

101st ANNUAL MEETING

Northern Kentucky University

Highland Heights, Kentucky

November 13-14, 2015



KAS - 101 Years Serving Kentucky

Sponsors

Platinum Level:



Sullivan University School of Pharmacy
(www.sullivan.edu/pharmacy/)



ASRC Michelin

Gold Level:



Kentucky Science & Technology Corporation
(www.kstc.com)



Eastern Kentucky University Graduate School
(<https://gradschool.eku.edu>)



Clariant (<http://www.clariant.com/en/Corporate>)

Silver Level:



MPD, Inc.
(<http://www.mpdinc.com/>)

Ohio Valley Scientific

Ohio Valley Scientific

Friend Level:



Kentucky Science Center



Warren RECC (<http://www.wrecc.com/>)

Exhibitors

Alltech, Inc

Kentucky Biomedical Research Network (KBRIN)

Kentucky Science Center

Kentucky State Nature Preserves Commission

Kentucky State University Aquaculture Program

Morehead State University Space Science Center

Murray State University College of Science, Engineering, and Technology

NKU Center for Global Engagement and International Affairs

Sullivan University College of Pharmacy

University of Kentucky College of Pharmacy

University of Kentucky Graduate School

University of Kentucky Office of Biomedical Education

University of Louisville School of Interdisciplinary and Graduate Studies

Researchers at Undergraduate Institutions Section, Ecological Society of America

Vernier

Western Kentucky University Ogden College of Science & Engineering

2015 Enhanced Affiliates

**Faculty, Staff, and Students at these institutions
can join KAS at no cost:**

Alice Lloyd College
Bellarmine University
Berea College
Brescia University
Campbellsville University
Centre College
Eastern Kentucky University
Georgetown College
Kentucky Community and Technical College System (KCTCS)
Kentucky State University
Midway College
Morehead State University
Murray State University
Northern Kentucky University
Spalding University
Transylvania University
University of Kentucky
University of Louisville
University of Pikeville
Western Kentucky University

2015 Member Institutions & Businesses

Asbury University
Lindsey Wilson College
Kentucky Wesleyan College
Thomas More College
University of the Cumberlands
Kentucky Science Center
Wood Hudson Cancer Research Laboratory
Lumins Associates

WELCOME TO NORTHERN KENTUCKY UNIVERSITY



Northern Kentucky University welcomes you to Highland Heights for the 101st annual meeting of the Kentucky Academy of Science. Our University enrolls more than 15,000 students who represent 106 Kentucky counties, 40 states, and 54 countries.

Our students benefit from a transdisciplinary approach to education – one that brings students from different disciplines and colleges to the same table to study topics that arise at the intersection of business, science, law, and culture.

This innovative approach is evident across our campus, from our College of Informatics to our new School of the Arts. It's particularly strong within our science programs.

Our neuroscience minor is one example. One of the first formal neuroscience educational programs in Kentucky, the program immerses students in a variety of neuroscientific perspectives such as neurobiology, evolution of the brain, theories of mind, behavioral neuroscience, ethics, psychopharmacology, computational neuroscience, animal behavior, cognitive science, linguistics, and culture. Their work ranges from examinations of the neurocognitive effects of energy drinks mixed with alcohol in college students to *in vitro* studies of nanoparticles infiltrating brain cancers. Our Ecological Stewardship Institute is another example. The program brings together biologists, artists, environmental educators, historians, sociologists, computer scientists, and environmental scientists. It has become a national leader in the citizen scientist movement for water quality assessment education.

Last month, we broke ground on our Health Innovation Center, which will help us to meet the growing need for new-world healthcare providers. We will offer a cross-functional educational experience where students and faculty from various disciplines will address population health management issues and seek new solutions to the health and wellness challenges we face. Our St. Elizabeth Healthcare Simulation Center will feature a two-story virtual care environment that will provide students with active learning opportunities across the continuum of care.

We are proud of the work of our outstanding faculty, staff, and students, and we are honored to host this year's KAS annual meeting. We hope you enjoy your time in Northern Kentucky, and I encourage you to explore our campus and our region.

*Geoffrey S. Mearns, President
Northern Kentucky University*

KENTUCKY ACADEMY OF SCIENCE

101st Annual Meeting
November 13-14, 2015
Northern Kentucky University

GOVERNING BOARD EXECUTIVE COMMITTEE

President..... **David White**, *Murray State University*
President-Elect **Eric Jerde**, *Morehead State University*
Vice President **Darrin Smith**, *Eastern Kentucky University*
Past President **K.C. Russell**, *Northern Kentucky University*
Secretary **Pam Feldhoff**, *University of Louisville*
Treasurer **Rodney King**, *Western Kentucky University*

EX-OFFICIO MEMBERS

Executive Director **Amanda Fuller**, *Kentucky Academy of Science*
Program Coordinator **Melony Stambaugh**, *Northern Kentucky University*
Editor, JOURNAL..... **Jerzy Jaromczyk**, *University of Kentucky*
Editor, NEWSLETTER **Moira O’Keeffe**, *Bellarmine University*
Director, Junior Academy of Science..... **Ruth Beattie**, *University of Kentucky*
Editor, Website..... **Claire Rinehart**, *Western Kentucky University*
AAAS/NAAS Representative **Nancy Martin**, *University of Louisville*

DIVISION REPRESENTATIVES AND AT-LARGE MEMBERS

2015 - Biological Sciences **Pamela Feldhoff**, *University of Louisville*
2016 - Biological Sciences **Vacant**
2017 - Physical Sciences **Richard Gelderman**, *Western Kentucky University*
2016 - Physical Sciences **R. Douglas Chatham**, *Morehead State University*
2017 - Social & Behavioral Sciences..... **Kerrie McDaniel**, *Western Kentucky University*
2016- Social & Behavioral Sciences) **Vacant**
2016 - At - Large..... **Mary Janssen**, **KCTCS**
2015 - At - Large..... **KatieAnn Skogsberg**, *Centre College*

TABLE OF CONTENTS

Exhibitors and Sponsors	Inside Front Cover
Welcome.....	1
KAS Governing Board.....	2
KAS Strategic Planning Update.....	4
Map of NKU Campus	6
Welcome and Keynote Speakers (Friday 11:00am)	8
Symposium (Friday 4:30 pm)	10
Program Summary	12
Field Trip and Extras.....	16
Ohio Valley Society of Toxicology Meeting.....	16
Youth Science Summit	16
Local Arrangements Committee	18
Oral Presentations:	
Agricultural Sciences	21
Anthropology and Sociology	23
Biochemistry and Physiology	(see Physiology and Biochemistry)
Botany.....	24
Cellular and Molecular Biology.....	25
Chemistry - Analytical/ Physical	27
Chemistry – Organic/Inorganic.....	28
Computer and Information Science	30
Ecology and Environmental Science	31
Engineering.....	33
Geography.....	34
Geology	35
Health Sciences.....	35
Mathematics.....	36
Microbiology.....	37
Physics and Astronomy	38
Physiology and Biochemistry	39
Psychology.....	40
Science Education.....	41
Zoology.....	42
Scientific Posters: Steely Library, Floors 2-4 (See Listing of poster presentations to see judging times for each section)	43
Past Presidents	66
Past Meeting Locations.....	67
KAS Affiliates.....	Inside Back Cover

KAS Strategic Planning Update

The mission of KAS is to foster scientific discovery and understanding in Kentucky. As the Academy enters its 2nd century we can look back with pride and some awe at what had been accomplished in that mission over the first 100 years. We owe it to our founders and everyone who followed them to keep the Academy growing not only in membership but in how we serve our community and commonwealth as the voice of science in Kentucky.



To this end, we are in the process of developing a strategic plan that we hope will build on our strengths and allow us to more effectively take advantages of opportunities yet to come. In developing the strategic plan, we are combining suggestions from member surveys, scientific leaders, and the best of other scientific academies. As a first step, the Board held a strategic planning retreat on June 6, 2015 at Mammoth Cave National Park under the leadership of Cindy Adelberg, a professional strategic planning facilitator. A report on the strategic plan developed at that meeting is available at <http://kyacademyofscience.net/about/>.

So what now? This is a living document and we need everyone's input and thoughts. You will find in the lobby area several posters with components of the strategic plan as it now stands. Use post-it notes to add your comments to the posters. There also will be space for you to write directly on the posters. If there is something you see that you think is a good idea, let us know. If there is something you think is a bad idea or just not worth worrying about, let us know. If there is something we are missing let us know.

I also encourage you to participate in committee meetings Saturday over lunch time in the Food court at the Student union. Look for signs and join a conversation on one of the following topics: Membership, Public Engagement, Science Education & Advocacy, Internal Communications, and Grants & Awards. We are looking forward to hearing back from these groups about priorities & timelines for implementation.



Thank you,

David S. White, KAS President 2015



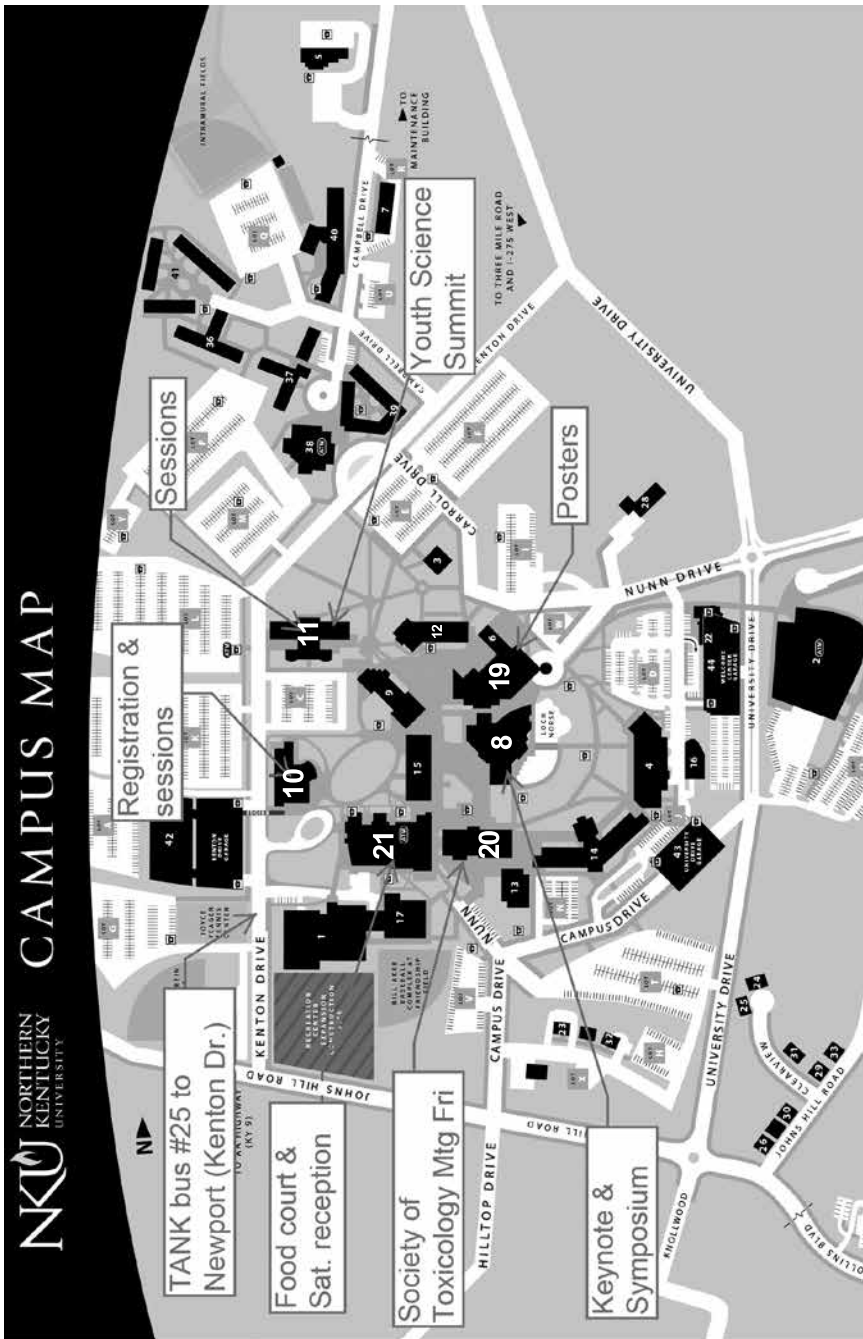
see community.
see discovery.
see excellence.
see globally.
see inspiration.
see success.

The University of Kentucky offers advanced study in 90 program areas, awarding doctoral degrees in 58 fields, master's degrees in 111 fields, 50 graduate certificates, and 5 specialist degrees.

We see passion and dedication in you.

For more information, visit www.gradschool.uky.edu

UK
UNIVERSITY
OF KENTUCKY
The Graduate School





REVISED OCTOBER 2014

ACADEMIC, ADMINISTRATIVE & MULTIPURPOSE BUILDINGS

- 1 Albright-Heath Center (HC)
- 2 The Bank of Kentucky Center (BK)
- 3 Baptist Student Union (BSU)
- 4 Business Academic Center (BC)
-Haley/US Bank College of Business
- 5 Campbell Hall (CA)
- 6 Central Receiving
- 7 Ceramics & Sculpture (CS)
- 8 Fine Arts Center (FA)
-Corbett Theatre
-Main Art Gallery
-Stauss Theatre
- 9 Founders Hall (FH)
- 10 Griffin Hall (College of Informatics) (GH)
-Riewerschl Digitalium
- 11 Herrmann Natural Science Center (SC)
- 12 Landrum Academic Center (LA)
- 13 Lucas Administrative Center (AC)
- 14 Mathematics-Education-Psychology Center (MP)
-Evo G. Farris Auditorium (MP 200)
- 15 Nunn Hall (NH)
-Salmon P. Chase College of Law
- 16 Power Plant
- 17 Regents Hall (RH)
- 18 Soccer Stadium (SS)
- 19 Steely Library (SL)
-Evo G. Farris Special Collections
-Schlichter Archive

HOUSES

- 20 University Center (UC)
-Otto M. Budig Theater
- 21 Vooruba Student Union (SU)
- 22 Welcome Center (WC)
-Parking Services
- 23 Alumni Programs (421 Johns Hill Rd.)
- 24 Catholic Newman Center
(19 Clearview Dr.)
- 25 Center for Environmental Restoration
(15 Clearview Dr.)
- 26 Christian Student Fellowship
(311 Johns Hill Rd.)
- 27 Economic Initiatives Center
-Center for Economic Analysis and Dev.
- 28 Honors House (HR)
- 29 N. Ky. Traineeship Program for Special Ed. (245 Johns Hill Rd.)
- 30 Small Business Development Center
(305 Johns Hill Rd.)
- 31 Talent Search (10 Clearview Dr.)
- 32 University Police (415 Johns Hill Rd.)
- 33 Upward Bound (241 Johns Hill Rd.)

BOOTHE RESIDENTIAL VILLAGE

- 36 Commonwealth Hall (CW)
- 37 Kentucky Hall (KY)
- 38 Norse Commons (NC)
-University Housing Office
- 39 Norse Hall (NO)
- 40 University Suites (US)
- 41 Woodcrest-Apartments
- 42 Kenton Drive Parking Garage*
- 43 University Drive Parking Garage*
- 44 Welcome Center Parking Garage*

PARKING GARAGES

- 42 Kenton Drive Parking Garage*
- 43 University Drive Parking Garage*
- 44 Welcome Center Parking Garage*

PARKING LOTS

- A Open Parking
- C Faculty/Staff Parking
- D Faculty/Staff Parking
- E Faculty/Staff Parking
- F Student Parking
- G Open Parking
- H University Police Parking
- I Student Parking
- J Faculty/Staff Parking
- K Open Parking
- L Open Parking
- M Student Parking

- N Reserved Parking
- O Open/VIP Parking
- P Student Parking
- Q Student Parking
- R Student Parking**
- S Open Parking
- T Open Parking
- U Student Parking
- V Faculty/Staff Parking
- W Student Parking
- X Open Parking
- Y Student Parking
- Z Open Parking***

* NO PERMIT REQUIRED
(VISITOR PARKING ALLOWED, MAX.
\$5.50 PER DAY)

** CERAMICS PERMIT REQUIRED

*** EITHER CALLAHAN PERMIT OR
REGULAR PERMIT WITH CALLAHAN
ENDORSEMENT REQUIRED

MC01309

WELCOME AND KEYNOTE

Friday, November 13, 2015
11:00 – 12:00 Greaves Concert Hall
Fine Arts Center

Welcome

Dr. David White, KAS President
Murray State University

Sue Ott Rowlands, Vice President for Academic Affairs
and Provost
Northern Kentucky University

Presiding

Dr. Eric Jerde, KAS President-Elect
Morehead State University

Keynote Speaker

Kevin A. Ford (Colonel, U.S. AIR FORCE, Ret.)
NASA Astronaut

“Learning from the International Space Station”



KEVIN A. FORD

Indiana native, NASA Astronaut and retired U.S. Air Force Col., Kevin A. Ford holds multiple degrees that include a bachelors, two masters and a Ph.D. from Notre Dame, Troy State University, the University of Florida, and the Air Force Institute of Technology respectively. He is also a graduate of Squadron Officer School, the Air Command and Staff College Associate Program and Air War College.

Continued, page 9

Commissioned through the Reserve Officer Training Corps program, he completed primary Air Force jet training at Columbus Air Force Base, Mississippi. While a student at the United States Air Force Test Pilot School, Edwards Air Force Base, California, he flew flight test missions in the F-16 Fighting Falcon at Eglin Air Force Base, Florida. He served as Director of Plans and Programs, as well as a flight and academic instructor at the Air Force Test Pilot School. He retired from active duty military in June 2008 and has over 4900 flying hours.

Ford was selected as a NASA astronaut in 2000, after training he was assigned technical duties at the Johnson Space Center. He later served as Director of Operations at the Gagarin Cosmonaut Training Center in Star City, Russia. He currently serves in the Soyuz Branch for the Astronaut Office in Houston.

Ford piloted the 2009 space shuttle mission STS-128 to the International Space Station. The crew completed 219 Earth orbits in 13 days, 21 hours. In 2012, Ford launched aboard a Soyuz rocket from Kazakhstan. After docking with the station, Ford served as flight engineer for Expedition 33, and later as commander of Expedition 34. Ford returned to Earth in March 2013, having completed 2233 Earth orbits in 143 days, 16 hours.



Much more than a classroom.

Morehead State University is proud to offer one of only five space science degrees in the nation, and a Master of Science in Space Systems Engineering.

Students gain experience in SmallSat and CubeSat development and work on actual space mission operations with Bob Twiggs, co-inventor of the CubeSat.

Students have opportunities to operate and take data with a 21-meter radio telescope, work with researchers investigating supernova remnants, gamma ray bursts and pulsars, and gain hands-on experience with data collection, reduction, calibration and analysis.

Follow us on Facebook, Twitter, YouTube, Instagram & LinkedIn.

For more information, call **800-585-6781** or visit **www.moreheadstate.edu**.

MSU is an affirmative action, equal opportunity, educational institution.

SYMPOSIUM

“Symposium on Human Origins”

Friday, November 13, 4:00 pm – 5:30 pm
Greaves Concert Hall, Fine Arts Center

Introduction and Presiding

Eric Jerde, Program Chair and President Elect,
Kentucky Academy of Science
Morehead State University

Speakers

Dr. Andrew Deane, University of Kentucky

**“Shaking the human family tree (again!):
How does *Homo naledi* change our
understanding of human origins?”**

Dr. Monica Wakefield, Northern Kentucky University

**“Why primates matter: What studies of
living primates teach us about our fossil ancestors.”**

Zachary Hruby, Northern Kentucky University

“*Homo naledi*: Technological Expectations”

DR. ANDREW DEANE

University of Kentucky

Andrew Deane is an Associate Professor in the Department of Anatomy and Neurobiology in the College of Medicine at the University of Kentucky where he has been a faculty member since 2008.

Andrew is a formally trained paleoanthropologist with an active research program addressing questions related to fossil ape and early human evolution. His research focuses on paleobiological reconstructions of fossil ape and early human locomotor and dietary behavior and, more specifically, how the functional and comparative anatomy of locomotor and dietary systems can provide

new insights into why some species were successful, why some died out and which gave rise to the living apes and humans. Andrew has participated in paleontological excavations in Eastern Europe, India and East and South Africa. Most recently he was a member of the Rising Star Expedition in South Africa’s ‘Cradle of Mankind’ that



resulted in the recovery of over 1,500 new human fossils and the description of a new member of the human family, *Homo naledi*. Specifically, he was part of the team that described the almost complete hand and foot associated with that discovery. Andrew has over 25 peer-reviewed publications in nationally and internationally recognized publications (Nature communications, Journal of Human Evolution, Anatomical Record, American Journal of Physical Anthropology, eLife, Journal of Morphology, etc.) and has presented his work at national and international conferences (American Association of Physical Anthropology, International Primatological Society, etc.).

DR. MONICA WAKEFIELD

Northern Kentucky University

Monica Wakefield has been with NKU since 2013. She is an Assistant Professor in the Department of Sociology, Anthropology, and Philosophy. Monica is a highly trained field primatologist specializing in behavioral ecology of African apes. She earned her Ph.D. in Biological Anthropology from Yale University in 2010. She has conducted research on gorillas in the Central African Republic, chimpanzees in Uganda, and most recently, bonobos in the Democratic Republic of the Congo (DRC). In her first year at NKU she was awarded three awards and fellowships from NKU (Summer Fellowship, Faculty Project Grant, and a Professional Development Fund) that enabled her to travel to the DRC to begin pilot research on bonobos. Monica's work has been published in peer-review journals and she has presented her research at numerous national and international scientific conferences. At NKU she has mentored and collaborated with undergraduates on research projects at the Cincinnati Zoo who have presented their work at regional and national conferences.



DR. ZACHARY HRUBY

Northern Kentucky University

I study the archaeology of both Mesoamerica and North America with specializations in the Maya area (southern Mexico, Guatemala, and Honduras) and the American West (California, Nevada, and the Pacific Northwest). Of particular interest to me is Mesoamerican and Maya religion as it is materialized in the archaeological record through ancient Maya texts (epigraphy), art (iconography), and ritual deposits (caches and burials). At the forefront of Maya lithic studies, I have carried out obsidian and flint analysis at some of the most well-known Maya sites over the past twenty years, including Piedras Negras, El Peru-Waka, El Zotz, Holmul, Kaminaljuyu, and Motul de San Jose in Guatemala, Palenque, Pomona, Chunchucmil, and Vista Alegre in Mexico, and Copan and Rio Amarillo in Honduras. My goal is to understand broad economic patterns across the ancient Maya world and through time, as well as how lithic goods (jade, flint, and obsidian) were used in ritual contexts. Most recently I have studied the largest known obsidian cache, a deposit of over 600 obsidian macroblades, from Copan's Great Plaza. When time permits I also run my own field project on the Caribbean Coast of Guatemala searching for the lost Contact Period city of Nito.



PROGRAM SUMMARY

FRIDAY, NOVEMBER 13

8:00 am - 10:00 am	KAS Board meeting (open to all KAS members) . <i>Griffin Hall 316</i>
8:00 am - 4:30 pm	Ohio Valley Society of Toxicology meeting..... <i>University Center</i>
9:00 am - 11:00 am	KY Organization of Field Stations meeting ... <i>Natural Science 200</i>
10:00 am	Section Officers & Judges meeting <i>Griffin Hall 240</i>
10:00 am	Registration open <i>Griffin Hall</i>
10:00 am - 12:00 pm	Poster set-up <i>Steely Library 2nd, 3rd, and 4th Floors</i>
11:00 am	Keynote Lecture & Welcome from Dr. Sue Ott Rowlands, NKU Vice President for Academic Affairs and Provost..... <i>Greaves Hall, Fine Arts Center</i>
12:00 pm -1:00 pm	Lunch break <i>Food Court in Student Union</i>

FRIDAY AFTERNOON ORAL PRESENTATIONS

12:45 pm - 4:30 pm	Anthropology / Sociology <i>Griffin 250</i>
12:45 pm - 4:40 pm	Cellular & Molecular Biology <i>Science 304</i>
1:00 pm - 4:15 pm	Chemistry Analytical / Physical <i>Griffin 302</i>
1:00 pm - 4:30 pm	Computer & Information Sciences <i>Griffin 260</i>
1:00 pm - 4:00 pm	Engineering <i>Griffin 333</i>
1:15 pm - 3:30 pm	Microbiology <i>Griffin 316</i>

FRIDAY AFTERNOON POSTER JUDGING

1:00 pm - 2:00 pm	Agricultural Sciences <i>Steely Library 3rd floor</i>
1:00 pm - 2:00 pm	Botany <i>Steely Library 3rd floor</i>
1:00 pm - 4:30 pm	Chemistry Organic/ Inorganic <i>Steely Library 2nd floor</i>
12:30 pm - 4:30 pm	Ecology & Environmental Science <i>Steely Library 3rd & 4th floor</i>
3:00 pm - 4:00 pm	Health Sciences <i>Steely Library 4th floor</i>
2:00 pm - 3:00 pm	Zoology <i>Steely Library 4th floor</i>
2:00 pm	Afternoon Break <i>Griffin & Steely Library</i>
4:30 pm - 5:30 pm	Plenary Session -Symposium on Human Origins <i>Greaves Hall, Fine Arts Center</i>
6:00 pm - 10:00 pm	“Night at the Museum” <i>Cincinnati Museum Center</i> Food, entertainment and both museums open. Explore the Natural History & Science and History museums. Meet & Greet with Keynote speaker Col. Kevin Ford
7:30 pm	Friday Night Planetarium Show <i>Natural Science 409</i>
8:00 pm	Seussical - presented by NKU Theatre Arts Department <i>Corbett Theatre</i>

SATURDAY, NOVEMBER 14

8:00am	Registration opens.....	<i>Griffin Lobby</i>
8:00 am - 9:30 am	Coffee & bagels	<i>Griffin Lobby</i>
9:00 am - 4:30 pm	Northern Kentucky Youth Science Summit	<i>Science Hall</i>
9:00 am - 4:00 pm	Exhibitors and Career Fair	<i>Griffin Lobby</i>
	On the job market? Bring your resume	

SATURDAY MORNING ORAL PRESENTATIONS

8:30 am - 11:45 am	Agricultural Science	<i>Griffin 240</i>
9:00 am - 11:45 am	Botany	<i>Griffin 226</i>
8:30 am - 12:00 pm	Chemistry Organic/Inorganic	<i>Science 305</i>
8:45 am - 11:45 am	Ecology / Environmental Science,.....	<i>Griffin 201</i>
9:00 am - 10:45 am	Geography	<i>Griffin 312</i>
9:00 am - 10:30 am	Geology.....	<i>Griffin 230</i>
10:00 am - 11:30 am	Health Sciences	<i>Griffin 250</i>
8:30 am - 9:45 am	Physics / Astronomy	<i>Science 304</i>
8:30 am - 12:00 pm	Physiology / Biochemistry.....	<i>Griffin 260</i>
9:45 am - 12:00 pm	Psychology	<i>Griffin 314</i>
9:00 am - 11:45 am	Science Education	<i>Science 201</i>
10:00 am - 11:45 am	Zoology	<i>Griffin 333</i>
9:00 am - 11:00 am	KCTCS Sessions	<i>Begins in Student Union 102</i> <i>Breakouts continue in 102, 104, 105)</i>

SATURDAY MORNING POSTER JUDGING

10:00 am - 12:00 pm	Anthropology	<i>Steely Library 3rd floor</i>
10:00 pm - 12:00 pm	Cellular & Molecular Biology	<i>Steely Library 3rd floor</i>
10:00 am - 12:00 pm	Chemistry - Analytical / Physical	<i>Steely Library 3rd floor</i>
11:00 am - 12:00 pm	Microbiology.....	<i>Steely Library 4th floor</i>
10:00 am - 12:00 pm	Physics & Astronomy.....	<i>Steely Library 2nd floor</i>
10:30 am	Morning break	<i>Griffin & Steely Library</i>
12:00 pm - 1:00 pm	Past Presidents' Lunch	<i>Griffin 130</i>
12:00 pm - 1:00 pm	Lunch on your own	<i>Food Court in Student Union</i>
	Look for for signs in the food court! Join a KAS Committee meeting and share your ideas on one of the following topics:	
	<ul style="list-style-type: none"> • Membership • Science Education & Advocacy • Grants & Awards • Public engagement • Internal Communications 	

12:00 pm - 2:00 pm **Open House** *Wood Hudson Cancer Research Lab*
Visit and meet researchers, and find out what they are working on!
Buspool and carpools leave from **Griffin hall at noon** - meet at
the double doors that open out on to the Student Union Loop.

12:00 pm **Student Luncheon with SPOG**
(Science Policy & Outreach Group) Griffin 240
Sponsored by University of Louisville School of Interdisciplinary
and Graduate Studies

A new graduate student organization at the University of Louisville, SPOG (Science Policy and Outreach Group), will discuss the formation of similar organizations at colleges and universities in Kentucky. We will share how to get started and what activities SPOG has participated in, to help you through this process. We would like to connect like-minded students through an umbrella SPOG organization, in Kentucky, to be a voice and resource for science in the state. Aside from greatly impacting the community, such an organization can help explore new career ideas, network, and perfect science communication skills. If you're interested in scientific outreach or science policy, please attend this event!

12:00 pm - 3:00 pm **Field Trip to NKU Field Station** (box lunch & transportation provided to registered participants) – *early shuttle will return for . 2pm EES oral session*

SATURDAY AFTERNOON ORAL SESSIONS AND SECTION MEETINGS

1:00 pm - 4:00 pm Agricultural Sciences *Griffin 240*
1:00 pm - 2:45 pm Chemistry Organic / Inorganic *Science 302*
2:15 pm - 4:00 pm Ecology & Environmental Science, *Griffin 201*
1:00 pm - 4:00 pm Mathematics *Griffin 316*
1:00 pm - 4:00 pm Physics & Astronomy *Science 304*

SATURDAY AFTERNOON POSTER JUDGING

1:00 pm - 2:00 pm Computer & Information Sciences *Steely Library 2nd floor*
1:00 pm - 2:00 pm Engineering, *Steely Library 2nd floor*
2:00 pm - 3:00 pm Geography *Steely Library 2nd floor*
2:00 pm - 3:00 pm Geology *Steely Library 2nd floor*
1:00 pm - 3:00 pm Physiology & Biochemistry *Steely Library 4th floor*
1:00 pm - 2:30 pm Psychology *Steely Library 3rd floor*
2:00 pm - 3:00 pm Science Education, *Steely Library 3rd floor*
1:00 pm - 4:00 pm **Physics Teaching Workshop** *Griffin 333*
Practicum Assessments and Case Studies That Incorporate
Engineering Practices Into Your Course (Read more, page 16)

2:30 pm	Afternoon break <i>Griffin & Steely Library</i>
4:00 pm	Computer Science Section Meeting Griffin 260
4:00 pm	Ecology & Environmental Section Meeting Griffin 201
4:30 pm	KAS Annual Business Meeting <i>Griffin 201</i>
4:30 pm	Planetarium Show <i>Natural Science 409</i>
5:00 pm	Reception, Science Bowl and Awards ... <i>Student Union ballroom</i>

Closing remarks from Dean of Arts & Sciences Dr. Katherine Frank and NKU President Dr. Geoffrey Mearns

Kentucky Science Bowl – Enjoy some fun and friendly competition! Watch teams compete & answer questions about science & current events. Cheer on your team, but no googling allowed!

Student Research Awards for Undergraduate Orals & Posters, and Graduate Oral Presentations

8:00 pm **Seussical** - presented by NKU Theatre Arts Department

Attention Presenters: Publish your research in the Journal of the Academy of Science

Spring Issue

- Published typically in May/June
- Submit by March 1
- Decision by May 1

Fall Issue

- Published typically in November/December
- Submit by September 1
- Decision by November 1

The authors may submit at any time by sending an email to the JKAS editor with a copy to JournalOfKAS@cs.uky.edu. Instructions how to prepare a manuscript for the Journal of the Kentucky Academy of Science and how to submit it can be found at <http://kyacademyofscience.net/publishing-in-the-journal/>

Welcome to our Special Guests...

Youth Science Summit – The Kentucky Science Center and CINSAM are hosting the Summit in Science Hall on Saturday the 14th for 50 high school students. They will be visiting the KAS poster session Saturday afternoon. Would you like to bring a Youth Science Summit to your community? Ask us for more details or talk to the folks at the Science Center table in Griffin Hall on Saturday!

<http://kysciencecenter.org/kids/youth-science-summit/>

Kentucky Junior Academy of Science - Some of our 2015 winners are presenting their research in Oral sessions. The Junior Academy is a program of KAS to encourage middle & high school scientists. Please spread the word about the Junior Academy and encourage students and teachers in your community to participate. KAS scientists volunteer to help coach new schools & teachers participating in this program- if you'd like to help in your community, please let us know!

Ohio Valley Chapter, Society of Toxicology – The OVSOT meeting will be in the University Center on Friday November 13.

<http://www.toxicology.org/groups/rc/ovsot/annmeets.asp>

Kentucky Odyssey of the Mind - Odyssey of the Mind is a creative problem solving program for kids K-College in which teams choose one of 5 competitive problems. Children learn to think outside the box, work together to develop creative solutions to broadly defined problems, and present their solution in an 8-minute performance. Teams are rewarded not only for solving the problem, but also for enhancing their solution with style. Watch for some demonstrations from local teams on Saturday.

<http://www.kyootm.com/>

Field Trips and Extras

NKU Field Station - Visit NKU's new field station with Dr. Dick Durtsche and Dr. Rick Boyce from NKU. See the field station facility, the trails through the woods and wetlands, and find out about some of the research being conducted there. \$15 fee includes shuttle from the Student Union Loop and boxed lunch. Shuttle leaves NKU at 12 noon Saturday. Register at: <http://kyacademyofscience.net/programs/annual-meeting/>

Wood Hudson Open House – Visit the Wood Hudson Cancer Research Center in Newport, KY, meet their researchers, and find out about what they are working on! Buspool and carpools leave from Griffin hall at 12 noon Saturday - meet at the double doors that open out on to the Student Union Loop.

Physics Teaching Workshop (Saturday 1:00 pm - 4:00 pm, Griffin 333)
Practicum Assessments and Case Studies That Incorporate Engineering Practices Into Your Course

Give physics tests that your students eagerly anticipate! Sounds too good to be true? Join Joe Mahler (Sayre School) as he shares examples of assessments that you can incorporate into your introductory physics classes. Case Studies and Practicum Assessments engage students with an application of real-world physics where they are asked to apply what they've learned to accomplish a specific task.



Find your future in **PHARMACY.**

Go Further with our 3-year accelerated
Doctor of Pharmacy degree.

 **Sullivan
University**

2100 Gardiner Ln., Louisville, KY | **502.413.8978** | sullivan.edu/pharmacy

REGIONALLY ACCREDITED Sullivan University is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award associate, baccalaureate, master's and doctoral degrees. Contact the Commission on Colleges at 1805 Southern Lane, Decatur, Georgia 30033-4097, or call 404.679.4500 for questions about the accreditation of Sullivan University. For more information about program success in graduation rates, placement rates and occupations, please visit sullivan.edu/programsuccess.



Healthy Food. Healthy Environment. Healthy Minds.

Offering undergraduate
and graduate degree and
research opportunities
in Agriculture, Food and
Environment; Aquaculture/
Aquatic Studies; and
Environmental Studies.

www.kysu.edu/CAFSSS



College of Agriculture, Food Science, and Sustainable Systems

2015 Local Arrangements Committee Northern Kentucky University

Melony Stambaugh, Local Arrangements chair

Richard Boyce

Richard Durtsche

Sharmanthie Fernando

Miriam Kannan

Stephanie F. Konkel

Lili Ma

KC Russell

Judy Voelker

STAY CONNECTED WITH KAS

Free Wifi Network at NKU



Facebook : Follow the Kentucky Academy of Science



Tweet about the Centennial meeting at #KAScience2015

SHOW YOUR PRIDE IN KENTUCKY SCIENCE



Kentucky Academy of Science Tshirts
Take one home for just \$10

**OK, you've presented
your work at KAS,
so why not publish it?**



The *Kentucky Journal of Undergraduate Scholarship* (KJUS) is an online journal that will publish original research and creative works by undergraduate students currently enrolled at post-secondary educational institutions in Kentucky.

The topics vary by discipline, and will be categorized into one of several domains, including Life Sciences, Engineering, Social Sciences, Humanities, Creative Writing, Performance Arts, and MORE!

**Please visit the website at
<http://encompass.eku.edu/kjus/>**

**For more information and questions, please contact the Executive Editor, Dr. Jonathan Gore
(Jonathan.Gore@eku.edu)**

PRESENTATIONS

AGRICULTURAL SCIENCES

John Sedlacek, Chair
Kentucky State University

Thomas Kingery, Secretary
Western Kentucky University

SATURDAY, NOVEMBER 14, 2015

GRIFFIN 240

- 8:00 am **Predacious insects found in sweet corn bordered by native perennial plants and pasture²** Kyle Slusher - Kentucky State University
- 8:15 am **Alternative Source of Fish Oil for Sustainable Aqu Feed Production¹**
Rebecca Wang - Kentucky State University, Kristy M. Allen - Kentucky State University, Benjamin A. Bowman - Kentucky State University, Kenneth R. Thompson, James H. Tidwell - Kentucky State University, Vaun C. Cummins, Keith Filer - Alltech, Vikas Kumar - Kentucky State University
- 8:30 am **Soil Infiltration Rate and its Dynamics in Six Land Management Systems of Western Kentucky¹** Landon Gibbs, Iin Handayani - Murray State University
- 8:45 am **Residues and fate of chlorpyrifos on two field-grown leafy vegetables** George Antonious - Kentucky State University
- 9:00 am **Farmers, Technology and Storytelling: a Method to get Training & Education to a Dispersed Audience** Cynthia Rice, Dr. Buddhi Gyawali, Jeremy Sandifer - Kentucky State University
- 9:15 am **Impact of soil amendments on the quality of field-grown onions.** Eric T Turley, George F. Antonious - Kentucky State University
- 9:30 am **Total Replacement of Oil with Algae (*Schizochytrium* sp.) Meal for Sustainable Shrimp Feed Production²** Kristy Allen, Benjamin Bowman, Kenneth Thompson - Kentucky State University, Vaun Cummins, Keith Filer - Alltech, James Tidwell, Andrew Ray, Vikas Kumar - Kentucky State University
- 9:45 am **Production and Growth Performance in a Small-Scale Australian Red Claw (*Cherax quadricarinatus*) Nursery Raised at Two Stocking Densities²** Benjamin A. Bowman, Kristy M. Allen, Kenneth R. Thompson, Vikas Kumar, Siddhartha Dasgupta - Kentucky State University

¹Undergraduate Research Competition

²Graduate Research Competition

³2015 Junior Academy winner

- 410:00 am **Improving Soil Health with a Multispecies Cover Cropping System: Preliminary Findings**¹ Tessa Combs, C. Brent Rogers - Morehead State University, John Graham - USDA NRCS Lexington KY, Dennis Perry - Maysville Community and Technical College(MCTCS)-Rowan Campus
- 10:15 am **Economics of Production, Processing, and Local Marketing of Catfish: Opportunities for Farmers' Market Producer-Vendors in Kentucky** Richard Bryant - Kentucky State University, Siddhartha Dasgupta - Kentucky State University
- 10:30 am **Break**
- 10:45 am **Comparison of Four Artificial Lighting Technologies for Indoor Aquaponic Production of Collard Greens (*Brassica oleracea*)**¹ George Pate, Janelle Hager, Chelsea Watts, Leigh Anne Bright, James Tidwell - Kentucky State University
- 11:00 am **Soil Compaction and Water Holding Capacity as Soil Quality Indicators in Agricultural versus Natural Ecosystems**² Mary G Derting, Dr. Iin Handayani - Murray State University
- 11:15 am **Evaluating Soil Quality Indicators in Western Kentucky**² Hannah Robbins, Dr. Iin Handayani - Murray State University
- 11:30 am Agriculture Section Meeting and selection of officers

Break for lunch

- 1:00 pm **Gas Chromatographic - Mass Spectrometric Identification of Methyl Ketones in Wild Tomato Leaf Crude Extracts** George Antonious - Kentucky State University
- 1:15 pm **Identification of Pedestrial Compaction Variation Over Varying Playing Surfaces in Calloway County, Kentucky**¹ Gunner Decker, Iin Handayani - Murray State University
- 1:30 pm **Analysis of Soil Quality in Seasonal High Tunnels Across the Bluegrass and Eastern Kentucky Regions**¹ David S. Smith - Asbury University, Krista Jacobsen, Alex Williams - University of Kentucky, Bobby R. Baldrige - Asbury University
- 1:45 pm **Methane Flux Measurements over a Rotational Grazed Pasture in Northern Kentucky** Maheteme Gebremedhin, K. Andries, B. Amankona, A. Hartell - Kentucky State University
- 2:00 pm **Indoor Marine Shrimp Production at Kentucky State University** Andrew J. Ray, Adam Cecil - Kentucky State University, William P. Auberry
- 2:15 pm **Impact of Soil Amendments on *Brassica* Biomass** Regina Hill, Thomas Trivette, Eric Turley, George Antonious - Kentucky State University

¹Undergraduate Research Competition

²Graduate Research Competition

³2015 Junior Academy winner

- 2:30 pm **Break**
- 2:45 pm **Planning for the Future: A Review of Retirement Planning and its Importance for Farmers**¹ Joseph T. Hood, Stephen A. King - Western Kentucky University
- 3:00 pm **Complete Substitution of Fish Oil with Algae Meal (*Schizochytrium* Sp.) for Pacific White Shrimp (*Litopenaeus vannamei*)**¹ Jeremy Caudill, Kristy M. Allen, Benjamin A. Bowman, Kenneth R. Thompson, James H. Tidwell - Kentucky State University, Vaun C. Cummins, Keith Filer - Alltech, Vikas Kumar - Kentucky State University
- 3:15 pm **Yield characteristics of Indigo Purple Tomato Varieties in Kentucky**² Srijana Thapa Magar, Kirk W. Pomper, Sheri B. Crabtree, Jeremiah D. Lowe, Brian Edgar, Bijesh Mishra - Kentucky State University
- 3:30 pm **Herbicide effects on Industrial Hemp (*Cannabis sativa*) biomass and weed suppression**² Brett Maxwell, Paul Woosley, Todd Willian - Western Kentucky University, David Williams - University of Kentucky
- 3:45 pm **Ground beetles (Carabidae) found in sweet corn bordered by native perennial plants and pasture**² Denita L. Brown, John D. Sedlacek, Karen L. Friley - Kentucky State University

ANTHROPOLOGY AND SOCIOLOGY

Benjamin Freed, Chair
Eastern Kentucky University

Andrew Deane, Secretary
University of Kentucky

FRIDAY, NOVEMBER 13, 2015

GRIFFIN 250

- 12:45 pm **Poaching And *Poitín*: Playing The Game With The *Gardaí* In Rural Ireland** Michael J Simonton - Northern Kentucky University
- 1:00 pm **Kentuckians and Climate Change: An Assessment of Our Knowledge, Beliefs, and Social Construction**² Jennifer Hubbard-Sánchez - Kentucky State University
- 1:15 pm **Why they do it. Sociosexual behaviors in bonobos (*Pan paniscus*)**¹ Lindsey Meador - Northern Kentucky University
- 1:30 pm **Friendships in Female Chimpanzees** Monica Wakefield - Northern Kentucky University

¹Undergraduate Research Competition

²Graduate Research Competition

³2015 Junior Academy winner

- 2:00 pm **Break**
- 2:15 pm **Searching for “Community”: Collecting Data on Something People Cannot Define** Douglas Hume - Northern Kentucky University
- 2:30 pm **The Role of Culture Change in Japanese Ceramic Expression: The Evolution of Japanese Pottery** Megan Beckerich - Northern Kentucky University
- 2:45 pm **Transnational dynamics among Haitians in the Diaspora: the case of Haitians in Chicago**² Daniel Joseph - University of Kentucky
- 3:00 pm **Urkoovil (village temple) consciousness: recent post-war changes in Hindu religious practice for Tamils in Jaffna, Sri Lanka**² Pathmanesan Sanmugeswaran - University of Kentucky
- 3:15 pm **Relationship between hot pepper consumption and body weight status among adults** Changzheng Wang, Lingyu Huang, Cecil Butler - Kentucky State University
- 3:30 pm **The Parker Academy Foodways: Theoretical Comparative Analyses of Enslaved African Diets and White Colonial Diets vs. Racially Integrated Communities in the Midwest during the Early Nineteenth Century**² Kendra L. Hein - Northern Kentucky University
- 3:34 pm Anthropology / Sociology Section Meeting & Selection of Officers

BOTANY

Maggie Whitson, Chair
Northern Kentucky University

Christopher Adams, Secretary
Berea College

SATURDAY, NOVEMBER 14, 2015

GRIFFIN 226

- 9:00 am **Physiological Dormancy and Germination Patterns in the Kentucky Rare Yellow Gentian (*Gentiana flavida* Muhl.)**¹ Kevin Montgomery, Olamide Adejumo, Moondil Jahan, Christopher Adams - Berea College
- 9:15 am **Comparison of Germination and Dormancy States in Seeds of *Calycanthus floridus* L. (eastern sweetshrub)**¹ Moondil Jahan - Berea College
- 9:30 am **Dormancy-Breaking and Germination Patterns in Seeds of *Calycanthus floridus* L. (eastern sweetshrub)**¹ Olamide Adejumo, Moondil Jahan, Kevin Montgomery, Christopher Adams - Berea College

¹Undergraduate Research Competition

²Graduate Research Competition

³2015 Junior Academy winner

- 9:45 am **Using Molecular Markers in Chloroplast DNA to Identify the Maternal Parent Species of *Dahlia variabilis***¹ Tyler M Hoard - Murray State University
- 10:00 am **Vascular flora inventory of the Eagle Lake watershed, Morehead, KY**¹ Breanna Knicely, Jonathan May, Allen C. Risk - Morehead State University
- 10:15 am **Dendroclimatological comparison of *Nyssa sylvatica* and *Oxydendrum arboreum*, two understory species in the Evans Branch watershed, Morehead, KY**¹ Benjamin Rasp, Allen C. Risk - Morehead State University
- 10:30 am **Break**
- 10:45 am **The Vascular Flora of Taylor Fork Ecological Area, Madison County, Kentucky**¹ Thomas McFadden, Brad Ruhfel - Eastern Kentucky University
- 11:00 am **Preliminary bryophyte flora of Cranks Creek Wildlife Management Area and Stone Mountain Wildlife Management Area/State Nature Preserve, Harlan County, Kentucky** Allen C. Risk - Morehead State University
- 11:15 am **In the Field Without a Flora: Can floristic e-resources compete with paper floras?** Maggie Whitson- Northern Kentucky University
- 11:30 am Botany Section Meeting and Selection of Officers

CELLULAR AND MOLECULAR BIOLOGY

Dawn Anderson, Chair
Berea College

Robert Wyatt, Secretary
Western Kentucky University

FRIDAY, NOVEMBER 13, 2015

SCIENCE 304

- 12:30 pm **Sex-Specific Differential Expression of Tumor Growth Factor β in Cardiac Hypertrophy** Maya James - Eastern Kentucky University
- 12:45 pm **Type 1 Interferon Expression Following Small Molecule Inhibition of Cyclic GMP-AMP Synthase**¹ Seth Reasoner - Berea College, Jessica Vincent, Katherine Rothamel - Byungil Kim, Manuel Ascano, Vanderbilt University Medical Center
- 1:00 pm **The Bioactivity of Pericellular Matrix from Adult Stem Cells**¹ Hsuan Peng - Berea College, Yangzi Jiang, Rocky S. Tuan - University Of Pittsburgh

¹Undergraduate Research Competition

²Graduate Research Competition

³2015 Junior Academy winner

- 1:15 pm **The Dynamics of Immunoediting in Skin Carcinogenesis¹** Chi Peng - Berea College, Bradley Kubick, Dennis Roop- University of Colorado- Denver
- 1:30 pm **Functional and expression analysis of a putative basement membrane degrader in *Drosophila melanogaster*²** Christopher Fields, Qian Dong, Elizabeth Oates, Ajay Srivastava - Western Kentucky University
- 1:45 pm **Caffeic Acid Phenethyl Ester Analogues: Synthesis and Optimization for Biological Evaluation as Xanthine Oxidase Inhibitors¹** Lindsey Snider - Northern Kentucky University
- 2:00 pm **Break**
- 2:15 pm **Identification of fatty acid biosynthesis genes involved in tissue specific production of unusual monoenoic lipids in the trichomes of *Pelargonium hortorum*** Richa A. Singhal, David J. Schultz, University of Louisville
- 2:30 pm **PAM-1 and autophagy pathways intersect to regulate gametogenesis in *Caenorhabditis elegans*¹** Ashley Munie, Andrew Cude, Chris Trzepacz - Murray State University
- 2:45 pm **Gene annotations of *Drosophila elegans* Contig14 and Contig21¹** Taryn Sigl, Heather Eisler - University of the Cumberlands
- 3:00 pm **Incidences of the *6A variant on exon 1 and the single nucleotide polymorphism on exon 7 of the transforming growth factor-beta receptor type 1 gene in colorectal cancer patients with more than one tumor¹** Nolan S. Calhoun, Ben Ellison, Amy Foertsch, Nick Grosser, Jordan M. Jones, T. Grant Lewis, Larry E. Douglass, Julia H. Carter - Wood Hudson Cancer Research Laboratory
- 3:15 pm **Effect of sleep disruption upon cytokine gene expression of zebra finch (*Taeniopygia guttata*)²** Laken Cooper, Dr. Noah Ashley - Western Kentucky University
- 3:30 pm **Observations into the Role of the *MSH4-MSH5* Heterodimer in Yeast Genome Stability¹** Olivia Davis, Miranda Combs, John Crum, Erin D. Strome - Northern Kentucky University
- 3:45 pm **Bromoenoil Lactone Attenuates Nicotine-induced Breast Cancer Cell Proliferation and Migration²** Joseph Rollins, Lindsay Calderon - Eastern Kentucky University
- 4:00 pm **Direct, Real-time Genotyping and Profiling of Individuals through Molecular Beacons: A Preliminary Study²** Benjamin Shaw, Dr. Jamie Fredericks - Eastern Kentucky University
- 4:15 pm Cellular & Molecular Biology Section Meeting and Selection of Officers

¹Undergraduate Research Competition

²Graduate Research Competition

³2015 Junior Academy winner

CHEMISTRY: ANALYTICAL / PHYSICAL

Donghui Quan, Chair
Eastern Kentucky University

Celeste Morris, Secretary
Northern Kentucky University

FRIDAY, NOVEMBER 13, 2015

SCIENCE 302

- 1:00 pm **Mesoscale Protein Patterning on a Self-Assembled Monolayer (SAMs) Coated Silicon Surface through Nanosphere Lithography¹** Andrew Schlereth, Pei Gao - Eastern Kentucky University
- 1:15 pm **Effect of pH on the physicochemical properties of xanthan gum-locust bean gum stabilized oil-in-water emulsions¹** Cory Owens, Hanna Khouryieh, Ph.D, Kevin Williams, Ph.D. - Western Kentucky University
- 1:30 pm **Raman Spectroscopy as an Analytical Tool for Monitoring Photocatalytic Degradation¹** Frankie Wallace, Matthew Nee - Western Kentucky University
- 1:45 pm **Designing a Unique Therapeutic Agent Involving Gold Nanoparticles Conjugated with Cephalosporins for Potent Antibacterial Applications¹** Harsh Moolani, Jason Payne, Rajalingam Dakshinamurthy - Western Kentucky University
- 2:00 pm **Break**
- 2:15 pm **Green Synthesis, Characterization of Saccharide Coated Gold Nanoparticles for Catalytic Applications²** Jason Payne, Harsh Moolani, Rajalingam Dakshinamurthy - Western Kentucky University
- 2:30 pm **Carbapenem Functionalized Gold Nanoparticle Synthesis, Characterization, and Antibacterial Susceptibility Testing¹** Fenil Chavda, Jason Payne, Rajalingam Dakshinamurthy - Western Kentucky University
- 2:45 pm **Dissipative Particle Dynamics (DPD) Simulations of Hard Nanoparticle-encapsulated Polymeric Micelle Formation¹** Kyaw Hpone Myint - Berea College, Dr. Barbara Wyslouzil, Dr. Lisa Hall - The Ohio State University
- 3:00 pm **A Study of Prebiotic Molecules in Titan's Atmosphere: Gas Phase Modeling of Tholin Precursors¹** Carl Loomis-Anderson, Donghui Quan - Eastern Kentucky University
- 3:15 pm **Asymmetric Cellulose Triacetate Membrane-Based Ion-Selective Electrodes with Pulsed Chronopotentiometry for the Discrimination of Lipophilic Ions During Chloride Measurement¹** Simon Segal, Kebede Gemene, PhD - Northern Kentucky University

¹Undergraduate Research Competition

²Graduate Research Competition

³2015 Junior Academy winner

- 3:30 pm **William Kelly Pneumatic Iron Process: The Commonwealth of Kentucky's First National Historic Chemical Landmark**
Bommanna Loganathan - Murray State University
- 3:45 pm **Collection of Drugs Traces from Fabric for DART Analysis¹**
Amelia M. Hartman, Rachel L. Masek, David D. Cunningham - Eastern Kentucky University
- 4:00 pm Chemistry: Analytical/Physical Section Meeting and Selection of Officers

CHEMISTRY: ORGANIC / INORGANIC

Mary Robert Garrett, Chair
Berea College

Judy Jenkins, Secretary
Eastern Kentucky University

SATURDAY, NOVEMBER 14, 2015
SCIENCE 302

- 8:30 am **Computational and Spectroscopic studies of bis(salicylaldimato)nickel(II) and related complexes with N₂O₄ donor spheres¹** Jesus Berlanga, Dr. Chris Mullins - Campbellsville University
- 8:45 am **Computational analysis of Bis(salicylaldiminato)-nickel(II) complex using Density Functional Theory¹** Jesus A. Berlanga, Dr. C.S. Mullins - Campbellsville University
- 9:00 am **Iron (III) corrole-catalyzed selective sulfoxidations with iodobenzene diacetate²** Ka Wai Kwong, Tse-Hong Chen, Weilong Luo, Jonathan Malone, Rui Zhang - Western Kentucky University
- 9:15 am **Optimization of the reaction conditions in the preparation of polystyrene-organoclay composites by microwave-assisted surface-initiated polymerization¹** Travis Schuyler, Mael Coeurdray, Isabelle Lagadic - Northern Kentucky University
- 9:30 am **Advances in synthetic methodologies for preparing polymeric subunits that incorporate extended aromatic acceptors and transition metal chromophores¹** Jason Callihan, Keith A Walters - Northern Kentucky University
- 9:45 am **Supramolecular organometallic sensitized solar cells: Advances in measurement procedures and refinement of cell preparation¹** Hannah Hearn, Keith A. Walters - Northern Kentucky University
- 10:00 am **Stark absorption studies on supramolecular small molecules and polymers that connect fullerenes and transition metal chromophores¹** Sarah Siemer, Keith A. Walters - Northern Kentucky University

¹Undergraduate Research Competition

²Graduate Research Competition

³2015 Junior Academy winner

- 10:15 am **Solvent Effect on Selective Sulfoxidation Catalyzed by Manganese(III) Corrole Complexes**² Wei Long Luo, Rui Zhang - Western Kentucky University
- 10:30 am **Break**
- 10:45 am **Palladium-Catalyzed Direct Heteroarylation of Ketones**¹ Nathan Johnson, Thuy (Donna) Do, Dr. Lili Ma - Northern Kentucky University
- 11:00 am **Synthesis of Pb doped ZnS for solar energy conversion** Allison Durr, Dylan Perraut, Armada McFadden, Dr. Judith Jenkins - Eastern Kentucky University
- 11:15 am **Direct Aminoglycoside Coated Gold Nanoparticles Synthesis, Characterization and Antibacterial Susceptibility Testing**¹ Sarah Tockstein, Jason Payne, Dr. Rajalingam Dakshinamurthy - Western Kentucky University
- 11:30 am **Synthesis and Biological Evaluation of Histone Deacetylase (HDAC) Inhibitors as a Potential Treatment for Lung Cancer**¹ Alma Onate, Janelle Tucker, Emily Hogle - Northern Kentucky University
- 11:45 am **(4,5)-bisarylethynylcatechols - Precursors for oxalixarenes and annulenes**¹ Chelsea Soward- Northern Kentucky University

Break for lunch

- 1:00 pm **Synthesis of analogues of a naturally occurring diarylheptanoid as potential anti-inflammatory agents**¹ Maxwell Boyle, Jacob Telesz, Joseph Mester, Amber J. Onorato - Northern Kentucky University
- 1:15 pm **Synthesis and Biological Evaluation of Histone Deacetylase (HDAC) Inhibitors**¹ Emily Hogle, Alma Oñate, Janelle Tucker, Rachel LeDuc, Reid Kline, Donna Do, Stefan Paula, Lili Ma - Northern Kentucky University
- 1:30 pm **Bromination of Aromatic Compounds**¹ Katie Bragdon, Dorothy Coe, Dr. Nicholas Marshall - Berea College
- 1:45 pm **Optimization of organic polymer-based solar cells to maximize the power conversion efficiency**² Swapnil Sahare, Ananthkrishnan SJ, Hemali Rathnayake - Western Kentucky University
- 2:00 pm **Versatile Method to Make Nickel Nanostructures via Green Synthesis.**¹ Aubrey Penn, Niharika Neerudu Sreeramulu, Hemali Rathnayake - Western Kentucky University,
- 2:15 pm **Aqueous phase synthesis of Copper nanoparticles**² Thulitha Abeywickrama, Dr. Hemali Rathnayake - Western Kentucky University
- 2:30 pm Chemistry: Organic /Inorganic Section Meeting and Selection of Officers

¹Undergraduate Research Competition

²Graduate Research Competition

³2015 Junior Academy winner

COMPUTER AND INFORMATION SCIENCES

Jerzy Jaromczyk, Chair
University of Kentucky

(vacant) Secretary

FRIDAY, NOVEMBER 13, 2015

GRIFFIN 260

- 1:00 pm **A Comparison of Statistical Learning Techniques for Discriminating Between Clinical Phenotypes Given Metabolomic Data**² Patrick J. Trainor, Andrew P. DeFilippis, Aruni Bhatnagar, Shesh N. Rai - University of Louisville
- 1:15 pm **Assembling Jigsaw Puzzles using Wisdom of Artificial Crowds**² Faezeh Tafazzoli, Mahsa Badami - University of Louisville
- 1:30 pm **A Survey of 3d Computer Graphic Software and File Types**¹ Kendra A. Kennedy, Lucas G. Kingston, Brandon K. Burgess, Yue Miao, Marc B. Beck - Murray State University
- 1:45 pm **EBooks, Mobile Learning, and the formation of C.E.S.T.: Collegiate eBook Study Tool**¹ Zane Hunter Dixon - Morehead State University
- 2:00 pm **Break**
- 2:15 pm **A classification framework for imbalanced data stream with concept drift**² Elaheh Arabmakki, Mehmed Kantardzic - University of Louisville
- 2:30 pm **Using Affective Virtual Reality with Psychophysiological Analysis for Emotional Reactivity Testing in Autism**² Yi Li, Adel S. Elmaghraby, Ayman S. El-Baz - University of Louisville, Estate Sokhadze - University of South Carolina
- 2:45 pm **Cell Phone Spying: An Exploitation of GSM Based Networks**¹ Benjamin Turi - Bellarmine University
- 3:00 pm **Identification of Cardio-Pulmonary Resuscitation (CPR) Scenes in Medical Simulation Videos Using Spatio-temporal Gradient Orientations**² Anju Panicker - University of Louisville
- 3:15 pm **Effect of Training Set Size on SVM and Naive Bayes for Twitter Sentiment Analysis**² Omar Abdelwahab, Adel Elmaghraby - University of Louisville

¹Undergraduate Research Competition

²Graduate Research Competition

³2015 Junior Academy winner

- 3:30 pm **Sentimental Analysis on Movie Reviews by Combining Lexical Knowledge and Augmented Labeling²** Wenlong Sun, Olfa Nasraoui, Yi Li - University Of Louisville
- 3:45 pm **Quiz Application Development¹** Alex Cass - Morehead State University
- 4:00 pm **Machine Translation Algorithm Detection via Authorship Attribution²** Keishin Nishiyama, Roman V. Yampolskiy - University of Louisville

ECOLOGY AND ENVIRONMENTAL SCIENCE

Luke Dodd, Chair
Eastern Kentucky University

Ben Brammell, Secretary
Asbury University

SATURDAY, NOVEMBER 14, 2015

GRIFFIN 201

- 8:45 am **Potential Environmental Causes for Central Appalachia's Thyroid Hotspot²** Maddison Couch- Eastern Kentucky University
- 9:00 am **Plant community responses to the removal of invasive shrub honeysuckle (*Lonicera maackii* (Rupr.) Herder) in an urban park woodland in Louisville, KY²** Elihu H. Levine, Dr. Margaret M. Carreiro - University of Louisville
- 9:15 am **Evaluating Wetland Quality: A Comparison of Amphibian Community Composition and the Kentucky Wetland Rapid Assessment Method²** Kari Dupler, Michelle Guidugli-Cook, David Brown, Stephen C. Richter - Eastern Kentucky University
- 9:30 am **Roost tree use by the tri-colored bat, *Perimyotis subflavus* (F. Cuiver) post-white nose syndrome²** Kate Schaefer, Terry Derting - Murray State University
- 9:45 am **Seasonal thermoregulation of the introduced wall lizard *Podarcis muralis*.**¹ Mara Leyendecker, J. Pedro do Amaral - University of Cincinnati
- 10:00 am **Studying movement patterns during wall lizard thermoregulation.**¹ Duaa Mureb, J. Pedro do Amaral - University of Cincinnati

¹Undergraduate Research Competition

²Graduate Research Competition

³2015 Junior Academy winner

- 10:15 am **Nutrient effects on tall fescue herbivory, fungal endophyte infection, and endophyte alkaloid production**¹ AnnaJoy Thompson, Lindsey Slaughter - University of Kentucky, Rebecca McCulley
- 10:30 am **Break**
- 10:45 am **Diversity of Stream Salamanders in Relation to Human Disturbance and Watershed Affiliation in Central Kentucky**¹ Zachary Spicer, Morgan Stacy, Jeremy Wilde - Berea College
- 11:00 am **Effects of white-nose syndrome on the bat population in Land Between the Lakes**¹ Jordan Robbins, Terry Derting - Murray State University
- 11:15 am **Dragonflies of pond and stream communities respond similarly to urbanization.**² Victoria Prescott - University of Louisville, Perri Eason - University of Louisville
- 11:30 am **Can exotic plant invasion be facilitated by belowground tri-trophic interactions?**² Matthew L. Reid, Sarah M. Emery - University of Louisville

Break for lunch & field trip

- 2:15 pm **Determining Greenhouse Gas Flux in Constructed Wetlands**¹ Sarah Stryffeler, Megan Koo, Dr. Hopfensperger - Northern Kentucky University
- 2:30 pm **Break**
- 2:45 pm **Hungry Hungry House Sparrows: Signaling Hunger in *Passer domesticu*.**¹ Olivia Utley, David Moldoff, David Westneat - University of Kentucky
- 3:00 pm **Fast and furious or slow and curious: foraging strategies in house sparrows (*Passer domesticus*)**¹ Emily Griggs - University of Kentucky
- 3:15 pm **Transdisciplinary collaboration of environmental science and journalism brings attention to the story of soil lead in Newport, KY**¹ Emily Keener, Beth Knox, Kevin Schultz, Kirsten Schwarz - Northern Kentucky University

¹Undergraduate Research Competition

²Graduate Research Competition

³2015 Junior Academy winner

- 3:30 pm **7 coal counties and remedial/reclamation transformation of surface mined land to original or better than original condition² condition²** Cynthia Rice, Buddhi Gyawali - Kentucky State University
- 3:45 pm **Legacy effects of mountaintop removal/valley fill (MTR/VF) coal mining on a freshwater snail in a reconstructed Appalachian headwater stream in southeastern Kentucky (U.S.A.)²** Steven W. Bailey, Hwa-Seong Jin, Margaret M. Carreiro, James E. Alexander, Jr. - University of Louisville
- 4:00 pm Ecology & Environmental Science Section Meeting & Selection of Officers

ENGINEERING

Yuqiu You, Chair
Morehead State University

Ni Wang, Secretary
Morehead State University

FRIDAY, NOVEMBER 13, 2015

GRIFFIN 333

- 1:00 pm **Electrospinning Nano Diamond Fiber Patches for Prevention of Secondary Myocardial Infarctions³** Manasa Sunkara - DuPont Manual High School, Danielle Graves - DuPont Manual High School
- 1:15 pm **The development of the attitude determination and attitude control system (ADACS) for the Cosmic X-ray background nanosatellite -2 (CXBN-2)¹** Andrew Cavins - Morehead State University
- 1:30 pm **Development of a Command & Data Handling Subsystem for the Morehead Cosmic X-ray Background Nano-satellite-2²** Jennafer L. Grindrod, Kevin Brown - Morehead State University
- 1:45 pm **Development of mechanical structures of the Cosmic X-ray Background Nanosatellite- 2²** Yevgeniy Byeloborodov, Kevin Brown, Benjamin Malphrus - Morehead State University
- 2:00 pm **Break**
- 2:15 pm **Development of a low power radiation detector system for femtosatellite based experiments¹** David Mays, William Roach-Barrette, Dr. Benjamin Malphrus - Morehead State University
- 2:30 pm **Design of an evolved multi-band communications system for the cosmic x-ray background nanosatellite-2 (CXBN-2)¹** Mathew A Hardin, Kevin Z Brown, Benjamin Kevin Malphrus - Morehead State University

¹Undergraduate Research Competition

²Graduate Research Competition

³2015 Junior Academy winner

- 2:45 pm **Numerical Modeling of a Cubesat Link Budget and Simulation of the South Atlantic Anomaly**² Jonathan Fitzpatrick - Morehead State University
- 3:00 pm **Development of Delta Robot as a Didactic Platform for Training in the Field of Mechatronics**¹ Troy Stafford, Dr. Jorge Alberto Ortega-Moody - Morehead State University, Róger E. Sánchez-Alonso - Instituto Politécnico Nacional. CICATA-Qro
- 3:15 pm **Development of a user interface to communicate with virtual delta robot by Modbus/TCP protocol**² Armin Maraghehmoghaddam - Morehead State University, Dr. Jorge Alberto Ortega Moody - Morehead State University, Róger E. Sánchez-Alonso - Instituto Politécnico Nacional México
- 3:30 pm Engineering Section Meeting and Selection of Officers

GEOGRAPHY

Leslie North, Chair
Western Kentucky University

Demetrio Zourarakis, Secretary
Kentucky Division of Geographic Information

SATURDAY, NOVEMBER 14, 2015

GRIFFIN 312

- 9:00 am **Historical Geography of Farmers Markets of Cincinnati** John Metz - Northern Kentucky University
- 9:15 am **A comparison of coal mining and socio-economic data in Kentucky's Appalachian region**² Andrew Gott - Kentucky State University
- 9:30 am **Modeling potential impacts of a high hazard dam breach, Kentucky, USA** Christopher A Day - University of Louisville
- 9:45 am **Impacts of Land Between the Lakes on local precipitation climatology**¹ Jacob Wilkins - Western Kentucky University
- 10:00 am **Resource Dependency and Socioeconomic Impacts- A Perplexity of Land Cover Change in Appalachian Region** Cynthia Rice, Andrew Gott, Jeremy Sandifer - Kentucky State University
- 10:15 am **Analysis of Farm productivity in Kentucky using Spatial Regression Model**² Bijesh Mishra, Buddhi R. Gyawali, Srijana Thapa Magar - Kentucky State University
- 10:30 am Geography Section Meeting and Selection of Officers

¹Undergraduate Research Competition

²Graduate Research Competition

³2015 Junior Academy winner

GEOLOGY

Frank Ettensohn, Chair
University Of Kentucky

Thomas Brackman, Secretary
Northern Kentucky University

SATURDAY, NOVEMBER 14, 2015

GRIFFIN 230

- 9:00 am **Monitoring surface water and groundwater levels to establish continuous hydroperiods for the St. Anne Wetlands in Northern Kentucky** Samuel Boateng - Alexandra Shelters - Northern Kentucky University
- 9:15 am **A History and Census Report from two Late Mississippian Bryozoan/Echinoderm Faunules, Powell County, east-central Kentucky** ² Ann W. Harris, Frank R. Ettensohn - University of Kentucky
- 9:30 am **Patterns of anthropogenic nutrient contaminants in the Otter Creek watershed, Madison County, Kentucky**¹ Elijah D. Wolfe, Walter S. Borowski, Jacob L. Robin - Eastern Kentucky University
- 9:45 am **Fecal microbe contamination in Otter Creek, Madison County, Kentucky**¹ Jacob L. Robin, Walter S. Borowski, Elijah D. Wolfe - Eastern Kentucky University
- 10:00 am **Using Groundwater simulations as a tool of groundwater management in Oldham County, KY.** Dr. Samuel Boateng - Northern Kentucky University
- 10:15 am Geology Section Meeting and selection of Officers

HEALTH SCIENCES

Avinash Tope, Chair
Kentucky State University

Joseph Mester, Secretary
Northern Kentucky University

SATURDAY, NOVEMBER 14, 2015

GRIFFIN 250

- 10:00 am **Urolithin A inhibits pro-inflammatory mediators through Histone deacetylase (HDAC) pathways**³ Praharshasai Paladugu - DuPont Manual High School, Sobha Bodduluri, Haribabu Bodduluri, Venkatakrishna R Jala - University of Louisville
- 10:15 am **Evaluation of Multiple Drug-Resistant *Enterobacteriaceae* on Produce from Small Farms**¹ Monique Frisby, Alexandra Hitter, Avinash M. Tope - Kentucky State University

¹Undergraduate Research Competition

²Graduate Research Competition

³2015 Junior Academy winner

- 10:30 am **Break**
- 10:45 am **Novel Diarylheptanoids Alter Expression of Multiple Inflammatory Mediators**¹ Leena Ibrahim, Rachael Cicci, Amber Onorato, Joseph Mester - Northern Kentucky University
- 11:00 am **Behavioral effects in adult mice resulting from chronic taurine consumption during adolescence**¹ Jamie Weimer, Josephine Brown, Clare Ludwig, Breann Hays Colter, Christine Perdan Curran - Northern Kentucky University
- 11:15 am Health Sciences Section Meeting and Selection of Officers

MATHEMATICS

R. Douglas Chatham, Chair
Morehead State University

John Porter, Secretary
Murray State University

SATURDAY, NOVEMBER 14, 2015
GRIFFIN 316

- 1:00 pm **Using mesoscale meteorological data to identify possible local effects of global climate change**¹ Janie L. Knell, Joshua Z. Fugate, Dr. Wilson J. Gonzalez-Espada - Morehead State University
- 1:15 pm **Causing a Racquet: Using Game Theory to Determine the Optimum Tennis Strategy**¹ Zane McQueary - Morehead State University
- 1:30 pm **Optimal Control for Models of RVF** D. Adongo, K. R. Fister - Murray State University
- 1:45 pm **The maximum queens problem on a rectangular board** Doug Chatham - Morehead State University
- 2:00 pm **On a Generalization of Monotonically Monolithic Spaces and D-spaces** John Porter - Murray State University
- 2:15 pm **A Logistic Version of Leslie Matrices for Population Modeling**¹ Andrew Davis - Western Kentucky University, Dr. Bruce Kessler - Western Kentucky University
- 2:30 pm **Break**
- 2:45 pm **Probabilities of Yahtzee--It May Change How You Play the Game.** Beverly Dearborn - Kentucky State University

¹Undergraduate Research Competition

²Graduate Research Competition

³2015 Junior Academy winner

- 3:00 pm **John Conway's "Look and Say" Sequence.** Andy Martin - Kentucky State University
- 3:15 pm **A One Dimensional Approach to Modelling Marine Populations¹** Nathan Dasenbrock-Gammon, Gail Mackin, Charles Acosta - Northern Kentucky University
- 3:30 pm **Distributions for Stock Market.** Ibukun Amusan - Kentucky State University
- 3:45 pm Mathematics Section Meeting and Selection of Officers

MICROBIOLOGY

Geoff Gearner, Chair
Morehead State University

Erin Strome, Secretary
Northern Kentucky University

FRIDAY, NOVEMBER 13, 2015

GRIFFIN 316

- 1:15 pm **Microbial Load of Vegetables Grown under Conventional, Organic or Aquaponic Conditions** Lingyu Huang, Cecil Butler, Robert Durborow, Changzheng Wang - Kentucky State University
- 1:30 pm **Analyzing sequence variation of centromeric regions from wild and lab isolates of *Saccharomyces cerevisiae*¹** Collin Johnson, Dr. Erin D. Strome - Northern Kentucky University
- 1:45 pm **Antimicrobial Resistance of Bacteria Isolated Above and Below the Town Branch Wastewater Treatment Plant¹** Laura Mims, Laura Peterson, William Staddon - Eastern Kentucky University
- 2:00 pm **Break**
- 2:15 pm **Incidence of Antibiotic Resistance *tet(B)* Gene at Kentucky Wastewater Treatment Plant Sites¹** Anthony Jeck - Eastern Kentucky University
- 2:30 pm **Effects of hot water and acidic electrolyzed water on microbial load and quality characteristics of Pawpaw fruits¹** Gidgett Taylor, Lingyu Huang, Cheri Crabtree, Jeremy Lowe, Kirk Pomper, Cecil Butler, Changzheng Wang - Kentucky State University
- 2:45 pm **Effects of acidic electrolyzed water on microbial load of vegetables grown hydroponically in fish ponds¹** Kelly Yufeh - Kentucky State University

¹Undergraduate Research Competition

²Graduate Research Competition

³2015 Junior Academy winner

- 3:00 pm **Surveillance for emerging influenza virus in pet dogs and cats** Alexander Lai - Kentucky State University, Jean Branttie - Kentucky State University
- 3:15 pm Microbiology Section Meeting and Selection of Officers

PHYSICS AND ASTRONOMY

Keith Andrew, Chair
Western Kentucky University

Robert Arts, Secretary
University of Pikeville

SATURDAY, NOVEMBER 14, 2015

SCIENCE 304

- 8:30 am **Parameter Study of Eclipsing Binary Stars HD 166383 and HD 168207¹** Terri Perrino, Wes Ryle - Thomas More College, Stephen Williams - National Observatory of Athens, Athens, Greece.
- 8:45 am **The Narrow-Line Seyfert 1 Galaxy WPVS 007: Looking through the Edge of the Torus** Dirk Grupe - Morehead State University
- 9:00 am **The Morehead State University Fast Pulsar Data Acquisition System²** Michael Robbins - Morehead State University
- 9:15 am **Determining metal abundances for RR Lyrae stars using low-resolution spectroscopy.** Nathan De Lee - Northern Kentucky University, Ronald Wilhelm, Eckhart Spalding - University of Kentucky
- 9:30 am Physics / Astronomy Section Meeting and Selection of Officers

Break for Poster Session and Lunch

- 1:00 pm **Quantum Efficiency of Thin Film Photovoltaics** Andrew Bailey - Morehead State University
- 1:15 pm **Stolen Base Physics from the Battery Point of View** Ignacio Birriel, Aaron Goe - Morehead State University
- 1:30 pm **Measuring Night Sky Brightness in the RGB Color Bands¹** Lauren M Duffy, Jennifer J. Birriel - Morehead State University
- 1:45 pm **Analysis of nighttime sky brightness data from September 2014 to February 2015 in Morehead, KY¹** Jessica Farrell, Jennifer Birriel,, Ignacio Birriel - Morehead State University
- 2:00 pm **Spatially-resolved X-ray spectroscopy of the Galactic supernova remnant 3C 397¹** Thomas Pannuti - Morehead State University
- 2:15 pm **Detection of Oxygen-Rich X-ray Emitting Ejecta from the Galactic Supernova Remnant W28** Thomas Pannuti - Morehead State University
- 2:30 pm **Break**

¹Undergraduate Research Competition

²Graduate Research Competition

³2015 Junior Academy winner

- 2:45 pm **Initial Analysis of Pulsating Variables Listed in the Kepler Eclipsing Binary Catalog** Garrison Turner, Austin Maynard - Kentucky Community and Technical College System
- 3:00 pm **Study of Exoplanet Data from Kepler¹** Stephen Denny, Nicholas Rockstroh, Dr. Akhtar Mahmood - Bellarmine University
- 3:15 pm **Citizen CATE: Geographically Distributed Citizen Scientist Observations of the August 2017 Total Solar Eclipse.** Richard Gelderman - Western Kentucky University
(continuing until 4:00)

PHYSIOLOGY AND BIOCHEMISTRY

Sarah Blank, Chair
Berea College

Patrick Mineo, Secretary
Berea College

SATURDAY, NOVEMBER 14, 2015

GRIFFIN 260

- 8:30 am **Biofeedback Eyeglasses for Unobtrusive Communication and Logging of Autonomic Activity²** Mohammad Nasser Saadatzi, Faezeh Tafazzoli, Karla Welch, James Graham - University of Louisville
- 8:45 am **pH induced compaction of the N-terminal domain of lipidated caveolin-3¹** Kaitlyn Reasoner - Berea College, Jonathan P. Schleich, Ji-Hun Kim, Zhenwei Lu, Charles R. Sanders - Vanderbilt University
- 9:00 am **Restoration of enzymatic activity of energy related proteins intrautically brain injured rats following the administration of gamma-glutamylcysteine ethyl ester.²** Brittany B. Rice, Tanea T. Reed - Eastern Kentucky University
- 9:15 am **Novel Self-Patented Gold Nanoparticles for Antineoplastic Activity¹** William R. Hamilton, Jason Payne, Dr. Rajalingam Dakshinamurthy - Western Kentucky University
- 9:30 am **The ancillary subunit Kvbeta2 alters Kv1 trafficking and modulates the electrophysiological properties of ventricular cardiac myocytes²** Peter J Kilfoil, Frank Raucci - University of Louisville, Srinivas Tipparaju - University of South Florida, Aruni Bhatnagar - University of Louisville
- 9:45 am **The relationship between canine nasal length and second-hand smoke cotinine levels¹** Sierra R. Wilson, Terry L. Derting - Murray State University

¹Undergraduate Research Competition

²Graduate Research Competition

³2015 Junior Academy winner

- 10:00 am **Effects of IPA-3 on PAK1 and PAK2 in Breast Cancer Cell Lines¹** Alex White, Rachel Bender, Evan Birmingham, Austin Johnson, Haley Mckeehan, Tristan Browne, Alexandra Fajardo, Julia H. Carter - Wood Hudson Cancer Research Laboratory
- 10:15 am **Overexpression of WT-1 (Wilm's Tumor) protein as a biomarker in ovarian cancer¹** Gretchen Mueller, Stefan Marasligiller, Ben Ellison, Lydia Duvall, T. Grant Lewis, James A. Deddens, Larry E. Douglass, Julia H. Carter - Wood Hudson Cancer Research Laboratory
- 10:30 am **Break**
- 10:45 am **Pak-1 and TGF- α Expression in Intestinal and Diffuse Stomach Cancers Arising from the Gastroesophageal Junction and the Gastric Epithelium¹** Mariah Dooley, Rachel Rutherford, Lydia Duvall, Denise Lucas, James A. Deddens, Larry E. Douglass, Julia H. Carter - Wood Hudson Cancer Research Laboratory
- 11:00 am **Neurodegeneration produced by various lengths of binge alcohol exposure during adolescence¹** Jacob S. Meece - Asbury University, Kimberly Nixon - University of Kentucky, Bobby Baldrige - Asbury University
- 11:15 am **Biochemical and gene expression changes in mice exposed to polychlorinated biphenyls during early brain development¹** Kelsey Klinefelter, Samantha Hampton, Chloe Bates, Molly Kromme, Melinda Stegman - Northern Kentucky University, Alejandro Juarez Lopez - Cincinnati Children's Medical Center, Christine Perdan Curran - Northern Kentucky University
- 11:30 am **Detection of methylated DNA using engineered Zinc Finger Proteins²** Anu Kini - Western Kentucky University
- 11:45 am Physiology & Biochemistry Section Meeting and Selection of Officers

PSYCHOLOGY

KatieAnn Skogsberg, Chair
Centre College

Mykol Hamilton, Secretary
Centre College

SATURDAY, NOVEMBER 14, 2015

GRIFFIN 314

- 9:45 am **Zebrafish (*Danio rerio*) Prefer a Context Paired with An Opposite Sex Conspecific¹** Kayla Morris, Brian Cusato - Centre College
- 10:00 am **Are Rodent Rescue Behaviors Motivated by Empathy, Sympathy, or Social Interaction?¹** Ashley Merkin, Brian Cusato - Centre College

¹Undergraduate Research Competition

²Graduate Research Competition

³2015 Junior Academy winner

- 10:15 am **Evidence of the Relative Contributions of Explicit and Implicit Learning of a Complex Video Game**² Kelly Smith - Northern Kentucky University
- 10:30 am **Break**
- 10:45 am **Cultural Values and Sympathy: A Comparative Study of Responses to Suffering in China and the United States**¹ Sangyi Hu, Kunhan Tang - Centre College
- 11:00 am **Arousal, Audition, and Spatial Awareness: Effects on Bias and Sensitivity**¹ Shelby Cansler - Berea College
- 11:15 am **Effects of Rehearsal Styles on Learning Words in a Foreign Language.**¹ Joscelin Rocha-Hidalgo - Berea College
- 11:30 am **Nonverbal Communication and Deception: A Multi-Method Investigation of Physical Indicators of Deception**¹ Mara L. Merlino - Kentucky State University
- 11:45 am Psychology Section Meeting and Selection of Officers

SCIENCE EDUCATION

Shen Liu, Chair
Kentucky Community and
Technical College System

Karen Hlinka, Secretary
Kentucky Community and Technical College
System

SATURDAY, NOVEMBER 14, 2015

SCIENCE 201

- 9:00 am **Practical Implementation of Sustainability Curriculum in a Non-Science Major Undergraduate Course** Darla French - University of Pikeville
- 9:15 am **Flipping an Engineering Computation Course - Is it Effective?** Shen Liu - Kentucky Community and Technical College System
- 9:30 am **Creating a Culture of Retention in the A&P Classroom: An Action Research Project** Karen Hlinka- Kentucky Community and Technical College System
- 9:45 am **How Large does the Moon Appear?** Andy Martin - Kentucky State University
- 10:00 am **Comparing Programmed Cell Death in Cultures of Primary and Tumor Cells for Inquiry-based Learning Exercises**¹ Shannon K. Murray, Amanda R. Vokoun - Centre College, Stephen E. Asmus - Centre College

¹Undergraduate Research Competition

²Graduate Research Competition

³2015 Junior Academy winner

- 10:15 am **Studying Cell Migration Using the Scratch Assay to Facilitate Inquiry-Based Learning in a Cell Biology Lab Course¹** Kaylind G. Batey, Stephen E. Asmus - Centre College
- 10:30 am **Break**
- 10:45 am **Reading primary literature: Three approaches for engaging students** Bill Staddon - Eastern Kentucky University
- 11:00 am **Middle and High school distance science learning with college student and faculty mentors: On line blogging and video communication** R. Cooper - University Of Kentucky, S. Behrendt, S. Poepelman - Lewis County High School, Vanceburg, Ky, P. Goff - Beaumont Middle School, Lexington, Ky, G.J. Capilouto - University Of Kentucky, H. Anderson - Dupont Manuel High School, Louisville, Ky, F. Whitaker - St. Francis Of Assisi, Louisville, R. Krall - University of Kentucky
- 11:15 am **Medical 3d printing: an overview** Michael James - Berea College
- 11:30 am Science Education Section Meeting and Selection of Officer

ZOOLOGY

Philip Lienesch, Chair
Western Kentucky University

David Eisenhour, Secretary
Morehead State University

SATURDAY, NOVEMBER 14, 2015

GRIFFIN 333

- 10:00 am **Clutch size and maternal condition in Carolina chickadees.¹** Elizabeth Nickell, Lindsey Walters - Northern Kentucky University
- 10:15 am **The effects of hyperuremia on glucose homeostasis in *Rana sylvatica*¹** Danielle Scott, Daniel Miller, Clara do Amaral - Wittenberg University
- 10:30 am **Break**
- 10:45 am **A Northern Fish in a Southern Land: Conservation Status of Trout-Perch (*Percopsis omiscomaycus*) in Tygart's Creek, Kentucky** David J. Eisenhour, Brooke A. Washburn - Morehead State University
- 11:00 am **Relationship between lay date and nestling fitness in Carolina chickadees¹** Danielle Frevola, Lindsey Walters - Northern Kentucky University
- 11:15 am **Food Preference in *Podarcis muralis* Based on Diet Content and Prey Abundance.¹** Allison Litmer- Northern Kentucky University
- 11:30 am Zoology Section Meeting and Selection of Officers

¹Undergraduate Research Competition

²Graduate Research Competition

³2015 Junior Academy winner

POSTER PRESENTATIONS

Poster presentations are grouped by divisions and will be on display in the Steely Library, Floors 2-4 starting Friday, November 13 from noon until 4:00 pm and on Saturday, November 14, 10:00 am until 4:00 pm.

2nd floor: Physical Sciences Division (Chemistry, Computer & Information Sciences, Engineering, Geography, Geology, and Physics & Astronomy)

3rd floor: Social Science Division (Anthropology & Sociology, Psychology, and Science Education)

3rd & 4th floor: Biological Sciences Division: (Agricultural Sciences, Botany, Cell & Molecular Biology, Ecology & Environmental Science, Health Sciences, Microbiology, Physiology & Biochemistry, and Zoology)

Each presenter will be provided with a poster board and clips. Each poster board will be identified with a number that matches the presenter's poster number.

Poster presenters will check in at Steely Library room 102 on Friday between 10:00 am – 12:00 noon. Posters will be set up from Noon on Friday until 4 pm Saturday. Presenters must be at their poster in order to have it judged at the specified time for their section.

PHYSICAL SCIENCES DIVISION

2nd floor Steely Library

CHEMISTRY: ANALYTICAL / PHYSICAL

2nd floor Steely Library

Poster judging Saturday 10am -12noon

Poster
#

Title, Authors, Affiliations

1. **Development of a Nanoscale Calcium-Selective Electrode¹** Theresa Ruwe, Tony Dobrzykowski, Teri Rae Armstrong, Chase Terry, Dr. Celeste Morris - Northern Kentucky University
2. **Confocal Microscopy and Electrochemical Evaluation of Suspended Lipid Bilayers for Future Investigations of Nanoparticle Toxicity¹** Adam Hoffmann, Marcus Jones, Kelly Wiegman, Andrew Hall, Dr. Kristi Haik, Dr. Celeste Morris - Northern Kentucky University

3. **Electrochemical Measurement of Thyroid Hormone for Rapid Diagnostics Technology** Barbara Cata, Dr. Celeste Morris - Northern Kentucky University
4. **Improvements in Solid-State pH Probes for Portable Water Quality Analysis**¹ Michael Chia, Kelley Wiegman, Grant Foreman, Dr. Richard Durtsche, Dr. Celeste Morris - Northern Kentucky University
5. **Separation and Identification of Progesterone and Fluoxetine Photoproducts**¹ Ceilidh Ahearn, Alex Olivan, Dr. Patrick M. Hare - Northern Kentucky University
6. **Temperature and electric field dependency of asymmetric stretching of nitrate ion**¹ Konnor K. Jones, Matthew J. Nee - Western Kentucky University
7. **Development of a Protocol for the Characterization of Organic Synthesis Products Using Differential Scanning Calorimetry, Fluorescence, and Ultraviolet-Visible Spectroscopy**¹ Jordan Smith, Denzel Cain, Bruce Egboudin, Mikel Reynolds, Blake Schumann, Dr. Patrick Sheridan, Dr. Todd Hamilton - Georgetown College
8. **Photodegradation of Progesterone**¹ Alex Olivan, Ceilidh Ahearn - Northern Kentucky University
9. **Mineral Composition of Ash from Agricultural Waste Burning Using Bioburner 500** ¹ Nicole States, Clayton Keiser, Jason Robertson, Bommanna Loganathan - Murray State University
10. **Approaching Single Molecule Detection with Nanoelectrodes** Edward A. Dobrzykowski III, Teri Armstrong, Chase Terry, Dr. Celeste Morris - Northern Kentucky University
11. **Mechanical Properties of Polymer Binders in Lithium-Ion Batteries**¹ Boniface O. Amankona, Aaron Wilson- Kentucky State University, Jiagang Xu- University of Kentucky, Kazi Javed-Kentucky State University, Yang-Tse Cheng - University of Kentucky
12. **Simple and Rapid Determination of Polyanion-Polycation Binding Ratio Using Pulsed Chronopotentiometry with Polyion-Selective Electrodes**¹ Emma Gordon - Northern Kentucky University
13. **Assessment of Trace Methamphetamine Levels on Various Fabrics by DART-MS** Rachel Masek, Amelia Hartman, David Cunningham - Eastern Kentucky University

14. **An Experimental Approach to Study Tholin Precursors: Solution state NMR Identification**¹ Donghui Quan - Eastern Kentucky University
15. **An Approach to Accurate Measurement of Mercury in Aqueous Environment Using An Automation Platform** Danming Wei, Cao Yan - Western Kentucky University
16. **Examination of Phosphate crystals by PEITA J-Coupling and PASS NMR Experiments**¹ Kodey Blankenship, Jay Baltisberger - Berea College
17. **Initial Synthesis and Characterization of Acrylate and Methacrylate Porous Polymer Monoliths** Benjamin Cecil, Kelley Ries, Julia Ziebro - Northern Kentucky University
18. **Chemical and Physical Resistance of Guayule and Nitrile Blend Gloves**¹ Boubacar Cherif - Berea College
19. **Spectroscopic Analysis of Tunable, Stimuli Responsive Polymeric Materials** Jamie Church, Andres Gasper - Northern Kentucky University
20. **Measurement of Physiological Chloride and Bicarbonate with Pulsed Chronopotentiometry for the Calculation of Anion Gap**¹ Adaeze Iloegbunam and Sara Keshtvarz, Simon Segal, Dr. Kebede Gemene - Northern Kentucky University

CHEMISTRY: ORGANIC / INORGANIC

2nd floor Steely Library

Poster judging Friday 1-4:30pm

21. **Kinetic and catalytic studies of a corrole-manganese species**¹ Haleh Jeddi, Weilong Luo, Rui Zhang - Western Kentucky University
22. **Evaluating and engineering mesoporous silicates for drug delivery**¹ Jonathan Hoey, Natalie Conner, Isabelle Lagadic - Northern Kentucky University
23. **Visible-Light Photocatalysis of TiO₂/Reduced Graphene Oxide Hybrid Nanocomposite Based on Up-conversion Fluorescence Mechanism** Ying Chen, Yan Cao - Western Kentucky University
24. **Enteric Coating of Benzophenanthridine Alkaloid Loaded Inulin Microbeads** Wesley Barnett - University of Pikeville
25. **Synthesis of Therapeutic Peptides**¹ Kaitlind Hydorn, Margaret Ndinguri - Eastern Kentucky University

26. **Photochemical Generation of Iron(IV)-oxo Porphyrin Radical Cations and Iron (IV)-oxo Porphyrin Derivatives** Tse Hong Chen - Purdue University, Ka Wai Kwong, Jonathan Malone - Western Kentucky University
27. **Insight Into Crosslink DNA-Adducts Through Sulfonyl Monofunctional Platinum Complexes** ¹ Bailee Freeman, Margaret Ndinguri - Eastern Kentucky University
28. **Pushing the Limits of PDMS: Efficiently Harvesting Waste Heat**¹ John R. Bertram, Jeremiah Sharpsteen, Dr. Hemali Rathnayake, Dr. Matthew J. Nee - Western Kentucky University
29. **Malonic Acid Monoesters for the Synthesis of Xanthine Oxidase Inhibitors** ¹ Nicole Brusman - Northern Kentucky University
30. **New Methods to Synthesize Nickel N-Heterocyclic Carbene Complexes**¹ Samuel A. Effoe, Benjamin R. Quesada, Lyndsey J. Barker, Maria S. Ledesma-Alonso, Anes Kovacevic - Berea College
31. **The Formation of Triphenylenediamines and Azacalixarenes**¹ Thomas Vornheder, Didi Ciolpan - International Student K.C Russell - Northern Kentucky University
32. **Oxidation of a lignin model compound by iron, manganese, and cobalt complexes of dpaq**¹ Karan Aletty, Leili Niu, Karin J. Young - Centre College
33. **Efforts toward the total synthesis of microcyclamides MZ568 and MZ602**¹ Brandon Wiefering, Lucas Edelen, Stefan Reid, John Carmen, Amber J. Onorato - Northern Kentucky University
34. **Synthesis of analogues of a naturally occurring diarylheptanoid**¹ Richard McLane, Maxwell Boyle, Jacob Telesz, Joseph Mester, Amber J. Onorato - Northern Kentucky University
35. **Extraction, Quantification, Antimicrobial Activity, and Degradation of Isoquinoline Alkaloids from *Sanguinaria canadensis*** Molly Frank, Wesley Barnett, Benjamin Clayton - University of Pikeville
36. **Synthesis of Heterocalixarenes incorporating s-triazine** Jason Loxterkamp, K.C. Russell - Northern Kentucky University
37. **The Bromination of Aromatic Compounds**¹ Dorothy Coe, Katie Bragdon, Dr. Nicholas Marshall - Berea College
38. **Determination of Ethyl Acetate Mixtures Through the Use of Density** Reyes Castellon, KC Russell - Northern Kentucky University

39. **Abnormal N-Heterocyclic Carbene Complexes¹** Lyndsey J. Barker, Maria S. Ledesma-Alonso, Samuel A. Effoe, Benjamin R. Quesada, Anes Kovacevic - Berea College
40. **Mechanochemical chlorination and iodination of electron-rich aromatics¹** Tyler Hutsell, Marco Santos - Berea College
41. **Phytochemical investigation of *Albizia shimperiana* and *Bridelia micrantha* for Cytotoxic Principles against Drug Sensitive and Multidrug Resistant Cancer cell lines¹** Job K. Limo - Berea College
42. **Rapid, electroless surface modification through surface-directed azo coupling** Tatiana Mikhailova, Nicholas Marshall - Berea College
43. **4,5-Bisarylethynylcatechols: Precursors to expanded covalent organic frameworks and oxalixarenes.¹** Amneh Alzatout, Daniel Powers, Chelsea Soward - Northern Kentucky University
44. **Vinylnitrene Formation from an Isoxazole in Solution and in Single Crystals** R. A. A. Upul Ranaweera - Murray State University, Elizabeth Kidd, Nevenka Sajkovic, Emilee McCoy, Jeanette A. Krause, Bruce S. Ault, Anna D. Gudmundsdottir - University of Cincinnati
45. **Functionalization Work on Dopamine Nanoparticles with the Incorporation of Human Serum Albumin (HSA)** Andrew Norris - Berea College

COMPUTER AND INFORMATION SCIENCES

2nd floor Steely Library

Poster judging Saturday 1-2pm

46. **Developing an Affordable Traffic Counting System Using Computer Vision** Carlos Andres Berejnoi - Berea College
47. **Dashboard Management System: A Tool to Manage Data Efficiently at the Back End and to Display Data Meaningfully at the Front End¹** Phyo Phyo Kyaw Zin - Berea College
48. **Know How to Protect Your Information** Bret M. Wisecarver - Morehead State University
49. **Employing Version Control and GPU Accelerated Computation Technology to Numerical and Experimental Investigations for Modeling of Ablative Thermal Protection System Surfaces** Longyin Cui, Jens Hannemann, Chi Shen - Kentucky State University
50. **Utilizing the quadratic residuosity problem to perform a fair virtual coin toss¹** Jordan Watkins - Morehead State University

ENGINEERING

2nd floor Steely Library
Poster judging Saturday 1-2pm

51. **A SEM Study of Copper Corrosion in the City of Bowling Green Water Supply Lines** Reema Alghamdi, Doug Kimbler - Bowling Green Municipal Utilities, Cathleen Webb - Western Kentucky University
52. **Dynamics of Strongly Confined Grafted Polymer Chains** Jonathan Murphy - Kentucky State University, William Lenart, Yuan Wei, Mike Hore - Case Western Reserve University
53. **Cellulose Acetate and Composite Membrane Synthesis**¹ Jordan Wells - Kentucky State University, Andrew Colburn - University of Kentucky
54. **Differential Thermal Analysis of Bioactive Glass Material for Bone Tissue Regeneration**¹ Denzell Barnett - Berea College

GEOGRAPHY

2nd floor Steely Library
Poster judging Saturday 2-3pm

55. **Estimating Ice and Snow Coverage on Mount Etna Using Digital Elevation Models and Supervised Classification of Landsat Imagery** Haluk Cetin, Ashley Casselberry - Murray State University
56. **Collecting Geospatial Data Required for Berea, Kentucky's Stormwater Management Program**¹ Jamie Farrar, Nathaniel Crockett, Michael Dickerson, James Farris, Matthew McClure, Laura Norris, Alec Sachleben, Ross Sanor - Eastern Kentucky University

GEOLOGY

2nd floor Steely Library
Poster judging Saturday 2-3pm

57. **Computer Simulations of Antipodal Effects of Impacts on Mars**¹ Timothy Nikoley, Steven Wilkinson, M.W. Roth - Northern Kentucky University
58. **Discovering relationships between surface and groundwater velocities through dye tracing in Fayette Co, KY**¹ Laura Norris, Cassie Simpson, Trent Garrison - Eastern Kentucky University
59. **Land Use and Water Quality in the Banklick Creek and a Spillway Tributary in Independence, KY**¹ Samuel Boateng, Alexandra Shelters - Northern Kentucky University

PHYSICS AND ASTRONOMY

2nd floor Steely Library

Poster judging Saturday 10am -12noon

60. **Investigating Microstructure and Mechanical Properties of Electrochemical Processed Graphene/Polymer Hybrid Composites: Nanoscale Morphology-Promoted Synergistic Effect¹** Benjamin / McDonald, Sara B. Carrizosa, Carson Price, Sanju Gupta – Western Kentucky University
61. **Novel Formulations for Stable, High-Performance Li-based Batteries Electrodes Nanoarchitectures Based on Graphene and Related Materials¹** Jared Walden, Bryce Aberg, Sara B. Carrizosa, Sanju Gupta – Western Kentucky University
62. **A Single-Step Hydrothermal Synthesis of Vanadium Pentaoxides -Reduced Graphene Oxide Composite Electrodes for Enhanced Electrochemical Energy Storage¹** Bryce Aberg, Jared Walden, Sara B. Carrizosa, Sanju Gupta – Western Kentucky University
63. **Fabricating Covalent Hybrids of Nanoscaled Cobalt and Cobalt Oxide Polymorphs on Graphene: Towards High-Performance Electrochemical Energy Storage Supercapacitors and Enzymeless Glucose Detection¹** Sara B. Carrizosa, Jared Walden, Benjamin McDonald, Sanju Gupta – Western Kentucky University
64. **Table of Ground-State Subatomic Particles¹** Jackson Sherman, Dr. Akhtar Mahmood – Bellarmine University
65. **Development of aptamer/graphene oxide FRET biosensor for one-step ultrasensitive detection of bisphenol A and analogues¹** Rebecca Wood, Sanju Gupta – Western Kentucky University
66. **Building a Low-Cost Atomic Force Microscope for Use in Undergraduate Physics Labs and Research at Berea College¹** Nathanael Bodine, Troy Messina – Berea College
67. **Glow Discharge Production of Oxygen from the Martian Atmosphere¹** Caleb Hughes – Murray State University, Ronald Outlaw – The College of William & Mary
68. **Impurity Behavior in a Palladium-Gallium Alloy.** Nathan Dasenbrock-Gammon, Matthew O. Zacate – Northern Kentucky University
69. **Analyzing the Architectural Features that Improve Sound Quality¹** Alexander Gelderman – Western Kentucky University

70. **Molecular Dynamics Simulations of Rotated Graphene Layered Systems**¹ Elizabeth M. McDonough, M.W. Roth – Northern Kentucky University, Rui He – University of Northern Iowa
71. **Using New Dynamical Simulation Algorithms to Study Angular Momentum Transfer in Solar System Formation**¹ Kelli Taylor, M.W. Roth – Northern Kentucky University
72. **Enhancing Grain Size and Uniformity of Ferrite Magnets for Magneto-Elastic Pressure Sensor Applications** Jared Carr, Robert Theis, Chari Ramkumar – Northern Kentucky University
73. **Mapping Nearby Galaxies at APO (MaNGA)**¹ Dadbeh Shaddel – Berea College
74. **The Measurement of the Radioactivity in Outcrops of Ohio Shale and Sunbury in Rowan County, KY** Ignacio Birriel, Joshua Allen – Morehead State University
75. **Measuring the Spin-Down Rate of Pulsars with Swift** Andrew J Hughes, Dirk Grupe, Thomas Pannuti, Michael Robbins – Morehead State University
76. **Three-Step Induced-Ferroelectric Phase Transition in (PMN)_{0.8}(PT)_{0.2}**¹ Yhenew D Kassie – Berea College
77. **Nanodiamond modified boron-doped diamond substrates surface redox chemistry: Influence of physicochemical properties on electrocatalytic and biocatalytic processes** Benjamin McDonald, Sara B. Carrizosa, Sanju Gupta – Western Kentucky University

SOCIAL SCIENCES DIVISION

3rd floor Steely Library

ANTHROPOLOGY AND SOCIOLOGY

3rd floor Steely Library

Poster judging Saturday 10am- 12 noon

78. **Sugar Cane Farming Knowledge in Northern Belize: Attribute Analyses of Qualitative Ethnographic Interview Data**¹ Stefan Kienzle, Douglas Hume - Northern Kentucky University
79. **Family Matters** Blake Dickerson, Ashlee Garcia, John Hammond, Christine Lutz, Olivia Neltner, Darius Thornton- Northern Kentucky University

80. **Hug-A-Thon¹** Deanna Uhl - Kentucky Community and Technical College System
81. **Examining Construction of Irrigation Canals and Engineering Techniques in the Chavin Culture¹** Matt Lowe - Northern Kentucky University
82. **The Clermont Academy: A Legacy of Equality** Karen Ely, Joseph Andrews - Northern Kentucky University
83. **The Parker Academy- A Legacy of Equality** Joseph Andrews, Karen Ely - Northern Kentucky University
84. **Sports Matter** Christopher Freyhof, Tyler Delhanty, Melony Stambaugh – Northern Kentucky University
85. **Young farmers in Sardinia, Italy and Appalachia, U.S.: a comparison of policies and possibilities for young farmers in comparable regions.** Giuseppe Serra, Ann Kingsolver - University of Kentucky, Domenica Farinella - University of Cagliari
86. **An Archaeological Excavation of an Egalitarian Academy¹** Sage Boyers - Northern Kentucky University
87. **Place That Matters¹**, Sydney Ferrante, Brad Eilers, Alex Barlow, Amherly Watkins, Junessa Lanada, Melony Stambaugh – Northern Kentucky University
88. **Effects of visitor group size on the number of abnormal behaviors in captive bonobos (*Pan paniscus*) housed in outdoor and indoor zoo exhibits¹** Jessica L Bolte - Northern Kentucky University
89. **Our Eutopia** Candace Seibert, Abigail Koors- Northern Kentucky University, Eva Dames- Kentucky State University, Kelan Belton, Courtney Taylor, Jesse Johnson Jr., Kaitlin Hegner, Melony Stambaugh- Northern Kentucky University
- 89.5 **Power of Hugs¹** Sean Sharrock, Kathleen Curry, Anthony Harrell, Tera Hinkle, Taylor Martin, Cassandra McCormick, Ty McKeehan, Melony Stambaugh - Kentucky Community and Technical College System

PSYCHOLOGY

3rd floor Steely Library

Poster judging Saturday 1-2:30pm

90. **Effects of One or Two Daily Trials on Learning in a T-maze by Larvae the Grain Beetle *Tenebrio molitor*** Alexandria Potts, Steven Survant - Kentucky Community and Technical College System

91. **Snuggle Power: Opioid Mediated Contact Comfort Reinforces Incubation Behavior in Birds**¹ Taylor Walker-Smith, Joshua Rieskamp, Kaylyn Berg, Megan Sherwood, Melissa Burns-Cusato - Centre College
92. **Does greater consumption of alcohol occur when mixed with energy drinks?** Cecile A. Marczynski, Caitlin Turner, Emily Baltes Thompson, Eli White - Northern Kentucky University
93. **Sex Differences in the Self-Concepts of Gifted Students: A Meta-Analysis**¹ Shannon Layman, Christopher Smith, Veronica Huddle, Stacy Curl, Charla Bowling, Richard Osbaldiston - Eastern Kentucky University
94. **Young Children's Perceptions of Race and Gender**¹ Carmellia Jackson - Berea College, Kelly Smith - Northern Kentucky University
95. **IQ and Adaptive Behavior in Autistic Children: A Meta-Analysis** Vivi Tecoulesco - Eastern Kentucky University
96. **The Integration of Wireless Electroencephalography into Psychological Research of Attention and Driving Simulation.** Stephen Alley, Dr. Gregory Corso - Morehead State University
97. **Meta-analysis of MBSR compared to modern treatments** Blake W. Palmer, Richard Osbaldiston - Eastern Kentucky University
98. **Assessment of aggression and testosterone levels in wild-type, heterozygous and knockout *Cyp11b1* mice**¹ Nick Brinkman - Northern Kentucky University
99. **On the correlation between the TOVA, the CPT and Sternberg's memory scanning task.**¹ James Casper, Hannah Smith, Gregory M. Corso - Morehead State University
100. **Drugs of abuse may produce short-term reinforcing effects and longer-term acute withdrawal effects via a common mechanism.** ¹ Jason T. McClurg, Logan W. Fields, Ilsun M. White, Wesley White - Morehead State University
101. **Differences in Self-Reported Levels of Depression, Anxiety and Stress Due to Use of Different Tobacco Types (smokeless and cigarettes)**¹ Adam R. Bocoook, Andrew G. Preston, Timothy S. Thornberry Jr. - Morehead State University

SCIENCE EDUCATION

3rd floor Steely Library

Poster judging Saturday 2-3pm

102. **The Expanded Use of High-Impact and Non-Cognitive Educational Practices in Building Classroom Communities in a Variety of Biology Courses** Darla French, Mathys Meyer - University of Pikeville
103. **Summer Capstone Trip for a Non-traditional Science Course** Travis Keene, Kenneth Bowling, Darla French, Mathys Meyer - University of Pikeville
104. **Using the television show, *The Big Bang Theory* as an educational tool in the teaching of beginning level physics courses.**¹ Brittany Sexton, Kent Price – Morehead State University
105. **Microbes in our Home and School: A High School Biology Curriculum Supplement** Rabin, S.D.P., Remold, S.K. - University of Louisville
106. **Designing Student Maker Spaces**¹ Mackenzie Ridley, Daniel Johnsen, Peter Hackbert, Troy Messina - Berea College

BIOLOGICAL SCIENCES DIVISION

3rd & 4th floor, Steely Library

AGRICULTURAL SCIENCES

3rd floor Steely Library

Poster judging Friday 1-2pm

107. **Assessment of Competitiveness and Legal Framework of Farmer's Markets**¹ Amber Daniel, J. Dominique Gumirakiza - Western Kentucky University
108. **Impact of Recycled Waste on Capsaicinoids Concentrations in Hot Pepper**¹ Catherine Croft, George Antonious - Kentucky State University
109. **Separation and Quantification of Glucosinolates in Brassica Vegetables**¹ Thomas Trivette, George Antonious, Eric Turley, Regina Hill - Kentucky State University
110. **Consumer Preference for Pawpaw Cultivars and KSU Advanced Selections** Sheri B. Crabtree, Kirk W. Pomper, Jeremiah D. Lowe - Kentucky State University

111. **Review of the Interaction of Endo-Dormancy and Eco-Dormancy Effects in Meeting Chilling Requirements of Perennial Fruit Crops in Kentucky** Venkata Sravani reddy Seethi - Western Kentucky University
112. **Assessing Environmental Chilling Conditions for Perennial Fruit Production in Kentucky** Yao Xue - Western Kentucky University
113. **Carbohydrate Concentration in Red and White Clover in Kentucky** Meredith Anderson - Asbury University, Kelly Prince, S. Ray Smith, Isabelle Kagan - University of Kentucky
114. **Consumer attitude toward sustainably produced ornamentals** Hideka Kobayashi, Teferi Tsegaye, Sheri Crabtree - Kentucky State University
115. **Rate of Change and Persistence of n-3 PUFA Levels in Egg Yolk from Chickens on Algae Supplemented Feed¹** Hannah Long, Bruce Branan, Marty Bilderback II - Asbury University
116. **Evaluation of five baits for monitoring spotted wing *Drosophila* in organic primocane fruiting blackberries** Jeremiah Lowe, Kirk Pomper, John Sedlacek, Karen Friley, Sheri Crabtree - Kentucky State University
117. **Comparison of the effects of two growth implant strategies on the average daily gain of suckling calves fed ‘ KY-31’ endophyte infected tall fescue** J. N. Timmers, F. J. DeGraves, H. O. Galloway, L. G. Brown - Western Kentucky University
118. **Kentucky State University agroforestry program: pawpaw and American persimmon for fruit production for small land owners and forest ecosystems** Kirk W. Pomper, Dustin Hodges, Ken Bates- Kentucky State University, Andrew Berry - Bernheim Arboretum and Research Forest, Sheri B. Crabtree, Jeremiah Lowe - Kentucky State University
119. **A Cost Analysis of Soil Sampling Methods for Kentucky Soils¹** Chelsea Holleman, Dr. Iin Handayani - Murray State University

BOTANY

3rd floor, Steely Library
Poster judging Friday 1-2pm

120. **Soil fungi promote North American dandelion seed germination.¹** Sabra L. Tomb, Jay A. Yoder, Matthew H. Collier - Wittenberg University
121. **Incorporating the plant collections of the Kentucky State Nature Preserves Commission into the Ronald L. Jones Herbarium at Eastern Kentucky University¹** Glen Kalisz, Lameace Hussain- Eastern Kentucky University, Tara Littlefield - Kentucky State Nature Preserves Commission, Dr. Brad Ruhfel - Eastern Kentucky University

122. **Comparison of the application of two herbicides as a management strategy for Running Buffalo Clover (*Trifolium stoloniferum*)** Lauren Childress, David Brown, Jennifer Koslow - Eastern Kentucky University

CELLULAR AND MOLECULAR BIOLOGY

3rd floor, Steely Library

Poster judging Saturday 10 am – 12 noon

123. **Engineering stress-resistant mouse Embryonic Stem (ES) cells**¹ Maria Anastasiadou - Berea College, Wallace Chick, Michael Ludwig - University of Colorado Denver
124. **Lysle Oxidase Homolog Extracellular Processing**¹ Jazmin Escamilla- Berea College , Alberto J. López-Jiménez, Catalina B. Kretschmar, Roberto Vanacore. Vanderbilt University Medical Center
125. **Zebrafish as a Model for Retinitis Pigmentosa** Kayla Swiatek - Washington University in St. Louis
126. **Examining the Effect of Anacardic Acid Alone or in Combination with Chemotherapeutics on PanC-1 Pancreatic Cancer Cells** Shaelyn Eversole- University of Pikeville, Melodie Blackmon- Kentucky College Of Osteopathic Medicine , Danielle Upton - University of Pikeville, Scott Craver, Maiyon Park - Kentucky College of Osteopathic Medicine
127. **The Effect of Ribosomal Depletion on Protein Translation in Rat Hippocampal Neurons** David Malicote - Centre College, Dr. Michal Hetman, Dr. Lukasz Slomnicki - University of Louisville
128. **Reproductive Maintenance of *Drosophila melanogaster***. Tori Gray - Eastern Kentucky University, Michelle Giedt, Douglas Harrison - University of Kentucky
129. **Expression of dSERF gene modulates SMN protein abundance in a *D. melanogaster* SMA disease model** Heather Feere, Hana Hafer, Swagata Ghosh, Douglas Harrison, Brian Rymond - University of Kentucky
130. **Bioinformatic tools utilization and development for *in silico* fungal genomic comparison**¹ Stephanie Gehrlich, Deborah Burgess, Kayla Smith, John C. Carmen - Northern Kentucky University
131. **Integrin subunits $\alpha 3$ and $\alpha 6$ mediate FGF10-dependent signaling events in collecting duct cells bound to LM511**¹ Sophia Toe - Berea College, Tianxiang Tu, Olga Viquez, Eugenia Yazlovitskaya , Roy Zent - Vanderbilt University

132. **The role of acetylcholine in neural circuit modulation, behavior and development in *Drosophila melanogaster*** Cole Malloy, Jacob Sifers - University of Kentucky, Emily Yocom - University of Louisville
133. **The Effects of Heat Shock Preconditioning on Protein Induction and Cell Survival after Nanoparticle Exposure¹** Jonah Rector - Berea College
134. **Structural modification of albumin associated with erythropoiesis stimulating agent utilization** David McElroy - Morehead State University
135. **Individual Taste Neurons Vary in Branching Characteristics** Austin Zachary - Bellarmine University
136. **Distribution of *Botryllus schlosseri*: Invasive Species Prevalence in the English Channel¹** Claire Waldman - Centre College
137. **The role of the Pox Neuro gene in the reproductive life span of *Drosophila melanogaster*** Eiman Ashraf, Nick Ackley, Tyler Butsch, Michelle Giedt, Douglas Harrison - University of Kentucky
138. **The Role of MethyI Farnesoate and Ultraspiracle Interactions in the Formation of Puparia in *Drosophila melanogaster*** Enes Atici - Western Kentucky University, Cameron Colvard, Dr. Grace Jones, Dr. Davy Jones - University of Kentucky
139. **Introgression between Type A and Type B *Ciona intestinalis*¹** Lucy Yanckello - Centre College
140. **Cellular and Molecular Basis of Premature Male Infertility in upd3 Mutant *Drosophila melanogaster*¹** William J. Akin, Douglas A. Harrison - University of Kentucky
141. **Are Endogenous Cardenolides Controlled by Atrial Natriuretic Peptide?** Amanda Hafner - Bellarmine University, Gulay Tegin, Yonglin Gao, Barbara J. Clark - University of Louisville, John Hamlyn - University of Maryland, Rif S. El-Mallakh - University of Louisville
142. **Are bacteria rhythmic?** Felicia Farmer - Morehead State University
143. **Mutations within Pseudogenes of Various Ab10 Haplotypes¹** Seth A. Applegate - Kentucky Wesleyan College, David M. Higgins, R. Kelly Dawe - University of Georgia
144. **Testing For Gene Mutation Impact on Loss Of Heterozygosity In A Yeast System¹** Elizabeth Cheyenne Hensley, Kellyn Hoffert, Erin Strome - Northern Kentucky University
145. **Character Displacement and Possible Hybridization in Brook Salamanders (genus *Eurycea*)** Paige Poggemeier - Centre College, Carlos D. Camp - Piedmont College, Demorest, GA

146. **Compare and Contrast Apoptosis Assays** Alexis Zifer - Georgetown College
147. **Observations into the Role of the MSH4-MSH5 Heterodimer in Yeast, *Saccharomyces cerevisiae* (*Saccharomyces*), Genome Stability¹** Miranda Combs - Northern Kentucky University
148. **Selection pressure on allorecognition genes in *Botryllus schlosseri*¹** Jessica Peak - Centre College
149. **Generation and Characterization of COD1 and YPK9 yeast deletion strains¹** Katelyn Dunn, Keith Prive, Harsh Patel, Patrick Schultheis – Northern Kentucky University
150. **The importance of neural crest cell migration and the FGF pathway¹** LeighAnn VanDyke, Emily Shifley – Northern Kentucky University

ECOLOGY AND ENVIRONMENTAL SCIENCE

3rd & 4th floor, Steely Library

Poster judging Friday 12:30-4:30pm

151. **Assessing dietary changes of bats in the wake of White-nose Syndrome** Shelby Fulton, Luke Dodd - Eastern Kentucky University, Lynne Rieseke-Kinney - University of Kentucky
152. **Bat activity after prescribed fires at Mammoth Cave National Park.** Rachael E. Griffiths, Luke E. Dodd - Eastern Kentucky University
153. **Detection of *Percopsis omiscomaycus* (trout-perch) using eDNA in eastern Kentucky streams¹** Harold A. Brabon - Asbury University, David J. Eisenhour, Brooke A. Washburn, Lynn V. Eisenhour - Morehead State University, Ben F. Brammell - Asbury University
154. **Soil Infiltration Rate and its Dynamics in Six Land Management Systems of Western Kentucky.**¹ Landon Gibbs, Iin P. Handayani - Murray State University
155. **Impacts of nonionized ammonia on righting time in the freshwater snail, *Pleurocera acuta* (Pleuroceridae).** Megan DeVries, James E. Alexander, Jr. - University of Louisville
156. **Use of eDNA to detect *Ambystoma* species in central Kentucky ponds.**¹ Cierla V. McGuire, Malinda A. Stull, Ben F. Brammell - Asbury University
157. **Use of eDNA to detect multiple species in high elevation habitats in the Sierra Nevada in Sequoia-Kings Canyon Nation Park, CA.**¹ Christopher C Pauley- Asbury University, Michael C McGrann - William Jessup University, Ronald B Sams, Cierla V McGuire, Malinda A Stull, Ben F Brammell - Asbury University

158. **Determining bat activity at Taylor Fork Ecological Area using the Echo Meter-Touch Detector**¹ Victor T. Holbrook, Luke E. Dodd - Eastern Kentucky University
159. **Seasonal Fluctuations in Salamander eDNA in Central Kentucky Streams**¹ Ronald B. Sams, Cierla V. Mcguire, Malinda A. Stull, Ben F. Brammell - Asbury University
160. **Patterns in Fish Species by time of day at South Water Caye, Belize**¹ Courtney Roush, Dr. Denice Robertson, Dr. Sarah Johnson - Northern Kentucky University
161. **A hands-off approach to monitoring the livelihood of cave salamanders (*Eurycea lucifuga*)** J. Gavin Bradley, Dr. Perri Eason - University of Louisville
162. **Ecological Service of Cavity Dwelling Birds**¹ Charles C. Barnes, Darrell D. Barnes, Mark L. Montgomery, D. Harold McKinnon, Piya Adris, Ray Cox, Sarah Mattox, K.N. Thimmaiah - Northwest MS Community College
163. **Assessing the population structure and gene flow of a salamander host of an imperiled freshwater mussel via a genomic approach** Mason Murphy, Steven Price, David Weisrock - University of Kentucky
164. **Assessing bat activity in the eastern Knobs and Bluegrass Regions of Kentucky using acoustic surveys**¹ Megan E. Chandler, Luke E. Dodd - Eastern Kentucky University
165. **Monitoring of Fish and Macroinvertebrate Biodiversity along the Blue River in Southern Indiana**¹ Robert Baskett, Nathan Nowacki, Dr. Martha Carlson-Mazur - Bellarmine University
166. **Amphibian Community Composition in Ridge-top Wetlands of the Daniel Boone National Forest** Audrey L. McTaggart - Eastern Kentucky University
167. **Population size and size structure of *Strombus gigas* in backreef habitat of Glover's Atoll, Belize.** Anthony Earnheart, Gail Mackin, Charles Acosta - Northern Kentucky University
168. **Sexual differences in the growth of captive-reared Eastern Gray Squirrel (*Sciurus carolinensis* Gmelin) and Virginia Opossum (*Didelphis virginiana* Kerr).**¹ Colleen Moureaux, Luke E Dodd - Eastern Kentucky University
169. **Can elemental ratios be used to link residential soil pollution to a former secondary lead smelter?**¹ Nicholas Wainscott, Kirsten Schwarz - Northern Kentucky University

170. **Water Quality Factors Affecting Blackside Dace and Cumberland Arrow Darter Populations** Brandon L. Yates, Dr. David J. Eisenhour - Morehead State University, Michael C. Compto, Zachary Wolf - Kentucky State Nature Preserve Commission
171. **The effects of invasive species in urban forests discovered through analysis in permanent forest plots in Cincinnati** Megan Koo, Dr. Kristy Hopfensperger - Northern Kentucky University
172. **Impact of Invasive Species on Native Amphibians** Cassandra Brendel, Nicholas DeMeo, Richard Durtsche - Northern Kentucky University
173. **Occupancy dynamics of stream salamanders in degraded and reference headwater streams** Sara Beth Freytag, Steven J. Price - University of Kentucky
174. **Orientation at the water surface by swimming carpenter ants (*Camponotus pennsylvanicus*; Hymenoptera: Formicidae)¹** Noah Griphover, Evan M. Gora, Stephen P. Yanoviak - University of Louisville
175. **The spatial distribution of lead in residential soils: results from an ongoing soil survey in Cincinnati, OH** Beth Knox - Northern Kentucky University, Kirsten Schwarz
176. **Think Sustainable.¹** Logan Cline, Mackenzie Summers, Darla French - University of Pikeville
177. **Coral and Algae Distribution along the Belize Coral Reef** Katie Ollier, Denice Robertson, Sarah Johnson - Northern Kentucky University
178. **Monitoring Wetland Efficiency¹** Corey Shrader, Kristine Hopfensperger - Northern Kentucky University
179. **The comparison of biodiversity in different reef habitats and the relationship between benthic and fish species at Glover's Reef, Belize.¹** Marisa Derenzo, Dr. Acosta, Dr. Mackin - Northern Kentucky University
180. **Kentucky Lake: An Opportunity for Long Term Monitoring of Overall Fish Community Dynamics** Bradley Hartman, Timothy Spier - Murray State University
181. **The Contribution of Lipids to Ant Adhesion** Rachel Sandman, Alyssa Stark, David Schultz, Steve Yanoviak - University of Louisville
182. **Anomalous densities of adult Caribbean spiny lobsters in shallow habitats of Glover's Reef, Belize¹** Kristafer Howard - Northern Kentucky University, Gail Mackin- Thomas More College, Charles Acosta - Northern Kentucky University

183. **Environmental monitoring of an active gold mining area in the Republic of Georgia** Gurandi Avkopashvili, Cathleen Webb - Western Kentucky University, Gary Mills - USGS Savannah River Ecology Lab
184. **Using Geographic Information Systems (GIS) to assess the urban heat island in Frankfort, Kentucky**¹ Ian Ries, Jeremy Sandifer, Buddhi Gyawali - Kentucky State University
185. **Phylogenetic relationships within the Chattahoochee Slimy Salamander (*Plethodon chattahoochee*) inferred from mitochondrial and nuclear sequences**¹ Megan E. Turner, Dr. Jessica Wooten - Centre College, Carlos D. Camp - Piedmont College
186. **Identifying Trematode and Snail Species Using Molecular Techniques to Better Understand Parasite-Host Relationships**¹ Daniel Wicker, Jessica Wooten - Centre College, Lori Tolley-Jordan - Jacksonville State University, Brian Helms - Auburn University
187. **Summer research with the Ohio River STEM Institute Water Quality Sampling and Educational Outreach**¹ Maria Dongo - Northern Kentucky University
188. **Avian Diversity in Remnant Forested Patches Affected by the Emerald Ash Borer on Kentucky State University's Campus**¹ Melissa Grimes, Tamara Sluss, Ken Bates - Kentucky State University
189. **Harmful Algal Blooms in King County, WA: Increasing effectiveness of community outreach and protocol**¹ Alexis Sharp - Northern Kentucky University, Olivia Pfeifer - Bowdoin College
190. **Assessing Water Quality of the Kentucky River Watershed: A GIS-Based Approach**¹ D'Andre Garrison - Kentucky State University
191. **Correlations between Land Cover and Socioeconomic Conditions using Satellite Imagery Data in Eastern Kentucky** Cynthia Rice, Andrew Gott, Jeremy Sandifer, Ken Bates - Kentucky State University
192. **Determination of the presence and concentration of antidepressants in the wastewater of Wilmore, KY**¹ Alegra Forwith, Rebecca Bolinger, Bruce Branan - Asbury University

HEALTH SCIENCES

4th floor, Steely Library

Poster judging Friday 3-4pm

193. **Antiproliferative activity of mathanolic extract of *Wadelia trilobata* is mediated through apoptosis in leukemic cells** Kuntebommanahalli N. Thimmaiah, James L. Sylvester, T. Padma, Mark Montgomery, Lindsay L. Massie, Robin Robison, Ashish Pagare, Paul Grisham, Piya Adris, Sarah Holt, Ray Cox, Darrell Barnes - NW Mississippi Community College, Uday V. Chethan, Satish K. Murari - M.S. Ramaiah University of Applied Sciences, Bangalore, India
194. **Potency and Efficacy Testing of a Novel Silver-Containing Antifungal Oral Rinse Solution** Logan E. Lucas, Lindsey Bierle, Daniel Atchley - University of Pikeville
195. **Expression and Purification of Transforming Growth Factor Receptor β -ii Cytoplasmic Tail from *E.coli*.** ¹ Kidist Ashami - Berea College, Kyle Brown, Ambra Pozzi, Hong-Jun Liaon – Vanderbilt University
196. **Obesity Impact On Life Expectancy in the United States Of America** Sai pavan Adigarla - Western Kentucky University
197. **Analysis of Chemical Differences in Black Teas Based on Picking Season, Clonal or Classical Variation, and Steeping Method¹** Tyler Ogden, Bruce Branan - Asbury University, Kevin Glascoy
198. **Novel Vaccines for Hepatitis C Virus Induce Immune Activation *in Vitro*** **Section: Health Sciences** Hailey Shanahan, Joseph Mester - Northern Kentucky University
199. **Virreal Binding Patterns¹** Jessica Jones, Wittenberg University

MICROBIOLOGY

4th floor, Steely Library

Poster judging Saturday 11am-12 noon

200. **Isolation and Characterization of the Novel Mycobacteriophage Phranny From a Soil Sample.** Lauren A. Eastep, David M. McElroy, David K. Peyton - Morehead State University
201. **Isolation and Characterization of the Novel Mycobacteriophage Reba From a Soil Sample.** Toni S. Carter, Amber N. Hall, Anna M. Knox, David K. Peyton - Morehead State University
202. **An Approach to Identify Mycobacteriophage Diversity Prior to DNA Sequencing¹** Thomas Gregory, Claire A. Rinehart - Western Kentucky University

203. **A survey for the presence of the *Wolbachia* endosymbiont in select insect morphospecies of Central Kentucky** Nicolette Payne - Bluegrass Community and Technical College, Katharine Carter, Rebecca Streeval, Stephanie Stoelb, Larry Porter
204. **Assessment of antimicrobial resistance in pathogens responsible for causing bovine mastitis in Kentucky dairy farms¹** Ryan Donkin, Erica Phillips, Marcia M. Pierce - Eastern Kentucky University
205. **Exploring the Link between Induction by DNA Damaging Agents and Pyocin Use in *Pseudomonas aeruginosa*¹** Zachary Matson, Andrew Diddle, Jeffrey Bara, Susanna Remold - University of Louisville
206. **Survey of microbial sedimentation from indoor air in a campus setting¹** Vaughan Caine, Jean Branttie, Alexander Lai - Kentucky State University
207. **Ohio River Plankton and Endangered Freshwater Mussels** Henry Bechtel - Northern Kentucky University
208. **Extracting antimicrobial compounds from environmental isolates¹** Amberlee Grau, Kristen Wesley - Northern Kentucky University
209. **Effects of acidic electrolyzed water on microbial load of vegetables grown hydroponically in fish tanks with artificial lighting** Cecil Butler, Lingyu Huang, Janelle Hager, James Tidwell, Changzheng Wang - Kentucky State University
210. **Transformation via CRISPR of *mef* (A) gene in *Streptococcus pyogenes*¹** Hayley Helton, Robert D. Jackson, Dr. Marcia M. Pierce – Eastern Kentucky University

PHYSIOLOGY AND BIOCHEMISTRY

4th floor, Steely Library

Poster judging Saturday 1-3pm

211. **Effects of Withaferin A in the Epithelial-Mesenchymal Transition Pathway in Ovarian Cancer** Taylor Johnson - Eastern Kentucky University, Sham Kakar - University of Louisville
212. **Identification of factors stabilizing the 3D structure of the Goodpasture autoantigen of glomerular basement membrane.¹** Tatiana Mikhailova - Berea College, Neonila Danylevych, Billy Hudson, Vadim Pedchenko - Vanderbilt University
213. **The effect of cold exposure & influence of modulators on the larval *Drosophila* heart** Emily Yocom - Kentucky Wesleyan College, Dr. Robin Cooper - University of Kentucky

214. **Does membrane composition affect whole-animal performance and thermal tolerance in the eastern newt (*Notophthalmus viridescens*)?**¹ S.W. Tabor, S.C. Moody, - Berea College, C.J. World, N.J. Berner - The University of the South., M. Mineo - Berea College
215. **Identification of lead compounds that differentially target integrin $\alpha 1\beta 1$ and $\alpha 2\beta 1$ I-domains for the treatment of kidney fibrosis.** Hanna Abe - Berea College, Billy Hudson, Kyle Brown - Vanderbilt University
216. **Thermal tolerance differs between terrestrial and aquatic life history stages in the eastern newt (*Notophthalmus viridescens*).**¹ S. Sherchan, S.W. Tabor, P.M. Mineo - Berea College
217. **The Effect of Rho-Kinase Inhibition on the Alpha and Beta-Actin Ultrastructure of Smooth Muscle**¹ John Nicholas Alcorn, Joshua Shane Carty - Morehead State University
218. **How the Inhibitory Modulatory GABA Alters Development and Behavior in *Drosophila***¹ Jacob Sifers - Alice Lloyd College, Nadera Dabbain, Justin Graff, Zana R. Majeed, Robin Cooper - University of Kentucky
219. **Neuromuscular physiology in chronic and acute cold exposed crayfish** Yuechen Zhu- University of Kentucky, Leo deCastro - Massachusetts Institute of Technology, Robin Cooper - University of Kentucky
220. **Effects of cisplatin and phenanthriplatinon on the hearing and inner ear hair cells of zebrafish (*Danio rerio*)**¹ Madison K. Heine, Taylor G. Billings, J. David Monroe, Michael E. Smith - Western Kentucky University
221. **Effects of IPA-3 on PAK1 and PAK2 in Breast Cancer Cell Lines**¹ Alexandra Wright, Rachel Bender, Evan Birmingham, Austin Johnson, Hayley McKeehan, Tristan Browne, Alexandra Fajardo, Julia H. Carter - Wood Hudson Cancer Research Laboratory
222. **The Effects of Leaving Ligands on Prospective Platinum Anticancer Drugs**¹ Brooke Duke - Western Kentucky University
223. **Technique Development for the Proper Display of the Different Regions of the Accumulated Associated Protein in Relation to Biofilm Formation**¹ Emily Kappes, Diana McGill - Northern Kentucky University
224. **Thyroid hormone levels in pre-weanling mice exposed to polychlorinated biphenyls during gestation and lactation**¹ Shelby Caudill, Kelsey Klinefelter, Yislain Villalolna, Christine Curran - Northern Kentucky University

225. **Quantitative Structure-Activity Relationship Modeling of Bisphenol Topoisomerase II Inhibitors.** John E. Burden, Alyssa Logan, Amrut Patel, Ira Land - Spalding University
226. **Multiplexed detection of pathogenic DNA using zinc finger proteins without DNA amplification** Kim Juhwa, Kim Moon-Soo- Western Kentucky University
227. **Effects of Physiological and Pharmacological Stress on Simple Memory** Zachary Abbott, Wesley White, Ilsun M. White - Morehead State University
228. **Sensitivity of presynaptic pH on synaptic transmission: Differences in evoked and spontaneous release** Warlen Pereira- University of Kentucky, Felicitas Koch, V.M.F., Univ. Leipzig, Zana Majeed - UK & Univ. Salahaddin, Iraq Sandra L.E. Blumich - V.M.F., Univ. Leipzig, Eugen Brailoiu - Temple University, Robin L. Cooper - University of Kentucky
229. **High urea levels in isolated tissues of *Rana sylvatica*: influence on glucose metabolism**¹ Daniel Miller, Danielle Scott, Clara do Amaral - Wittenberg University

ZOOLOGY

4th floor, Steely Library
Poster judging Friday 2-3pm

230. **Comparisons between Prey Species in Barn Owl (*Tyto alba*) Pellets Collected in 1988, 1996, and 1997 from a Silo Roost in Harrogate, Tennessee**¹ Geri Mitchell, Jessica Vinson, Sean Nilan, G. Neil Douglas, Ralph Thompson - Berea College
231. **A Preliminary Species Identification for an Isolated Population of Salamanders of the *Plethodon glutinosus* complex.** ¹ Morgan Stacy, Jeremy Wilde, Dr. Roy Scudder-Davis, Zachary Spicer - Berea College
232. **Relationship between nestling characteristics and blood hemoglobin concentration in Carolina chickadees**¹ Spynce Mones, Lindsey Walters - Northern Kentucky University
233. **Taxonomic Classification Using a Polychotomous Key Application for Smart Devices** Molly Miller, Dr. Richard Durtsche - Northern Kentucky University
234. **The effect of breeding experience on the reproductive success of female Carolina chickadees**¹ Shelby Nemece, Lindsey Walters - Northern Kentucky University

235. **Classroom vs. Field: Experiences in Learning and Retention** Nickole Smith, Samuel Thacker, Darla French, Mathys Meyer - University of Pikeville
236. **The nutritional ecology of the introduced wall lizards (*Podarcis muralis*) from two populations in North America** Richard D. Durtsche, Marisa Derenzo, Allison Litmer, Wesley Parsons - Northern Kentucky University
237. **Possible functions of tail-pumping by male and female American Kestrels (*Falco sparverius*)** Joshua Suich, Dr. Gary Ritchison - Eastern Kentucky University
238. **Higher Breeding Success in Crevices Repeatedly Used in Green Salamanders, *Aneides aeneus*** Paul V. Cupp, Jr. - Eastern Kentucky University
239. **The invasive Chinese Lespedeza (*Lespedeza cuneata*) herb, does it have an impact on anuran larvae? ¹** Nicholas DeMeo, Donneisha Mason¹, Jenna Graham – Northern Kentucky University

Past Presidents of the Kentucky Academy of Science

1914-1915	Joseph H. Kastle	1965-1966	John M. Carpenter
1915-1916	N.F. Smith	1966-1967	Robert M. Boyer
1916-1917	A.M. Miller	1967-1968	Paul G. Sears
1917-1918	R.C. Ballard	1968-1969	Orville Richardson
1918-1919	J.E. Barton	1969-1970	Lloyd Alexander
1919-1920	Paul P. Boyd	1970-1971	Karl Hussung
1920-1921	W.H. Coolidge	1971-1972	Louis Krumholz
1921-1922	George D. Smith	1972-1973	Marvin W. Russell
1922-1923	Lucien Becker	1973-1974	Donald Batch
1923-1924	W.R. Jillson	1974-1975	Ellis V. Brown
1924-1925	Cloyd M. McAllister	1975-1976	Frederick M. Brown
1925-1926	Austin R. Middleton	1976-1977	Charles Payne
1926-1927	W.G. Burroughs	1977-1978	Charles Kupchella
1927-1928	W.D. Valleau	1978-1979	Sanford Jones
1928-1929	G.D. Buckner	1979-1980	Rudolph Prins
1929-1930	Frank L. Rainey	1980-1981	John Philley
1930-1931	V.F. Payne	1981-1982	Ted M. George
1931-1932	Anna A. Schnieb	1982-1983	J.G. Rodriguez
1932-1933	George Roberts	1983-1984	Gary Boggess
1933-1934	John S. Bangson	1984-1985	Joe Winstead
1934-1935	Alfred M. Peter	1985-1986	Charles V. Covell
1935-1936	J.S. McHargue	1986-1987	Larry Giesmann
1936-1937	Robert T. Hinton	1988	William P. Hettinger, Jr.
1937-1938	L. Y. Lancaster	1989	Richard N. Hannan
1938-1939	W.R. Allen	1990	Debra K. Pearce
1939-1940	A. W. Homberger	1991	W. Blaine Early, III
1940-1941	Charles Hire	1992	Douglas L. Dahlman
1941-1942	G.B. Pennebaker	1993	Charles N. Boehms
1942-1943	J.T. Skinner	1994	Larry P. Elliott
1943-1944	L.A. Brown	1995	Robert O. Creek
1944-1945	L.A. Brown	1996	William S. Bryant
1945-1946	P.J. Kolachov	1997	Marcus McEllistrem
1946-1947	Ward Sumter	1998	Patricia K. Doolin
1947-1948	Alfred Brauer	1999	Gordon K. Weddle
1948-1949	Morris Scherago	2000	Blaine R. Ferrell
1949-1950	W.E. Blackburn	2001	Ron Rosen
1950-1951	E.P. Penrod	2002	Jerry Warner
1951-1952	Harvey B. Lovell	2003	Robert Barney
1952-1953	Thomas Herndon	2004	Robert Kingsolver
1953-1954	C.B. Hamann	2005	Bruce Mattingly
1954-1955	R.H. Weaver	2006	Miriam Kannan
1955-1956	J.G. Black	2007	Nigel Cooper
1956-1957	A.M. Wolfson	2008	John Mateja
1957-1958	William M. Clay	2009	Robin Cooper
1958-1959	William B. Owsley	2010	Nancy Martin
1959-1960	Pete Panzera	2011	Barbara Ramey
1960-1961	H.H. LaFuze	2012	Dawn Anderson
1961-1962	Charles Whittle	2013	Cheryl Davis
1962-1963	Lyle Dawson	2014	K.C. Russell
1963-1964	R.A. Chapman	2015	David White
1964-1965	C.B. Hamann		

Past Meeting Locations of the Kentucky Academy of Science

1914-15	State College (presently University of Kentucky)	1969	Murray State University
1916-28	University of Kentucky	1970	Georgetown College
1929	Berea College	1971	Eastern Kentucky University
1930	Centre College	1972	Morehead State University
1931	Transylvania University	1973	Transylvania University
1932	Eastern Kentucky State Teachers College	1974	Centre College
1933	University of Kentucky	1975	University of Louisville
1934	Berea College	1976	University of Kentucky
1936	University of Kentucky	1977	Western Kentucky University
1936	Western Kentucky State College	1978	Eastern Kentucky University
1937	University of Louisville	1979	Northern Kentucky University
1938	Morehead State Teachers College	1980	Transylvania University
1939	Murray State Teachers College	1981	Murray State University
1940	University of Kentucky	1982	Ashland Oil Inc, Ashland
1941	Eastern Kentucky State Teachers College	1983	University of Louisville
1942	University of Kentucky	1984	Kentucky State University
1943	University of Louisville	1985	Morehead State University
1944	University of Kentucky	1986	Lexington, Kentucky (with SSMA)
1945	No Annual Meeting	1987	Western Kentucky University
1946	University of Louisville	1988	Eastern Kentucky University
1947	Western Kentucky State College	1989	University of Kentucky
1948	University of Kentucky	1990	Northern Kentucky University
1949	Cumberland Falls State Park	1991	Owensboro, Kentucky
1949	Eastern Kentucky State College	1992	Ashland Community College
1950	University of Louisville	1993	Georgetown College
1951	University of Kentucky	1994	Paducah Community College
1952	Georgetown College	1995	Western Kentucky University (Joint meeting with the Tennessee Academy of Science)
1953	Ashland & University of Kentucky	1996	Kentucky State University
1954	Berea College & University of Louisville	1997	Morehead State University
1955	Cumberland Falls State Park & Kentucky State College	1998	Jefferson Community College, S.W.
1956	Kentucky Dam Village	1999	Eastern Kentucky University
1956	Eastern Kentucky State College	2000	University of Kentucky
1957	Western Kentucky State College, Mammoth Cave National Park & Berea College	2001	Middle Tennessee State (Joint meeting with the Tennessee Academy of Science)
1958	Natural Bridge State Park & University of Kentucky	2002	Northern Kentucky University
1959	Lake Cumberland State Park & Western Kentucky State College	2003	Western Kentucky University
1960	Murray State College & University of Louisville	2004	Murray State University
1961	Morehead State College & University of Louisville	2005	Eastern Kentucky University
1962	Eastern Kentucky State College	2006	Morehead State University
1963	University of Kentucky	2007	University of Louisville
1964	Morehead State College	2008	University of Kentucky
1965	University of Kentucky	2009	Northern Kentucky University
1966	Kentucky Wesleyan College	2010	Western Kentucky University
1967	University of Louisville	2011	Murray State University
1968	Western Kentucky University	2012	Eastern Kentucky University
		2013	Morehead State University
		2014	Lexington, Kentucky
		2015	Northern Kentucky University

Next KAS Annual Meeting

The 102nd Annual Meeting of the
Kentucky Academy of Science

will be hosted by

UNIVERSITY OF
LOUISVILLE®

November 4-5, 2016

