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Western Kentucky University Ogden College of Science and Engineering

## 2012 KAS AFFILIATES

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Berea College  
Brescia University  
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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

### SUSTAINING MEMBERS

Campbellsville University

### MEMBERS

Asbury University  
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WKU Crawford Hydrology Laboratory  
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### HONORARY PATRON

Lumins Associates

# WELCOME

## TO THE 98<sup>TH</sup> ANNUAL MEETING OF THE KENTUCKY ACADEMY OF SCIENCE

Eastern Kentucky University welcomes the Kentucky Academy of Science to Richmond for its 98<sup>th</sup> annual meeting. Eastern has more than 16,000 students on the main Richmond campus with additional students at the regional campuses in Corbin, Manchester, and Danville. Situated near the heart of the Bluegrass, the University seeks to offer quality instruction at a variety of degree levels. In the College of Arts and Sciences (CAS), the primary mission is to equip students with the intellectual skills, knowledge, and tools that will enable them to compete successfully in a complex, diverse, and rapidly changing world. To achieve this mission, students, faculty, and staff work collaboratively through a series of programs, activities, and experiences that are guided by the unifying principles of learning, discovery, and community. In the EKU CAS, many students are pursuing degree programs in academic departments including Anthropology, Sociology, and Social Work, Biological Sciences, Chemistry, Computer Science, Geology and Geography, Mathematics, Physics and Astronomy, and Psychology.

In January 2012, EKU saw the opening of Phase I of the New Science Building that houses the Departments of Chemistry, Physics and Astronomy, Science Education (for the Department of Curriculum and Instruction), as well as the Division of Natural Areas. Phase I of the New Science Building provides more than 174,000 square feet of space containing state-of-the-art teaching laboratories, research laboratories, classrooms, seminar rooms, along with offices to support the students and faculty in those disciplines. A key design objective was to create public spaces that display the sciences and encourage interaction between the departments and the wider community. While not yet funded, Phase 2 will complete the New Science Building and add the Departments of Biological Sciences and Geography and Geology. In addition to our academic building, we are proud to have a number of scientific research centers on campus involving faculty and students including the Center for Renewable and Alternative Fuel Technologies (CRAFT), Environmental Research Institute (ERI), as well as the Maywoods Environmental and Educational Laboratory.

Eastern Kentucky University is committed to its education mission and providing intellectual opportunities that will develop habits of scholarship and intellectual curiosity in the sciences that will benefit our commonwealth. We are pleased to support the Kentucky Academy of Science with hosting this year's annual meeting, and pledge our continued dedication to the achievement of our mutual goals. The local arrangements committee has worked with the Academy to provide a meeting that is pleasing, stimulating, and productive. We have many volunteer students and faculty that are happy to assist (one just needs to ask). Have a grand and pleasant meeting!

**John Wade, Dean**

Eastern Kentucky University  
College of Arts and Sciences

# KENTUCKY ACADEMY OF SCIENCE

98th Annual Meeting

October 19-20, 2012

Hosted by Eastern Kentucky University and Berea College  
Richmond, Kentucky

## GOVERNING BOARD

### Executive Committee

President .....	Dawn Anderson Berea College
President-Elect .....	Cheryl Davis Western Kentucky University
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### Division Representatives and At-Large Members

Ron Jones (2013 - Biological Sciences) .....	Eastern Kentucky University
Pamela Feldhoff (2015 - Biological Sciences).....	University of Louisville
Ted Porter (2012 - Physical Sciences).....	Murray State University
Eric Jerde (2014 - Physical Sciences).....	Morehead State University
Judy Voelker (2014 - Social & Behavioral Sciences).....	Northern Kentucky University
Sean Reilley (2012 - Social & Behavioral Sciences) .....	Eastern State Hospital
Mary Janssen (2013 - At-Large).....	KCTCS
KatieAnn Skogsberg (2015 - At-Large).....	Centre College
Robert Creek (Program Coordinator).....	Eastern Kentucky University
Claire Rinehart (Editor, Webpage).....	Western Kentucky University
Nancy Martin (AAAS/NAAS Representative).....	University of Louisville

# TABLE OF CONTENTS

Exhibitors and Sponsors .....	Inside Front Cover
Welcome.....	1
KAS Governing Board .....	2
Symposium.....	4
Plenary Session.....	7
Kentucky Society of Professional Geologists 16th Annual Fall Conference .....	8
Kentucky Association of Physics Teachers Workshop.....	9
Walking Tour: A Walk Through Geologic Time.....	10
Walking Tour: Green Highlights of EKU’s New Science Building .....	10
Invited Lecture.....	11
Program Summary.....	12
Map .....	14
Local Arrangement Committee .....	15
Presentations:	
Agricultural Sciences.....	17
Anthropology and Sociology.....	20
Biochemistry and Physiology .....	<i>(see Physiology and Biochemistry)</i>
Botany .....	23
Cellular and Molecular Biology .....	25
Chemistry .....	27
Computer and Information Science .....	30
Ecology and Environmental Science .....	31
Engineering .....	33
Geography .....	34
Geology .....	35
Health Sciences .....	37
Mathematics .....	38
Microbiology.....	39
Physics and Astronomy .....	40
Physiology and Biochemistry .....	42
Psychology .....	44
Science Education.....	46
Zoology .....	48
Scientific Posters:	
<b>AM Sessions: NSB 4<sup>th</sup> Floor Hall:</b> <i>Geology, Geography, Physics &amp; Astronomy,</i> <i>Ecology and Environmental Science and Psychology .....</i>	51
<b>NSB 5<sup>th</sup> Floor Hall:</b> <i>Chemistry .....</i>	56
<b>PM Sessions: NSB 4<sup>th</sup> Floor Hall:</b> <i>Microbiology, Physiology &amp; Biochemistry,</i> <i>Science Education and Zoology .....</i>	59
<b>NSB 4<sup>th</sup> Floor Hall:</b> <i>Cellular and Molecular Biology, Computer and Informational</i> <i>Science, Engineering, Agricultural Sciences and Health Sciences.....</i>	64
Past Presidents.....	68
Past Meeting Locations .....	69
KAS Affiliates.....	Inside Back Cover

# **SYMPOSIUM**

## **“Engaging Students in Global Health Research”**

### **Panel Discussion**

Friday, October 19, 2012  
Wallace Bldg. – Room 147  
7:00 – 8:30 p.m.

Introduction of Panel and Presiding  
Dr. Cheryl Davis  
President Elect – KAS  
University Distinguished Professor of Biology  
Western Kentucky University

#### **Panel Members:**

Dr. Dan Colley – University of Georgia Distinguished Research Professor

Dr. Nancy Rice – Associate Professor of Biology at  
Western Kentucky University

Ms. Carol Etherington – Associate Professor of Nursing at  
Vanderbilt University, Institute for Global Health



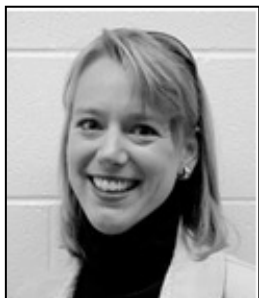
### **“Lessons Learned Through Global Health Research in St. Lucia, Brazil, Egypt, Kenya and CTEGD”**

**Dan Colley, Ph.D.**

**Distinguished Research Professor of Microbiology**  
**Director of Center for Tropical and Emerging Global Diseases**  
University of Georgia

Dan Colley is a University of Georgia Distinguished Research Professor of Microbiology and Director of the UGA Center for Tropical and Emerging Global Diseases. He is also a past Director of the Parasitic Diseases Branch of the US Centers for Disease Control and Prevention. Dan has worked extensively in collaborative studies on the immunology of human parasitic infections in Brazil, the West Indies, Egypt, and for the last 17 years in Kisumu, Kenya. Most of his research has been focused on the regulatory checks and balances of immune responses during chronic parasitic infection. In 2008, Dan received a \$19-million award from the Bill & Melinda Gates Foundation to find ways to identify, control and eliminate schistosomiasis in Africa, the Middle East and the South America. The consortium, known as the Schistosomiasis Consortium for Operational Research and Evaluation, involves partners from around the world. Dan has received numerous awards and honors in his field, and in July, 2012 he was chosen as the recipient of the

***Distinguished Life Sciences Scientist Award*** sponsored by the Christopher Columbus Fellowship Foundation and the U.S Chamber of Commerce. The Foundation is a Federal government agency established by Congress to "encourage and support research, study and labor designed to produce new discoveries in all fields of endeavor for the benefit of mankind.



### **"Integrating Undergraduates in Substantive Global Health Research Projects: Lessons from Kenya"**

**Nancy Rice, PhD**  
**Associate Professor of Biology**  
Western Kentucky University

Nancy Rice is an Associate Professor of Biology at Western Kentucky University. At WKU, Nancy has developed the Partners in Caring: Medicine in Kenya (PiC:MiK) program, now in its fifth year. The program's aim is to stimulate global health awareness in pre-medical undergraduate students through hands-on international medical service-learning and research experiences. Currently, Nancy and her students are examining the molecular mechanisms that lead to the high prevalence of essential hypertension (EH) in rural Kenya. Funded through a KBRIN-AREA award, her lab is testing the hypothesis that salt-sensitive EH is prevalent in Kasigau, Kenya as a result of polymorphic and/or epigenetic modifications of the renin-angiotensin gene system, the key hormonal pathway that regulates blood volume and pressure. These studies will provide key epidemiological and genetic information that will be directly translatable into prevention, treatment, and control of hypertension. Long-term, Nancy hopes to use the results to impact the development and implementation of cost-effective therapeutic interventions that should have broad application for lowering the chronic disease burden in Kenya and other developing countries.



### **"Perspectives on the Evolving Roles and Responsibilities of Academic Institutions in Global Health"**

**Carol A. Etherington, M.S.N., R.N., FAAN**  
**Associate Director Community Health Initiatives**  
**Associate Professor of Nursing**  
Vanderbilt University Institute for Global Health

Carol Etherington is an Associate Professor of Nursing at Vanderbilt University and Associate Director of Community Health initiatives for Vanderbilt University's Institute for Global Health. She has worked with traumatized populations in urban and rural areas around the globe. She established one of the first police based counseling programs in the nation within the Nashville Metropolitan Police Department and has

worked throughout the U.S. during times of natural and man-made disasters including earthquakes, hurricanes, school shootings and New York City post 9/11. Carol first served on an international emergency medical team in the aftermath of the Pol Pot genocide. In the early 90s, she completed four missions in war-torn Bosnia and since 1996, has worked with Médecins Sans Frontières (Doctors Without Borders) in Bosnia, Poland, Honduras, Tajikistan, Kosovo, Sierra Leone, Angola and in the Darfur refugee camps of Eastern Chad. She has been honored with the International Red Cross<sup>1</sup> Florence Nightingale Medal (1997/98), received an honorary Doctorate of Humane Letters from the University of New Hampshire in 2004 and was named Distinguished Alumna of the Year by the Vanderbilt Alumni Association in 2007. Since 2008, Carol has worked with the Vanderbilt institute for Global Health, teaching and mentoring interdisciplinary graduate students who are pursuing projects and careers in community health, global health, disaster response and caring for victims of violence.

## PLENARY SESSION

Saturday, October 20, 2012  
Wallace Bldg – Room 147  
4:15 - 5:15 p.m.

Welcome  
Dr. Dawn Anderson  
President - KAS  
Berea College

Presiding: Dr. Cheryl Davis  
President-elect - KAS  
Western Kentucky University

### **“Human Schistosomiasis - A Journey from Immune Responses to Mass Drug Administration”**



**Dan Colley, Ph.D.**

**Distinguished Research Professor of Microbiology  
Director of Center for Tropical and Emerging Global  
Diseases**

University of Georgia

*Please find Dr. Colley's biography on page 4.*



# Kentucky Society of Professional Geologists 16th Annual Fall Conference



The purpose of the Kentucky Society of Professional Geologists is to advance the profession, practice, and science of Geology within the Commonwealth of Kentucky. Building on the fifty-year history of the Geological Society of Kentucky, the KSPG was created in 1997 to support and promote Kentucky's program for registration of Professional Geologists. Additional objectives of the Society include providing a forum for disseminating information and educational activities throughout the geological community. Our membership comprises professional scientists, educators, and students.

We are pleased to hold our 16th Annual Fall Conference in conjunction with the Kentucky Academy of Science.

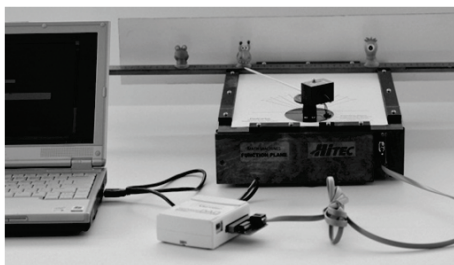
More information about the KSPG including an application for membership is available on our website: <http://www.kspg.org>. Annual dues are \$10.

## **KSPG Meeting Schedule for Saturday, October 20.**

- 8:00am-11:00am ..... Geology Oral Papers ..... (See T.O.C.)
- 9:30am-9:45am ..... Refreshment Break ..... NSB – 2<sup>nd</sup> Floor Atrium
- 10:00am -11:00am ..... KSPG Business Meeting ..... NSB – 3120
- 8:00am – 11:30am ..... Geology Posters ..... NSB – 4<sup>th</sup> Floor
- 11:30am-12:30pm ..... Lunch on your own
- 12:30pm-5:30pm ..... KSPG Field Trip departs ..... NSB Lobby
- 5:30pm-6:30pm ..... KAS Business Meeting & Reception
- 6:30pm-9:00pm ..... ANNUAL AWARDS BANQUET

# Workshop on Math Machines sponsored by the Kentucky Association of Physics Teachers

1:30 to 5:30 pm, Saturday, Oct. 20, 2012  
New Science Bldg #3122  
Eastern Kentucky University, Richmond, KY



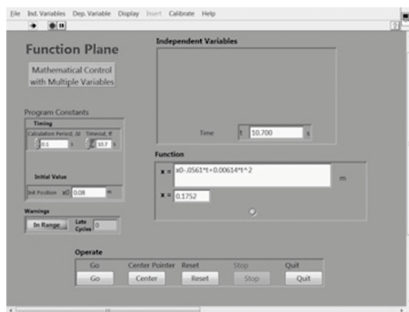
*Math Machines* activities engage students in designing and testing mathematical functions that control engineering-style physical systems and display immediate, physical and dynamic results. This teacher-approved professional development event builds on more than a decade of successful workshops conducted by Fred Thomas

and Robert Chaney from Sinclair Community College in Dayton, Ohio.

Enrollment is limited to 20 participants. Please bring your own Windows laptop on which you can install the control software.

The “Math Machines” project has developed hardware and software that empowers students to create, test, compare, and modify linear and quadratic functions that control motion, rather than simply describing it. This device lets students control the motion of a laser via a mirror, a gear, and other components. The system’s role in motivation, pedagogy, and assessment will be discussed along with opportunities for collaboration.

Participants in this NSF-funded workshop receive a free Vernier SensorDAQ interface and “Function Plane,” an algebraically controlled laser pointer which they and their students can control using algebraic functions such as “ $x = x_0 + v_0*t + \frac{1}{2} a t^2$ ” or “ $x = A \sin(2\pi*t/P)$ .” Participants will also receive a CD with all necessary control software along with classroom activities in Word format and have an opportunity to apply for additional Math Machines for students to use.



View the demonstration video [http://www.youtube.com/watch?v=9aOE\\_\\_ZDogM](http://www.youtube.com/watch?v=9aOE__ZDogM)  
Register for the workshop at <http://physics.wku.edu/kapt/>

Learning with Math Machines, Inc. is an independent, non-profit 501(c)(3) organization. This project is supported in part by the National Science Foundation's Advanced Technological Education Program

# A Walk through Geologic Time

Walter S. Borowski

11:00 AM

Saturday, 20 October

Geologic time is so vast that it is beyond true human comprehension, so geologists have long used analogies in attempts to grasp the breadth and nature of geologic time. One such device is the use of geologic timelines.

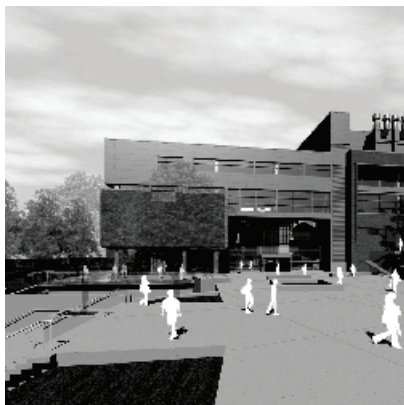
Join us today for a walk along geologic time just outside EKU's New Science Building as we trace the antiquity of Earth and key events during its history.

FIRST FOSSILS	ARCHEAN ERA, CRYPTOZOIC EON	3.45 Ga	<p>Algae that comprise the stromatolite grow upward as filaments to catch sunlight and trap sediment, making thin layers.</p> <p>Stromatolites rest on the seafloor and their height is often controlled by tides.</p>
<p>The first fossil evidence of life occurs in the form of biological structures called stromatolites, found in the rocks near North Pole, Australia. Stromatolites form when a collective of microorganisms that includes algae form a micro-ecosystem building successive, millimeter-scale layers of sediment and organic matter. Fossil cells have also been found preserved in a very fine-grained rock called chert, which is composed of silica (SiO<sub>2</sub>). The rock record shows that for <i>billions</i> of years, only microorganisms occupied Earth.</p>			
<p>At this time Earth's atmosphere contained almost no oxygen, nor would it for approximately another billion years.</p>			

A reproduction of one of the plaques comprising the timeline.

Meet outside the New Science Building at the foot of the stairs leading down to the street (Kidd Way).

## Green Highlights of EKU's New Science Building



Alice L. Jones

1:00 P.M. Saturday, 20 October

Meet at the Reception Desk in Main Lobby of NSB

The New Science Building is the first on EKU's campus that meets the US Green Building Council's Leadership in Energy and Environmental Design (LEED) certification requirements.

Join EKU Sustainability Coordinator Alice Jones for a walking tour that will highlight

many of the architecturally innovative features of the building including polka-dotted windows that reduce heat gain, an innovative storm water system, a high-tech HVAC system that uses no refrigerants, and recycled and reclaimed materials throughout.

## INVITED LECTURE

Saturday, October 20, 2012

NSB 3101

3.00 p.m

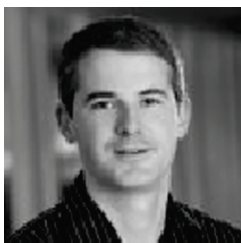
Presiding

Dr. Rajalingam Dakshinamurthy

Assistant Professor of Chemistry

Western Kentucky University

### **“Cytokines: Expression, Purification, and Evaluation of Its Secretion Mechanism”**



#### **Steve Hume**

Director of Process Science

Kentucky BioProcessing, Owensboro, KY

Department of Chemistry, Western Kentucky University, Bowling Green, KY

Steve Hume is a co-founder of Kentucky BioProcessing (KBP) in Owensboro, KY, where he serves as Director of Process Science. KBP specializes in the production of therapeutic protein candidates including monoclonal antibodies, anti-viral proteins, and vaccines using tobacco as the production host. Steve earned his B.S. in Biochemistry and Molecular Biology at Centre College in 1995 and his M.S. in Manufacturing Technology from Eastern Kentucky University in 2003. He is currently pursuing an M.S. in Chemistry at Western Kentucky University. The intent of Steve's research is to create a novel production platform for human cytokines that produces superior proteins at a lower cost than traditional bacterial expression systems to better understand cytokine structure and function. Most importantly, the results of this research will trigger investigators to devise novel approaches to regulate cytokine secretion and availability, and to develop methods for mitigating undesired pro-inflammatory and angiogenic effects.

# PROGRAM SUMMARY


## FRIDAY, OCTOBER 19, 2012

- 9:00 am - 4:30 pm KBRIN-NIH Proposal Development Workshop ....NSB 4104
- 3:30 pm - 5:30 pm KAS Governing Board Meeting ..... NSB 4109
- 6:00 pm – 7:30 pm Registration..... NSB 2<sup>nd</sup> Floor Atrium
- 7:00 pm - 8:30 pm **SYMPOSIUM** ..... Wallace Bldg. 147  
**“Engaging Students in Global Health Research”**  
Dr. Dan Colley – *“Lessons Learned Through Global Health Research in St. Lucia, Brazil, Egypt, Kenya and CTEGD”*  
Dr. Nancy Rice – *“Integrating Undergraduates in Substantive Global Health Projects: Lessons from Kenya”*  
Ms. Carol Etherington – *“Perspectives on the Evolving Roles and Responsibilities Of Academic Institutions in Global Health”*
- 8:30 pm - 9:00 pm KAS Sectional Officers Meeting ..... NSB 5132
- 8:30 pm - 10:30 pm Social ..... Lobby - Student Service Building

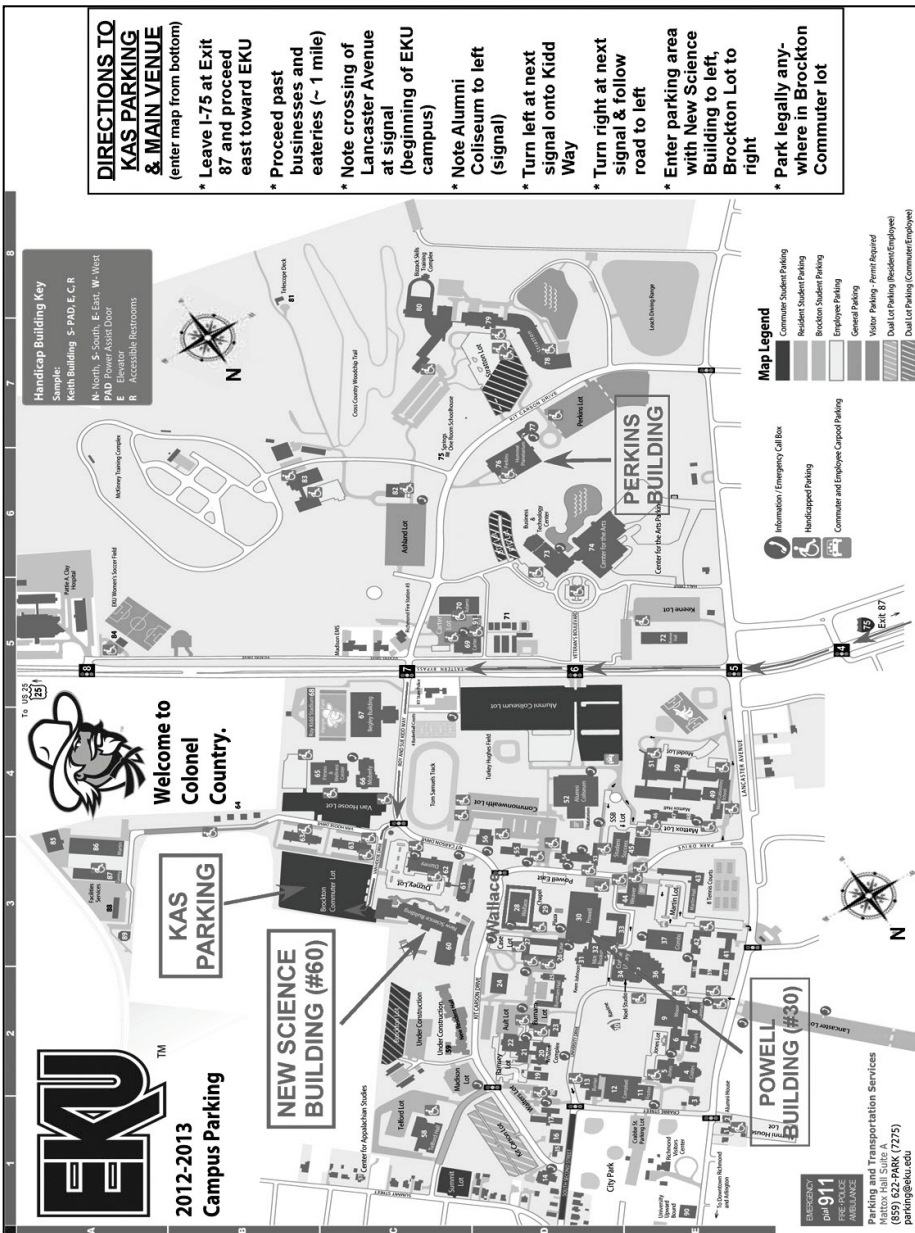
## SATURDAY, OCTOBER 20, 2012

- 7:00 am - 5:00 pm Registration..... NSB 2<sup>nd</sup> Floor Atrium
- 8:00 am - 4:00 pm Exhibitors..... NSB 2<sup>nd</sup> Floor Atrium
- 8:00 am - 9:30 am Oral Presentations ..... See Table of Contents
- 8:00 am - 4:00 pm Scientific Posters on Display ..... NSB 4<sup>th</sup> & 5<sup>th</sup> Floor Halls  
(Will be divided into AM and PM Poster Sessions. Please check the 2012 KAS Poster Presentation Schedule starting on page 51)
- 9:30 am - 9:45 pm Refreshment Break ..... NSB 2<sup>rd</sup> Floor Atrium
- 9:45 am - 11:30 am Oral Presentations ..... See Table of Contents
- 10:00 am - 11:00 am Kentucky Society of Professional Geologists –  
Business Meeting..... NSB 3120
- 11:00 am - A Walk Through Geologic Time ..... In Front of the NSB

10:00 am - 11:30 am	Kentucky Community & Technical College Meetings Faculty Meeting ..... NSB 3122 Biology Faculty ..... NSB 3122 Chemistry Faculty ..... NSB 3125 Physics Faculty ..... NSB 3121
11:30 am - 12:45 pm	Lunch - Restaurants Options Available at Registration
11:30 am - 12:45 am	KAS Past President’s Luncheon ..... Reagents Rm. 2nd Floor Powell Bldg.
12:00 pm - 1:00 pm	Natural History Museum Meeting ( by invitation only) ..... NSB 3125
12:30 pm - 5:30 pm	KSPG Field Trip Departs ..... Lobby NSB
1:00 pm	Green Highlights of New Science Building ..... Main Lobby of NSB
1:00 pm - 2:15 pm	Oral Presentations ..... See Table of Contents
1:30 pm - 5:30 pm	Physics Workshop ..... NSB 3122
2:15 pm - 2:30 pm	Refreshment Break ..... NSB 2 <sup>rd</sup> Floor Atrium
2:30 pm – 4:00 pm	Oral Presentations ..... See Table of Contents
3:00 pm – 3:45 pm	Steve Hume – Invited Lecture ..... NSB 3101
4:14 pm – 5:15 pm	<b>PLENARY SESSION</b> ..... <b>“Human Schistosomiasis - A Journey from Immune          Responses to Mass Drug Administration”</b> Dr. Daniel Colley
5:30 pm - 6:30 pm	Annual KAS Business Meeting / Reception ..... Perkins Bldg. Lobby
6:45 pm - 9:00 pm	ANNUAL AWARDS BANQUET ..... Perkins Bldg Quad (A-D)



**2012-2013  
Campus Parking**



**EMERGENCY**  
call 911  
PRE-PAID  
RESERVATION

Parking and Transportation Services  
(859) 622-PARK (7275)  
parking@eku.edu

**Handicap Building Key**  
Sample:  
K: Keith Building S: PAD E: C: R  
N: North S: South E: East W: West  
PAD: Power Assist Door  
E: Elevator  
R: Accessible Restrooms

**Map Legend**

- Commuter Student Parking
- Resident Student Parking
- Brocton Student Parking
- Employee Parking
- General Parking
- Visitor Parking - Permit Required
- Dual Lot Parking (Resident/Employee)
- Dual Lot Parking (Commuter/Employee)

Information / Emergency Call Box  
Handicapped Parking  
Commuter and Employee Carpool Parking

**DIRECTIONS TO KAS PARKING & MAIN VENUE**  
(enter map from bottom)

- \* Leave I-75 at Exit 87 and proceed east toward EKU
- \* Proceed past businesses and eateries (~ 1 mile)
- \* Note crossing of Lancaster Avenue at signal (beginning of EKU campus)
- \* Note Alumni Coliseum to left (signal)
- \* Turn left at next signal onto Kidd Way
- \* Turn right at next signal & follow road to left
- \* Enter parking area with New Science Building to left, Brocton Lot to right
- \* Park legally anywhere in Brocton Commuter lot

# 98<sup>th</sup> Annual Kentucky Academy of Science Meeting

## Local Arrangement Committee Eastern Kentucky University

Darrin Smith ..... *Chemistry / Office of Undergraduate Research*  
Cassie Green ..... *University Programs*  
Walter Borowski ..... *Geology and Geography*  
Benjamin Freed ..... *Anthropology, Sociology, & Social Work*  
Jessica Lair ..... *Physics and Astronomy*  
Donghui Quan ..... *Chemistry*  
Jing Wang ..... *Physics and Astronomy*



<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## **PRESENTATIONS**

### **AGRICULTURAL SCIENCES**

Sheri Crabtree, Chair  
Kentucky State University

Iin Handayani, Secretary  
Murray State University

**SATURDAY, OCTOBER 19, 2012**  
**NSB 5150**

- 8:00 a.m. **Identification of 2-Undecanone and 2-Tridecanone in Field-Grown Onion.** George Antonious - Kentucky State University
- 8:15 a.m. **Impact of Soil Amendments on Yield and Quality of Kale and Collard Greens.** Eric Turley and Dr. George Antonious - Kentucky State University
- 8:30 a.m. **Heavy Metal and Antioxidant Concentrations of Pepper and Melon Fruits of Plants Grown in Sewage Sludge and Yard Waste Amended Soil.**<sup>1</sup> McKenzie Johnson and Dr. George Antonious - Kentucky State University
- 8:45 a.m. **Evaluations of the influences of paddlefish *Polyodon spathula* (Walbaum ) on reservoir productivity in Kentucky.**<sup>2</sup> Zachary A., Steven D. Mims, Rafael Cuevas-Uribe - Kentucky State University
- 9:00 a.m. **Marketing of Small Scale Aquaculture Products in Kentucky.**<sup>2</sup> Richard Bryant and Siddhartha Dasgupta - Kentucky State University
- 9:15 a.m. **Evaluation of Cultivars of Sunflower and Selected Environments for Production of Cut Flowers** Yao Xue, Christopher G. Ferguson, Pavani G. Vuppalapati, Martin J. Stone and Elmer Gary - Western Kentucky University
- 9:30 a.m. **Break – NSB 2<sup>nd</sup> Floor Atrium**
- 9:45 a.m. **Growth of Horticultural Vegetable Crops With the Use of Various Water Types.**<sup>1</sup> Alaina Tobbe, I.P. Handayani and P.N. Williams - Murray State University
- 10:00 a.m. **Evaluation of Drought Tolerant Corn Hybrids in Various Soil Textures.**<sup>1</sup> Stephanie Rexing, Iin P. Handayani and Dwayne Driskill - Murray State University
- 10:15 a.m. **Intensive pond culture of Paddlefish, *Polyodon spathula* (Walburn), in Kentucky.**<sup>2</sup> Alex Squadrito, Rafael Cuevas and Steven D. Mims - Kentucky State University

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

- 10:30 a.m. **Cultivar, Mowing Height, and Herbicide Effects on Bermudagrass, *Cynodon dactylon*, Suppression in Tall Fescue, *Schedonorus phoenix*.**<sup>2</sup> Dan Sandor and Dr. Paul Woosley - Western Kentucky University
- 10:45 a.m. **An Economic Analysis of Grape Production in Kentucky**  
Stephen A. King, Todd Willian, Martin J. Stone and Nathan Howell - Western Kentucky University
- 11:00 a.m. **Reclaimed water as an alternative water source for aquaculture.**<sup>2</sup> Godardo Juanich, Rafael Cuevas and Steven D. Mims - Kentucky State University
- 11:15 a.m. **Muscle activity and respiration rates of paddlefish, *Polyodon spathula* (Walbaum) determined by body mass and temperature in a respirometer.**<sup>2</sup> Noah L. Nelson, Rafael Cuevas and Steven D. Mims - Kentucky State University
- 11:30 a.m. **Lunch** – *Restaurant options available at registration*
- 1:00 p.m. **Ground dwelling arthropods associated with newly established native perennial and pasture border rows in Central Kentucky.**  
John D. Sedlacek, Kyle Kratzer and Karen L. Friley - Kentucky State University
- 1:15 p.m. **Yield of Baby Corn as Influenced by Individual Plants, Cultivars, Planting Dates, and Harvesting Sequences at Bowling Green, Kentucky in 2012.** Yao Xue, Christopher G. Ferguson and Elmer Gray - Western Kentucky University
- 1:30 p.m. **Attracting beneficial insects to blackberries using methyl salicylate-based lures.** Karen L. Friley, John D. Sedlacek and Justina A. Riddick - Kentucky State University
- 1:45 p.m. **Effects of plastic and hay mulches on soil temperature and moisture in organic watermelon production.**<sup>2</sup> Joni Nelson, Michael Bomford, Jon Cambron and Anthony Silvernail - Kentucky State University
- 2:00 p.m. **Abundance of Leafhoppers Associated with Blackberry Plantings in Central Kentucky: Preliminary Results.**<sup>2</sup> Jeannie J. Haak, John D. Sedlacek, Karen L. Friley, Kirk W. Pomper, Jeremiah D. Lowe and Sheri B. Crabtree - Kentucky State University
- 2:15 p.m. **Break** – NSB 2<sup>nd</sup> Floor Atrium
- 2:30 p.m. **Effects of row cover weight on yield and nitrate content of high tunnel grown kale.** Michael Bomford, Brittney Wyatt, Changzheng Wang and Michael Ward - Kentucky State University
- 2:45 p.m. **Evaluation of plant and animal protein sources as partial or total replacement of fish meal in diets for juvenile Nile tilapia *Oreochromis niloticus*.** Kenneth R. Thompson and Carl D. Webster - Kentucky State University

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

- 3:00 p.m. **Correlation of Pawpaw [*Asimina triloba* (L.) Dunal] Acetogenin Activity in Twig and Ripe Fruit as Determined by the Brine Shrimp Test.**<sup>1</sup> Lydia Kronmaah, Jeremiah Lowe, Kirk Pomper and Sheri Crabtree - Kentucky State University
- 3:15 p.m. **Evaluation of distiller's dried grains with solubles in diets for whiteleg shrimp, *Litopenaeus vannamei*.** Vaun C. Cummins - Kentucky State University, Steven D. Rawles - Harry K. Dupree Stuttgart National Aquaculture Research Center, Alejandro Velasquez, Kenneth R. Thompson and Carl D. Webster - Kentucky State University
- 3:30 p.m. **Does soil amendment with chicken manure or sewage sludge affect concentrations of ascorbic acid and phenolic compounds in kale and collard greens?** Regina Hill and George F. Antonious - Kentucky State University, John C. Snyder and Mutari Abubakari - University of Kentucky
- 3:45 p.m. **"Horsing" Around with Acceleration: A New Look at the Motion of Horse and Rider Using Wireless Accelerometers.** Ignacio Birriel, Cody Howard, Erin LeCompt and Sara Lynch - Morehead State University
- 4:00 p.m. **Break**
- 4:15 p.m. **Plenary Session**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## ANTHROPOLOGY AND SOCIOLOGY

Benjamin Freed, Chair  
Eastern Kentucky University

Changzheng Wang, Secretary  
Kentucky State University

**SATURDAY, OCTOBER 20, 2012**  
**NSB 3125**

- 1:00 p.m. **Prehistoric technical ceramics: examining casting molds from the Khao Wong Prachan Valley, Central Thailand.** Voelker - Northern Kentucky University
- 1:15 p.m. **Can incisors tell us about fossil ape and human diets? New 2D and 3D approaches to old questions about incisor allometry.** Andrew S. Deane and Marquiana Jusma - University of Kentucky
- 1:30 p.m. **Noxious Weed and Invasive Plant Knowledge Among Northern Kentucky Farmland Owners.** Douglas Hume - Northern Kentucky University
- 1:45 p.m. **Measuring Structural Violence: Vicarious Trauma Among Sexual Assault Nurse Examiners.** Jennifer Wies - Eastern Kentucky University
- 2:00 p.m. **Current body weight status and confidence in reaching personal body weight goal among Kentucky adults.** Changzheng Wang - Kentucky State University
- 2:15 p.m. **Break – NSB 2<sup>nd</sup> Floor Atrium**
- 2:30 p.m. **How strong is the frugivory signal? The interpretive power of infraorbital foramen area in making dietary inferences in extant apes.** Magdalena N Muchlinski - University of Kentucky, Vanya Bistrekova - The Math, Science and Technology Center at Paul Laurence Dunbar High School, Andrew S. Deane - University of Kentucky
- 2:45 p.m. **An Analysis of the Contradictions between Food Advertising and Healthy Food Guidelines.**<sup>1</sup> Michelle Kroger - Northern Kentucky University
- 3:00 p.m. **Connecting Effort and Attainment: Climate Change Knowledge and Environmental Engagement among Berea Students.**<sup>1</sup> Eva A. Griffin - Berea College
- 3:15 p.m. **A New Perspective on Slag: Environmental Waste in Prehistoric central Thailand**<sup>1</sup> Alex Ivers - Northern Kentucky University, Grant Edwards - Northern Kentucky University, Judy Voelker - Northern Kentucky University
- 3:30 p.m. **Preliminary comparative and functional anatomy of the forelimb musculature of Humboldt's woolly monkey (*Lagothrix lagotricha*)**<sup>1</sup> Lindsey Hays - Eastern Kentucky University, Valerie Wheeler - University of Kentucky, Magdalena Muchlinski -

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

Department of Anatomy and Neurobiology, University of Kentucky  
College of Medicine, Jason Organ - Department of Anatomy and  
Cell Biology, Indiana University School of Medicine, Sarah Abshire  
- Department of Rehabilitation Sciences, University of Kentucky  
College of Medicine, Timothy Butterfield - Department of  
Rehabilitation Sciences, University of Kentucky College of  
Medicine, Andrew Deane - Department of Anatomy and  
Neurobiology, University of Kentucky College of Medicine

4:15 p.m. **Plenary Session**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

**BIOCHEMISTRY AND PHYSIOLOGY\***

**\* Please see PHYSIOLOGY AND BIOCHEMISTRY**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## BOTANY

Maggie Whitson, Chair  
Northern Kentucky University

Allen Risk, Secretary  
Morehead State University

**SATURDAY, OCTOBER 20, 2012**  
**NSB 3126**

- 8:00 a.m. **Botanical Survey of the *Playa Delfin* Rainforest Reserve and Research Station, Costa Rica.** Ronald Jones - Eastern Kentucky University
- 8:15 a.m. **Taxonomy and ecology of Bartonberry, *Rubus bartonianus* (Rosaceae): a narrow endemic of Hells Canyon.** Lawrence Alice - Western Kentucky University, Jenifer Ferriell - USDA Forest Service-Malheur, Umatilla, and Wallowa-Whitman National Forests, Oregon, Roger Ferriell - Bureau of Land Management-Vale District, Oregon
- 8:30 a.m. **Floristic Survey of Rucker's Knob (Dead Horse Knob) in Southern Madison County, Kentucky.** Ralph L. Thompson - Berea College, Derick B. Poindexter - University of North Carolina at Chapel Hill, J. Richard Abbott - Missouri Botanical Garden
- 8:45 a.m. **Species Richness After *Lonicera MAACKII* Removal on Rucker's Knob (Dead Horse Knob) from an Old Cemetery in Southern Madison County, Kentucky.** Ralph L. Thompson - Berea College, Derick B. Poindexter - University of North Carolina at Chapel Hill
- 9:00 a.m. **The Vascular Flora of Garrard County, Kentucky.**<sup>2</sup> Will Overbeck and Ronald Jones - Eastern Kentucky University
- 9:15 a.m. **Developing a vegetation-based index of biotic integrity for assessing the ecological condition of wetlands in Kentucky.**<sup>2</sup> Tanner M. Morris, JohnRyan A. Polascik, David R. Brown, Michelle L. Guidugli and Stephen C. Richter - Eastern Kentucky University
- 9:30 a.m. **Break – NSB 2<sup>nd</sup> Floor Atrium**
- 9:45 a.m. **Comparative dendroclimatology of *Quercus alba* (white oak) and *Q. coccinea* (scarlet oak), Eagle Lake, Morehead, KY.** Allen C. Risk - Morehead State University, Nydiana Benitez-Mangual - Escuela Isidro A. Sanchez, Natalie Lopez-Rodriguez - Academia Immaculada Concepcion, Allie R. Caudill and Kelly L. Modaff - Morehead State University
- 10:00 a.m. **Inferring the phylogeny of green plants (Viridiplantae) using coding data from the plastid genome.** Brad R. Ruhfel - Eastern Kentucky University, J. Gordon Burleigh, Matthew Gitzendanner and Douglas Soltis and Pamela Soltis - University of Florida

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition



- 10:15 a.m. **Comparative sensitivity of two oak species on east-facing and south-facing slopes located at Eagle Lake, Morehead, KY.**<sup>1</sup> Kelly Modaff and Allen C. Risk - Morehead State University
- 10:30 a.m. **Population Trends of the Federally Endangered Running Buffalo Clover (*Trifolium stoloniferum* Muhl. ex. A. Eaton) in the Blue Grass Army Depot from 2003-2012.** Alexi Dart-Padover, David Brown and Jennifer Koslow - Eastern Kentucky University
- 10:45 a.m. **Woody plant species richness in relationship to area in eastern Kentucky state parks.**<sup>1</sup> Lacey Pyles - Morehead, Allen C Risk, Erica Eldridge, Alexia Callihan and Byron Newland - Morehead State University
- 11:00 a.m. **Forest age and woody plant composition at Spaws Creek Gorge, Menifee County, Kentucky.**<sup>1</sup> Kate Bomar and Allen C. Risk - Morehead State University
- 11:15 a.m. **Woody plant floristic inventory of Carter Caves State Resort Park, Carter County, KY.**<sup>1</sup> Erica R. Eldridge and Allen C. Risk - Morehead State University
- 11:30 a.m. **Effects of Fire on Late Summer Herbaceous Plants in Mesic Deciduous Forests: Two Years Later.**<sup>1</sup> Alaina Mikulcik and Dr. Albert Meier - Western Kentucky University
- 11:45 a.m. **Lunch** – *Restaurant options available at registration*
- 4:15 p.m. **Plenary Session**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## CELLULAR AND MOLECULAR BIOLOGY

Ajay Srivastava, Chair  
Western Kentucky University

Alexey Arkov, Secretary  
Murray State University

### SATURDAY, OCTOBER 20, 2012 NSB 4125

- 8:00 a.m. **Tracing the origin and evolution of the acetylcholine system in its neuronal and non-neuronal forms.** Dr. Chandrakanth Emami - Western Kentucky University
- 8:15 a.m. **Assessment of Neurodegeneration in a Novel Model of Tauopathy in *Caenorhabditis Elegans*.**<sup>2</sup> Kelsey R. Nelson, Courtney Wells, Wesley Edwards, Andrew Cude and Chris Trzepacz - Murray State University
- 8:30 a.m. **Gold Nanoparticles-Exposure Induces Cytokine Gene Expression *in vivo*.**<sup>2</sup> Pranav Chandra, Nilesh Sharma, Sinilal Bhaskaran and Shivendra Sahi - Western Kentucky University
- 8:45 a.m. **Single Nucleotide Polymorphisms linked to Essential Hypertension in Kasigau, Kenya.**<sup>2</sup> Julia C. Freeman, Brian M. Lengube, Michelle W. Trawick and Nancy A. Rice - Western Kentucky University
- 9:00 a.m. **The PAM-1 Aminopeptidase Governs Ovulation in Coordination with the Actinomyosin Protein Complex in *Caenorhabditis elegans*.**<sup>2</sup> Hannah M. Flood and Chris Trzepacz - Murray State University
- 9:15 a.m. **Using Recombineering to Define the Requirements for Bacteriophage HK639 Early Gene Expression.**<sup>2</sup> Amanda L. Seaton and Rodney A. King - Western Kentucky University
- 9:30 a.m. **Break – NSB 2<sup>nd</sup> Floor Atrium**
- 9:45 a.m. **Genotyping abnormal behavior- Lessons from the fruit fly.**<sup>2</sup> Josh Titlow, Jeremiah Smith and Robin Cooper - University of Kentucky
- 10:00 a.m. **Global DNA Methylation Patterns Are Not Correlated with Essential Hypertension in Rural Kenyans.**<sup>1</sup> Meredith Clouse and Spencer Wright - Western Kentucky University, Nancy A. Rice -
- 10:15 a.m. **Integrin subunits  $\alpha 3$  and  $\alpha 6$  in adhesion, migration and proliferation of inner medullary collecting duct (IMCD) epithelial cells on various matrices.**<sup>1</sup> Franceska Mehmeti - Berea College, Roy Zent - Vanderbilt University
- 10:30 a.m. **Structure and function of Tudor protein and its interactions with other proteins in germline stem cells of *Drosophila melanogaster*.**<sup>1</sup> Jordan Davis, Dr. Ming Gao, Brandi Greer, Yanyan Lin, Sudan Loganathan, Marisca Mozeleski and Dr. Alexey Arkov - Murray State University

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

- 10:45 a.m.     **Reverse Genetic Analysis Indicates Redundancy in the M1 Aminopeptidase Family of *Caenorhabditis elegans*.** <sup>1</sup> Mark Althoff - Murray State University, Chris Trzepacz - Murray State University, Laura Samples - Murray State University, Andrew Cude - Murray State University
- 11:00 a.m.     **Classification of Bacteriophages using Polymerase Chain Reaction: An Alternative to Complete Genome Sequencing** <sup>1</sup> Charles A. Coomer - Western Kentucky University, Rodney A. King - Western Kentucky University
- 11:30 a.m.     **Lunch** – *Restaurant options available at registration*
- 4:15 p.m.     **Plenary Session**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## CHEMISTRY

Darrin Smith, Chair  
Eastern Kentucky University

Christopher Mullins, Secretary  
Campbellsville University

### SATURDAY, OCTOBER 20, 2012 NSB 3104

- 8:00 a.m.      **Prediction of photoinduced electron transfer in lanthanide and d-blockhybrid systems.**<sup>2</sup> Brady Garabato and Jeremy Maddox - Western Kentucky University
- 8:15 a.m.      **Glucose Production from Cellulose.**<sup>2</sup> Lin Wu, Yunxin Liao and Buchang Shi - Eastern Kentucky University
- 8:30 a.m.      **Intermolecular and intramolecular interactions in the superoxide-hydrogen fluoride anion complex.**<sup>2</sup> Yuchen Zhang - Murray State University
- 8:45 a.m.      **Effect of Leaving Ligands of Platinum Complexes on Guanine Residues of DNA and Methionine Proteine Residues.**<sup>2</sup> Ramya Kollu - Western Kentucky University
- 9:00 a.m.      **The Synthesis and Characterization of Some Thallium Cyclopentadienide Salts.**<sup>2</sup> Jason Young - Western Kentucky University
- 9:15 a.m.      **Determination of charge transfer distances in fullerene-transition metal complexes with Stark spectroscopy.**<sup>1</sup> Emma R. Vander Ende and Keith A. Walters - Northern Kentucky University
- 9:30 a.m.      **Break – NSB 2<sup>nd</sup> Floor Atrium**
- 9:45 a.m.      **Ampicillin Encapsulated Gold Nanoparticles as Antimicrobial Drug Carriers.**<sup>1</sup> Dillon S. Pender, Lakshmisri M. Vangala, Vivek D. Badwaik, Helen Thompson and Rajalingam Dakshinamurthy - Western Kentucky University
- 10:00 a.m.     **Synthesis of fullerene substituted bipyridine complexes for solar cell applications.**<sup>1</sup> Derek Gibbs and Keith A Walters - Northern Kentucky University
- 10:15 a.m.     **Characterization and reaction of an analog anticancer drug oxaliplatin.**<sup>1</sup> Jonathan D. Hendrie and Kevin M. Williams - Western Kentucky University
- 10:30 a.m.     **A New Metal-Organic Framework.**<sup>1</sup> Steven Calhoun and Dr. Bangbo Yan - Western Kentucky University
- 10:45 a.m.     **Computational investigations on intermolecular and intramolecular interactions of reactive species and the cytosine nucleotide base.**<sup>1</sup> Austin Jameson - Murray State University

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

- 11:00 a.m. **Modification of Amikacin and Tobramycin for Enhanced Antibacterial Activity.**<sup>1</sup> Amanuel Tesfamichael - Berea College
- 11:15 a.m. **Computational study of hydrogen bonding between adenine and reactive species.**<sup>1</sup> Sijin Ren - Murray State University
- 11:30 a.m. **Lunch – Restaurant options available at registration**
- 1:00 p.m. **Octadecyltrichlorosilane (OTS)-coated ionic liquid drops: Micro-reactors for homogenous catalytic reactions at designated interfaces.**<sup>2</sup> Xiaoning Zhang and Yuguang Cai - University of Kentucky
- 1:15 p.m. **Specific Characteristics of Kentucky Lake Waters that Prevent the Reproduction of Zebra Mussels.**<sup>2</sup> Subhash Dasari, Bommanna Loganathan and David White - Murray State University
- 1:30 p.m. **Novel II-Conjugated Organic Macromolecules for Organic Field Effect Transistors**<sup>2</sup> Harista Irugulapati - Western Kentucky University
- 1:45 p.m. **Molecular Level Interaction of Human Fibroblast Growth Factor-1 (hFGF-1) with Anti-Diabetic Drug.**<sup>2</sup> Rammohan Paripelly, Matt Gonzalez, Dillon S. Pender, Lakshmisri M. Vangala and Rajalingam Dakshinamurthy - Western Kentucky University
- 2:00 p.m. **Characterization of disinfection byproduct (DBP) formation potential within the Ashokan watershed: Effects of filtered and unfiltered chlorinated water samples.**<sup>1</sup> Ivan Titaley - Berea College, Timothy Johnson - Alfred University, Megan Ferguson - State University of New York at New Paltz
- 2:15 p.m. **Break – NSB 2<sup>nd</sup> Floor Atrium**
- 2:30 p.m. **Self-assembly of a novel copper-based metal organic framework.**<sup>1</sup> Nick Cottrell, Steven Calhoun and Bangbo Yan - Western Kentucky University
- 2:45 p.m. **Molecular dynamics and quantum mechanical calculations of aqueous nitrate solutions.**<sup>1</sup> Logan Eckler and Matthew Nee - Western Kentucky University
- 3:00 p.m. **Detection of Potassium in Plasma and Red Blood Cells using Pulsed Chronopotentiometry.**<sup>1</sup> Benjamin Stevens and Kebede Gemene - Northern Kentucky University
- 3:15 p.m. **Synthesis and Biological Evaluation of Chalcone Derivatives as Xanthine Oxidase Inhibitors.**<sup>1</sup> Thuy Donna Do, Quintin Hauser, Taylor Kidd, Stefan Paula and Lili Ma - Northern Kentucky University
- 3:30 p.m. **Potential MurA Inhibitor.**<sup>1</sup> Yang (Vanessa) Song and Jennifer Muzyka - Centre College

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

- 3:45 p.m.     **Molecular Dynamics on Potential MurA Inhibitors.**<sup>1</sup> Josh Winner and Jennifer Muzyka - Centre College
- 4:00 p.m.     **Break**
- 4:15 p.m.     **Plenary Session**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## COMPUTER AND INFORMATION SCIENCES

Jerzy Jaromczyk, Chair  
University of Kentucky

Sherif Rashad, Secretary  
Morehead State University

**SATURDAY, OCTOBER 20, 2012**  
**NSB 3121**

- 1:00 p.m.      **A Streamlined Utility for Universal DTI Analysis building on the Medical Image Processing and Visualization (MIPAV) application.**<sup>2</sup> Elizabeth Tyrie - WKU Hoffman Environmental Research Institute, Alexandra Bokinsky, PhD - Geometric Tools, Inc. , Nishith Pandya - Center for Information Technology, National Institutes of Health, Julie McEntee and Dzung Pham, PhD - Center for Neuroscience and Regenerative Medicine, National Institutes of Health, Matthew McAuliffe, PhD - Center for Information Technology, National Institutes of Health
- 1:15 p.m.      **Learning Bioinformatics in Galaxy**<sup>2</sup> Vijaykant Nadadur, Neil Moore, Mark Farman, Christopher L. Schardl and Jerzy W. Jaromczyk - University of Kentucky, Pat Calie - Eastern Kentucky University
- 2:15 p.m.      **Break – NSB 2<sup>nd</sup> Floor Atrium**
- 4:15 p.m.      **Plenary Session**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## ECOLOGY AND ENVIRONMENTAL SCIENCE

Scott Grubbs, Chair  
Western Kentucky University

John Starnes, Secretary  
Kentucky Community and Technical  
College System

**SATURDAY, OCTOBER 20, 2012**  
**NSB 4101**

- 1:00 p.m. **Ambient Wetland Monitoring in Kentucky's Green and Upper Cumberland River Basins.** Michelle L. Guidugli, Stephen C. Richter and David R. Brown - Eastern Kentucky University
- 1:15 p.m. **Kentucky Natural History Survey: A Proposal to the Kentucky Academy of Science.** Albert J. Meier - Western Kentucky University, John Pickering - University of Georgia
- 1:30 p.m. **Distribution and habitat associations of two stream salamanders (*Ambystoma barbouri* and *Eurycea cirrigera*) across multiple spatial scales.**<sup>2</sup> John M. Yeiser and Stephen C. Richter - Eastern Kentucky University
- 1:45 p.m. **Food Web Analysis of an Autumn Riverine Macroinvertebrate Community.**<sup>2</sup> Elizabeth Malloy, Victoria Gilkison, Jennifer Yates, Albert Meier and Scott Grubbs - Western Kentucky University
- 2:00 p.m. **Landscape genetics of the marbled salamander, *Ambystoma opacum* (Gravenhorst), in a nationally protected park** <sup>2</sup> Kevin J. Tewell and Jarrett R. Johnson - Western Kentucky University
- 2:15 p.m. **Break – NSB 2<sup>nd</sup> Floor Atrium**
- 2:30 p.m. **Defense against invasive species by *Asimina triloba* through interference competition.**<sup>2</sup> Brandon May, Kirk Pomper, Jeremy Lowe, Jacob Botkins and Sheri Crabtree - Kentucky State University
- 2:45 p.m. **Using Vegetation and Bird Surveys to Validate a Wetland Rapid Assessment Method for Kentucky's Forested Riparian Wetlands.**<sup>2</sup> JohnRyan A. Polascik, Tanner M. Morris, David R. Brown, Michelle L. Guidugli and Stephen C. Richter - Eastern Kentucky University
- 3:00 p.m. **Effects of Leaf Litter Depth on *Ranunculus ficaria* L. var. *bulbilifera* (Ranunculaceae).**<sup>2</sup> Jeffery A. Masters and Sarah M. Emery - University of Louisville
- 3:15 p.m. **Individual diet variation in anurans: who and why.**<sup>2</sup> Carl Cloyd - University of Louisville, Seth D. Newsome - University of Wyoming, Perri K. Eason - University of Louisville

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition



- 3:30 p.m.      **Variation in Diversity of Salamander Species in Four Selected Stream Habitats in Central Kentucky.**<sup>1</sup> Nadia A. Karkenny, Ashley N. Curtis, Joshua A. Hall, Sara A. Keller, Michon A. Martin, Brandi L. Vaughn and Roy M. Scudder-Davis - Berea College
- 4:00 p.m.      **Break**
- 4:15 p.m.      **Plenary Session**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

# ENGINEERING

Sally Krijestorac, Chair  
Morehead State University

Sanjeev Adhikari, Secretary  
Morehead State University

**SATURDAY, OCTOBER 20, 2012**

**NSB 3121**

- 2:15 p.m.     **Break – NSB 2<sup>nd</sup> Floor Atrium**
- 2:30 p.m.     **Round and Round with Physics: An “Amusing” Look at Non-Inertial Reference Frames** Ignacio Birriel, Amber Kirchner, Chayce Swafford and Robert Blair - Morehead State University
- 2:45 p.m.     **Cyber Physical Systems for Vehicular Networking in Intelligent Transportation Systems.**<sup>2</sup> Danda B. Rawat and Anthony Campbell - Eastern Kentucky University
- 3:00 p.m.     **Development of a complete, standalone 1-U CubeSat power system.**<sup>2</sup> Brandon L. Molton, Dr. Benjamin K. Malphrus , Kevin Brown and Kien Dang - Morehead State University
- 3:15 p.m.     **BearkerSat-1: A PocketQube FemtoSatellite.**<sup>1</sup> Jordan Healea, Robert Twiggs, Jennafer Grinrod, Yevgeniy Byeloborodov and David Mays - Morehead State University
- 3:30 p.m.     **Electrical Power System (EPS) for cubesats** Kien T Dang and Brandon L Molton - Morehead State University
- 3:45 p.m.     **Intelligent Instrumentation for Diabetic Foot Health Monitoring.**<sup>1</sup> Colby White, Sanjeevi Chitikeshi and James M. Benson - Murray State University
- 4:15 p.m.     **Plenary Session**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## GEOGRAPHY

Glenn Campbell, Chair  
Eastern Kentucky University

Demetrio Zourarakis, Secretary  
Kentucky Division of Geographic  
Information

**SATURDAY, OCTOBER 20, 2012**  
**NSB 3126**

- 1:00 p.m.     **Using multi-temporal satellite imagery to assess forest change following prescribed fire in a Kentucky hardwood forest.** Christine McMichael - Morehead State University, Mary Arthur and Gretchen Sovkoplas - University of Kentucky
- 1:15 p.m.     **Examining Methodologies and Tools for Evaluating Human-Environmental Impacts on Karst Landscapes.** Leslie North, Jason Polk, Brandon Porter, Taylor and Victoria Allen - WKU Hoffman Environmental Research Institute
- 1:30 p.m.     **Cave and Karst Resources in West-Central Florida, USA: Implications for Management, Education and Research.** Jason S. Polk, Leslie North, Jonathan Oglesby and Taylor Hutchison - Western Kentucky University
- 1:45 p.m.     **Teleconnective Influences on the Strength of Post-tropical Cyclones in the United States.**<sup>2</sup> Jeremy Young - Western Kentucky University
- 2:00 p.m.     **Reconstructing Climate Change in the Caribbean to Address Water Resource Issues on Karst Islands.**<sup>2</sup> Gilman Ouellette - and Jason Polk - WKU Hoffman Environmental Research Institute
- 2:15 p.m.     **Break – NSB 2<sup>nd</sup> Floor Atrium**
- 2:30 p.m.     **Karst Stormwater Regulation under the Safe Drinking Water and Clean Water Acts.**<sup>1</sup> Ellen Green and John All - Western Kentucky University
- 2:45 p.m.     **March 9 Hawaii Kona Low System Case Study.**<sup>1</sup> Emily Yates - Western Kentucky University
- 4:15 p.m.     **Plenary Session**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## GEOLOGY

Thomas Brackman, Chair  
Northern Kentucky University

Robert Lierman, Secretary  
Eastern Kentucky University

**SATURDAY, OCTOBER 20, 2012**

**NSB 3120**

- 8:00 a.m.      **Cobalt-manganese bearing alteration to an *Allosaurus* (Jurassic Period, Morrison Formation) from the Aaron Scott Quarry, Utah: Potential evidence of fungus growth?** Edward Kintzel - Western Kentucky University, Cathleen Webb - Kentucky Community and Technical College System
- 8:15 a.m.      **The Silurian Stratigraphy and Paleoenvironments of Central Kentucky, U.S.A.** Frank R. Etensohn - University of Kentucky, R. Thomas Lierman - Eastern Kentucky University, Charles E. Mason - Morehead State University
- 8:30 a.m.      **Influence of the Cincinnati Arch on Devonian-Mississippian Deposition and Hydrocarbon Accumulations.** Patrick J. Gooding - KSPG
- 8:45 a.m.      **A Tale of Two Storms: Depositional Setting of a Late Mississippian Crinoid Garden from East-Central Kentucky.**<sup>2</sup> Ann Harris and Frank R. Etensohn - University of Kentucky
- 9:00 a.m.      **A comprehensive analysis of the relationship between ostracode shell chemistry, pore morphology, and host water chemistry in Bahamian lake systems: to build confidence in the use of ostracodes as paleoenvironmental indicators.**<sup>2</sup> Rachel E. Bowles, Jordan A. Seng and Dr. Fredrick Siewers - Western Kentucky University
- 9:15 a.m.      **Thermobarometry of Metamorphosed Pseudotachylyte and Determination of Co-Seismic Slip Depth During Devonian Caledonian Extension, North Norway.**<sup>2</sup> Susan Leib - University of Kentucky
- 9:30 a.m.      **Break – NSB 2<sup>nd</sup> Floor Atrium**
- 9:45 a.m.      **A Case Study of a Rare Long-Track EF-3 Tornado in Eastern Kentucky.**<sup>1</sup> Ryan Difani, Tyler Binkley, Andrew, John L. Thomas, Micheal Flanigan, Quentin Walker and Dr. Joshua Durkee - Western Kentucky University
- 10:00 a.m.     **Fish fossils from Kentucky.** Stephen F. Greb - Kentucky Geological Survey, University of Kentucky
- 10:15 a.m.     **Characterization of Carlin-Type Gold Deposits of Northeastern Nevada.**<sup>1</sup> Jason Howard - Western Kentucky University
- 10:30 a.m.     **Melt Inclusions in Olivine in the Martian Meteorite NWA 5789: Methods, Bulk Composition and Evolution.**<sup>1</sup> Michael Powers - Western Kentucky University

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

- 10:45 a.m.     **Identification of Metamorphic Grade and Characterization of Gold Deposits from the Rochford Formation of Southwestern South Dakota.** Charles Hancock - Western Kentucky University
- 11:00 a.m.     **A geologic timeline at EKU's New Science Building.** Walter S. Borowski - Eastern Kentucky University
- 11:30 a.m.     **Lunch** – *Restaurant options available at registration*
- 4:15 p.m.     **Plenary Session**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## HEALTH SCIENCES

Cecil Butler, Chair  
Kentucky State University

Bruce Branam, Secretary  
Asbury University

**SATURDAY, OCTOBER 20, 2012**

**NSB 3101**

- 1:00 p.m. ***E. coli* densities are associated with gastrointestinal illness among recreational water users at an inland Ohio beach.** Jason W. Marion - Eastern Kentucky University, Jiyoung Lee, John R. Wilkins, III, Stanley Lemeshow and Timothy J. Buckley - The Ohio State University
- 1:15 p.m. **Therapeutic Role of Natural Coconut Oil in Experimental Ulcerative Colitis.**<sup>2</sup> Pranav Chandra and Nilesh Sharma - Western Kentucky University
- 1:30 p.m. **Novel Approach of Using Microvesicles as Biomarkers for Oral Cancer.**<sup>1</sup> Horton Li - Berea College, Alexander J. Trachtenberg - Harvard Catalyst - Laboratory for Innovative Translational Technologies (HC-LITT), Fatemeh M. Heravi - Harvard Catalyst - Laboratory for Innovative Translational Technologies (HC-LITT), Winston P. Kuo - Harvard School of Dental Medicine
- 1:45 p.m. **Attitudes and Practice of Healthy Lifestyle in Students Attending a Historically Black College.**<sup>1</sup> Achaia Taltoan, Avinash Tope and Phyllis Rogers - Kentucky State University
- 2:00 p.m. **Prevalence of Metabolic Syndrome and Individual Criteria in Students Attending a Historically Black College and University.**<sup>1</sup> Victoria Mathis, Avinash Tope and Phyllis Rogers - Kentucky State University
- 2:15 p.m. **Break – NSB 2<sup>nd</sup> Floor Atrium**
- 2:30 p.m. **HLA Class II Molecules Influence Susceptibility Vs Protection in Rheumatoid Arthritis by Programming the Cytokine Profile.**<sup>1</sup> Helena Pett - Berea College, Marshall Behrens, Chella David and Veena Taneja - Mayo Clinic
- 2:45 p.m. **Impact of the Respiratory Syncytial Virus F Peptide on the Cytokine Response of Human Macrophages.**<sup>1</sup> Shelby Kozlowski, Amy Weinstock and Joseph Mester - Northern Kentucky University
- 4:15 p.m. **Plenary Session**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## MATHEMATICS

R. Douglas Chatham, Chair  
Morehead State University

John Porter, Secretary  
Murray State University

**SATURDAY, OCTOBER 20, 2012**

**NSB 4112**

- 9:30 a.m.     **Break – NSB 2<sup>nd</sup> Floor Atrium**
- 9:45 a.m.     **The Collins-Roscoe Mechanism and D-spaces.** Ted Porter -  
Murray State University
- 10:00 a.m.    **How Low a Percentage of the Popular Vote could the Winning  
Presidential Candidate Earn?** Andy Martin - Kentucky State  
University
- 10:15 a.m.    **The rook\'s independence separation problem** R. Douglas  
Chatham - Morehead State University, Paul A. Burchett - none
- 10:30 a.m.    **Assessing the chaotic nature of interstellar magnetic fields.** <sup>1</sup>  
Lindsay Grayson, Lisa Holden and Kirk Wallace - Northern  
Kentucky University
- 11:30 a.m.    **Lunch – *Restaurant options available at registration***
- 4:15 p.m.     **Plenary Session**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## MICROBIOLOGY

Marcia Pierce, Chair  
Eastern Kentucky University

Tim Johnston, Secretary  
Murray State University

**SATURDAY, OCTOBER 20, 2012**  
**NSB 4112**

- 8:00 a.m. **A comparison study of a neutral anolyte solution from electrolyzed water to sodium hypochlorite on the inactivation of *Escherichia coli* O157:H7 during leafy green washing Cangliang Shen - Western Kentucky University**
- 8:15 a.m. **MICROBIOLOGY Assessment of antimicrobial resistance in pathogens responsible for causing bovine mastitis in Kentucky.**<sup>2</sup> Erica Phillips and Marcia M. Pierce - Eastern Kentucky University
- 8:30 a.m. **Assessing virulence factors present in clinical isolates of *Acinetobacter baumannii* from the University of Kentucky hospital, Lexington, KY**<sup>2</sup> Amber R. Stanton, Marcia Pierce and Robert Jackson - Eastern Kentucky University
- 8:45 a.m. **Genome Assembly and Syntenic Analysis of *Clostridium scatologenes* ATCC 25775.**<sup>2</sup> Shawn Smiley - Western Kentucky University
- 9:00 a.m. **To clone erkf gene from E.coli K12 in Pet32a+ expression vector and and perform functional assay**<sup>1</sup> Dipendra Sharma Chapagain - Berea College
- 9:15 a.m. **A comparison of hemolytic activity of *Acinetobacter baumannii* strains**<sup>1</sup> Robert Jackson and Amber Stanton - Eastern Kentucky University
- 9:30 a.m. **Break – NSB 2<sup>nd</sup> Floor Atrium**
- 11:30 a.m. **Lunch – Restaurant options available at registration**
- 4:15 p.m. **Plenary Session**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition



## PHYSICS AND ASTRONOMY

Akhtar Mahmood, Chair  
Bellarmine University

Arthur Pallone, Secretary  
Northern Kentucky University

SATURDAY, OCTOBER 20, 2012

3101

- 8:00 a.m. **Measurement of the Radioactivity in an Outcrop of Ohio Shale.** Ignacio Birriel, Daniel Rodreguiz and Charles Mason - Morehead State University
- 8:15 a.m. **Acquiring Working Mathematic Skills in Physics Context.** Jing Wang and Jerry Cook - Eastern Kentucky University
- 8:30 a.m. **Hydrogen atom confined by a Woods-Saxon potential.** Ed Montgomery - Centre College
- 8:45 a.m. **Evaluation of a compact CCD-based high-resolution autocollimator for use as a slope sensor.**<sup>1</sup> Rohan Isaac - Berea College, Dr. Lahsen Assoufid - Argonne National Laboratory
- 9:00 a.m. **Theoretical Study of Diproton Emission.**<sup>1</sup> Marissa Brown - Berea College, Witold Nazarewicz, Ph.D, Noah Birge, Erik Olsen and Alexander Perhac - University of Tennessee
- 9:15 a.m. **Rapid Conversion of Traditional Introductory Physics Sequences to an Activity-Based Format.** Garett Yoder and Jerry Cook - Eastern Kentucky University
- 9:30 a.m. **Break – NSB 2<sup>nd</sup> Floor Atrium**
- 9:45 a.m. **Discovery of a Previously Unknown Millisecond Pulsar.**<sup>1</sup> Hannah Mabry - Morehead State University, Jennifer Carter - Rowan County Senior High School, Dr. Thomas Pannuti - Morehead State University, Dr. Rachel Rosen - West Virginia University, Jeff Kruth - Morehead State University
- 10:00 a.m. **Investigation of Nanofibers in the Interfacial Transition Zone of Concrete.**<sup>2</sup> Jahi Palmer, Edward Kintzel, Shane Palmquist, Linda Cruz and Keith Andrew - Western Kentucky University
- 10:15 a.m. **The Discrete X-ray Source Population of the Nearby Sculptor Group Galaxy NGC 55 as Revealed by the Chandra X-ray Observatory.** Thomas G. Pannuti, Jared P. Napier and Eric M. Schlegel - University of Texas-San Antonio, Seppo Laine - Caltech, Miroslav Filipovic - University of Western Sydney, Stephen A. Griffith and Wayne D. Staggs - Morehead State University
- 10:30 a.m. **Late Light Curves of SN 2002cx-like Type Ia Supernovae.** Jessica C. Lair - Eastern Kentucky University, Ethan E. Kilgore - Clemson University, Peter A. Milne - Steward Observatory, Ginger L. Bryngelson - Francis Marion University, Mark D. Leising - Clemson University

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

- 10:45 a.m. **Higgs Boson at the Large Hadron Collider(LHC).** Dr. Akhtar Mahmood - Bellarmine University
- 11:00 a.m. **Video analysis of a bouncing ball.** Marco Ciocca - Eastern Kentucky University, Jing Wang - Eastern Kentucky University
- 11:30 a.m. **Lunch** – *Restaurant options available at registration*
- 4:15 p.m. **Plenary Session**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## PHYSIOLOGY AND BIOCHEMISTRY

Julia Carter, Chair  
Wood Hudson Cancer Research Laboratory

Tracy Livingston, Secretary  
Georgetown College

**SATURDAY, OCTOBER 20, 2012**  
**NSB 4105**

- 1:00 p.m. **Pharmacogenetic approach in directing inhibition of the larval heart in *Drosophila melanogaster*.**<sup>2</sup> Zana R. Majeed - Dept of Biology, Univ. of KY.; Dept of Biology, College of Sci, Univ of Salahaddin, Erbil, Iraq, Charles D. Nichols - Dept of Pharmacol Exp Therapeutics, Louisiana State Univ Health Sci Ctr, New Orleans, LA, Robin L. Cooper - University of Kentucky
- 1:15 p.m. **Optimizing methods to quantify CYP1A enzyme activity in mouse brain with and without PCB exposure.**<sup>1</sup> Amy Ashworth and Christine Perdan Curran - Northern Kentucky University
- 1:30 p.m. **Improved Transdermal Drug Delivery using Pluronic Lecithin Organogels (PLO gels).**<sup>1</sup> Rachel Woodall - Georgetown College, Dr. John Arnold - Samford University McWhorter School of Pharmacy
- 1:45 p.m. **Effects of purple sweet potato powder on bone mineral content of ovariectomized rats.**<sup>1</sup> Tiana Smith, Lingyu, Cecil Butler and Changzheng Wang - Kentucky State University
- 2:00 p.m. **Optimization of Eosinophil Peroxidase Assay.**<sup>1</sup> M.R. Stephens - Thomas More College, K. L. Schollaert and P. C. Fulkerson - Cincinnati Children's Hospital and Medical Center
- 2:15 p.m. **Assessing basal ganglia motor function in *Cyp1a1\_Cyp1a2*(-/-) mice.**<sup>1</sup> Anna Lang, Kelsey Taylor, Helen Garber, Carly Strohmaier and Christine Perdan Curran - Northern Kentucky University
- 2:30 p.m. **Optimizing conditions for active MurA purification for use in novel inhibitor studies.**<sup>1</sup> Andrea N. Frost, Ben Boone and January Haile - Centre College
- 2:45 p.m. **Streamlining Western Blot Protocol as a Means to Attenuate Variability While Increasing Reproducibility.**<sup>1</sup> Jackie Jansen, Brian Riesenburb, Sean Lawson, Cody, Heather Christensen, Tracy Reed-Kessler and Julia Carter - Wood Hudson Cancer Research Laboratory
- 3:00 p.m. **Increased Expression of eIF4E is Associated with Development of Human Breast Cancer.**<sup>1</sup> Kyle Darpel, Christian Gausvik, Hillary Restle, Kevin Murray, Shane Mulvihill, Gina Heim, Brian Riesenburb and Bruce Colligan - Wood Hudson Cancer Research Laboratory

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

- 3:15 p.m. **Purification of Membrane Scaffold Proteins and Binding of Lipids by the C99 Domain of the Amyloid Precursor Protein.<sup>1</sup>**  
Tommy O. Boykin - Berea College, Joseph Ellis - , Katie Armstrong - , John Chen - , Arina Hadziselimovic - , Charles Sanders -
- 3:30 p.m. **Effects of developmental PCB exposure on energy metabolism in adult and aged mice.<sup>1</sup>** Austin Brown, Kevin Smith, Amy Ashworth and, Christine Perdan Curran - Northern Kentucky University
- 3:45 p.m. **Pharmacological analysis of dopamine modulation in the developing fruit fly heart.<sup>1</sup>** Kayla King - University of Kentucky, Jenna M. Rufer - Berea College, Josh Titlow and Robin L. Cooper - University of Kentucky
- 4:00 p.m. **Gamma-glutamylcysteine ethyl ester as a post therapeutic treatment for moderate traumatic brain injury in rat: insights into glutathione elevation.<sup>2</sup>** Zach Sellers - Eastern Kentucky University
- 4:15 p.m. **Plenary Session**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## PSYCHOLOGY

KatieAnn Skogsberg, Chair  
Centre College

Jennifer Goetz, Secretary  
Centre College

**SATURDAY, OCTOBER 20, 2012**  
**NSB 4101**

- 8:00 a.m. **Habituation to the fear of pain and death: A significant link between physical abuse and self-injurious behavior.**<sup>2</sup> Tara Holaday and Amy Brausch - Western Kentucky University
- 8:15 a.m. **Preschooler attachment predicts parental criticism eight years later.**<sup>2</sup> Dandan Li and Stephanie Burns - Morehead State University
- 8:30 a.m. **Racial Identity Development: Examination of the Cross Nigrescence Theory and the Experience of Black Students Attending Predominately White Institutions.** Quantá D. Taylor - The Ohio State University
- 8:45 a.m. **Sex differences in complex learning after repeated METH-treatment in adolescence.**<sup>2</sup> Katy R. Hauris, Jessica Pita and Ilsun M. White - Morehead State University
- 9:00 a.m. **Child attachment and its association with parental insightfulness in early adolescence.**<sup>1</sup> Bethany O. Greene and Emily L. Wilson - Morehead State University
- 9:15 a.m. **The effect of energy drinks on visual attention task performance.**<sup>1</sup> Chelsea Benham and Gwynne Rose - Centre College
- 9:30 a.m. **Break – NSB 2<sup>nd</sup> Floor Atrium**
- 9:45 a.m. **Body Mass Index, Body Dissatisfaction, and Eating Disorder Symptomology in Undergraduate Women.**<sup>1</sup> Lillian Semedo, Rachel Brannen, Claire Jolly, Carly Gardner and Jan Wertz - Centre College
- 10:00 a.m. **Socio-economic stereotype threat: Effects on academic performance and self-confidence.**<sup>1</sup> Sara Dean - Berea College
- 10:15 a.m. **Repeated phencyclidine (PCP) impairs simple learning and produces ‘anxiety-like’ behavior.**<sup>1</sup> Rachael E. Whitley and Ilsun M. White - Morehead State University
- 10:30 a.m. **“Am I good or bad?” Parental sensitivity is associated with children’s emotion competence.**<sup>1</sup> Shelby House, Kayla, Katelyn Fugate and Shari Kidwell - Morehead State University
- 10:45 a.m. **The expression of compassion; does it exist?**<sup>1</sup> Kelsey A. Nelson and Jennifer L. Goetz - Centre College
- 11:00 a.m. **Proximate Mechanisms Underlying the Nest Bond in Ring Neck Dove.**<sup>1</sup> Nathan Horrell, Ashley Boerrigter and Dr. Melissa Burns-Cusato - Centre College

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

- 11:15 a.m. **Judicial Practices, Hidden Juror Bias, and the Trayvon Martin Case: Better Practices in Individual Voir Dire.**<sup>1</sup> Kary Stivers, Emily Robbins and Mykol C. Hamilton - Centre College
- 11:30 a.m. **A survey on the attitudes of athletes, coaches, and athletic trainers toward sport-related concussions.**<sup>1</sup> Elizabeth LeBlond - Centre College
- 11:45 a.m. **Lunch** – *Restaurant options available at registration*
- 4:15 p.m. **Plenary Session**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## SCIENCE EDUCATION

Jay Kirchner, Chair  
Galen College of Nursing - Cincinnati, OH

Jason Fuller, Secretary  
Eastern Kentucky University

**SATURDAY, OCTOBER 20, 2012**  
**NSB 3120**

- 1:00 p.m. **An Alternative Approach for Teaching Dilutions in Microbiology.** William Staddon - Eastern Kentucky University
- 1:15 p.m. **Reducing absenteeism in community college biology and other courses: a case for establishing an institution-wide attendance policy.** John G. Shiber, PhD - Kentucky Community and Technical College System
- 1:30 p.m. **Interstate partnerships for pre-college summer science research: The case of Kentucky and Puerto Rico.** Wilson J. Gonzalez-Espada - Morehead State University
- 1:45 p.m. **STEM & Health: Stressors on the circulatory system.** Rebecca M. Krall - Department of STEM Education, S. Rose H. Cooper - College of Medicine, Susan Mayo, Diane Johnson and Kimberly Zeidler-Watters - PIMSER, Robin L. Cooper - Department of Biology
- 2:00 p.m. **Significance of Next Generation Science Standards and Framework for college science teaching.** Martin Brock - Eastern Kentucky University
- 2:15 p.m. **Break – NSB 2<sup>nd</sup> Floor Atrium**
- 2:30 p.m. **Integration of NMR into Chemistry Curriculum at WKU and ECTC and Assessment of Factors Leading to a Successful Collaboration between 2- and 4-year Colleges.** Sue Ballard and Shawn Kellie - Elizabethtown Community and Technical College, Darwin Dahl, Lester Pesterfield, Cathleen Webb and Rui Zhang - Western Kentucky University
- 2:45 p.m. **Transitioning from “science” to “my science”: Contextualizing science for Puerto Rican school students.** Wilson J. Gonzalez-Espada - Morehead State University, Yaihara Fortis-Santiago - AAAS Science Policy Fellow, Directorate of Engineering, National Science Foundation, Arlington, VA, Giovanna Guerrero-Medina - Executive Director, Ciencia Puerto Rico, Nicole Ortiz-Vega - Research Evaluator, Center for Evaluation and Sociomedical Research, University of Puerto Rico Medical Sciences Campus, San Juan, PR, Daniel Colon-Ramos - Yale Program in Cellular Neuroscience, Neurodegeneration and Repair, Yale School of Medicine, New Haven, CT, Monica Feliu-Mojer - Ph.D. Candidate, Program in Neuroscience, Harvard Medical School, Boston, MA

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

- 3:00 p.m. **Students' Science Process Skills in the General Chemistry Laboratory.** <sup>1</sup> Kevin Beers - Northern Kentucky University
- 3:15 p.m. **Computational Physics Using Parallel Cluster Computing in the Physics Curriculum.**<sup>1</sup> Meghan Allen, Nick Hushebeck, Jovan Andjelich, Dr. Akhtar Mahmood and Dr. Syed Faiz Ahmad - Bellarmine University
- 3:30 p.m. **Meeting Students' Expectations and Goals for "Physics and Astronomy for Teachers."** Jon D. H. Gaffney - Eastern Kentucky University
- 3:45 p.m. **Integrating online discussion forums into an Anatomy & Physiology I course for student nurses increases academic performance.** Jay Kirchner - Galen College of Nursing
- 4:00 p.m. **Break**
- 4:15 p.m. **Plenary Session**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition



## ZOOLOGY

Michael Floyd, Chair  
US Fish & Wildlife Service

Lindsey Walters, Secretary  
Northern Kentucky University

**SATURDAY, OCTOBER 20, 2012**  
**NSB 4105**

- 8:00 a.m. **Alligator Gar Propagation and Restoration in Western Kentucky.** Stephanie L. Brandt and Matthew R. Thomas - Kentucky Department of Fish and Wildlife Resources
- 8:15 a.m. **Evidence for selection on a chordate histocompatibility locus.** Marie Nydam - Centre College, Anthony De Tomaso - University of California, Santa Barbara
- 8:30 a.m. **Survey and Review of the Fishes of Buck Creek, Cumberland River Drainage, Kentucky.** Matthew R. Thomas and Stephanie L. Brandt - Kentucky Department of Fish and Wildlife Resources
- 8:45 a.m. **New records of earwigflies (*Merope tuber* Newman, Mecoptera: Meropeidae) from Eastern Kentucky.** Sean O'Keefe, Rebecca Roberts and Jackie Carder - Morehead State University
- 9:00 a.m. **Distribution and conservation status of the Cumberland arrow darter, *Etheostoma sagitta sagitta* (Jordan and Swain), in Kentucky and Tennessee.** Michael Floyd - US Fish and Wildlife Service, Matthew Thomas and Stephanie Brandt - Kentucky Department of Fish and Wildlife Resources, Bart Carter - Tennessee Wildlife Resources Agency
- 9:15 a.m. **The use of a rapid assessment approach for estimating adult Crawfish Frog (*Lithobates areolatus*) populations associated with 13 breeding ponds on and adjacent to West Kentucky Wildlife Management Area, McCracken County, Kentucky.** John MacGregor - Kentucky Department of Fish and Wildlife Resources, Frankfort, KY 40601
- 9:30 a.m. **Break – NSB 2<sup>nd</sup> Floor Atrium**
- 9:45 a.m. **Evaluating Personality and Leadership in African Elephants (*Loxodonta africana*).**<sup>2</sup> Emily M McIntire and Bruce A Schulte - Western Kentucky University
- 10:00 a.m. **Population Distribution and Abundance of the blackfin sucker (*Thoburnia atripinnis*) in the Upper Barren River System, Kentucky and Tennessee.**<sup>2</sup> Cory Stringfield - Eastern Kentucky University

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

- 10:15 a.m. **Male and female *Neolamprologus multifasciatus* fight by different rules.**<sup>2</sup> Piyumika S Suriyampola and Perri K Eason - University of Louisville
- 10:30 a.m. **Phenotypic plasticity of oral jaw dentition in *Archosargus probatocephalus*.**<sup>2</sup> Cynthia E. Worcester and Steve Huskey - Western Kentucky University
- 10:45 a.m. **Comparison study of nursery habitats for *Dasyatis sabina*, *Dasyatis say*, and *Urobatis jamaicensis*.**<sup>1</sup> Christine Spear - Kentucky Wesleyan College
- 11:00 a.m. **Zoology Early spawning in Frecklebelly Darters, *Percina stictogaster*: adaptive for pelagic life?** Carol-Rose Gingras, David J. Eisenhour and Jonathan D. Eisenhour - Morehead State University
- 11:15 a.m. **A culvert acts as a barrier for Blackside Dace (*Chrosomus cumberlandensis*) movements in Lick Fork, Kentucky.** David J. Eisenhour - Morehead State University, Michael A. Floyd - US Fish and Wildlife Service
- 11:30 a.m. **Lunch** – *Restaurant options available at registration*
- 4:15 p.m. **Plenary Session**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition



## POSTER PRESENTATIONS

We will this year divide the poster presentations into a morning (A.M.) session and an afternoon (P.M.) session according to sections. Each presenter will be provided with an easel and a poster board. Each poster board will be identified with a number that matches the presenter's number in the poster portion of the program booklet. Poster presenters must check in at the Poster Table on the 2<sup>nd</sup> floor of the Atrium. The posters will be presented in two locations, the 4<sup>th</sup> floor hallway and the 5<sup>th</sup> floor hallway, both of which are located in the New Science Building.

**A.M. SESSION. 4<sup>th</sup> Floor Hallway:** For sections: **Geology, Geography, Physics & Astronomy, Ecology and Environmental Science and Psychology.**

**A.M. SESSION. 5<sup>th</sup> Floor Hallway:** For section: **Chemistry**  
These posters will be set up between 7:30 - 8:00 a.m. Students entering the URC will have their posters judged starting at 9:00 a.m. and the presenters **must be present** in order to have their posters judged. **The A.M. posters must be removed or arrangements made to take them down between 11:30 - 12:00.** It is very important that the posters are removed at this time in order to allow the P.M. session to set up.

**P.M. SESSION. 4<sup>th</sup> Floor Hallway:** For sections: **Microbiology, Physiology and Biochemistry, Science Education and Zoology**

**P.M. SESSION. 5<sup>th</sup> Floor Hallway:** For sections: **Cellular and Molecular Biology, Computer and Informational Science, Engineering, Agricultural Science and Health Sciences.** These posters will be set up between 12:00 - 1:00 p.m. The URC posters will be judged starting at 1:30 p.m. during which time the **presenters must be at their posters.** These posters can be removed at 4:00 p.m.

**AM  
SESSION**

**NEW SCIENCE BUILDING  
4<sup>TH</sup> FLOOR HALLWAY**

### GEOLOGY

1. **A Record of Mercury Accumulation in Bat Guano Deposits** Veronica Hall, Jason Polk - WKU Hoffman Environmental Research Institute  
Michael Kochasic - California University of Pennsylvania, Cathleen Webb - Western Kentucky University
2. **An analysis of ostracode sieve pore morphology and shell chemistry in Bahamian lake systems to better understand proxies for paleosalinity.** Jordan A. Seng, Rachel E. Bowles, Dr. Fredrick Siewers - Western Kentucky University
3. **Dryosaurus (Jurassic Period, Morrison Formation) material from the Aaron Scott Quarry, Utah.**<sup>1</sup> Nathaniel Hall, Janet Bertog - Northern Kentucky University

4. **Evaluating water seepage through an earthen filled dam with electrical resistivity.**<sup>1</sup> Evan Clark, Sean Reed - Northern Kentucky University
5. **Understanding the geology beneath Kentucky's rivers for carbon storage and other applications.** Stephen F. Greb - Kentucky Geological Survey, University of Kentucky, Michael P. Solis - Ohio Geological Survey
6. **Stratigraphic correlation charts for Kentucky.** Stephen F. Greb - Kentucky Geological Survey, University of Kentucky
7. **Surficial Geologic Map of the Independence Quadrangle, KY.** Max Hammond III - KSPG

## GEOGRAPHY

8. **Hydrologic Study: Correlation Between Surface Runoff and Groundwater Blackacre State Nature Preserve, Jefferson County, KY.** Laura Osterhoudt - WKU Hoffman Environmental Research Institute
9. **An assessment of the microclimatic and pedological conditions of rock shelters containing *Solidago albopilosa*, Red River Gorge, Kentucky.**<sup>1</sup> Jeremiah J. Nieves, Dr. Andrew C. Day - University of Louisville
10. **A preliminary analysis of the Ohio River Basin water balance and its variability over time.** David A Howarth, Randy S VanHoose - University of Louisville

## PHYSICS AND ASTRONOMY

11. **Fabrication of Sub-Micron Periodic Structures on Glass.**<sup>1</sup> Adam Stewart, Sergio Mendes - University of Louisville, Uliana Salgaeva, Sergey Mushinskiy - Perm State University
12. **Reducing light pollution and increasing efficiency of outdoor lighting on Morehead State University's campus.** Kelsey Whitaker, Jennifer Birriel - Morehead State University
13. **Physical Modeling of Photon Dominated Regions.**<sup>1</sup> Zachary Butler, Donghui Quan - Eastern Kentucky University
14. **Hough Transform Method and Analysis for the All-Sky Gravitational Wave Search.** Molly Williams, Dr. Jessica Lair - Eastern Kentucky University, Dr. Pia Astone - Universita di Roma
15. **Search for the Z-Prime Boson using the ATLAS Detector at the Large Hadron Collider(LHC) at CERN.**<sup>1</sup> Bryan Fagan, Matthew Heath, Akhtar Mahmood, Syed Faiz Ahmad - Bellarmine University
16. **Time Series Analysis of the Blazar QSO 1011+496.** Ellen Gamel, Wesley Ryle - Thomas More College, Michael Carini - Western Kentucky University

17. **Fracture Mechanics of Brake Rotors.**<sup>1</sup> Kolton Jones, Dr. Edd Kintzel - Western Kentucky University
18. **Simulation of the SAVI, Strut Adjusted Volumetric Implant, Brachytherapy Treatment.**<sup>1</sup> Mackenzie Endres - Berea College
19. **Comparison of Effective Magnetic Spring Constants to Equivalent Mechanical Compressive Springs.** Kristopher Andrew - South Warren High School, Keith Andrew - Western Kentucky University
20. **Fermi Gamma Ray Dispersion Bounds Applied to a Quantum Gravity Model.** Shane Masuda, Akhil Ghanta, Duncan Wood - Gatton Academy of Science and Math, Keith Andrew - Western Kentucky University
21. **Examination of Paleontological Objects Using the Large Chamber Scanning Electron Microscope.** Edward J. Kintzel, Jr., Cathleen Webb, Matthew Nee - Western Kentucky University, Janet Bertog - Northern Kentucky University
22. **Investigation into the orbital properties of intermediate mass binary star systems.** Sierra O'Bryan, Wesley Ryle - Thomas More College, Stephen Williams - Georgia State University
23. **Data mining the OGLE database for eclipsing binary stars.** Marco Ciocca - Eastern Kentucky University
24. **Analysis of Sky Brightness Data from the City Of Morehead KY from January to September 2012.**<sup>1</sup> Hannah Winsor, Gabreila Talavera, Daniel Rodriguez, Jennifer Birriel - Morehead State University
25. **Properties of Cold Galactic Interstellar Clouds.**<sup>1</sup> Mary Spraggs - Western Kentucky University
26. **Physically-Motivated Computer Models of Snow Crystal Growth.** Everett Boyer - Centre College
27. **Analysis of carbon nanofibers in concrete using the large chamber scanning electron microscope.** Linda Cruz, Edward Kintzel, Keith Andrew, Shane M. Pakmquist - Western Kentucky University

## **ECOLOGY AND ENVIRONMENTAL SCIENCE**

28. **Gene expression in sunfish as a biomarker of contaminant exposure.** Matthew Johnson, Ben Brammell - Asbury University, David Peyton - Morehead State University, Andrew Wigginton - University of Kentucky
29. **Effects of atrazine on the chemical alarm cue response in centrarchid species.**<sup>1</sup> Benjamin M. Adams, Ben F. Brammell - Asbury University
30. **Use of auditory stimuli by Carolina chickadees to recognize and inform conspecifics about predators.** Sabrina L. Shrader-McOwen, Gary Ritchison - Eastern Kentucky University

31. **Microbial analysis of three spoil types from a surface mine site in Pike Co., Kentucky.**<sup>1</sup> Joshua Best, Kaleigh Hire, Sarah L. Hall - Berea College
32. **Quantifying Benthic Macroinvertebrate Community Structure, Biomass, and Habitat in a Recently Restored Stream in Eastern Kentucky.** Nicholas Revetta, Amy Braccia - Eastern Kentucky University, Arthur Parola, Clayton Mastin - University of Louisville
33. **Variation in Abundance of Salamanders in Four Selected Stream Habitats in Central Kentucky.**<sup>1</sup> Ashley N. Curtis, Joshua A. Hall, Nadia A. Karkenny, Sara A. Keller, Michon A. Martin, Brandi L. Vaughn, Roy M. Scudder-Davis - Berea College
34. **Going “Green”: How are vegetative roofs impacting urban surface water quality and building roof temperatures.**<sup>1</sup> Aaron McCoy, Richard Durtsche - Northern Kentucky University, Ishi Buffam - University of Cincinnati
35. **Assessment of black walnut (*Juglans nigra* L.) growth and survival on reclaimed surface-mined land.**<sup>1</sup> Kaleigh Hire, Joshua Best, Sarah L. Hall - Berea College
36. **The Fishes of the Hickman and Jessamine Creek Watershed.** Jordan A. Cox, Ben F. Brammell - Asbury University
37. **Buffer capacity and pH trends in Berea College’s aquaculture and aquaponics facilities.**<sup>1</sup> Georgia Dahlquist, Sophia Al-Maamary, Sarah Elrod, Brittany Schroeder, Paul Smithson - Berea College
38. **Soil phosphorus content in watersheds affected by waste lagoon overflows at Berea College Farm.** Sarah Elrod, Sophia Alamaary, Georgia Dahlquist, Brittany Schroeder, Paul Smithson - Berea College
39. **Effects of particle size and substrate concentration on the fermentation of Switchgrass by a co-culture of *Clostridium thermocellum* (27405) and *Clostridium beijerinckii* (51743).**<sup>1</sup> Micah Schmal, Bruce Branan - Asbury University, Michael Flythe - University of Kentucky
40. **Routine water quality monitoring at the Berea College aquaponics facility and aquaculture ponds.**<sup>1</sup> Brittany Schroeder, Georgia Dahlquist, Sophia Al-Maamary, Sarah Elrod, Paul Smithson - Berea College
41. **Assessing Bat and Insect Activity in the Bluegrass Region of Kentucky.** Mary M. McKenna, Luke E. Dodd, Lynne K. Rieske-Kinney - University of Kentucky
42. **Does ecology or phylogeny explain fish morphological diversity in a mosaic of desert aquatic habitats?**<sup>1</sup> Meghan E. Hall, Michael L. Collyer - Western Kentucky University
43. **Strategic assessment of recycling awareness and effectiveness at Kentucky State University via waste audits, surveys and single stream implementation.** John D. Sedlacek, Brandon May, Adena Rivas, Irina Howard- Kentucky State University

44. **Small Mammal Capture Rates for Ground Level and Elevated Traps in Huron National Forest.**<sup>1</sup> Benjamin Hagen, Kyle Breslin, Richard Phillips - Wittenberg University, Kimberly Piccolo - USDA Forest Service
45. **Does ecology promote sexual dimorphism in the Pecos pupfish. (*Cyprinodon pecosensis*)?**<sup>1</sup> Melissa D. Smith, Michael L. Collyer - Western Kentucky University
46. **The seasonal use of microhabitats by invertebrate fauna associated with an ephemeral stream in southeastern Kentucky.** Daniel Douglas, Amy Braccia - Eastern Kentucky University
47. **Relative Species Abundance and Movement Patterns of Ambystomid Salamanders at Eagle Marsh in Fort Wayne, Indiana.**<sup>1</sup> Bailey Patillo - University of Saint Francis
48. **Comparison of Hach® water test kits and standard analytical methods at Berea College's aquaculture and aquaponics facilities.**<sup>1</sup> Sophia Al-Maamary, Georgia Dahlquist, Sarah Elrod, Brittany Schroeder, Paul C. Smithson - Berea College
49. **Habitat Exploration of the Michigan Bog Grasshopper.**<sup>1</sup> Kyle Breslin - Wittenberg University
50. **Comparison of sap flow and chlorophyll fluorescence in red cedar, Amur honeysuckle, and Callery pear growing on a road cut in northern Kentucky.**<sup>1</sup> Richard L. Boyce - Northern Kentucky University

## PSYCHOLOGY

51. **The Effect of Race and Gender on Likability of Brand Named Products.**<sup>1</sup> Cassie Oelgeschlager - Berea College
52. **Priming effects of alcohol after increased energy drink consumption.**<sup>1</sup> Amy Stamates, Sarah Maloney, Dr. Cecile Marczynski - Northern Kentucky University
53. **The effects of energy drink expectancies on subjective states and behavioral control tasks.**<sup>1</sup> Sarah Maloney, Dr. Cecile Marczynski - Northern Kentucky University
54. **Morphine Administration during Adolescence Leads to Learning Deficits in Adulthood.** Gianni P. Maione, Rachael Whitley, Ilsun M. White - Morehead State University
55. **Physiological Responses Related to Food vs. Non-Food Stimuli & BMI.**<sup>1</sup> Julia Fleming, Annie Wigginton, Hannah Greer, Jennifer Bohnert, Jan Wertz - Centre College
56. **Does the boss's personality affect the quality of the organization? NHA traits and CMS ratings.** Richard Osbaldiston, Kelly Osbaldiston, Jaime Henning - Eastern Kentucky University



57. **Implications of perceived injustice on workplace behaviors: A meta-analysis.** Richard Osbaldiston, Joshua Hager, Jaime Henning - Eastern Kentucky University
58. **Do Zzz's equal A's: The relationship between sleep and memory.** Richard Osbaldiston, Amanda Renfro - Eastern Kentucky University
59. **The Relationship Between Psychopathy, Sensation Seeking, and Deception.** Ashley Dickey - Eastern Kentucky University
60. **The motivational implications of social stereotypes: An exploratory examination of stereotypes about Eastern Kentuckians.** Megan Hogan, David Butz - Morehead



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**CHEMISTRY**

61. **Applications of Si-29 Magic-Angle Flipping Nuclear Magnetic Resonance Experiments to Silicate Glasses.**<sup>1</sup> Pyae Phyo, Jay Baltisberger - Berea College, Kevin Sanders, Eric Keeler, Philip Grandinetti - The Ohio State University
62. **NKU Fullerene Research: Synthesis of Fullerene Complexes via One Pot Method for Solar Cell Applications.**<sup>1</sup> Jessica Horn, Keith A Walters - Northern Kentucky University
63. **NKU molecular wire research: The combination of molecular wire and fullerene synthesis to create a polymer with both fullerenes and transition metals.**<sup>1</sup> Corinne Basinger, Keith A Walters - Northern Kentucky University
64. **New selective nonsteroidal aromatase inhibitors: Synthesis and characterization of 3-phenyl-1H-isochromen-1-one.**<sup>1</sup> Erica Amato, Becca Kidney - Northern Kentucky University
65. **Synthesis of Hydrophilic Polymers Containing a Reactive Thiol Group by RAFT and Aminolysis.** Grace Par - Berea College, Jianwen Xu, Socheata Ly, Jie Song - University of Massachusetts Medical School
66. **NKU Molecular Wire Research: Synthesis of a Pi-Conjugated Polymer via Negishi and LDA Coupling Methods.**<sup>1</sup> Margaret A. Powell, Keith A Walters - Northern Kentucky University
67. **Enzymatic activity of sarco/endoplasmic reticulum calcium ATPase measured by isothermal titration calorimetry.** Manori Jayasinghe, Tony Bankemper, Stefan Paula - Northern Kentucky University

68. **NKU Fullerene Research: Synthesis of novel ligands to connect fullerene and transition metal subunits for supramolecular applications.**<sup>1</sup> Zachary Ewing, Keith A. Walters - Northern Kentucky University
69. **Catalytic Sulfoxidation by Ruthenium Porphyrin Complexes with Iodobenzene Diacetate.** Zhibo Yuan, Tse-hong Chen, Dr. Rui Zhang - Western Kentucky University
70. **Dehydroheteroarylannulenes: Asymmetric isomers of pyridyl [14]-annulenes.**<sup>1</sup> Hillary Anderson, Cameron Johnson, Dr. KC Russell - Northern Kentucky University
71. **Investigating the use of a non-toxic solvent in the loading of Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) into mesoporous silicates.** Daniel Hemmerle, Christine Brandenburg, Isabelle Lagadic - Northern Kentucky University
72. **Mechanistic Investigation on Gold-Catalyzed Microwave-assisted Annulation Reaction.**<sup>1</sup> Timothy Dunn, Lili Ma, Erica Amato - Northern Kentucky University
73. **Synthesis of  $\beta$ -Ketoesters Through Ketene Intermediates.**<sup>1</sup> Michael McCann, Kathryn Risk - Berea College
74. **Silver Filament Formation at Nanogaps Formed from Electro-deposited Silver Nanowires.**<sup>1</sup> Cameron Campbell - Campbellsville University, Nidhi Shah, Francis P. Zamborini - University of Louisville
75. **New Method of  $\beta$ -Ketoester synthesis.**<sup>1</sup> Anna Tribble, Marceline Aengwanama, Mary Robert Garrett - Berea College
76. **NKU Fullerene Research: Shortening the Fullerene Bridge with Phenanthrolines.**<sup>1</sup> Emma Jones, Keith A Walters - Northern Kentucky University
77. **Chemical Modeling of Newly Detected  $\text{CH}_3\text{CHNH}$  molecule in Sgr B2.**<sup>1</sup> Dhruv Patel, Donghui Quan - Eastern Kentucky University
78. **NKU Fullerene Research: Functionalization of fullerene, coronene, and corannulene for organometallic systems utilizing microwave synthetic methods.**<sup>1</sup> Chad Maschinot, Keith A. Walters - Northern Kentucky University
79. **Absolute photolysis rates of estrone and estrone 3-methyl ether in multiple solvents.**<sup>1</sup> Krista Loose, Daniel Ghere - Northern Kentucky University
80. **Synthesis of Internally-Quenched Fluorescent Peptide Substrates for the Peptidase Neurolysin.**<sup>1</sup> Elijah Whitaker, Garrett Cairo, Courtney Howard, Matthew Saderholm - Berea College

81. **Photopatterning of Ethylene Glycol Diacrylate and Evaluation by Scanning Electron Microscopy.**<sup>1</sup> Connor Thomas Smith - Eastern Kentucky University
82. **“Enzymatic Analysis of Antioxidant Enzymes in Wistar Rats with a Moderate Traumatic Brain Injury: A Dosage Dependent Approach.”** Joseph Johnson, ReBecca Williams - Eastern Kentucky University
83. **Reaction rates of amino acids with analogs of the anticancer drug cisplatin.** Celia Jess Whelan, Kevin M. Williams - Western Kentucky University
84. **Development of a Mathematica-based interface to the potential energy surface library (POTLIB) of chemical reactions.**<sup>1</sup> Aaron Taliaboschi - Western Kentucky University
85. **Creation of Poly(3-hexylthiophene)- Functionalized Silsesquioxane Nanorods for Organic-Based Solar Cells.** David Brown, Nicolas Wright, Hemali Rathnayake - Western Kentucky University
86. **The Effect of Ionic Strength on Symmetry Breaking in Aqueous Nitrate Ion.**<sup>1</sup> Garrett Barnes, Matthew J Nee - Western Kentucky University
87. **Comparison of Algae Culture and Cultivation under Different Lightning Systems.** Pu Zheng, Yan Cao, Wei-ping Pan - Western Kentucky University
88. **New Synthetic Pathway to Triazolium Carbene Complexes.**<sup>1</sup> Leif E.R. Van Laar, Russell D. Hammond II, Alexandria A. Smith, Christa Cherry, Anes Kovacevic - Berea College
89. **Forensic Applications of Desorption Electrospray Ionization (DESI).**<sup>1</sup> Allison Miller, Erica Campbell, Darrin L. Smith, Barbara Wheeler - Eastern Kentucky University
90. **Quantitative structure-activity relationship (QSAR) modeling for the identification of inhibitors of the sarco/endoplasmic reticulum calcium ATPase (SERCA).**<sup>1</sup> Emily Hofmann, Stefan Paula - Northern Kentucky University, John Burden - Spalding University, David Stanton - Proctor & Gamble
91. **Coumarin-based compounds as xanthine oxidase inhibitors.**<sup>1</sup> Taylor Kidd, Rachel Medlock, Jennifer Hand, Manori Jayasinghe, Stefan Paula - Northern Kentucky University
92. **Does a Legal High Contain an Illegal Spike?** Rachel Masek, Diane Vance - Eastern Kentucky University, Christina Curtis, Julie Hickerson, Mike Ward - PremierTox Laboratory
93. **Mercury Analysis in Rafinesque Big Eared Bat Populations.** Lara van der Heiden, Cathleen J. Webb - Western Kentucky University
94. **Synthesis of Sarco-Endoplasmic Reticulum Calcium ATPase (SERCA) Inhibitor for Prostate Cancer Cells.**<sup>1</sup> Katherin Elson - Northern Kentucky University

95. **Comparison of Chemical and Enzymatic Methods in Producing Glucose from Cellulose.** Yunxin Liao, Lin Wu, Buchang Shi - Eastern Kentucky University
96. **Perylenediimide-functionalized silsesquioxane nanoribbons for organic-based photovoltaics.** Lan Xu, Hemali Rathnayake - Western Kentucky University
97. **Synthesis of Fully Aromatic Conjugated Polymers Through Imide Precursors.**<sup>1</sup> Cody Nance - Georgetown College, Matt Milner - Texas State University, Anusree Iyer, Daniel Knauss - Colorado School of Mines
98. **Synthesis and Characterization of Corroles and Iron(III) Corroles.** Tse-Hong Chen, Zhibo Yuan, Dr. Rui Zhang - Western Kentucky University
99. **A Quantitative Structure Activity Relationship for Pyrido[2,3-d]pyrimidine Inhibitors of *Pneumocystis Carinii* Dihydrofolate Reductase.** John E. Burden - Spalding University
100. **Multiple Quantum Transitions of <sup>17</sup>O.**<sup>1</sup> Daniel Pardue\* - Berea College, Richard Wittebort - University of Louisville
101. **Polyoxometalate as guest of metal-organic frameworks.**<sup>1</sup> Nicholas Fedorka, Bangbo Yan - Western Kentucky University
102. **Development of a Nanospray Tandem Mass Spectrometry System for Proteomic Investigations of Fescue Toxicosis.** Deidre Brumfield, Darrin Smith - Eastern Kentucky University
103. **Reactions of the Amino Acids Cysteine, Methionine, and Histidine with Analogs of the Anticancer Drug Cisplatin.** Cynthia Tope, Kevin Williams - Western Kentucky University
104. **Donor and acceptor functionalized silsesquioxane nanoparticles for organic-based solar cells.**<sup>1</sup> John Ferguson - Western Kentucky University
105. **Effect of bulky group of Cisplatin analogs on DNA bases.** Swathi Nandala - Western Kentucky University



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## MICROBIOLOGY

1. **A Tripartite Association Between an Insect, an Endosymbiont and a Parasite.**<sup>1</sup> Donna Williams, Sebastian Sanchez, Rodney King, Keith Philips - Western Kentucky University

2. **Transcriptome Analysis of *Acinetobacter baylyi* ADP1 in Response to DNA Damage.** Joshua C. Ferrell\*, James A. Bradley, Janelle M. Hare - Morehead State University
3. **Discovering if DNA Polymerase IV or V causes rifampin resistance in the *rpoB* gene of *Acinetobacter* strains.** Travis A Witkowski, Alison N Grice, Janelle M Hare - Morehead State University
4. **Down-regulation of multiple viral entry receptors in human T cells cultured in *Uncaria tomentosa* extracts.**<sup>1</sup> Megan Hale, Christina Nichols, Amy Weinstock, Joseph Mester - Northern Kentucky University
5. **Elephant Endotheliotropic Herpesvirus.**<sup>1</sup> Monica Lincoln, Gary S. Hayward, Simon Long - John Hopkins School of Medicine

## PHYSIOLOGY AND BIOCHEMISTRY

6. **Characterization of 5-HT (serotonin) receptor subtypes in *Drosophila melanogaster* larval heart.**<sup>1</sup> Audra Stacy, R.L. Cooper - University of Kentucky, Zamar Majeed - Dept of Biology, Univ of KY & Dept of Biology, College of Sci, Univ of Salahaddin, Erbil, Iraq
7. **Transection of a motor nerve results in a rapid synaptic depression.** Ann S. Cooper, Robin L. Cooper - University of Kentucky
8. **Ritalin and other dopaminergic drugs affect CNS function and development in *Drosophila* larvae.** Jenna M. Rufer - Berea College, Kayla King, Josh Titlow, Robin L. Cooper - University of Kentucky
9. **The regulation and packaging of synaptic vesicles related to recruitment within glutamatergic synapses.** Wenhui Wu, Robin L. Cooper - University of Kentucky
10. **Crayfish hindgut: A model system for examining central and peripheral control mechanisms.**<sup>1</sup> ELLEN BURNS, J.B. POTENZA, R.C. HOLSINGER, M.J. LEBLANCQ, C. MASLINK, A.J. MERCIER, R.L. COOPER - University of Kentucky
11. **Carbohydrate Energy Considerations for Cardiac Function in *Drosophila melanogaster* Larvae.**<sup>1</sup> Jeremy Keathley, Josh Titlow, Robin Cooper - University of Kentucky
12. **The action of stimulating adenylyl cyclase within motor nerve terminals in the regulation of synaptic vesicles.** Weikai Kong, Wenhui Wu, Robin L. Cooper - University of Kentucky
13. **Gene Expression in Native Sunfish as a Biomarker of Contaminant Exposure.**<sup>1</sup> Marina Kirtland, Meredith Eckstein, David Peyton - Morehead State University, Ben Brammell - Asbury University, Andrew Wigginton, Scott Lynn - University of Kentucky

14. **OCT4 in Lamprey Programmed Genome Rearrangement.**<sup>1</sup> Rebecca R. Radcliffe - Kentucky Biomedical Research Infrastructure Network, Melissa C. Keinath, Joseph R. Herdy, Jeremiah J. Smith - University of Kentucky
15. **Interaction of human Fibroblast Growth Factor-1 (hFGF-1) with Anti Angiogenic Drug: myo-Inositol.** Matthew Gonzalez, Rommohan Paripelly, Dillon Pender, Dr. Rajalingam Dakshinamurthy - Western Kentucky University, David Donald - East Tennessee State University
16. **3-Nitrotyrosine as an Oxidative Stress Indicator in Wistar Rats Involving Moderate Traumatic Brain Injuries for Proteomic Analysis.**<sup>1</sup> Moses Henderson, Joseph Johnson, J. Seth Vanzant, Zachariah Sellers, Tanea T. Reed - Eastern Kentucky University
17. **Stability of enzymes from *Thermus thermophilus* in the presence of ionic liquids.** AGATHE ROUBERT,\* PHIL KYLES, and MARTIN BROCK - Eastern Kentucky University
18. **Experimental Analysis of the Relationship Between Parasite Burden and Cognitive Abilities in House Mice (*Mus musculus*).**<sup>1</sup> Carli Whittington, Carlynn Rekosh, Chesika Crump, Terry Derting - Murray State University
19. **Methyl farnesoate as a regulating hormone in the metamorphosis of *Drosophila melanogaster* Larvae: a general dipteran model .**<sup>1</sup> William Assan - Berea College, Hye-Mi Lee, Mitch Wattles, Dr. Grace Jones, Dr. Davy Jones - University of Kentucky
20. **Motor function in *Cyp1a1\_Cyp1a2(-/-)* mice.**<sup>1</sup> Kelsey Taylor, Anna Lang, Helen Garber, Carly Strohmaier, Christine Perdan Curran - Northern Kentucky University
21. **BIOCHEMISTRY Role of ABIN1 Mutation in Lupus Nephritis.**<sup>1</sup> Rebecca K Oliver - Transylvania University, Erik Kort, Dawn Caster M.D. David Powell Ph.D., University of Louisville
22. **Rho kinase inhibition may preferentially target alpha-actin remodeling and fiber maintenance in A7r5 aortic smooth muscle cells.**<sup>1</sup> Sarah M. McClanahan, Josie Maione, William R. Hankinson, Michael E. Fultz - Morehead State University
23. **The Generation of a Combinatorial Library of Post-Translationally Modified Proteins Using a Novel Co-Expression System.** Zachary Losey, Brian Chaffin, Chelsea Brown - Georgetown College, Emerson Dick, Michael L. Bricken, Roberta Magnani, Robert L. Houtz - University of Kentucky, Luke H. Bradley
24. **A Higher-Throughput Platform for Investigating Protein Binding Specificity Using Combinatorial Approaches.** Chelsea Brown, Brian Chaffin, Zac Losey - Georgetown College, Emerson Dick, Luke H. Bradley - University of Kentucky

25. **Compositional Changes in Human Tear Lipids with Meibomian Gland Dysfunction.**<sup>1</sup> Gregory W. Cox - Berea College, Douglas Borchman - University of Louisville
26. **Effects of purple sweet potato powder and dietary calcium intake on body weight of ovariectomized rats.** Lingyu Huang, Cecil Butler, Changzheng Wang - Kentucky State University
27. **Effects of plastic and hay mulches on phenolics content of organic watermelons.** Lingyu Huang, Xueli Zheng, Joni Thompson, Michael Bomford, Changzheng Wang - Kentucky State University

## SCIENCE EDUCATION

28. **The Persistence of Genetics Misconceptions with the Use of Conceptual Change Strategies.** Megan Glassford, Shonna Barnes, Sarah Borgman, Dr. Bethany Bowling - Northern Kentucky University
29. **A summer with the Ohio River STEM institute.**<sup>1</sup> Alexus Rice - Northern Kentucky University
30. **Putting Down Roots in Shifting Sands: Design Adventures in Utila, Honduras.**<sup>1</sup> Eva Griffin, Kelly Kusumoto, Cory Shenk, David Scrivener - Berea College

## ZOOLOGY

31. **Nocturnal habitat selection during spring migration by American woodcock (*Scolopax minor*) in Central Kentucky.** Charles Elliott, Andrew Newman, David Brown - Eastern Kentucky University
32. **Bats of the Lilley Cornett Woods Appalachian Ecological Research Station, Letcher County, Kentucky.** Charles Elliott, Lindsay Conley - Eastern Kentucky University, Brooke Hines, Kentucky Department of Fish and Wildlife Resources
33. **Dispersal ability of the Frecklebelly Darter (*Percina stictogaster*).**<sup>1</sup> Brooke Washburn, Carol-Rose Gingras, David Eisenhour - Morehead State University
34. **Development of jaws and dentition in two morphs of pupfish (*Cyprinodon*) from San Salvador Island, Bahamas.**<sup>1</sup> Emily Madden, Michael Barton - Centre College
35. **Spermatid ultrastructure within the Yellow-bellied Sea Snake, *Pelamis platurus*.**<sup>1</sup> Brenna Burkhart - Wittenberg University, Dr. Kevin Gribbins - Wittenberg University
36. **The germ cell development strategy and seasonal changes in spermatogenesis and to Leydig cell morphologies of the spiny lizard *Sceloporus mucronatus* (Squamata: Phrynosomatidae).**<sup>1</sup> Vitalia Vargo, Jeanette Klamfoth, Kevin Gribbins - Wittenberg University, Oswaldo Hernández-Gallegos, Gisela Granados-González, Maricela Villagrán-Santa Cruz

<sup>1</sup>Undergraduate Research Competition

37. **Ecological Determinates of Geographic Range Size in North American Amphibians.**<sup>1</sup> Shelby R. Timm, Cy L. Mott - Kentucky Wesleyan College
38. **Evidence of social monogamy in green salamanders, *Aneides aeneus*.**  
Paul V. Cupp, Jr. - Eastern Kentucky University
39. **Characterization of the sensory systems in the cercaria of the trematode, *Proterometra macrostoma*.**<sup>1</sup> Rachele Johnson, Kaila Noland, Marc Rowley - Berea College
40. **Ultrastructure of spermiogenesis in the lizard, *Sceloporus consobrinus*.**<sup>1</sup> Jonathan Clinger, Kevin Gribbins - Wittenberg University, Justin Rheubert - Saint Louis University
41. **Breeding biology of Chuck-will's-widows (*Caprimulgus carolinensis*): nesting behavior and nest-site selection.** Ryan S. O'Connor, Gary Ritchison - Eastern Kentucky University
42. **Maggot mass size on the developmental water requirements of forensically relevant flies.**<sup>1</sup> Andrew J. Jajack, Patrick M. Tomko, Andrew E. Rosselot, Jay A. Yoder - Wittenberg University
43. **Importance of a pollen source for growth and establishment of concrete mites as a beneficial predator of insect pests in the landscape.**<sup>1</sup> Patrick M. Tomko, Andrew J. Jajack, Andrew E. Rosselot, Jay A. Yoder - Wittenberg University
44. **Identification of guanine as an arrestant for pheromone-assisted control of the brown dog tick, a common indoor pest of human homes and animal facilities.**<sup>1</sup> Logan M. Griffith, Andrew E. Rosselot, Patrick M. Tomko, Jay A. Yoder - Wittenberg University
45. **The Effect of Temperature on Digestive Flexibility in Mexican Kingsnake Hatchlings (*Lampropeltis Mexicana*).** Benjamin Rausch, Richard Phillips, Kevin Gribbins - Wittenberg University
46. **Male Carolina Chickadees provide more parental care.**<sup>1</sup> Cassie Volker, Lindsey Walters - Northern Kentucky University
47. **Bird blow flies have no effect on the reproductive success of Carolina Chickadees (*Poecile carolinensis*).**<sup>1</sup> Brittany Jones, Zachary Holtkamp, Lindsey Walters - Northern Kentucky University
48. **Ultrastructural study of spermatids within the lizard, *Sceloporus variabilis*.**<sup>1</sup> Caroline L. Matchett, Kevin M. Gribbins - Wittenberg University
49. **Diurnal Activities and Metabolism of the Lazarus Lizard (*Podarcis muralis*) as an Introduced Species.**<sup>1</sup> Wesley Parsons, James "Mitch" Mercer, Richard D. Durtsche - Northern Kentucky University
50. **Effects of Wastewater Treatment on Fish and Macroinvertebrate Communities in Madison County, KY.** DANIEL RATTERMAN - Eastern Kentucky University



51. **Dietary partitioning as a mechanism of kin selection among larvae of a facultatively paedomorphic salamander, *Ambystoma talpoideum*.**<sup>1</sup> Haris Dzaferbegovic, Shelby R. Timm - Kentucky Wesleyan College, Cy L. Mott - Valdosta St. University/ Kentucky Wesleyan College
52. **Yellow pan traps as an efficient method to assess beetle diversity.** Jacklyn Carder, Rebecca Roberts, Dr. Sean O'Keefe - Morehead State University
53. **Effects of Size Asymetry on Territorial Behavior in Skunk Loach *Yasuhikotakia morleti*.**<sup>1</sup> Jacob Daly, Piyumika Suriyampola, Dr. Perri Eason - University of Louisville
54. **Beetles as a Tool for Conservation: Preliminary Assessment of Beetle Biodiversity at Wolf Penn Sites in the Daniel Boone National Forest.** Rebecca Roberts, Jackie Carder, Sean O'Keefe - Morehead State University



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## **CELLULAR AND MOLECULAR BIOLOGY**

55. **Genetic structure of a California newt metapopulation on a protected landscape.** Dana Leigh - Eastern Kentucky University, Dr. Jarrett Johnson, Kevin Tewell - Western Kentucky University
56. **Determining Levels of Bax and Bcl-xL in Human Adenocarcinoma Lung Cells Treated with High Concentrations of Cadmium Chloride and Sodium Arsenate.** Kathleen Gallagher, Rachel Amshoff, Mary Huff - Bellarmine University
57. **Genetic information on the tip of maize abnormal chromosome 10 distal to the D(f)L breakpoint is unique from that of maize normal chromosome 10.** Ethan Coursey - Kentucky Wesleyan College, Elizabeth Lowry, Lisa Kanizay - University of Georgia, R. Kelly Dawe - University of Georgia
58. **The effect of TGF- $\beta$  on renal interstitial cells and the progression of tubulointerstitial fibrosis.** Karen Reynolds - Berea College, Leslie Gewin, Roy Zent - Vanderbilt University
59. **The Stimulation of cAMP and its Effects on MnSOD.** Brenda Patel and Alexandra Ortiz - Georgetown College, John D'Orazio, Markey Cancer Center

60. **The role of Autophagy in Programmed Cell Death.**<sup>1</sup> Savannah Pepper - Kentucky Wesleyan College, Dan Ledbetter, Dr. Edmund Rucker - University of Kentucky
61. **The Role of *D. melanogaster* SERF in Proteostasis.**<sup>1</sup> Haris Dzaferbegovic - Kentucky Wesleyan College, Susan Harrison, Swagata Gosh, Douglas Harrison - University of Kentucky
62. **Comparison of Fitness Associated Traits in Lines of Maize (*Zea mays*) with Abnormal Chromosome-10.**<sup>1</sup> Josiah Zachary - Kentucky Wesleyan College, R. Kelly Dawe - University of Georgia, Athens
63. **Bactericidal activity of starch-encapsulated gold nanoparticles.**<sup>1</sup> Helen Y. Thompson, Dillon S. Pender, Lakshmisri M. Vangala, Vivek D. Badwaik, Chad B Willis, Tejas N Sangoi, Rammohan Paripelly, Rajalingam Dakshinamurthy - Western Kentucky University
64. **Surveillance of Avian Influenza in waterfowl.**<sup>1</sup> Wendell Bliss - Berea College, Jacqueline Nolting, Richard Slemons - The Ohio State University
65. **Investigating the Role of Protocadherin 24 in Bacterial Attachment to Microvilli.**<sup>1</sup> Aung Soe Lin - Berea College, David A. Shifrin, Scott W. Crawley, Jessica N. Mazerik, Nathan Grega Larson, Matthew J. Tyska - Vanderbilt University
66. **Plant-based Production of Bi-specific HIV Inhibitor as Topical Microbicide.**<sup>1</sup> Daniel Speer - Kentucky Wesleyan College, Adam Husk, Nobuyuki Matoba - Owensboro Cancer Research Program
67. **Cardioglycoside stimulated association between Na-K-ATPase and NHE-1 : A TIRF and FRET Analysis.**<sup>1</sup> Brandon C. Farmer - Western Kentucky University, Rebecca D. Murray, Syed J. Khundmiri - University of Louisville
68. **Role of HLA Class II Polymorphisms on Staphylococcal Superantigen Pathogenicity.**<sup>1</sup> Alyssa Quiray - Berea College, Chella S. David, Govindarajan Rajagopalan, Ashenafi Tilahun - Mayo Clinic
69. **The effect of light on astrocyte morphology in *Gallus gallus domesticus*.** Tasha E Payne - Berea College, Jiffin Paulose, Gang Wang, Brandon Schelter, Vincent Cassone - University of Kentucky

## COMPUTER AND INFORMATIONAL SCIENCE

70. **Retrieval of Enzyme Category and Subcellular Localization for Use in Metabolic Network Analysis.**<sup>1</sup> Eugene W. Hinderer - Bellarmine University, Hunter N.B. Moseley - University of Louisville

## ENGINEERING

71. **Dependence of Volume of Distribution on Gel Strength for Convection Enhanced Delivery of drugs to the Brain.**<sup>1</sup> Kunal Sunthakar, Christopher A. Brown, Alyssa Fountain, Peter A. Hardy, Luke H. Bradley - University of Kentucky

## AGRICULTURAL SCIENCES

72. **Students assess capacity of college farm to supply dining hall at Berea College: Is producing 25% of the food an achievable goal?** Sean Clark - Berea College
73. **Mold screening honey as a means to identify potential at-risk bee colonies from fungicide spraying, with a focus on blue honey from the North Carolina Sandhills.** Jay A. Yoder - Wittenberg , Logan Griffith, Andrew J. Jajack, Andrew E. Rosselot – Wittenberg
74. **Feasibility of pastured broiler production on a student-managed farm.**<sup>1</sup> Dallas Cook, Jennifer Rominger - Berea College
75. **Breeding a more cold tolerant ornamental.**<sup>1</sup> Loyd Britt, Dr. Martin Stone - Western Kentucky University, Dr. Martin Stone, Department of Agriculture
76. **Improving the sustainability of small-scale, pond aquaculture.**<sup>1</sup> Sabrina Barnes - Berea College
77. **Phenolic content and antioxidant capacity of spicebush (*Lindera benzoin* L.) tea.** Hideka Kobayashi, Changzheng Wang, George Antonious - Kentucky State University
78. **Two Years of Production Data from Prime-Ark®45 and Prime-Jan® Primocane Fruiting Blackberries Grown Organically in Kentucky.** Jeremiah D. Lowe, Kirk W. Pomper, Sheri B. Crabtree - Kentucky State University, John R. Clark - University of Arkansas, John G. Strang - University of Kentucky
79. **Differences in Ease of Processing of Three Commercially Available North American Pawpaw Cultivars.** Sheri Crabtree, Brandon May, Kirk Pomper, Jeremiah Lowe - Kentucky State University
80. **Feasibility of a free-range egg enterprise at Berea College.**<sup>1</sup> Amanda Benitez, Makala Settlege - Berea College
81. **Incidence of Stink Bugs in Organically Grown ‘Prime Jan’ and ‘Prime Jim’ Blackberries in Central Kentucky.** Irina Howard, John D. Sedlacek, Karen L. Friley, Kirk W. Pomper, Jeremiah D. Lowe, Michael K. Bomford, Sheri B. Crabtree - Kentucky State University

82. **Development of a Baccalaureate Degree Program in Agriculture, Food, and Environment and Supporting Research Opportunities at Kentucky State University.** Kirk W. Pomper, Michael Bomford, John Sedlacek, George Antonious, Avinash Tope, Kenneth Andries, James Tidwell, Teferi Tsegaye - Kentucky State University
83. **Energy return on investment for small-scale ethanol fuel production from sweet sorghum.** Jon Cambron, Michael Bomford, Tony Silvernail, Joni Nelson - Kentucky State University

## HEALTH SCIENCES

84. **Attraction of deer tick larvae to copperhead snake excreta and shed skins, with uric acid and squalene, as host cues, and its implications for Lyme disease.**<sup>1</sup> Andrew E. Rosselot, Jay A. Yoder, Logan M. Griffith, Andrew J. Jajack - Wittenberg University
85. **Histological Analysis of Atp13a2-Deficient Mice.**<sup>1</sup> Abbey Bailes, Christina Basinger, Amy Clippinger, Molly Briggs, Kelsey Carnahan, Patrick J. Schultheis - Northern Kentucky University
86. **Innate Immune Response to Human Metapneumovirus G Peptides.**<sup>1</sup> Beris Dizdar, Joseph Mester - Northern Kentucky University
87. **Health Sciences Early Diagnosis of Malignant Lung Nodules Using 3D Shape Analysis.**<sup>1</sup> Katherine Webb - Berea College, Ayman El-Baz - University of Louisville

## Past Presidents of the Kentucky Academy of Science

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

## Past Meeting Locations of the Kentucky Academy of Science

1914-33	No records available	1969	Murray State University
1935	University of Kentucky	1970	Georgetown College
1936	Western Kentucky State College	1971	Eastern Kentucky University
1937	University of Louisville	1972	Morehead State University
1938	Morehead College	1973	Transylvania College
1939	Murray State College	1974	Centre College
1940	University of Kentucky	1975	University of Louisville
1941	Eastern Kentucky State College	1976	University of Kentucky
1942	University of Kentucky	1977	Western Kentucky University
1943	University of Louisville	1978	Eastern Kentucky University
1944	University of Kentucky	1979	Northern Kentucky University
1945	No annual meeting	1980	Transylvania University
1946	University of Louisville	1981	Murray State University
1947	Western Kentucky State College	1982	Ashland Oil, Inc.
1948	University of Kentucky	1983	University of Louisville
S1949	Cumberland Falls State Park	1984	Kentucky State University
F1949	Eastern Kentucky State College	1985	Morehead State University
1950	University of Louisville	1986	Lexington, Ky (with SSMA)
1951	University of Kentucky	1987	Western Kentucky University
1952	Georgetown College	1988	Eastern Kentucky University
S1953	Ashland	1989	University of Kentucky
F1953	University of Kentucky	1990	Northern Kentucky University
S1954	Berea College	1991	Owensboro
F1954	University of Louisville	1992	Ashland Community College
S1955	Cumberland Falls State Park	1993	Georgetown College
F1955	Kentucky State College	1994	Paducah Community College
1956	Eastern Kentucky State College	1995	Western Kentucky University (Joint Meeting with TAS)
1957	Western Kentucky State College and Mammoth Cave State Park	1996	Kentucky State University
F1957	Berea College	1997	Morehead State University
S1958	National Bridge State Park	1998	Jefferson Community College, S.W.
F1958	University of Kentucky	1999	Eastern Kentucky University
S1959	Lake Cumberland State Park	2000	University of Kentucky
F1959	Western Kentucky State College	2001	Middle Tennessee State (Joint Meeting with TAS)
S1960	Murray State College	2002	Northern Kentucky University
F1960	University of Louisville	2003	Western Kentucky University
S1961	Morehead State College	2004	Murray State University
F1961	University of Kentucky	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		

### 99th Annual Meeting of the Kentucky Academy of Science

Host: Morehead State University

# NOTES

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