td>
<td>Jose Garcia</td>
<td>Matt Craft</td>
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<td>Amin Djamshidpour</td>
<td>Regan Smith</td>
<td>Hank Voss</td>
<td>Jeff Dailey</td>
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**Friday, November 2, 2018  1:15pm - 3:15pm**

**Environmental Science - Oral Presentations**

<table>
<thead>
<tr>
<th>DSU 1037</th>
<th>Section meeting follows talks at 3:15</th>
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<tbody>
<tr>
<td>WITHDRAWN - A synoptic focus on the January 2016 blizzard and tornado event using satellite and radar imagery</td>
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<tr>
<td>WITHDRAWN - American Chestnut Reintroduction in Kentucky: a GIS Approach</td>
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<td>1:45 - An Index-Based Assessment of Tourism Development Impacts on Cold-Climate Hydrologically-Dominant Landscapes</td>
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<th>First Author</th>
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<tbody>
<tr>
<td>Jason Fox</td>
<td>Leslie North</td>
<td>Jason Polk</td>
<td>Sydney Herndon</td>
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| 2:00 * - Analysis of the Bioaccumulation of Methylmercury in the Organs and Tissues of Bald Eagles |

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<tr>
<th>First Author</th>
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<tbody>
<tr>
<td>Evan Hendrickson</td>
<td>Leslie North</td>
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| 2:15 - Assessment of Emerald Ash Borer Related Canopy Gaps in Kentucky Using Drone-Based Remote Sensing and Plot-Level Data |

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<th>First Author</th>
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<tr>
<td>Brandon Preece</td>
<td>Richard Cristan</td>
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<td>Kentucky State</td>
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</table>
2:30 - Comparison of Benthic Macroinvertebrate Sampling Methods on Non-Wadeable Waters: A Study Proposal

First Author
Ed Wilcox
Kentucky State University

Co-author
Richard Cristan
Kentucky State University

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

First Author
Ian Ries
Kentucky State University

Co-author
Maheteme Gebremedhin
Kentucky State University

Co-author
Martin Matisoff
Kentucky State University

Co-author
Ken Andries
Kentucky State University

Co-author
Martin Matisoff
Kentucky State University

Co-author
Ken Andries
Kentucky State University

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

First Author
Stephen Richter
Eastern Kentucky University

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

Geology - Oral Presentations

DSU 3002
Section meeting follows talks at 3:15

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

First Author
Chelsey Kipper
Western Kentucky University

Co-author
Patricia Kambesis
Western Kentucky University

Co-author
Jason Polk
Western Kentucky University

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

First Author
Mitchell Grothaus
Morehead State University

Co-author
Elizabeth Hereford
Morehead State University

Co-author
Robert Grigsby
Morehead State University

Co-author
Geoffrey Gearner
Morehead State University

Co-author
Timothy Hare
Morehead State University

Co-author
Charles Mason
Morehead State University

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

First Author
### 2:00 - Incision timing and its relationship to tectonic uplift and climate change: using thermochronology to unravel Ethiopia's

<table>
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<th>First Author</th>
<th>Co-author 1</th>
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<th>Co-author 3</th>
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<tr>
<td>Shelby Bowden</td>
<td>Nahid Gani</td>
<td>Matthijs Van Soest</td>
<td>Royhan Gani</td>
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<td>Arizona State University</td>
<td>Western Kentucky University</td>
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<tr>
<td>Co-author</td>
<td>M. Royhan Gani</td>
<td>Prabhakar Misra</td>
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<td>Western Kentucky University</td>
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### 2:15 - Mass-Transport Deposits in the Northern Gulf of Mexico and Their Implications to Hydrocarbon Exploration

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<th>First Author</th>
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<tr>
<td>Michael Arthur</td>
<td>M. Royhan Gani</td>
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<td>Western Kentucky University</td>
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### 2:30 * - Spectral Analysis of Analog Lunar and Martian Mineral Samples

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<th>First Author</th>
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<tr>
<td>Madison Howard</td>
<td>Marianne Peterson</td>
<td>Prabhakar Misra</td>
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<td>Morehead State University</td>
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### 2:45 - Stratigraphic Controls on Cave Passage Development of Dogwood Cave, Hart, County, Kentucky

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<td>Patricia Kambesis</td>
<td>Shelby Bowden</td>
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### 3:00 - Tekeze River Incision Constrained from Apatite (U-Th)/He Dating

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<td>Shelby Bowden</td>
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### 1:15 * - Effect of Growth Temperature on Mycoplasma iowae Pathogenicity

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<td>Brittany Boyken</td>
<td>Justin Fraizer</td>
<td>Rachel Pritchard</td>
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<td>Kentucky Wesleyan College</td>
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### 1:30 - Host range shift of H3N8 canine influenza virus: A phylodynamics approach to delineate its origin and its adaptation

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<td>Alexander Lai</td>
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### 1:45 * - Novel Inactivation of the Causative Fungus of White Nose Syndrome with Methoxsalen and Ultraviolet A Light

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

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<td>Clarissa Gearner</td>
<td>Simran Banga</td>
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### 2:15 - UV Treatment of Environmental Fungi

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<td>Ashley Wentworth</td>
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### 2:30 * - Metal and antibiotic cross-resistance among bacteria isolated from the Kentucky River

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<tr>
<td>William Fenske</td>
<td>William Staddon</td>
<td>Valerie Peters</td>
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<td>Eastern Kentucky University</td>
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**Practice Room**

**DSU 2081**

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

**DSU 3004**

This room is available for speakers to practice their presentations.

### Poster Session and Social Hour

**Downing Student Union, Second & Third floors**

Asterisk* denotes student research competition

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

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

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


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<th>First Author</th>
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<tr>
<td>Nathan Folz</td>
<td>Handayani</td>
<td>Brian Parr</td>
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#### 4. * - Assessing Soil Quality Indicators in No-Till and Conventional Tillage Systems: Study Case: IL, IN, and KY

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<td>Riley Mabe</td>
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<td>Mabe</td>
<td>Handayani</td>
<td>I. P. Handayani</td>
<td>Parr</td>
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#### 5. * - Assessing the Rising Plate Meter Method to Determine Forage Production on Organic Dairies

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<td>River Dowell</td>
<td>Iin Handayani</td>
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**6. * - Comparing Characteristics of Soil under Various Management Conditions in Western Kentucky**


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

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

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

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

**12. * - Evaluation of Soil Response to the Applications of Ammonium Nitrate and Horse Manures**
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<td>13.</td>
<td>Food Safety Perceptions and Behaviors of Kentucky Farmer Market Consumers</td>
<td>Hanna (John) Khouryieh Western Kentucky University</td>
<td>Co-author</td>
<td>Marlain Khouryieh Western Kentucky University</td>
<td>Co-author</td>
<td>Steve Still Murray State University</td>
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<td>14.</td>
<td>Grafting success of eleven pawpaw cultivars and advanced selections using four grafting methods</td>
<td>Sheri Crabtree Kentucky State University</td>
<td>Jeremy Lowe Kentucky State University</td>
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<td>Kirk Pomper Kentucky State University</td>
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<td>Growth of Pawpaw (Asimina triloba) Seedlings in Two Commercially Available Potting Mixes</td>
<td>Aidan Thompson Kentucky State University</td>
<td>Co-author</td>
<td>Jessica Stoner Murray State University</td>
<td>Co-author</td>
<td>Alyx Shultz Murray State University</td>
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<td>16.</td>
<td>Impact of aerobic compost tea on growth of Lactuca sativa</td>
<td>Ella Potts Murray State University</td>
<td>Co-author</td>
<td>Shawn Lucas Murray State University</td>
<td>Co-author</td>
<td>Derek Law Kentucky State University</td>
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<td>17.</td>
<td>Impact of integrated crop-livestock rotation including small ruminants on nitrate and phosphorus concentrations in water</td>
<td>Ellyn Anthony Kentucky State University</td>
<td>Co-author</td>
<td>Shawn Lucas Kentucky State University</td>
<td>Co-author</td>
<td>Tony Silvermail Beyond the Bridge Organic Farm University</td>
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<td>Investigating the Impact of Soil Amendments on Eggplant Production</td>
<td>Yogendra Upadhyaya Kentucky State University</td>
<td>Co-author</td>
<td>Yogendra Upadhyaya Kentucky State University</td>
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<td>Yogendra Upadhyaya Kentucky State University</td>
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19. - Longitudinal Histological Study of Nosema ceranae in Honey Bees

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<td>Katherine Kamminga</td>
<td>Thomas Webster</td>
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<td>Samantha Peterson</td>
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21. - The Effect of Sulfur and Copper Fungicides on June Drop of Pawpaw Fruit.

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<td>Sijan Pandit</td>
<td>Jeremiah Lowe</td>
<td>Sheri B Crabtree</td>
<td>Kirk William Pomper</td>
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22. - Variation in annonaceous acetogenins activity in twig tissues of pawpaw varieties and new advanced selections using.....

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

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

Anthropology and Sociology - Poster Presentations

24. - Ethnographic Study of Ohio River Barge Deckhands

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</table>
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
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Northern Kentucky University
Co-author
Samantha Hamilton
Northern Kentucky University
Co-author
Cooper Pfalz
Northern Kentucky University

27. * - Uncovering the Women of Parker Academy

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

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

Botany - Poster Presentations

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

First Author
Wendy Cecil
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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
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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
Affiliation: Western Kentucky University
Co-author: Ajay Srivastava
Affiliation: Western Kentucky University

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

First Author: Natalie Mercer
Affiliation: Kentucky Wesleyan College
Co-author: Krystal Hamorsky
Affiliation: Kentucky Wesleyan College

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

First Author: Sharman N Sugumaran
Affiliation: Berea College
Co-author: Keenan Taylor
Affiliation: Vanderbilt University

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

First Author: Diana Schweitzer
Affiliation: Murray State University
Co-author: Dena Weinberger
Affiliation: Murray State University

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

First Author: Alexander Stewart
Affiliation: Western Kentucky University
Co-author: Claire Rinehart
Affiliation: Western Kentucky University

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

First Author: Jiyoung Shim
Affiliation: Western Kentucky University
Co-author: Moon-Soo Kim
Affiliation: Western Kentucky University

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

First Author: Tristan Haight
38. Evaluation of Genes that May Mediate Individualization in Spermatogenesis

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<th>First Author</th>
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<td>Olivia Honaker</td>
<td>Darren Paris</td>
<td>Douglas Harrison</td>
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<td>Centre College</td>
<td>Murray State</td>
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39. Examining how the FGF signaling pathway effects gene expression within the pharynx during embryonic development

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<td>Elizabeth Wilke</td>
<td>Emily Shifley</td>
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40. Examining the Role that Iroquois Genes Play During Embryonic Development

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<td>Maria Stewart</td>
<td>Emily Shifley</td>
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41. Fishing for fertility: Creating a PAM-1 substrate trap to isolate novel fertility-governing proteins

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<td>Autumn Graves</td>
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42. Generation of a transgenic beta cell line for study of Glis3 using CRISPR/Cas9 technology

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<td>NancyAnn Webster</td>
<td>Gary ZeRuth</td>
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43. Generation of transgenic zebrafish line by CRISPR/Cas9 to evaluate pancreas development and function

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<td>LilyAnne Grieve</td>
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</table>
44. * - Integrin \( \beta1 \) Promotes Kras-Mutated Lung Cancer Proliferation Via Mapk-Independent Mechanism

First Author  
Kateryna Nabukhotna  
Berea College

Co-author  
Scott Haake  
Vanderbilt University

Medical Center

45. * - Investigating a transient expression system in Nicotiana Benthamiana for the production of Novel TALE Proteins

First Author  
Colleen Jackson  
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Co-author  
Wendy Cecil  
Western Kentucky University

Kibum Kim  
Chung-Ang University

Moon-Soo Kim  
Western Kentucky University

Kisung Ko  
Chung-Ang University

46. * - Platinum Leaving Ligand Effects on Mammalian Cells

First Author  
Emily Nole  
Western Kentucky University

Co-author  
Jessica Schlabach  
Western Kentucky University

Brooke Duke  
Western Kentucky University

B.Blairanne Williams  
Western Kentucky University

47. * - Potential for the green alga Chlamydomonas reinhardtii to degrade lignin

First Author  
Meg Dillingham  
Western Kentucky University

Co-author  
Cydne Kitchens  
Western Kentucky University

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

First Author  
Areli Medina Hernandez  
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Co-author  
Lauren Walsh  
University of Missouri

Thaysa Ghiarone  
University of Missouri

Luis Martinez-Lemus  
University of Missouri

Jaume Padilla  
University of Missouri

49. - Spinal Cord Injury and its effect on Circadian Rhythm

First Author  
Charles Thaler  
KBRIN

50. * - The Bioinformatics of Mycobacteriophage Drake94

First Author
51. * - The effect of light pollution on immunoresponse and neurogenesis in zebra finches

**First Author**
Matthew Knerr  
**University**
Western Kentucky

52. * - The Effects of Acute Sleep Fragmentation on Microglial Cells

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<td>Anna Strunjas</td>
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53. * - The effects of oxidative stress on p75NTR signaling in dopaminergic neurons.

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

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<td>Kelsey Donahue</td>
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55. - The Role of Polarity Genes in Esophageal Adenocarcinoma Metaplasia

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<td>David Wang</td>
<td>Malinda Stull</td>
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56. * - Therapeutic and toxicity profile of Pt-Mal-LHRH, a target direct chemotherapeutic for triple negative breast cancer.

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<td>Lindsay Calderon</td>
<td>Margaret Ndinguri</td>
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### Chemistry: Analytical/Physical - Poster Presentations

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

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

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

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

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

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

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<td>Beau Schweitzer</td>
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<td>University of Michigan</td>
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#### 63. * - Purification and Analysis of LHRH using HPLC
64. - Detection of Polyions with Pulsed Chronopotentiometry - Screening Antidotes for the Anticoagulants Low Molecular Heparin

First Author  
Sean Greer  
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Kyle Rowe  
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65. * - Determination of Ochratoxin A in Kentucky Black Walnuts

First Author  
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Asbury University

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

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

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Co-author  
John Burden  
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68. * - Modeling Molecular Relaxation Dynamics for Diatom Clathrates

First Author  
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Co-author  
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Western Kentucky University

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

First Author  
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69.5 * - Unraveling Subtle Intermolecular Interactions in Crystals of a Solar Thermal Fuel.

First Author  
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Murray State University

Co-author  
Kasey Clear  
Murray State University

Co-author  
Sebastian Jezowski  
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Co-author  
Kasey Clear  
Murray State University

Co-author  
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Murray State University

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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-author
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The University of Tennessee, Knoxville

Co-author
Lindsey Miller
The University of Tennessee, Knoxville

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

First Author
Madisyn Hayes
Northern Kentucky University

Co-author
Eric Milner
Northern Kentucky University

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

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Co-author
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Co-author
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Colby College

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Kristine Nolin
University of Richmond

Co-author
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74. - Synthesis of Oxacalixarenes from Silyl Protected Precursors

First Author
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Co-author
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Co-author
Bailey Hardey
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Co-author
Rachel Holland
Northern Kentucky University

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

First Author
Ban Wang
Western Kentucky University

Co-author
Isaac Howard
Western Kentucky University

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

<table>
<thead>
<tr>
<th>First Author</th>
<th>Co-author</th>
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<tr>
<td>Simrat Kaur</td>
<td>BANGBO YAN</td>
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### 77.5. - An in vitro Study on Skin Protection Across the UV Spectra

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<tr>
<td>Cheyenne Boone</td>
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<td>Kentucky State</td>
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### 78. * Phosphonium-containing Poly(ionic liquid) Networks Prepared From Thiol-ene 'Click' Photopolymerization

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<tr>
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<tr>
<td>Samantha Sims</td>
<td>Rachel Whittaker</td>
<td>Kevin Miller</td>
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<td>Murray State</td>
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<td>University</td>
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### 79. * Highly efficient and selective oxidation of sulfides catalyzed by manganese corroles with iodobenzene diacetate

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<td>Ben Willis</td>
<td>Davis Ranburger</td>
<td>Benjamin Kash</td>
<td>Christian Alcantar</td>
<td>Rui Zhang</td>
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### 80. * Enantioselective Cross Aldol Reactions of Aldehydes

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<td>Samantha Bradley</td>
<td>Chase Slone</td>
<td>Brandon Vanness</td>
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<td>Morehead State</td>
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### 81. * Investigating the Synthesis of LMA-P2

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<tr>
<td>Sarah Little</td>
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<td>Project Title</td>
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<tr>
<td>82. * - Palladium-Catalyzed Heteroarylation Under Microwave Irradiation</td>
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<td>83. * - Generation and kinetic studies of porphyrin-manganese(IV)-oxo intermediates</td>
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<td>84. * - Synthesis and photocatalytic properties of three metal-organic framework materials</td>
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<td>85. * - The Syntheses of Heteroatom-activated Antibiotics</td>
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<td>86. * - Iron Catalyzed Oxidation of Amines to Imines</td>
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<td>87. * - Solid Phase Organic Synthesis of an Antibody Drug Conjugate Linker</td>
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<td>88. * - Phenylethynyloxacalixarenes Synthesis</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
Northern Kentucky University

Co-author
Andrew Quillen
Northern Kentucky University

Co-author
Lili Ma
Northern Kentucky University

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

First Author
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Co-author
Nicholas Spark
colleague

Colleague
Eli Biedenbender
colleague

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

First Author
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Co-author
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Computer & Informational Sciences - Poster Presentations


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Co-author
Heba Elgazzar
Morehead State University

94. - Encoding and Decoding Messages in Android Applications

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

First Author
Brian Luciano
University of Kentucky

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

First Author
# Ecology - Poster Presentations

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<th>Poster Number</th>
<th>Title</th>
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<th>Co-author 1</th>
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<tr>
<td>97. *</td>
<td>Nutrient Export of the Kentucky River to Detect Possible Eutrophication</td>
<td>Ieisha Hopwood Kentucky State University</td>
<td>Kazi Javed Kentucky State University</td>
<td>Tamara Sluss Kentucky State University</td>
<td>Li Lu Kentucky State University</td>
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<td>98.</td>
<td>Litter Breakdown and Invertebrate Detritivores from a Hydrologically Restored Stream</td>
<td>Jacob Becraft Eastern Kentucky University</td>
<td>Amy Braccia Graduate Advisor</td>
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<td>99. *</td>
<td>Influence of Salamanders on Leaf Litter Decomposition in Appalachian Headwater Streams</td>
<td>Emily Jones Eastern Kentucky University</td>
<td>Joseph Baecher Eastern Kentucky University</td>
<td>Amy Braccia Eastern Kentucky University</td>
<td>Stephen Richter Eastern Kentucky University</td>
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<td>100.</td>
<td>The Effects of Salinity on the Juvenile Freshwater Crayfish Procambarus clarkii</td>
<td>Alexandra Ghinn Bellarmine University</td>
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<td>101. *</td>
<td>Evaluation of biomass and filtration method on eDNA detection of fantail darters (Etheostoma flabellare)</td>
<td>Ramon Guivas Asbury University</td>
<td>Kyle Laufenburger Asbury University</td>
<td>Ben Brammell Asbury University</td>
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<tr>
<td>102. *</td>
<td>Use of eDNA in detection of multiple salamander species in eastern Kentucky streams</td>
<td>Angie Flores Asbury University</td>
<td>Florene Bell Asbury University</td>
<td>Kenton Sena University of Kentucky</td>
<td>Thomas Maigret University of Kentucky</td>
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<td>103. *</td>
<td>Detection of species using eDNA in high elevation habitats in the Sierra Nevada in Sequoia-</td>
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Friday, November 2, 2018 3:00pm - 6:00pm
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

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

Christopher Frost
University of Louisville

106. * - Honeysuckle leaf blight increases leaf loss in Amur honeysuckle

First Author
Natalie Holsclaw
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Co-author
Allison Jones
Northern Kentucky University

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.

Esther Abiara
Berea College Biology Dept.

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
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<th>No.</th>
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<th>First Author</th>
<th>Co-author</th>
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<tr>
<td>111</td>
<td>*- 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</td>
<td>*- Determining the Cyanogenic Potential of Two Land Races of Lima Bean, Phaseolus lunatus</td>
<td>Renae Steinberger</td>
<td>Grace Freundlich</td>
<td>Eastern Kentucky University</td>
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<td>113</td>
<td>*- 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</td>
<td>*- 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</td>
<td>Does Life History Variation Mediate the Effects of Disease?</td>
<td>Alex Woolen</td>
<td>Howard Whiteman</td>
<td>Murray State University</td>
</tr>
<tr>
<td>116</td>
<td>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>
</tr>
<tr>
<td>117</td>
<td>The Effect of Malathion Toxicity on Zebrafish Caudal Fin Regeneration</td>
<td>Indigo Thoman</td>
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</tbody>
</table>
## 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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<tr>
<th>First Author</th>
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<tr>
<td>Lawrence Madriaga</td>
<td>Ivan Novikov</td>
<td>Morteza Nurcheshmeh</td>
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<tr>
<td>Western Kentucky University</td>
<td>Western Kentucky University</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

<table>
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<tr>
<th>First Author</th>
<th>Co-author</th>
<th>Co-author</th>
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<tbody>
<tr>
<td>Charles O'Connell</td>
<td>Eric Rappin</td>
<td>Western Kentucky University</td>
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<tr>
<td>Western Kentucky University</td>
<td>University</td>
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## Environmental Science - Poster Presentations

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

<table>
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<th>First Author</th>
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<tbody>
<tr>
<td>Anna Harris</td>
<td>Patricia Kambesis</td>
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<tr>
<td>Western Kentucky University</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

<table>
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<th>First Author</th>
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<tr>
<td>Christopher Padgett</td>
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<td>Western Kentucky University</td>
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### 122. - Can remote sensing be used to accurately predict beaver activity?

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<th>First Author</th>
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<tr>
<td>Melody Feden</td>
<td>Haluk Cetin</td>
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<td>Murray State University</td>
<td>Murray State University</td>
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</table>

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

First Author
Eric Rappin
Western Kentucky University

Co-author
Stuart Foster
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Co-author
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Co-author
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Co-author
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125. - The Kentucky Forecasting System

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

First Author
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Co-author
Katherine Kamminga
Kentucky State University

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

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

First Author
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Co-author
Javed Kazi
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Co-author
Tamara Sluss
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129. * - Use of a Reduced Sulfur Gas Chromatograph with Custom-made Permeation Tube for Analysis of Sulfur Compounds

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

First Author
Steven Collett
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First Author
Josh Durkee
Co-author
Tori Murley
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ECTC

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

First Author
Logan Twohey
Co-author
Jason Naylor
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133. * - Comparing water quality variables between first order streams located in agricultural and heavily forested communities

First Author
Caitlin Mullins
Kentucky State University

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

First Author
Jarod Jones
Kentucky State University

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

First Author
Megan Paule
Murray State University

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

First Author
Ariel Smith
Kentucky State University

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

First Author
Marie White
Murray State University

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

First Author
Constance Brown
Northern Kentucky University

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

First Author
Colton Sanders
Murray State University

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

First Author
Adam Mattson
Western Kentucky University
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**142. * - Altered Immune Cell Profile Contributes to Increase Risk of Heart Disease in Aging Mice**

<table>
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<tr>
<th>First Author</th>
<th>Co-author</th>
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<tr>
<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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<tr>
<td>Kristen Miller</td>
<td>Yonglin Gao</td>
<td>Rifaat El-Mallakh</td>
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<td>Western Kentucky University</td>
<td>University of Louisville</td>
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### WITHDRAWN - Assessment of learning styles and learning retention among the elderly population in Frankfort, Kentucky

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<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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<td>Rem Brands</td>
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### 150. * - Sterilization of Staphylococcus aureus and Pseudomonas aeruginosa using Sanitrol

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

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

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<tr>
<td>Frederick Bebe</td>
<td>Shasa Hu</td>
<td>Tony Brown</td>
<td>Orien Tulp</td>
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<tr>
<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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<th>First Author</th>
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<tr>
<td>Kristen Eads</td>
<td>Ila Mishra</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
Berea College

Co-author
Louisa Summers
Berea College

Co-author
Jaden Johnson
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156. * - Vitreous Syneresis in the Human Eye

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

Mathematics - Poster Presentations

157. - Investigating Tire Tracks to Determine a Vehicles Direction

First Author
Richard Cyrus
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Friday, November 2, 2018 3:00pm - 6:00pm

Microbiology - Poster Presentations

158. - Predictive MLS Soccer Ratings

First Author
Taylor Ray
Morehead State

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

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

First Author
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Co-author
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Western Kentucky University

Co-author
Anmol Sandhu
Western Kentucky University

Co-author
Sahil Chhabra
Western Kentucky University

Co-author
Samuel Chang
Western Kentucky University

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

First Author
Samuel Chang
Western Kentucky University
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<th>161. - Characterization of Mycobacteriophage MooMoo</th>
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<td>Amanda Staples</td>
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<td>Western Kentucky University</td>
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<th>162. * - Clostridium isolate growth in a zinc-limited environment</th>
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<td><strong>First Author</strong></td>
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<td>Kamila Nurmakova</td>
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<th>163. * - Effect of Growth Temperature on Mycoplasma iowae Pathogenicity</th>
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<td><strong>First Author</strong></td>
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<td>Christopher Frazier</td>
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<th>164. * - Immunity Repressor Gene Regional Difference May Control Gene Expression of Lytic and Lysogenic Life Cycles</th>
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<td><strong>First Author</strong></td>
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<td>Sahil Chhabra</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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<td>Kaylee Fox</td>
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<th>166. * - Ruin Genome</th>
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<td>Anmol Sandhu</td>
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<th>167. - The House Sparrow as a Better Model for the Human Gut Microbiome</th>
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<td>Joshua Nowacki</td>
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### 168. * - Contemporaneous Ground-Based Observations of Blazars Observed with NASA's K2 Mission

**First Author**  
Zoe Ward  
Western Kentucky University Dept. of Physics and Astronomy

**Co-author**  
Michael Carini  
Western Kentucky University Dept. of Physics and Astronomy

### 169. * - Development of a LabView Controlled Rotational Support System for the Dual Radiation Rotating Scattering Mask

**First Author**  
Devon Loomis  
Western Kentucky University

**Co-authors**  
Alexander Barzilov  
University of Nevada, Las Vegas  
Lawrence Madriaga  
Western Kentucky University  
Ivan Novikov  
Western Kentucky University  
Seth Harper  
Western Kentucky University

### 170. * - Electrochemical Desulfurization and Electroactivity of Molybdenum Disulfide (MoS2) Nanocatalysts on Reduced Graphene

**First Author**  
Taylor Robinson  
Western Kentucky University

**Co-authors**  
Jacob Dobler  
Western Kentucky University  
Sanju Gupta  
Western Kentucky University

### 171. * - Engineered Nanocomposite Materials Properties through Embedding of Smaller Nanoparticles in a Polymer Matrix

**First Author**  
Alex Henson  
Western Kentucky University

**Co-author**  
Sanju Gupta  
Western Kentucky University

### 172. * - Graphene-mediated Surface Enhanced Raman Spectroscopy for Detection of Biomolecules and Monitoring DNA Hybridization

**First Author**  
Alexander Banaszak  
Western Kentucky University

**Co-author**  
Sanju Gupta  
Western Kentucky University

### 173. * - Graphene-Polymer Thin Film Composite Membranes as Efficient and Anti-fouling Membranes for Water Purification

**First Author**  
Brendan Evans
174. * - Hydrothermally Synthesis and Properties of Mesoporous Molybdenum Disulfide (MoS2) / Reduced Graphene Oxide Composites

First Author: Jacob Dobler
Western Kentucky University
Co-author: Taylor Robinson
Western Kentucky University
Co-author: Sanju Gupta
Western Kentucky University

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

First Author: Daniela Olivera Velarde
Berea College
Co-author: Danielle Schaper
University of Kentucky
Co-author: Christopher Crawford
University of Kentucky

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

First Author: Heather Thompson
Berea College
Co-author: Benjamin Wollant
St. Olaf College
Co-author: Kenneth Bader
University of Chicago

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

First Author: Wyatt Ringo
Western Kentucky University
Co-author: Sanju Gupta
Western Kentucky University

178. * - Phase transitions in charged black holes

First Author: Emily Frame
Northern Kentucky University
Co-author: Sharmanthie Fernando
Northern Kentucky University

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

First Author: Sean Lawless
Bellarmine University
Co-author: Carlos Galindo
Bellarmine University
Co-author: Akhtar Mahmood
Bellarmine University
Co-author: Muhammad Saleem
Bellarmine University

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

First Author: Carlos Galindo
Bellarmine University
Co-author: Muhammad Saleem
Bellarmine University
Co-author: Akhtar Mahmood
Bellarmine University
181. * - Self-Assembly of Spheres on a Cone Surface

First Author
Talha Rehman
Berea College

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

First Author
John Adamick
Northern Kentucky University

Co-author
John Rademacher
Northern Kentucky University

Co-author
Wayne Bresser
Northern Kentucky University

Co-author
Chari Ramkumar
Northern Kentucky University

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

First Author
Lori Porter
Craft Academy

Co-author
Thomas Pannuti
Morehead State University

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

First Author
Kennedy Pendleton
2001

Co-author
Michael Carini
Department of Physics
and Astronomy
Western Kentucky University

185. - Procedure improvement for FAPbI3 perovskite solar cells

First Author
Valeria Rosa Rocha
Berea College

Co-author
Somin Park
University of Kentucky

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

First Author
Eli Prater
Berea College

Co-author
Martin Veillette
Berea College

Co-author
Brian Leist
Berea College

Co-author
Mothi Ghimire
Berea College

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-kB activity

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<tr>
<th>First Author</th>
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<td>JT Toebbe</td>
<td>Michael Merchant</td>
<td>Daniel Wilkey</td>
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<td>Murray State</td>
<td>University of Louisville</td>
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### 190. * - Disruption of choline acetyltransferase (ChAT) by congenital mutations: Screening potential therapeutic leads

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<th>First Author</th>
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<td>Imelda Saintilma</td>
<td>Jeremy Rotty</td>
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### 191. * - Dose-dependent induction of circulating SAA, and pulmonary inflammation after ozone exposure: Alzheimer' Disease Link

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

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<td>Emma Higgins</td>
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<td>Maddie Stanback</td>
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<td>Robin Cooper</td>
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### 193. * - Mechanism of quinolone resistance in Escherichia coli type II topoisomerases

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<td>Nyasha Gombami</td>
<td>Alexandria Oviatt</td>
<td>Neil Osheroff</td>
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### 194. - P. gingivalis infection debilitates anti-viral immune responses in gingival epithelial cells
### 195. * - Pharmacological identification of cholinergic receptor subtypes in modulation of neural circuits in D. melanogaster

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

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<td>Allison Harper</td>
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<td>Jennifer Herington</td>
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### 197. - Regulation of Programmed Genome Rearrangement in the Sea Lamprey

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<td>Taylor Stewart</td>
<td>Gena Wilson</td>
<td>Cody Saraceno</td>
<td>Jeremiah Smith</td>
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### 198. - TBF-B Pathway in relation to down regulation of PTTG gene expression

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<td>Alanis Morgan</td>
<td>Karthik Suresh</td>
<td>Xin Yan</td>
<td>Laura Servinsky</td>
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<td>Larissa Shimoda</td>
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### 199. * - The Role of Reactive Oxygen Species in Regulating TRPV4 Responses to Stimuli

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<td>Zackery Hill</td>
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<td>Amazon Mechanical Turk Responses vs. Student Responses</td>
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Friday, November 2, 2018 3:00pm - 6:00pm

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 Collins
University of Kentucky
Co-author
Robin Cooper
University of Kentucky

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

First Author
Jonathan Eisenhour
Morehead State University

Co-author
Matthew Fossett
Morehead State University

Co-author
David Eisenhour
Morehead State University

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

First Author
Paul Cupp Jr
Eastern Kentucky University

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

First Author
Jordan Danflous
Kentucky Wesleyan College

Co-author
Shannon Finerty
Kentucky Wesleyan College

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

First Author
Sarah Tabor
Berea College

Friday, November 2, 2018 7:00pm - 10:00pm

Reception and Plenary at National Corvette Museum
Facilitated by President-Elect Leslie North

Free Shuttles to Corvette Museum begin at 6:30

"Behind the Scenes at the Corvette Cave-In"

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

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

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

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

Featured Speakers

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

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

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

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

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

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

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

Third Floor, Downing Student Union

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

Posters on Display

Downing Student Union, Second & Third floors

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

Oral Presentations - Saturday morning

Asterisk * denotes student research competition

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

Practice Room

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

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

Practice Room

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

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

Agricultural Science - Oral Presentations

Section meeting follows talks at 11:45

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

First Author
James Adeyemi
Kentucky State University
Co-author
Hank Schweickart
Kentucky State University
Co-author
Ibukun Ogunade
Kentucky State 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
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<th>Time</th>
<th>Title</th>
<th>First Author</th>
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<tbody>
<tr>
<td>09:45</td>
<td>Do Online Shoppers Have Knowledge on Community Supported Agriculture Programs?</td>
<td>Wyatt Lucas</td>
<td>Dominique Gumirakiza</td>
<td>Western Kentucky</td>
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<td>Western Kentucky University, Dept. of Agriculture</td>
<td>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>
<td>Tavin Marshall</td>
<td>Shreya Patel</td>
<td>Avinash Tope</td>
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<tr>
<td>10:30</td>
<td>Optimizing Non-Phytate Phosphorus in Soybean Meal-Based Diets for Largemouth Bass Micropterus salmoides</td>
<td>Kasondra Miller</td>
<td>Gagan Kolimadu</td>
<td>Habte-Michael Habte-Tsion</td>
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<td>10:45</td>
<td>Assessing the Use of Biochar for Immobilization of Trace Elements in Sewage Sludge</td>
<td>Lusekelo Nkuwi</td>
<td>George Antonious</td>
<td>Eric Turley</td>
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<td>11:00</td>
<td>Efficacy of a fertilization solution created with testes extraction and maceration in largemouth bass</td>
<td>Amit Sharma</td>
<td>Kenneth Semmens</td>
<td>Quinn Quinn Heist</td>
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### 11:30 - Low-Tech hydroponics for beginning and limited resource farmers

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<td>Nanaaishat umar</td>
<td>Siddhartha Dasgupta</td>
<td>Richard Bryant</td>
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### 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

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<tr>
<th>First Author</th>
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<tr>
<td>Tara Croft</td>
<td>Bikram Subedi</td>
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#### 08:15 - Investigating caffeine levels in water sources in Morehead, Kentucky

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<tr>
<th>First Author</th>
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<tr>
<td>Brandon VanNess</td>
<td>Melanie West</td>
<td>Sarah Little</td>
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<td>Morehead State University</td>
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#### 08:30 * - Various Tools for Quantifying Diffusion of a Model Analyte Set via Capillary Electrophoresis

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<td>Corbin Arrasmith</td>
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#### 08:45 * - Temporal Changes in Dissolved Calcium Levels in Stream and River Waters in Western Kentucky

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<th>First Author</th>
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<tr>
<td>Adam Martin</td>
<td>Bommanna</td>
<td>Susan Hendricks</td>
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<td>Student</td>
<td>Loganathan</td>
<td>Professor</td>
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#### 09:00 * - Effect of kappa-carrageenan on the Stability of Oil-in-water Emulsions

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<td>Andrew Ballard</td>
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<tr>
<td>09:30</td>
<td>Identifying Fecal Biomarkers of Obesity in Mouse Model Using Proton Nuclear Magnetic Resonance Metabolomics</td>
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<tr>
<td>10:00</td>
<td>Incorporation of metal oxides into a polymer substrate for buoyant photocatalysts</td>
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<td>10:15</td>
<td>Electrochemical Method for Fabrication of Metal Nanostructures Across Micron Gap Electrodes</td>
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**Saturday, November 3, 2018 8:00am - 12:00pm**

**Ecology - Oral Presentations**

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<tbody>
<tr>
<td>08:00</td>
<td>Towards rapid assessment of wetland biological condition using indicator species</td>
<td>Suneeti Jog</td>
<td>Jason Bried</td>
<td>Tommi Fouts</td>
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<tr>
<td>08:15</td>
<td>Experts and models can agree on species sensitivity values for wetland assessments</td>
<td>Jason Bried</td>
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<tr>
<td>08:30</td>
<td>Verification of a Vegetation Index of Biotic Integrity (KY-VIBI) and a Rapid Wetland Assessment (KY-WRAM) in western KY</td>
<td>Elizabeth Malloy</td>
<td>Stephen Richter</td>
<td>David Brown</td>
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<td>Eastern Kentucky University</td>
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<td>08:45</td>
<td>Does increasing food-web stability mediate the effects of cattle grazing in aquatic ecosystems?</td>
<td>Hannah Moore</td>
<td>Howard Whiteman</td>
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<td>Murray State</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>
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<td>09:15</td>
<td>The Kentucky Arboreal Ant Survey: ant communities among forests and urban greenspaces</td>
<td>Daniella Prince</td>
<td>Benjamin Adams</td>
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<td>University of Louisville</td>
<td>Natural History</td>
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<td>Museum of Los Angeles County</td>
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<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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<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
Howard Whiteman
Murray State University

Co-author
Sarah Bissmeyer
University of Louisville

Co-author
Carly Nunamaker
University of Louisville

Co-author
Chris Frost
University of Louisville

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

First Author
Louis Ross
Kentucky State University

Co-author
Richard Cristan
Kentucky State University

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

First Author
R. Lynn Von Hagen
Western Kentucky University

Co-author
Bruce Schulte
Western Kentucky University

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

First Author
Autumn Turner
Western Kentucky University, Crawford Hydrology Laboratory

Co-author
Lee Anne Bledsoe
Western Kentucky University

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

Co-author
Cate Webb
Western Kentucky University

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

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>
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<th>Time</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>
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<td>08:15</td>
<td>High Amplitude variabile Active Galactic Nuclei</td>
<td>Dirk Grupe</td>
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<td>08:30</td>
<td>Citizen CATE: citizen scientist observations of 2017 total solar eclipse</td>
<td>Richard Gelderman</td>
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<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>
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<td>09:00</td>
<td>NGC 1566: A Temperamental Changing Look AGN</td>
<td>Rebecca Mikula</td>
<td>Dirk Grupe</td>
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<td>09:15</td>
<td>Fabrication of Aluminum Nanoparticles via Pulsed Laser Ablation for Bacterial Deactivation</td>
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<td>09:30</td>
<td>* - Computer Simulation of Atomic-Scale Defects in Intermetallic Compounds</td>
<td>Christopher Weaver</td>
<td>Matthew Zace</td>
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<tr>
<td>09:45</td>
<td>* - Effects of Plastic Deformation and Tensile Strain on Polycrystalline Solids</td>
<td>Jesse Tapp</td>
<td>Dylan Weaver</td>
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<tr>
<td>10:15</td>
<td>* - Dependence of Helium Atmospheric Pressure Plasma Jet-Induced DNA Damage on Voltage Pulse Frequency and Irradiation Time.</td>
<td>Kemo Jammeh</td>
<td>Sylwia Ptasinska</td>
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<tr>
<td>10:30</td>
<td>* - Blue Light and UV Blocking Lenses</td>
<td>Marissa Walls</td>
<td>Jennifer Birriel</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>Ignacio Birriel</td>
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<td>11:00</td>
<td>Modular Bootstrap Bounds at Finite Central Charge</td>
<td>Casey Christian</td>
<td>Joshua Qualls</td>
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<td>11:15</td>
<td>* - Energy Determination in the ISS-CREAM Instrument Using Simulations</td>
<td>Tyler LaBree</td>
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<td>11:30</td>
<td>Analyses of Jet measurements in Relativistic Heavy Ion Collisions</td>
<td>Ricardo Santos</td>
<td>Christine Nattrass</td>
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<td>Austin Schmier</td>
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<td>11:45</td>
<td>Nylon or Steel?</td>
<td>Tanner Tacket</td>
<td>Ignacio Birriel</td>
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<td>13:15</td>
<td>X-ray Diffractometry and Compression of Materials</td>
<td>Hayden Johnson</td>
<td>Jacob Hall</td>
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<td>13:30</td>
<td>TESS: Initial Results and Follow-Up Work at the University of Louisville</td>
<td>Garrison Turner</td>
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<td>Big Sandy Community and Technical College</td>
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<tr>
<td>13:45</td>
<td>A look at Swift observations of the highly variable Active Galactic Nucleus RX J0148-2758</td>
<td>Parker Poulos</td>
<td>Dirk Grupe</td>
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<td>14:00</td>
<td>Long term X-Ray and UV monitoring of the Narrow Line Seyfert 1 Galaxy, RXJ2217.9-5941</td>
<td>Alanna Cavins</td>
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<td>14:15</td>
<td>An XMM-Newton Observation of the Galactic Supernova Remnant CTB 1 (G116.9+0.2)</td>
<td>Thomas Pannuti</td>
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### 14:30 - Night Sky Quality at Mammoth Cave National Park

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<tr>
<td>Chris Groves</td>
<td>Bobby Carson</td>
<td>Barclay Trimble</td>
<td>Vickie Carson</td>
<td>Dave Spence</td>
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<td>Mammoth Cave National Park</td>
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### 14:45 - System Parameters for the Eclipsing B-star Binary BD+11 3569

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<tr>
<td>Wesley Ryle</td>
<td>Stephen Williams</td>
<td>Terri Perrino</td>
<td>Sierra O'Bryan</td>
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<td>Thomas More College</td>
<td>United States Naval Observatory</td>
<td>Thomas More College</td>
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### 15:00 * - Design and Implementation of a Data Processing and Statistical Analysis Tool for the Unihevron Sky Quality Meter

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<td>Zachary Pater</td>
<td>Jennifer Birriel</td>
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### Saturday, November 3, 2018 8:00am - 12:00pm

#### Physiology and Biochemistry - Oral Presentations

**DSU 2123**

**Section meeting follows talks at 10:00**

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

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<td>Daisy DiVita</td>
<td>Michael Guy</td>
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**08:15 * - Characterization of the Molecular Diversity of Pulmonary Sensory Neurons**

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<td>Issac Domenech</td>
<td>Mark Krasnow</td>
<td>Yin Liu</td>
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<tr>
<td>Berea College</td>
<td>Stanford University</td>
<td>Stanford University</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>First Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dat Thinh Ha</td>
</tr>
</tbody>
</table>
Early Detection of Breast Cancer Through Changes in Amino Acid Metabolism

First Author: David Kelley
Co-authors: Kyle Damon, James Deddens, Larry Douglass, Leila Valanejad, Julia Carter

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

First Author: Ryan Moore
Co-authors: Kyle Damon, Zachary Taylor, Julia Carter, Manuel Ascano

Mapping the Binding Sites of FATTY ACID SYNTHASE on Chikungunya Viral RNA

First Author: Clara Reasoner
Co-authors: Yuqi Bian, Jeffrey Jian, Katherine Rothamel, Byungil Kim

Expression of translation initiation factor eIF4E and phospho eIF4E is increased in human ovarian cancer.

First Author: Kalin Russell
Co-authors: James Deddens, Larry Douglass, Julia H. Carter, Grace Restle

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

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>First Author</th>
<th>Co-author</th>
<th>Co-author</th>
<th>Co-author</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:00</td>
<td>Seasonal variation in the communication system of the field cricket Gryllus rubens (Orthoptera: Gryllinae)</td>
<td>Caleb Sedlak</td>
<td>WKU</td>
<td></td>
<td></td>
</tr>
<tr>
<td>08:15</td>
<td>The kinematics of envenomation by the yellow stingray, Urobatis jamaicensis</td>
<td>Oliver Beckers</td>
<td>Murray State</td>
<td>University</td>
<td></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 Hodinka</td>
<td>Western Kentucky</td>
<td>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</td>
<td>Western Kentucky</td>
<td>University</td>
<td></td>
</tr>
<tr>
<td>09:00</td>
<td>Heritable Behavioral Tendencies of the African Lion</td>
<td>Natalie Mercer</td>
<td>Kentucky Wesleyan College</td>
<td>Czech University of</td>
<td>Life Sciences Prague</td>
</tr>
<tr>
<td>09:15</td>
<td>Courtship behavior, communication, and copulation in Tigrosa annixa</td>
<td>Samuel White</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Section meetings follow talks at 11:15
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
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
### Geography - Oral Presentations

| Time       | Title                                                                 | First Author          | Co-author          | Institution                          |
|------------|-----------------------------------------------------------------------|-----------------------|--------------------|
| 13:15      | Inadvertent local climate modification at a regional university in    | Donald Yow            | Matthew Ruggless   | Eastern Kentucky University           |
|            | Kentucky, USA                                                         |                       |                    |                                    |
| 13:30      | URBAN HEAT AND DEMOGRAPHIC CHANGE: A COMPARATIVE ANALYSIS OF THE      | Tori Farrow           | Jeremy Sandifer    | Kentucky State University            |
|            | LARGEST 100 CITIES OF THE TEMPERATE-FORESTED ECOREGION                |                       |                    |                                    |
| 13:45      | Analyzing sanitary sewer overflow event response to storm frequency  | Christopher Andrew    |                    | University of Louisville             |
| 14:00      | Comparing Sediment Yield of Selected Forest Ecosystems Using SWAT in  | Aman Bhatta           | Buddhi Gyawali     | Kentucky State University            |
|            | Bell Watershed, Kentucky                                              |                       |                    |                                    |
| 14:15      | Land cover classification and change detection using remote sensing   | Saaruj Khadka         | Buddhi Gyawali     | Kentucky State University            |
|            | imagery in Morgan County, Kentucky                                    |                       |                    |                                    |
| 14:30      | How economic geography might have saved the Mammoth Cave Mushroom    | Katie Algeo           |                    | Western Kentucky University         |
|            | Company                                                               |                       |                    |                                    |
| 14:45      | Observing Boundary Layer Heights over Mountainous Terrain Using      | *                      |                    |                                    |
|            | Aircraft Vertical Profiles                                            |                       |                    |                                    |
15:00 - Mapping Opioid Epidemic in Kentucky’s Counties

*First Author*
Charlie Zhang
*University of Louisville*

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**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*
Erme 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
Western Kentucky University Physics and Astronomy Department
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

Mathematics - Oral Presentations

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

First Author
Ethan Caudill
Morehead State University

Co-author
Jennifer Birriel
Morehead State University

13:30 * - Using Topology to find Copyright Infringement

First Author
Jeremiah Halter

13:45 - From the Hardwood to the Spreadsheet

First Author
Christopher Napier
Morehead State University

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

First Author
Dwight Smith
Kentucky Community and Technical College System

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

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

First Author
Andy Martin
Kentucky State University

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

First Author
Doug Chatham
Morehead State University

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

First Author
Mark Robinson
Western Kentucky University

15:15 - Random Operators and Dynamical Localization

First Author
Kyle Besing
Kentucky Wesleyan College

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

First Author
Mikhail Khenner
Western Kentucky University

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

First Author
Justin Trulen
Kentucky Wesleyan College

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

Science Education - Oral Presentations

DSU 3006  Section meeting follows talks at 2:45

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

**First Author**  
Andy Martin  
Kentucky State University

**Co-author**  
Hannah Brewer  
Morehead State University  
Wilson Gonzalez-Espada  
Morehead State University  
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  
Bronwyn Williams  
University of Louisville  
Adam Stieglitz  
University of Louisville  
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
WKU Info
Registration & Abstracts
Friday Plenary & Reception
Parking & Maps
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Hotel Accommodations
Photo contest
Exhibitors
Sponsors
Student Competitions
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Kelly Watson
Walter Borowski

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