



**KAS**

**Kentucky Academy of Science**

**96th ANNUAL MEETING**

Hosted by:

Western Kentucky University

Bowling Green, Kentucky

November 12-13, 2010



**KAS - 96 Years Serving Kentucky**

## EXHIBITORS AND SPONSORS

### SPONSORS

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B&B Microscopes, Ltd  
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Integrated Programs in Biomedical Sciences-University of Louisville  
Kentucky Biomedical Research Infrastructure Network (KBRIN)  
Integrated Biomedical Science-University of Kentucky College of Medicine  
University of Kentucky College of Pharmacy  
University of Louisville School of Dentistry  
University of Louisville School of Interdisciplinary and Graduate Studies  
Western Kentucky University Ogden College of Science and Engineering

## 2010 KAS AFFILIATES

### ENHANCED

Bellarmino University  
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Brescia University  
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Eastern Kentucky University  
Georgetown College  
Kentucky Community and Technical College System  
Kentucky State University  
Morehead State University  
Murray State University  
Northern Kentucky University  
Spalding University  
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University of Kentucky  
University of Louisville  
Western Kentucky University

### PATRON

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### MEMBERS

Asbury College  
Kentucky American Water Company  
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Thomas More College  
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Wood Hudson Cancer Research Laboratory

### ASSOCIATE MEMBER

WKU Hoffman Environmental Research Institute

# **WELCOME**

## **TO THE 96<sup>TH</sup> ANNUAL MEETING OF THE KENTUCKY ACADEMY OF SCIENCE**

Western Kentucky University would like to welcome the Kentucky Academy of Science back to Bowling Green for its 96th annual meeting. It is the 10th time WKU has hosted the KAS and 7 years since the last meeting. WKU and the city have changed considerably since 2003, most notably enrollment at WKU has grown over 13% to 20,855 students this fall. The new 76,000 square foot, Complex for Engineering and Biological Sciences was completed in the fall of 2005 and the new Snell Hall, housing Biology, Chemistry and Computer Science classrooms and laboratories, was completed in the summer of 2009. In addition, WKU is now host to the Carol Gatton Academy of Mathematics and Science in Kentucky as well as the SKyTeach program (supported by a grant from Exxon Mobil via the National Mathematics and Science Institute) to better prepare more math and science teachers through inquiry-based instruction. We continue to assist government, business and industry with technical problems while providing our students hands-on applied research experiences through WKU's Applied Research and Technology Program (ARTP) now in its 12<sup>th</sup> year.

The local arrangements committee hopes that this year's KAS meeting will continue its long tradition of providing opportunities to present research, exchange new ideas, greet old friends and make new ones. This year the KAS is meeting jointly with the KY/TN Regional Branch of the American Society for Microbiology. In keeping with the microbiological theme, our Friday Symposium speaker will be Dr. Stanley Maloy, Professor of Biology from the University of California, Irvine, who will speak on Emerging Diseases. The Saturday Plenary Session will be a panel discussion of industry representatives that will focus on the skills students need to get jobs in the STEM disciplines. KAS will also host the KY Biomedical Research Infrastructure Network (KBRIN) who will present an NIH Proposal Development Workshop. The 2010 meeting will continue to recognize the winners of the Undergraduate Research Competition at the awards banquet on Saturday night. This year, in an attempt to streamline the banquet itinerary, there will be no keynote speaker at the banquet.

Western Kentucky University has been pleased to support the Kentucky Academy of Science over the years as an Enhanced Academic Affiliate member and through service and leadership from its faculty. As WKU has entered its second century, we look forward to continued growth and continued service to the Commonwealth of Kentucky and the region. If we can help make your stay in Bowling Green more pleasant, please let us know. Have a great meeting.

**Ken Crawford**  
Chair, Local Arrangements Committee

# KENTUCKY ACADEMY OF SCIENCE

96th Annual Meeting

November 12 - 13, 2010

Hosted by Western Kentucky University  
Bowling Green, KY

## GOVERNING BOARD

Executive Committee

President.....	Nancy Martin University of Louisville
President-Elect .....	Barbara Ramey Eastern Kentucky University
Vice President .....	Dawn Anderson Berea College
Past President .....	Robin Cooper University of Kentucky
Secretary.....	Robert Kingsolver Bellarmine University
Treasurer .....	Kenneth Crawford Western Kentucky University
Executive Director.....	Jeanne Harris Kentucky Academy of Science
Editor, JOURNAL.....	David White Murray State University
Editor, NEWSLETTER.....	Susan Templeton Kentucky State University
Director, Junior Academy of Science.....	Ruth Beattie University of Kentucky

## Division Representatives and At-Large Members

Richard Durtsche (2011 - Biological Sciences).....	Northern Kentucky University
Ron Jones (2013 - Biological Sciences).....	Eastern Kentucky University
Eric Jerde (2010 - Physical Sciences).....	Morehead State University
K.C. Russell (2012 - Physical Sciences) .....	Northern Kentucky University
Judy Voelker (2010-Social & Behavioral Sciences)...	Northern Kentucky University
Sean Reilley (2012 - Social & Behavioral Sciences) .....	Morehead State University
Cheryl Davis (2011 - At - Large).....	Western Kentucky University
Mary Janssen (2013-At-Large) ...	Kentucky Community & Technical College System
Robert Creek (Program Coordinator).....	Eastern Kentucky University
Claire Rinehart (Editor, Webpage).....	Western Kentucky University
Nancy Martin (AAAS/NAAS Representative).....	University of Louisville

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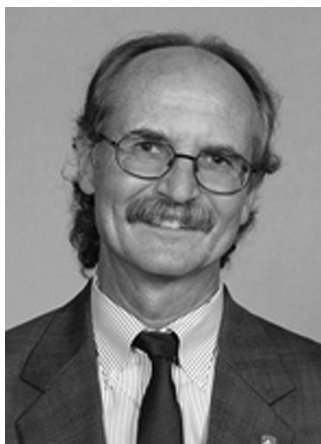
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## SYMPOSIUM

Friday, November 12, 2010  
Snell 2113  
7:00 – 8:00 pm

**Presiding:** Dr. Rodney King  
Associate Professor of Biology  
Western Kentucky University  
Kentucky/Tennessee Branch of the American Society for Microbiology

### “One Health: Humans, Animals and the Environment”



**Stanley Maloy, Ph.D.**  
Dean, College of Sciences  
Professor of Biology  
University of California, Irvine

After earning a Ph.D. in Molecular Biology and Biochemistry from the University of California at Irvine, Stanley did postdoctoral work in Genetics at the University of Utah, then joined the University of Illinois, Urbana-Champaign faculty in 1984 where he was promoted through the ranks to Professor and Director of the Biotechnology Center. In August, 2002 he moved to San Diego State University as founding Director of the Center for Microbial Sciences and Professor of Biology.

Stanley is Past-President of the American Society for Microbiology, the oldest and largest single life science membership organization in the world. He has had numerous affiliations with Cold Spring Harbor Laboratory, teaching the summer course in Advanced Bacterial Genetics from 1990-1995, the advanced graduate course in Microbial Pathogenesis at the Watson Graduate School from 2002-2006, and was co-founder of the international symposium on Microbial Pathogenesis and Host Response. He has also taught numerous international courses and organized many international scientific meetings. He is the author of several books including a widely used textbook of Bacterial Genetics, and has won multiple awards for teaching. He has consulted for large companies and small, biotech start-up companies, served on the Scientific Advisory Board of several companies, and is currently Chief Scientific Officer of Vaxion Therapeutics. He served as chair of the NIH MBC1 Study Section and has on panels for the NIH, NSF, USDA, NAS, AHA, and international funding agencies.

Research in his lab focuses on bacterial physiology, genetics, genomics, and pathogenesis.

## PLENARY SESSION – Panel Discussion

Saturday, November 13, 2010  
Snell 2113  
4:15 - 5:15 pm

### Welcome

Dr. Nancy Martin  
President - KAS  
University of Louisville

**Presiding:** Dr. Barbara Ramey  
President-elect - KAS  
Eastern Kentucky University

## “Skills Required for 21st Century Careers in Science”

### Panel Members:

Michael Leal, Assistant General Manager,  
Toyota Motor Manufacturing, Kentucky, Inc.

Karl Scharrer, Supply Chain Manager, American Synthetic Rubber Company

Laura Sudkamp, Director of Kentucky Central Forensic Laboratory

Helge Toufar, Technical Director of Sud-Chemie Inc.



### Michael Leal

Assistant General Manager  
Toyota Motor Manufacturing Kentucky, Inc.

Michael Leal graduated from GMI Engineering & Management Institute (Kettering University) with a Bachelor of Science in Industrial Engineering in 1990 and earned a Master of Science in Manufacturing Management in 1997 also from GMI Engineering and Management Institute. Mr. Leal began working for General Motors in Flint Michigan as a co-op student in 1985 at AC Spark Plug (Delphi) and worked for GM until 2001. He also worked for Ford Motor Company from 2001 - 2003 before moving to Toyota Manufacturing in 2003. He currently serves as the Assistant General Manager of Body Operations at the Toyota Georgetown Kentucky plant.

## PLENARY SESSION – Panel Discussion (Continued)



### **Karl Scharrer**

Portrait of Mr. Karl Scharrer  
American Synthetic Rubber Co / Michelin  
North America

Karl Scharrer pursued his undergraduate and graduate studies at the University of Louisville where he earned a BA in chemistry and participated in the PhD program. Mr. Scharrer joined the ASRC / MNA group in 1989 at the Louisville, KY polymer site as a quality control chemist before moving into research and development where his work was centered on modified Ziegler-Natta first-row transition metal catalysis and butadiene polymerization to high cis-1,4-polybutadiene. His academic research was focused in physical-inorganic chemistry and electron paramagnetic spectroscopy and was collaboratively supported by the University of Louisville and ASRC / MNA. During his 21-year career with ASRC / MNA, Mr. Scharrer has held management positions in technical, manufacturing process, and administrative areas. He currently manages a team that is responsible for manufacturing planning, logistics, inventory control, and sales. Karl enjoys running, road biking, Indianapolis Colts football, and travel. He and wife, Alice, currently live in Sellersburg, Indiana



### **Laura Sudkamp**

Director, Kentucky Central Forensic  
Laboratory

Laura Sudkamp graduated from the University of Kentucky with a Bachelors Degree in Chemistry. Ms. Sudkamp has worked with the Kentucky State Forensic Laboratories for 21 years. She started as an intern in the Forensic Biology section, was a Drug Chemist for 9 years, and then was promoted to Supervisor over the HIDTA Marijuana Signature Laboratory Research Project in 1998. In 2000 she was promoted and served as the Administrative Laboratory Manager writing and administering grants for the laboratories along with overseeing all of the purchasing for the six laboratories. After four years she took on the duties of the Operations Laboratory Manager. As the Operations Manager, she is responsible for the day-to-day operations of the Central Lab as well steering the entire six laboratory system through accreditation and long term planning processes. She is responsible for the overall quality of the analytical work and services provided by the six laboratories. She currently sits on the Board for the American Society of Crime Laboratory Directors. Ms. Sudkamp lives in Frankfort with her husband of 20 years. They have two high school aged children.



## PLENARY SESSION – Panel Discussion (Continued)



### **Helge Toufar**

Technical Director, Sud-Chemie Inc.

Helge Toufar was born in Dessau, Sachsen-Anhalt / East Germany. He graduated in Technical Chemistry with focus on Heterogeneous Catalysis at the Technical University of Merseburg, Germany and obtained a Ph.D. for work about isomorphous substituted zeolites in 1992. He worked in academic positions at the Fritz-Haber-Institute of the Max-Planck Gesellschaft in Berlin, Germany, the Martin-Luther University in Halle, Germany, and the Center for Surface Science and Catalysis of the Catholic University of Louvain, Belgium. Through a cooperation between the University of Halle and the US based company Tricat Industries and its subsidiaries Zeosorb and Tricat Zeolites he became involved in process development and plant design for a new zeolite manufacturing plant in Bitterfeld, Germany. Dr. Toufar joined the company as Head Research and Development and overlooked design, construction and startup of the new facility which was completed in 2000. In 2003 he additionally assumed responsibility for zeolite sales and marketing in Central and Eastern Europe. After acquisition of Tricat Zeolites by Sud-Chemie in 2006 he coordinated the implementation of new products and processes. Since 2009 he took responsibility for the Technical Department of Sud-Chemie Inc. in Louisville, overlooking Research & Development activities as well as analytical services for the catalyst business in the Americas.

## Kentucky -Tennessee branch of the American Society for Microbiology



The Kentucky-Tennessee branch of the American Society for Microbiology is pleased to hold our Annual Fall Conference in conjunction with the Kentucky Academy of Science.

The American Society for Microbiology is the world's oldest and largest single life science membership organization. The mission of the ASM is to advance the microbiological sciences as a vehicle for understanding life processes and to apply and communicate this knowledge for the improvement of health and environmental and economic well-being worldwide. To achieve these goals, ASM:

- Supports programs of education, training and public information;
- Publishes journals and books; convenes meetings, workshops and colloquia;
- Promotes the contributions and promise of the microbiological sciences;
- Recognizes achievement and distinction among its practitioners;
- Sets standards of ethical and professional behavior.

Eligibility for Full Membership in the ASM is open to any person who is interested in microbiology and holds at least a bachelor's degree or equivalent experience in microbiology or related field. Many members hold advanced degrees, including a large number at the master's, PhD, ScD, DrPH and MD level. A regularly matriculated student of microbiology or a related field is eligible to become a student member. There are also separate membership categories for postdoctoral fellows and for transitional scientists in the early years of a career.

ASM's thirty-five Branches are organized by geographical territories that are defined by one or more states and/or zip code areas. Branches are individually chartered, elect their own officers, set their own dues, and determine their own membership criteria. Membership in the National ASM is not required to join a Branch. The Kentucky-Tennessee branch of the ASM strongly encourages student membership in our organization. Additional information about the KY-TN branch and resources for students can be found at: <http://www.asm.org/branch/brkt/homekytn.html>.



# PROGRAM SUMMARY

## FRIDAY, NOVEMBER 12, 2010

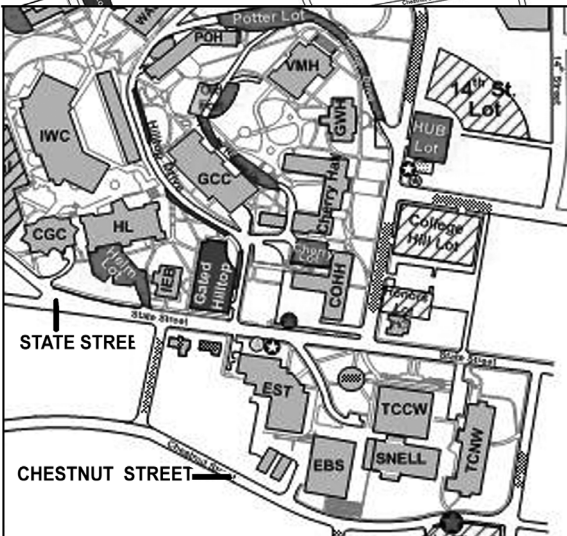
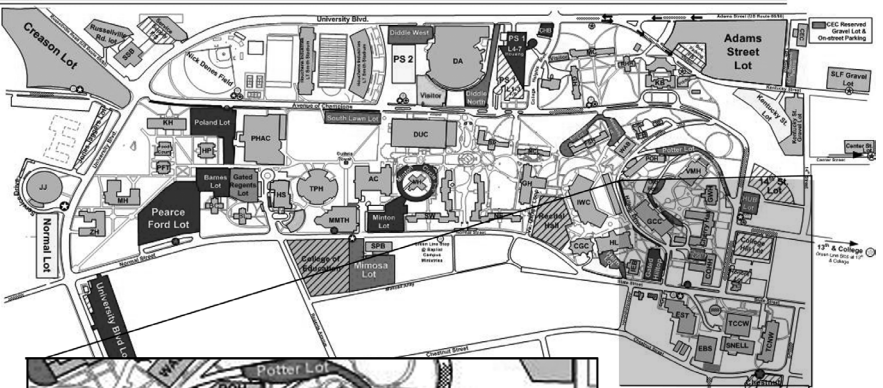
9:00 am - 4:30 pm	KBRIN - NIH Proposal Development Workshop ..... COHH/STH 4123
3:30 pm - 6:00 pm	KAS Governing Board Meeting ..... TCNW 203
6:00 pm - 7:30 pm	Registration..... Lobby of TCCW
7:00 pm - 8:00 pm	<b>SYMPOSIUM</b> ..... Snell 2113 “One Health: Humans, Animals and the Environment” Stanley Maloy, Ph.D. Dean, College of Sciences Professor of Biology San Diego State University
8:15 pm - 9:00 pm	KAS Sectional Officers Meeting ..... Snell 1108
8:15 pm - 10:30 pm	Social ..... Holiday Inn University Plaza

## SATURDAY, NOVEMBER 13, 2010

7:00 am - 5:00 pm	Registration..... Lobby of TCCW
8:00 am - 4:00 pm	Vendor’s Exhibits ..... 3 <sup>rd</sup> Floor Hallway, TCCW
8:00 am - 11:30 am	Paper Sessions ..... See Table of Contents
9:30 am - 9:45 am	Refreshment Break ..... 3 <sup>rd</sup> Floor Hallway, TCCW
8:00 am - 4:00 pm	Scientific Posters on Display. See Poster Section of Program
10:00 am - 11:30 am	Kentucky Community & Technical College Meetings Faculty Meeting ..... COHH 3121 Biology Faculty ..... COHH 3121 Chemistry Faculty..... COHH 3123 Physics Faculty ..... COHH 3119
11:30 am - 12:45 pm	Lunch
11:30 am - 12:45 pm	The KY-TN Branch of the American Society for Microbiology will host a lunch time symposium on Careers in Biotech & Public Health (bring your lunch) ..... Snell 2113 Speakers: Suzanne Kennedy, Ph.D., Director of Research & Development MO BIO Amy Woron, Ph.D., Molecular Biology & Enteric Bacteriology Labs, TN Dept. of Health
11:30 am - 12:45 pm	KAS Past President’s Luncheon ..... Snell 1105
1:00 pm - 4:00 pm	Paper Sessions ..... See Table of Contents

- 2:00 pm – 3:30 pm KY- TN ASM Business Meeting ..... EBS 2134
- 2:15 pm - 2:30 pm Refreshment Break ..... 3<sup>rd</sup> Floor Hallway, TCCW
- 4:15 pm - 5:15 pm **PLENARY SESSION -PANEL DISCUSSION**..... Snell 2113  
 “Skills Required for 21st Century Careers in Science”  
 Panel Members  
 Michael Leal, Assistant General Manager Toyota Motor  
 Manufacturing Kentucky, Inc  
 Karl Scharrer, Supply Chain Manager American Synthetic  
 Rubber Company  
 Laura Sudkamp, Director of Kentucky Central Forensic  
 Laboratory  
 Helge Toufar, Technical Director of Sud-Chemie Inc.
- 5:30 pm - 6:30 pm Annual KAS Business Meeting  
 and Reception.....Potter Room, Van Meter Hall
- 6:30 pm - 9:00 pm **ANNUAL AWARDS BANQUET**.... Garrett Ball Room (GCC)

WKU Parking & Transportation Services



**KEY**  
**COHH:** College High Hall  
**EBS:** Engineering & Biological Sciences  
**GCC:** Garrett Conference Center  
**TCCW:** Thompson Complex Central Wing  
**TCNW:** Thompson Complex North Wing  
**VMH:** Van Meter Hall

# **Western Kentucky University Local Arrangement Committee**

Ken Crawford – Chair

Martin Stone - Agriculture

Larry Alice – Biology

Kate Webb – Chemistry

Ed Kintzel - Physics and Astronomy

Doug Smith - Sociology

## **PRESENTATIONS**

### **AGRICULTURAL SCIENCES**

Karen Friley, Chair  
Kentucky State University

Stephen King, Secretary  
Western Kentucky University

**SATURDAY, NOVEMBER 13, 2010  
TCCW 402**

- 8:00 am **Effect of Pigweed, *Amaranthus hybridus*, on Attractancy of Methyl Salicylate-Based PredaLure Lures for Pink Lady Beetle, *Coleomegilla maculata*, and Asian Lady Beetle, *Harmonia axyridis*.** John D. Sedlacek - Kentucky State University, Karen L. Friley - Kentucky State University
- 8:15 am **Heavy Metals in Sweetpotato Grown in Soil Fertilized with Municipal Sewage Sludge.** George Antonious\* - Kentucky State University, Sam Dennis - Tennessee State University, Jason Unrine - University of Kentucky, John Snyder - University of Kentucky
- 8:30 am **Yield of Vegetables Grown on Organic Amended Soil.** Eric T. Turley - Kentucky State University, Regina R. Hill - Kentucky State University, George F. Antonious - Kentucky State University
- 8:45 am **Timing of Primocane Mowing Influences Flowering and Ripening Time in Primocane Fruiting Blackberry Selections in Kentucky.** Karen L. Friley - Kentucky State University, John. D. Sedlacek - Kentucky State University, Kirk W. Pomper - Kentucky State University, Jeremiah D. Lowe - Kentucky State University, Sheri B. Crabtree - Kentucky State University, Michael K. Bomford - Kentucky State University
- 9:00 am **Potential of Kentucky Freeway Rights of Way to Displace Fossil Fuel Consumption through Production of Prairie Switchgrass, *Panicum virgatum*.** Michael Bomford - Kentucky State University, Tamara Sluss - Kentucky State University, Sharmali Hansford - Kentucky State University, Ken Bates - Kentucky State University
- 9:15 am **Land, labor, and energy efficiency of alternative biofuel feedstock crops at three farm scales.** Anthony Silvernail - Kentucky State University, Michael Bomford - Kentucky State University, Michael Ward - Kentucky State University, John Cambron - Kentucky State University
- 9:30 am **Break** - Hallway near Registration Area, TCCW
- 9:45 am **Residues of Clomazone in Soil and Water.** Regina R. Hill - Kentucky State University, Eric T. Turley - Kentucky State University, George F. Antonious - Kentucky State University

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

- 10:00 am **Using a Becker-deGroot-Marschak Experimental Auction to Evaluate the Willingness to Pay for Freshwater Prawn (*Macrobrachium rosenbergii*) in Kentucky.** William Rimmele - Kentucky State University, Siddhartha Dasgupta - Kentucky State University
- 10:15 am **Using Arbuscular Mycorrhizae to influence yield, vegetative quality, and nutrient uptake in conventional vs. organic production.**<sup>2</sup> Gary T. Cundiff - Western Kentucky University, R.A. Gilfillen - Western Kentucky University, A.P. Netthisinghe - Western Kentucky University, R. L. Dennis - Western Kentucky University, K.L. Cook - USDA- ARS Bowling Green KY, M. Jn-Baptiste - USDA- ARS Bowling Green KY
- 10:30 am **Effectiveness of Row Covers.**<sup>2</sup> Michael J Ward - Kentucky State University, Michael K Bomford - Kentucky State University, Tony F Silvernail - Kentucky State University
- 10:45 am **The Effects of Multispecies Grazing Pasture Management and Utilization.**<sup>2</sup> Chelsea Williams - Western Kentucky University, Paul B. Woosley - Western Kentucky University, Linda B. Gonzales - Western Kentucky University, Elmer Gray - Western Kentucky University, David Stiles - Western Kentucky University
- 11:00 am **A field comparison of data collection efficiency using the iPod Touch and paper-based systems.**<sup>2</sup> Jon Cambron - Kentucky State University, Michael Bomford - Kentucky State University
- 11:15 am **Irrigation Volume and Distribution Influence upon Staked Trickle Irrigated Tomato Yield and Quality in Kentucky.**<sup>2</sup> Nathan Howell - Western Kentucky University, martin stone - Western Kentucky University
- 11:30 am **Lunch**
- 1:00 pm **Genetic Diversity in Five Kentucky Pawpaw Populations Using SSR Markers.**<sup>1</sup> Yankuba Banda - Kentucky State University, Jeremiah D. Lowe - Kentucky State University, Kirk W. Pomper - Kentucky State University, Li Lu - Kentucky State University, Sheri B. Crabtree - Kentucky State University
- 1:15 pm **Impacts of Farming Practices on Soil Physical Properties.**<sup>1</sup> Katie LeBlanc - Murray State University, Dr. Iin Handayani - Murray State University
- 1:30 pm **The effect of adipocyte determination and differentiation factor-1 on fresh pork quality.**<sup>1</sup> Moriah L. Penick - Morehead State University, Rebecca S.E. Miculinich - Morehead State University, Troy J. Wistuba - Morehead State University, Steven J. Moeller - The Ohio State University, Henry N. Zerby - The Ohio State University

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition



- 1:45 pm **Stink Bug Species Associated with Organic Blackberry Production in Kentucky.**<sup>1</sup> Marquita L. Grayson-Holt - Kentucky State University, John D. Sedlacek - Kentucky State University, Karen L. Friley - Kentucky State University, Kirk W. Pomper - Kentucky State University, Jeremiah D. Lowe - Kentucky State University, Michael K. Bomford - Kentucky State University, Christopher M. Wales - Kentucky State University, Rachel S. Hayden - Kentucky State University
- 2:00 pm **Populations of Beneficial Insects in Conventionally Grown Sweet Corn Using Methyl Salicylate Based PredaLure Lures.**<sup>1</sup> Rachel S. Hayden - Kentucky State University, John D. Sedlacek - Kentucky State University, Karen L. Friley - Kentucky State University, Christopher M. Wales - Kentucky State University, Marquita L. Grayson-Holt - Kentucky State University
- 2:15 pm **Break - Hallway near Registration Area, TCCW**
- 2:30 pm **Determination of grass preference of horses on pasture using Near-Infrared Reflectance Spectroscopy.**<sup>1</sup> Rhonda Beasley - Asbury University
- 2:45 pm **Ergovaline levels over time in *Festuca arundinaceae* dried for bedding.**<sup>1</sup> Joel Noah - Asbury University, S. Ray Smith - University of Kentucky, Lori L. Smith - University of Kentucky, Cynthia L. Gaskill - University of Kentucky, Bobby R. Baldrige -
- 3:00 pm **Business Meeting & Selection of Officers**
- 4:00 pm **Break - Hallway near Registration Area, TCCW**
- 4:15 pm **Plenary Session - Snell 2113**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## ANTHROPOLOGY AND SOCIOLOGY

Cheryl Pan, Chair  
University of Kentucky

Changzheng Wang, Secretary  
Kentucky State University

**SATURDAY, NOVEMBER 13, 2010**  
**COHH 3119**

- 8:00 am **A Comparison Of Lemur Conservation And Local Forest Beliefs In Two Forests of Northern Madagascar.** Benjamin Z. Freed - Eastern Kentucky University
- 8:15 am **Major Nutrition and Health Concerns Among People Living in Rural Kentucky.** Changzheng Wang - Kentucky State University, Cecil Butler - Kentucky State University, Lingyu Huang - Kentucky State University
- 8:30 am **The Thailand Archaeometallurgy Project: An Overview.** Judy Voelker - Northern Kentucky University
- 8:45 am **Minimizing Risk by Sharing Resources: Community Supported Agriculture among Organic Farmers in Central California.** Douglas Hume - Northern Kentucky University
- 9:00 am **Delivery of Chinese dance curriculum in a summer camp for school children.**<sup>2</sup> Cheryl Pan - University of Kentucky
- 9:15 am **Examining Prehistoric Small Finds in the Khao Wong Prachan Valley, Thailand.**<sup>1</sup> Matthew Buttacavoli - Northern Kentucky University
- 9:30 am **Break** - *Hallway near Registration Area, TCCW*
- 9:45 am **Hopelessness and Disadvantage Like You: A comparative examination of disadvantaged youth in Mobile and Medellin.**<sup>1</sup> Colleen Wynn - Western Kentucky University
- 10:00 am **Bad College Habits: Who is to Blame?**<sup>1</sup> Samantha Wang - University of Kentucky
- 10:15 am **Early Experiences with Vegetable Consumption and Current Body Weight Status of Kentucky Adults.**<sup>1</sup> Ramona Douglas - Kentucky State University, Changzheng Wang - Kentucky State University, Lingyu Huang - Kentucky State University, Cecil Butler - Kentucky State University
- 10:30 am **Business Meeting & Selection of Officers**
- 11:30 am **Lunch**
- 4:15 pm **Plenary Session** - *Snell 2113*

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## BOTANY

Lawrence Alice, Chair  
Western Kentucky University

Nilesh Sharma, Secretary  
Western Kentucky University

**SATURDAY, NOVEMBER 13, 2010**  
**SNELL 1101**

- 1:00 pm **Woody plants of the Sendero Naturalista, Los Cusingos, Costa Rica** Ronald L. Jones - Eastern Kentucky University, Allen C. Risk - Morehead State University
- 1:15 pm **A ground-based, preliminary inventory of the ferns of Los Cusingos Bird Sanctuary, Costa Rica** Allen C. Risk - Morehead State University
- 1:30 pm **The Natural History of *Physalis carpenteri* (Solanaceae)** Whitson, Maggie - Northern Kentucky University
- 1:45 pm **Relationships among *Rubus* (Rosaceae) species used in traditional Chinese medicine** <sup>2</sup> Yinu Wang - Western Kentucky University, Lawrence A. Alice - Western Kentucky University
- 2:00 pm **Update on the new EKU Herbarium website, database, and imaging project.** Robert Pace - Eastern Kentucky University, Ronald L. Jones - Eastern Kentucky University
- 2:15 pm **Break - Hallway near Registration Area, TCCW**
- 2:30 pm **Treatment with Venus flytrap (*Dionaceae muscipula* Ellis) extract alters the expression of Bax and Bcl-xL in the non-small cell lung cancer line H1793.** <sup>1</sup> Alyssa B. Roby - Bellarmine University, Daniel G. Eschenbach - Bellarmine University, Joann M. Lau - Bellarmine University
- 2:45 pm **Do vascular plants know moss?**<sup>1</sup> Alexia Callihan - Morehead State University, Allen C. Risk - Morehead State University
- 3:00 pm **Business Meeting & Selection of Officers**
- 4:00 pm **Break - Hallway near Registration Area, TCCW**
- 4:15 pm **Plenary Session - Snell 2113**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## CELLULAR AND MOLECULAR BIOLOGY

Joseph Mester, Chair  
Northern Kentucky University

Rajalingam Dakshinamurthy, Secretary  
Western Kentucky University

**SATURDAY, NOVEMBER 13, 2010**  
**TCCW 125B**

- 8:00 am **A novel protease inhibitor regulates tumorigenesis by suppressing apoptosis in *Drosophila melanogaster*.** Ajay Srivastava - Western Kentucky University, Tian Xu - Yale University
- 8:15 am **Novel and Efficient Purification Procedure for Heparin Binding Proteins.**<sup>2</sup> Sumit Batra - Western Kentucky University, Nilesh Sahi - Western Kentucky University, Kristen Mikulcik - Western Kentucky University, Heather Shocley - Western Kentucky University, Camille Turner - Western Kentucky University, Zachery Laux, Vivek Badwaik - Western Kentucky University, Eric Conte - Western Kentucky University, Rajalingam Dakshinamurthy - Western Kentucky University
- 8:30 am **EST database approach to identify anacardic acid biosynthesis genes in geranium trichomes.**<sup>2</sup> Oliver Starks - University of Louisville, Dr. David Schultz - University of Louisville
- 8:45 am **Regulation of eNOS translocation in pulmonary myofibroblasts.**<sup>2</sup> Jon Faughn - Western Kentucky University, Nancy Rice - Western Kentucky University
- 9:00 am **Over expression of "osmotin-chitinase" gene chimera in *Medicago sativa* to develop transgenics resistant to various biotic and abiotic stresses.**<sup>2</sup> Jahnvi reddy Kancharla - Western Kentucky University, Ajay Jain - Western Kentucky University, Shivendra V.Sahi - Western Kentucky University
- 9:15 am **Scoring with NOE Restraints Improves Protein Structure Results.**<sup>1</sup> Louesa Akin - Centre College, Nathan Alexander - Vanderbilt University, Brian Weiner - Vanderbilt University, Nils Woetzel - Vanderbilt University, Mert Karakas - Vanderbilt University, Jens Meiler - Vanderbilt University
- 9:30 am **Break - Hallway near Registration Area, TCCW**
- 9:45 am **Effect of Ouabain on Intracellular pH in Olfactory Neuroepithelial Progenitor Cells Derived from Bipolar Patients and Psychiatrically Healthy Controls.**<sup>1</sup> Adam Chambers - Berea College, Yonglin Gao - University of Louisville, Zhenmin Lei - University of Louisville, Chengliang Lu - University of Louisville, Fred J. Roisen - University of Louisville, Rif S. El-Mallakh - University of Louisville

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

- 10:00 am **Cytotoxicity Effects of a Chemotherapeutic Drug 7-t-butyl-dimethylsilyl-10-hydroxycamptothecin (DB-67) on Prostrate Cancer Cell Lines.**<sup>1</sup> Diana Sanchez - Asbury University, Dr. Bruce Branan - Asbury University, Dr. Markos Leggas - University of Kentucky
- 10:15 am **The Effect of Oral Tolerance on the Th17 Cell Response.**<sup>1</sup> Laura Brungs - Thomas More College, Mitchell Strohmaier - Thomas More College, K. Siobhan Barone - Thomas More College
- 10:30 am **CD151 clustering by the monoclonal antibody 1A5 abrogates TGF-beta1 induced tumor cell migration.**<sup>1</sup> Kelly Njine Mouapi - Berea College, Will Ashby - Vanderbilt University, Shanna Arnold - Vanderbilt University, Andries Zijlstra - Vanderbilt University
- 10:45 am **Phenotype and function of tyrosine hydroxylase-containing interneurons in the developing rat cerebral cortex.**<sup>1</sup> Meredith Mayfield - Centre College, JB Boone - Centre College, Elizabeth Brooks - Centre College, Ben Cocanougher - Centre College, Laura Hench - Centre College, Donald Allen - Centre College, Sarah Hawkins - Centre College, Stephen Asmus - Centre College
- 11:00 am **The E3 ubiquitin ligase NEDD4L interacts with and polyubiquitinates delta-Np63-alpha following genotoxic stress.**<sup>1</sup> Alisha M. Holmberg - Berea College, Christopher E. Barton - Vanderbilt University, Deborah J. Mays - Vanderbilt University, Jennifer A. Pietenpol - Vanderbilt University
- 11:15 am **Screening RNAi transformants of *Chlamydomonas* for reduced expression of the photoreceptor cryptochrome.**<sup>1</sup> Jeremy Webb - and Dr. Sigrid Jacobshagen - Western Kentucky University
- 11:30 am **Lunch**
- 1:00 pm **DNA Sequence Variation in the wingless Gene Product in Buckeye Butterflies (genus *Junonia*).**<sup>1</sup> Bonnie McCullagh - Western Kentucky University, Jeffrey M. Marcus - Western Kentucky University
- 1:15 pm **Immune Response to Vimentin Peptides and the Role of Smoking in an HLA Transgenic Mouse Model of Rheumatoid Arthritis.**<sup>1</sup> Kayla Kinker - Berea College
- 1:30 pm **The effects of *Anemopsis californica* extracts on the growth and migration of human cancer cell lines.**<sup>1</sup> Catherine Kaminski - Asbury University, Severine van Slambrouck - New Mexico Institute of Technology, Seth Ferrey - New Mexico Institute of Technology, Malinda Stull - Asbury University, Wim F. A. Steelant - New Mexico Institute of Technology
- 1:45 pm **Pathophysiology of amyloid beta peptides on cells of the human central nervous system.**<sup>1</sup> Osniel Gonzalez Ramos - Northern Kentucky University

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

- 2:00 pm **TGF-B Modulates Ras Pathway Alteration of Murine Neural Stem Cell Differentiation.**<sup>1</sup> S. Lee Ware - Berea College, Michelle Stark - Vanderbilt University, Ping Li - Vanderbilt University, Ty W. Abel - Vanderbilt University
- 2:15 pm **Break - Hallway near Registration Area, TCCW**
- 2:30 pm **Synthesis and anti-tumor activity of VEGF binding molecule: Evidence through surface plasmon resonance imaging.** K. N. Thimmaiah - Northwest MS Community College, J. L. Sylvester - Northwest MS Community College, Ray Cox - Northwest MS Community College, Harold Simmons - Northwest MS Community College, Augustinus Rinaldy - Northwest MS Community College, Mark Montgomery - Northwest MS Community College, Sarah Mattox - Northwest MS Community College
- 2:45 pm **Business Meeting & Selection of Officers**
- 3:00 pm **Break - Hallway near Registration Area, TCCW**
- 4:15 pm **Plenary Session - Snell 2113**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## CHEMISTRY

Rui Zhang, Chair  
Western Kentucky University

Bruce Branan, Secretary  
Asbury University

**SATURDAY, NOVEMBER 13, 2010**  
**SNELL 3110**

- 8:00 am      **Computational modeling of binding of the highly potent inhibitor di-tert butylhydroquinone (BHQ) to Sarco/Endoplasmic Reticulum Calcium-ATPase (SERCA).** Manori Jayasinghe - Northern Kentucky University, Stefan Paula - Northern Kentucky University
- 8:15 am      **Quantitative proteomic analysis of differentially expressed proteins in amyloid beta (17-42) treated synaptosomes.**<sup>2</sup> Jaffer Mohammed - Eastern Kentucky University
- 8:30 am      **Synthetic Studies Related to the Conversion of 2,6-Diaminoanthraquinone to 2,6-Diaminoanthracene.**<sup>2</sup> Rambhoopal Kantam - Murray State University, Robin Holland - Murray State University, Rachel - Murray State University, Kevin Revell - Murray State University, Bhanu Priya Khanna -
- 8:45 am      **Decreasing content of toxic element in coal combustion by-product by oxalate.**<sup>2</sup> Kelin Wang - Western Kentucky University
- 9:00 am      **The preparation of copper based oxygen carrier using coprecipitation method.**<sup>2</sup> Yaowen Cui - Western Kentucky University
- 9:15 am      **Analysis of Biomass by Direct Analysis in Real Time Mass Spectrometry (DART-MS).**<sup>2</sup> Sushma Dendukuri - Eastern Kentucky University, Gary Selby - Eastern Kentucky University, Don Llewellyn - Eastern Kentucky University, Darrin Smith - Eastern Kentucky University
- 9:30 am      **Break - Hallway near Registration Area, TCCW**
- 9:45 am      **Synthesis, structures and photocatalytic properties of novel hybrid solids from Keggin ion and metal coordination complexes.**<sup>2</sup> yan fen li - Western Kentucky University
- 10:00 am     **Complete 'Green' One-Step Synthesis of Highly Monodispersed Gold Nanoparticles of 10-120 NM and Applications in Chemistry and Biology.**<sup>2</sup> Vivek Badwaik - Western Kentucky University, Jane J Bartonjo - Western Kentucky University, Jesse W Evans - Western Kentucky University, Chad Willis - Western Kentucky University, Sahi Shivendra - Western Kentucky University, Rajalingam Dakshinamurthy - Western Kentucky University
- 10:15 am     **Photocatalytic Aerobic Oxidation by a Bis-Porphyrin-Ruthenium(IV) mu-Oxo Dimer.**<sup>2</sup> Eric Vanover - Western Kentucky University, Yan Huang - Western Kentucky University, Rui Zhang - Western Kentucky University

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

- 10:30 am **The Research of Particulate bond Mercury in Urban City of Huainan.**<sup>2</sup> Limeimei Xu - Limeimei Xu
- 10:45 am **Loading and Release of the Chemotherapeutic Agent Doxorubicin onto and from Functionalized Mesoporous Silicates.** Emilee Knue - Northern Kentucky University, Stevi Johnson - Northern Kentucky University, Adam McCallum - Northern Kentucky University, Isabelle Lagadic - Northern Kentucky University
- 11:00 am **Exploration and identification of the thermal and photochemical properties of norbornadiene-quadricyclane for its use as a solar energy storage cell.**<sup>1</sup> Caleb Hamilton - Asbury University, Silas C Blackstock - U. of AL, Tuscaloosa
- 11:15 am **Surface Tension of Binary Mixtures.**<sup>1</sup> Emily Raetz - Asbury University, Dr. Bruce Branam - Asbury University, Christin Hollis - University of Kentucky, Dr. Tonglei Li - University of Kentucky
- 11:30 am **Bisphenol-A in Drinking Water: A Possible Source of Human Exposure.**<sup>1</sup> Brianna Cassidy - Murray State University, Dr. Bommanna Loganathan - Murray State University
- 11:45 am **Lunch**
- 1:00 pm **The Bio-accumulation of Mercury (Hg) in Bat Hair from Atmospheric Deposition.**<sup>1</sup> Melinda Rucks - Western Kentucky University
- 1:15 pm **Simulation of <sup>2</sup>H Static Solid-State NMR Spectra for the Determination of Influenza A M2 Transmembrane Peptide Side Chain Conformation and Dynamic.**<sup>1</sup> Theint Theint - Berea College
- 1:30 pm **TRICLOSAN CONCENTRATIONS IN WESTERN KENTUCKY WATERSHED.**<sup>1</sup> Dylan Benningfield - Murray State University, Sudan Loganathan - Murray State University, Dr. Bommanna Loganathan - Murray State University
- 1:45 pm **Spectroscopic examination of charge transfer in fullerene-transition metal organometallic supramolecular systems.**<sup>1</sup> Elizabeth Walsh - Northern Kentucky University, Shelby Kozlowski - Northern Kentucky University, Keith Walters - Northern Kentucky University
- 2:00 pm **Synthesis of novel phenanthroline-backboned fullerene/corannulene ligands used for photo-induced electron transfer applications.**<sup>1</sup> Wesley Baas - Northern Kentucky University, Alexa Abner - Northern Kentucky University, Derrick Gibbs - Northern Kentucky University, Keith Walters - Northern Kentucky University
- 2:15 pm **Break - Hallway near Registration Area, TCCW**

<sup>1</sup>Undergraduate Research Competition<sup>2</sup>Graduate Research Competition



- 2:30 pm **Effective Arsenic Removal Methodology Using Cheap and Abundant Materials.**<sup>1</sup> Dino Varajic - Western Kentucky University
- 2:45 pm **Fluorescein isothiocyanate functionalized bridged-polysiloxane nanoparticle for imaging applications.**<sup>1</sup> Andreu Edge - Western Kentucky University
- 3:00 pm **Donor-Acceptor functionalized polysiloxane nanohybrids: Synthesis, characterization and particle morphology.**<sup>1</sup> Aaron D McKee - Western Kentucky University, Byrichetti Kiranmai - Western Kentucky University, Amar Patel - Western Kentucky University, Hemali Rathnayake - Western Kentucky University
- 3:15 pm **A new Approach to the Synthesis of O-Dehydrobenzoannulenes.**<sup>1</sup> William J. Talbert - Northern Kentucky University
- 3:30 pm **Fatty Acid Analysis in Great Lakes Fish: The Great Lakes Fish Monitoring Project.**<sup>1</sup> Rachel Runtas - Asbury University, Dr. Bruce Branan - Asbury University, Thomas Holsen - Clarkson University
- 3:45 pm **Virtual Screening of MurA.**<sup>1</sup> Zachary Sweeney - Centre College
- 4:00 pm **Business Meeting & Selection of Officers**
- 4:15 pm **Plenary Session - *Snell 2113***

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## COMPUTER AND INFORMATION SCIENCES

Jerzy Jaromczyk, Chair  
University of Kentucky

Eric Rouchka, Secretary  
University of Louisville

**SATURDAY, NOVEMBER 13, 2010**  
**SNELL 1101**

- 8:00 am      **Scaffolder: Simple genome sequence scaffolding.** Michael Barton  
- Northern Kentucky University, Hazel Barton - Northern Kentucky University
- 8:15 am      **Mining Data from Multiple Software Releases for Software Quality Prediction.** Huanjing Wang - Western Kentucky University, Taghi M. Khoshgoftaar - Florida Atlantic University
- 8:30 am      **Knots: Found in Nature & Skewed in Silico** Uta Ziegler - Western Kentucky University
- 8:45 am      **Avatar Face Detection Analysis using an Extended Set of Haar-like features.** Darryl DSouza - University of Louisville
- 9:00 am      **A Performance Comparison of General-Purpose GPU Computing.** Sungbo Jung - University of Louisville
- 9:15 am      **Flight Simulation using Google Earth.**<sup>2</sup> Gyuchoon Cho - University of Louisville
- 9:30 am      **Break** - *Hallway near Registration Area, TCCW*
- 9:45 am      **Stereoscopic vision in augmented reality and vehicle driving.**<sup>2</sup> Behnoush Abdollahi - University of Louisville
- 10:00 am     **Kentucky Space Software for Satellite Ground Operations.**<sup>2</sup> Marc Beck - University of Louisville, Benjamin Malphrus - Morehead State University
- 10:15 am     **Mining Mobile Sequential Patterns in Wireless Mobile Networks.**<sup>1</sup> Joshua Bradley - Morehead State University, Sherif Rashad, Ph.D. - Morehead State University
- 10:30 am     **Business Meeting and Selection of Officers**
- 11:30 am     **Lunch**
- 4:15 pm.     **Plenary Session** - *Snell 2113*

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## ECOLOGY AND ENVIRONMENTAL SCIENCE

Albert Meier, Chair  
Western Kentucky University

Richard Boyce, Secretary  
Northern Kentucky University

**SATURDAY, NOVEMBER 13, 2010**  
**COHH 1102**

- 9:45 am      **The Importance of Maintenance and Metadata of Kentucky Mesonet Stations.** Megan Ferris-Schargorodski - Western Kentucky University, Dana Grabowski - Western Kentucky University, Andrew Quilligan - Western Kentucky University
- 10:00 am      **Effects of atrazine exposure on immune function of a dragonfly larva, *Plathemis lydia*.** Coy R. St. Clair - Murray State University, Claire A. Fuller - Murray State University
- 10:15 am      **Natural Resource Condition Assessment at Abraham Lincoln National Historical Park.** Sean T. Hutchison - Western Kentucky University, Kenneth W. Kuehn - Western Kentucky University, Nathan Rinehart - Western Kentucky University
- 10:30 am      **PROTECTED AREAS IN THE HIMALAYAS: TOURISM AND MANAGEMENT.** Kamal Humagain - Western Kentucky University, John D. All - Western Kentucky University
- 10:45 am      **Land snail species diversity and composition among different forest disturbance regimes in central and eastern Kentucky.<sup>2</sup>** Daniel Douglas - Eastern Kentucky University, David Brown - Eastern Kentucky University
- 11:00 am      **Amphibian community similarity between natural ponds and constructed ponds of multiple age classes in Daniel Boone National Forest, Kentucky.<sup>2</sup>** Robert Denton - Eastern Kentucky University, Stephen Richter - Eastern Kentucky University
- 11:15 am      **Residential tree damage and loss of ecosystem services in Louisville, Kentucky by Hurricane Ike and the January 2009 ice storm.<sup>2</sup>** Shannon A. Scroggins - University of Louisville, Margaret M. Carreiro - University of Louisville
- 11:30 am      **Lunch**
- 1:00 pm      **Smooth Sumac and Allelopathy.** Harold Simmons - Northwest MS Community College, Randall Warren - Northwest MS Community College, Sarah Mattox - Northwest MS Community College, Mark Montgomery - Northwest MS Community College
- 1:15 pm      **Invasive plant induced hypoxia in aquatic systems: microbial activity or humic content?** <sup>1</sup> Stephanie J. Hayes - Northern Kentucky University, Dr. Richard D. Durtsche - Northern Kentucky University

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

- 1:30 pm **Effects of inorganic fertilizer on the growth and survival of *Utterbackia imbecillis*.**<sup>1</sup> Victoria Gilkison - Western Kentucky University
- 1:45 pm **Influence of filamentous algae on nutrient and sestonic algal levels in the Green River, Kentucky.**<sup>1</sup> Brenna E. Tinsley - Western Kentucky University, Jeanne M. Shearer - Georgetown College, Mary D. Penick - Western Kentucky University, Scott A. Grubbs - Western Kentucky University, Albert J. Meier - Western Kentucky University
- 2:00 pm **Climate change effects on forage quality in a Kentucky mixed-species hay community.**<sup>1</sup> Allison L. Cooke - Transylvania University, Glade B. Brosi - University of Kentucky, Rebecca L. McCulley - University of Kentucky
- 2:15 pm **Break** - *Hallway near Registration Area, TCCW*
- 2:30 pm **Effects of removal treatment on an invasive *Ranunculus ficaria* population and an existing native wildflower community.**<sup>1</sup> Anne E. Schoettelkotte - Thomas More College, Shannon L. Galbraith-Kent - Thomas More College
- 2:45 pm **Determination of Switchgrass Growth Curves.**<sup>1</sup> Kenton Sena - Asbury University, David Davis - University of Kentucky, Ray Smith - University of Kentucky
- 3:00 pm **Business Meeting and Selection of Officers**
- 4:15 pm **Plenary Session** - *Snell 2113*

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

# ENGINEERING

Sanjeev Adhikari, Chair  
Morehead State University

Sally Krijestorac, Secretary  
Morehead State University

**SATURDAY, NOVEMBER 13, 2010**

**EBS 1103**

- 1:00 pm **Simulation of Magnetic Flux and Energy Loss within the Core of a Power Transformer.** Walter L. Collett - Western Kentucky University, Harrie Buswell - Buswell Energy LLC
- 1:15 pm **A 24FT/7.3M PARABOLIC REFLECTOR ANTENNA PERFORMANCE & FEED DESIGN ANALYSIS** Anthony Shelley - Morehead State University
- 1:30 pm **An Overview of Ad-Hoc Routing Protocols.**<sup>2</sup> Sadeta Krijestorac - Morehead State University, Elaheh Arabmakki - Morehead State University, Maryam Motadem - Morehead State University
- 1:45 pm **Integrated Risk-Based Inventory Classification System.**<sup>2</sup> Jared May - Morehead State University, Dr. Nilesh Joshi - Morehead State University
- 2:00 pm **Engineering Design Optimization Using Solidworks Simulation.**<sup>1</sup> Amariah Belcher - Morehead State University, Jared May - Morehead State University, Dr. Nilesh Joshi - Morehead State University
- 2:15 pm **Break - Hallway near Registration Area, TCCW**
- 2:30 pm **Optimizing the Mechanical Design of a FemtoSat Orbital Deployer (FOD) for Space Missions.**<sup>1</sup> Tyler G. Rose - Morehead State University, Kevin Z. Brown - Morehead State University, Benjamin K. Malphrus - Morehead State University
- 2:45 pm **Deployment of the electronical deployment mechanism for the Morehead-Rome FemtoSat Orbital Deployer (MR-FOD).**<sup>1</sup> Tyler T. Burba - Morehead State University, Kevin Z. Brown - Morehead State University, Benjamin K. Malphrus - Morehead State University
- 3:00 pm **Developing an engineering test-bed standard for KYSat-1 and future Kentucky Space missions based on the KYSat-1 bus.**<sup>1</sup> BRANDON L. MOLTON - Morehead State University, BENJAMIN K. MALPHRUS - Morehead State University
- 3:15 pm **The Sub-Orbital Cubesat Experimental Mission (SOCEM) Results and Analysis.**<sup>1</sup> Daniel C. Graves - Morehead State University
- 3:30 pm **Business Meeting and Selection of Officers**
- 4:00 pm **Break - Hallway near Registration Area, TCCW**
- 4:15 pm. **Plenary Session - Snell 2113**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## GEOGRAPHY

Christine McMichael, Chair  
Morehead State University

Glenn Campbell, Secretary  
Eastern Kentucky University

**SATURDAY, NOVEMBER 13, 2010**  
**COHH 3117**

- 8:00 am **An Assessment of the 2010 Drought and Implementation of the Kentucky Drought Mitigation and Response Plan.** Stuart A. Foster - Western Kentucky University
- 8:15 am **Geographical Patterns of Farmers Markets in Greater Cincinnati.** John Metz - Northern Kentucky University, Sarah Scherer - Northern Kentucky University
- 8:30 am **An Assessment of the GO BG Public Transit System in Bowling Green, KY.** Frank Aryee - Western Kentucky University, Jun Yan - Western Kentucky University
- 8:45 am **Tornado Risk in Kentucky: A Spatial Analysis Using Kernel Density Estimation in GIS.** CHRISTOPHER M. BLINN - Western Kentucky University
- 9:00 am **Site identification and selection for the Kentucky Mesonet** Thompson, James K - Kentucky Mesonet, Foster, Stuart A. - Western Kentucky University, Mahmood, Rezaul - Western Kentucky University
- 9:15 am **Resource Management Assessment – Nepal.** John All - Hoffman Environmental Research Institute
- 9:30 am **Break** - *Hallway near Registration Area, TCCW*
- 9:45 am **Measuring Accessibility to Primary Care Physicians in Nashville Metro Area Using GIS.** Sami Almudaris - Western Kentucky University, Dr. Jun Yan - Western Kentucky University
- 10:00 am **Farmers' Markets in Kentucky: A Geospatial, Statistical, and Cultural Analysis**<sup>2</sup> Elizabeth Ann Schmitz - Western Kentucky University
- 10:15 am **A spatial analysis of thunderstorm and nonconvective high winds from Atlantic Basin post-tropical cyclones.**<sup>2</sup> Joshua M. Gilliland - Western Kentucky University, Joshua D. Durkee - Western Kentucky University
- 10:30 am **Economic Impacts of Drought on Kentucky's Agriculture.**<sup>2</sup> Kortney Craft - Western Kentucky University
- 10:45 am **Valley Stress-Release Fracturing as a Predictive Model in Conduit Development: The Karst Hydrogeology of Tarklin Creek, Elliott County, Kentucky** Joshua W. Druen - Kentucky Community and Technical College System, Gary A. O'Dell - Morehead State University

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

- 11:00 am **Regression Analysis to Determine Digital Elevation Model (DEM) Accuracy.** Luke Miles - Western Kentucky University, Kamal Humagain - Western Kentucky University, William Oris - Western Kentucky University, John All - Western Kentucky University
- 11:15 am **An Analysis of WRF Physics Parameters for the January 29th and 30th 2008 Ohio Valley Squall Line Event.**<sup>2</sup> Mitchell Gaines - Western Kentucky University, Ronnie Leeper - Western Kentucky University, Rezaul Mahmood - Western Kentucky University
- 11:30 am **Lunch**
- 1:00 pm **Assessment of Dynamical Climate Downscaling Techniques using the Weather Research and Forecasting (WRF) model.**<sup>2</sup> Liang Chen - Western Kentucky University, Xingang Fan - Western Kentucky University
- 1:15 pm **Project to Create and Implement a Geographic Information System for the Baker Arboretum in Bowling Green, Kentucky.**<sup>1</sup> David R. Evans - Western Kentucky University
- 1:30 pm **Historic 2010 Mid-South Flood**<sup>1</sup> Lee Campbell - Western Kentucky University, Kyle Berry - Western Kentucky University, Dustin Jordan - Western Kentucky University, Josh Durkee - Western Kentucky University, Greg Goodrich - Western Kentucky University, Rezaul Mahmood - Western Kentucky University, Stuart Foster - Western Kentucky University
- 1:45 pm **Effects of weather on load demand for electricity: a case study.** Joseph Gutenson - Western Kentucky University, Stuart Foster - Western Kentucky University
- 2:00 pm **Using a Karst Atlas Approach to Address the Complexities of Karst Resource Management in West-central, FL, USA.** Jason S. Polk - Hoffman Environmental Research Institute, Grant L. Harley - University of Tennessee, Sean Vanderhoff - University of South Florida, Ben Miller - Hoffman Environmental Research Institute, Philip Reeder - University of South Florida
- 2:15 pm **Break - Hallway near Registration Area, TCCW**
- 2:30 pm **Rural Rail in Lincolnshire.** David Keeling - Western Kentucky University, Robbie Doughty - Robert Doughty Consultancy Limited
- 2:45 pm **Transport and Residence Time of Organic Soil Amendments in the Pennyroyal Plateau of South Central Kentucky.** Sean M. Vanderhoff - Western Kentucky University, Jason S. Polk - Western Kentucky University, Chris G. Groves - Western Kentucky University
- 3:00 pm **Landscape Indicators of Stream Water Quality in Eastern Kentucky.** Christine McMichael - Morehead State University, David Smith - Morehead State University, Robert Johnson - University of Louisville

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

- 3:15 pm **Place Names in Kentucky, Geographic Names Information System (GNIS) Phase II. All Features Great and Small.** Steven Parkansky - Morehead State University
- 3:30 pm **Correlations between Soil Temperature and Precipitation within the ERA-40 Reanalysis.** Xingang Fan - Western Kentucky University, Liang Chen - Western Kentucky University
- 3:45 pm **Business Meeting and Selection of Officers**
- 4:00 pm **Break** - *Hallway near Registration Area, TCCW*
- 4:15 pm **Plenary Session** - *Snell 2113*

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition



## GEOLOGY

Michael May, Chair  
Western Kentucky University

Thomas Brackman, Secretary  
Northern Kentucky University

### SATURDAY, NOVEMBER 13, 2010 EBS 1103

- 8:00 a.m. **Developmmt of an efficient irrigation protocol for small scale farming in Ghana.** Dr. Samuel Boateng - Northern Kentucky University, Dr. Ben Kofi Nyarko - University of Cape Coast, Ghana
- 8:15 a.m. **Fluvial System Deposition and Erosion - Contributors to Aquifer Heterogeneity.** Michael T. May - Western Kentucky University
- 8:30 a.m. **When Rayleigh Waves Meet Northern Kentucky Landslides.** Thomas Brackman - Northern Kentucky University
- 8:45 a.m. **Examination of a tabulate coral biostrome in the Bull Fork Formation (Ordovician), Bath County, Kentucky.** <sup>2</sup> Ann W. Harris - University of Kentucky, Robert T. Lierman - Eastern Kentucky University
- 9:00 a.m. **3D Modeling: Paint Creek and Poole Oil Fields.** <sup>1</sup> Christopher Robards - Murray State University, Tin Nguyen - Murray State University
- 9:15 a.m. **Ca/Mg Ratios For Use As Sea-Level Proxies in Magnesian Calcites of Phanerozoic Marine Origin.** <sup>1</sup> Christopher Toney - Western Kentucky University, Aaron J Celestian, Ph. D. - Western Kentucky University
- 9:30 a.m. **Break - Hallway near Registration Area, TCCW**
- 9:45 am **Heavy metal concentrations in water and surface sediments of Wilgreen Lake, Madison County, Kentucky.** <sup>1</sup> Chad Von Gruenigen - Eastern Kentucky University, Walter S. Borowski - Eastern Kentucky University
- 10:00 am **Characterization of the Suite of Minerals from Dos Pobres, Arizona.** <sup>1</sup> Melanie Newton - Western Kentucky University, Aaron Celestian - Western Kentucky University, Andrew Wulff - Western Kentucky University
- 10:15 am **Characterization of mineral assemblages from the Rochford Banded Iron Formation.** <sup>1</sup> Austin Moyers - Western Kentucky University, Aaron Celestian - Western Kentucky University, Andrew Wulff - Western Kentucky University
- 10:30 am **Patterns of heavy metal concentration in core sediments, Wilgreen Lake, Madison County, Kentucky.** <sup>1</sup> Clint McMaine - Eastern Kentucky University, Walter S. Borowski - Eastern Kentucky University

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

- 10:45 am **Three Dimensional Block Model--Millport Quadrangle, Western Coal Field, Kentucky.**<sup>1</sup> Michael Ray - Murray State University, Andrew C. Kellie - Murray State University
- 11:00 am **Modeling Faulted Structure: The Spencer Oil Field.**<sup>1</sup> Tin Nguyen - Murray State University, Christopher Robards - Murray State University
- 11:15 am **Sulfur isotope research in the karst of Wayne County, Kentucky.** Lee J. Florea - Western Kentucky University, Chasity L. Stinson - Western Kentucky University, Nicholas Lawhon - Western Kentucky University, Jonathan G. Wynn - Univeristy of South Florida, William D. Walden -
- 11:30 am **Business Meeting and Selection of Officers**
- 11:45 am **Lunch**
- 4:00 pm Break - *Hallway near Registration Area, TCCW*
- 4:15 pm **Plenary Session - Snell 2113**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## HEALTH SCIENCES

Avinash Tope, Chair  
Kentucky State University

Lingyu Huang, Secretary  
Kentucky State University

### SATURDAY, NOVEMBER 13, 2010 COHH 2117

- 9:30 am **Break** - *Hallway near Registration Area, TCCW*
- 9:45 am **Antioxidant activity of primocane fruiting blackberries grown in Kentucky.** Lingyu Huang - Kentucky State University, changzheng.wang - Kentucky State University, Cecil Butler - Kentucky State University, Jeremy D. Lowe - Kentucky State University, Kirck Pomper -
- 10:00 am **Analysis of genetic polymorphisms in the Vitamin-D receptor in persons with disc herniation.**<sup>1</sup> Sharen C. Kemp - Bellarmine University, Michael Pisani - American Chiropractic, Joann M. Lau - Bellarmine University
- 10:15 am **Virus-Specific Cytokine Responses of Human Lung Epithelial Cells.**<sup>1</sup> Julie Cardosi - Northern Kentucky University, Andrew Jones - Northern Kentucky University, Joseph Mester - Northern Kentucky University
- 10:30 am **Studying Effects of Plumbagin on Ulcerative Colitis Pathogenesis in Mice.**<sup>1</sup> Justin E. Pile - Western Kentucky University, Sujung Kim - Western Kentucky University, Nilesh Sharma - Western Kentucky University
- 10:45 am **Cell proliferation in the male lung cancer cell H2342 is affected by the triterpenoid component from *Ganoderma lucidum* (Curtis) P. Karst.**<sup>1</sup> Jillian C. Goines - Bellarmine University, Joann M. Lau - Bellarmine University
- 11:00 am **Prevalence of Metabolic Syndrome (MetS) in Young African American Adult Population.**<sup>1</sup> Jacqueline Walker - Kentucky State University, Avinash Tope - Kentucky State University, Phyllis Rogers - Kentucky State University
- 11:15 am **Business Meeting and Selection of Officers**
- 11:30 am **Lunch**
- 4:00 pm **Break** - *Hallway near Registration Area, TCCW*
- 4:15 pm **Plenary Session** - *Snell 2113*

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## MATHEMATICS

R. Douglas Chatham, Chair  
Morehead State University

Mark Robinson, Secretary  
Western Kentucky University

**SATURDAY, NOVEMBER 13, 2010**

**COHH 2117**

- 1:00 pm **An Introduction To Iterative Methods For Solving Linear Systems.** Mark Robinson - Western Kentucky University
- 1:15 pm **Chessboard placement problems peppered with pawns.** R. Douglas Chatham - Morehead State University
- 1:30 pm **It is Not Always Bad to Delay. A simple differential equation which isn't so simple.** John S. Spraker - Western Kentucky University, Daniel C. Biles - Belmont University
- 1:45 pm **Dimension Computations in Hyperspaces.** Matt Zapf - University of Louisville
- 2:00 pm **Links on the Cubic Lattice.**<sup>1</sup> Anthony Bombik - Western Kentucky University, Claus Ernst - Western Kentucky University
- 2:15 pm **Break** - *Hallway near Registration Area, TCCW*
- 2:30 pm **Applications of linear algebra in elucidating the role of microbial loops through food web network analysis.**<sup>1</sup> Justine Missik - Western Kentucky University, Albert J. Meier - Western Kentucky University, Kati Ayers - Western Kentucky University, Bruce Kessler - Western Kentucky University, Stuart Borrett - University of North Carolina-Wilmington
- 2:45 pm **Frequent Hypercyclicity of the Laplacian Operator.**<sup>1</sup> Stefan Schnake - Murray State University, Ted Porter - Murray State University
- 3:00 pm **We've Got the Functions; We Will Find You.** Kara Wiltrout - Asbury University, Stephanie Lawrence - Asbury University, John Elgin - Asbury University
- 3:15 pm **To Catch a Serial Killer: Utilizing Geographic Profiling Methods in Investigations of Serial Killers.** George H. Lytle - Asbury University, Valerie Dodd Sleeth - Asbury University, Matias von Bell - Asbury University
- 3:30 pm **Analysis of the Sweet Spot of a Baseball Bat.** Keri Eustis - Asbury University, Benjamin Pugh - Asbury University, Joseph Thacker - Asbury University
- 3:45 am **Business Meeting and Selection of Officers**
- 4:00 pm **Break** - *Hallway near Registration Area, TCCW*
- 4:15 pm **Plenary Session** - *Snell 2113*

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## MICROBIOLOGY

Bill Staddon, Chair  
Eastern Kentucky University

Janelle Hare, Secretary  
Morehead State University

**SATURDAY, NOVEMBER 13, 2010**  
**SNELL 2113**

- 8:00 am **KY-TN ASM:Lessons from microbial genomics in a small research group.** Michael Barton - Northern Kentucky University, Michael Petronio - Northern Kentucky University, Michael Johnston - Northern Kentucky University, Hazel Barton - Northern Kentucky University
- 8:15 am **KY-TN ASM Liberation of p-coumaric acid from lignin and conversion to p-ethylphenol by *Lactobacillus* sp. pep8.** CLINTON W. COPP - Western Kentucky University, K. DOERNER - Western Kentucky University
- 8:30 am **Culture enrichment of Acidobacteria from Wind Cave lakes.**<sup>2</sup> Giarrizzo, J - Northern Kentucky University, Vater, M - Northern Kentucky University, Barton, H - Northern Kentucky University
- 8:45 am **KY-TN ASM: Analysis of the clear plaque phenotype of bacteriophage HK75.**<sup>2</sup> Chandrika Kunapuli - Western Kentucky University, Rodney A. King - Western Kentucky University
- 9:00 am **Distribution of Geomyces species in Cave Environments.**<sup>2</sup> Marcelo A. F. Kramer - Northern Kentucky University, Alexis Henry - Northern Kentucky University, Samantha Kaiser - Northern Kentucky University, Hazel A. Barton - Northern Kentucky University
- 9:15 am **KY-TN ASM Molecular Evidenc for a Diazotrophic *Agrobacterium*.** Timothy Johnston - Murray State University, Michael Cooper - Murray State University
- 9:30 am **Break - Hallway near Registration Area, TCCW**
- 9:45 am **PCR-based detection of Rickettsia spp. in ticks collected in Warren County, Kentucky.**<sup>1</sup> Aric J. Johnson - Western Kentucky University, Naomi Rowland - Western Kentucky University, Cheryl D. Davis - Western Kentucky University
- 10:00 am **Strain Level Differences in *Escherichia coli* Transport, Cell Surface and Adhesion Characteristics.**<sup>1</sup> Kati Ayers - Western Kentucky University, Kimberly Cook - , Rohan Parekh - , Carl Bolster - , Dale Reynolds -
- 10:15 am **Decontamination Strategies to Prevent the Spread of White-Nose Syndrome via Bat Research Gear.**<sup>1</sup> Elizabeth Shelley - Northern Kentucky University, Tim Williams - Northern Kentucky University, Hazel Barton - Northern Kentucky University

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

- 10:30 am **Rev1 Knockout in *Schizosaccharomyces pombe*.**<sup>1</sup> Kelda Beachy - Eastern Kentucky University, Ronald J. Brooks Jr. - Eastern Kentucky University, Marcia M. Pierce - Eastern Kentucky University
- 10:45 am **Disruption of Erythromycin-Resistance Genes in Group A Streptococci.**<sup>1</sup> Heather M. O'Daniel - Eastern Kentucky University, Marcia M. Pierce - Eastern Kentucky University
- 11:00 am **Study of population genetic structure in *Staphylococcus pseudintermedius*.**<sup>2</sup> Samar M. Solyman - University of Tennessee, Stephen A. Kania - University of Tennessee, David A. Bemis - University of Tennessee
- 11:30 am **Lunch**
- 1:00 pm **Genomic Characterization of Mycobacteriophage TiroTheta9.**<sup>1</sup> Sarah M. Schrader - Western Kentucky University, Rodney A. King - Western Kentucky University
- 1:15 pm **Survey of Bacteria from Subsurface Water in a Restored Wetland.**<sup>1</sup> Lambert, Tom - Freed Hardeman University, Fader, Paul - Freed Hardeman University
- 1:30 pm **Epitope presentation derived from Hemagglutinin and Neuraminidase of H5N1 Avian Flu by Antigen Presenting Cell can be identified through Peptide Microarray.** Augustinus Rinaldy - Northwest MS Community College, Larry Sylvester - Northwest MS Community College, Kuntebommanahalli Thimmaiah - Northwest MS Community College, Harold Simmons - Northwest MS Community College, Paul Grisham - Northwest MS Community College, Ray Cox - Northwest MS Community College, Sarah Mattox - Northwest MS Community College, Mark Montgomery - Northwest MS Community College
- 1:45 pm **Business Meeting and Selection of Officers**
- 2:15 pm **Break** - *Hallway near Registration Area, TCCW*
- 4:15 pm **Plenary Session** - *Snell 2113*

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## PHYSICS AND ASTRONOMY

Akhtar Mahmood, Chair  
Bellarmine University

Arthur Pallone, Secretary  
Murray State University

**SATURDAY, NOVEMBER 13, 2010**  
**SNELL 1108**

- 1:00 pm **H2+ Embedded in a Debye Plasma.** H. E. Montgomery - Centre College, M. L. Angel - Centre College
- 1:15 pm **X-ray and Radio Observations of the Galactic Supernova Remnant G156.2+5.7.** Thomas G. Pannuti - Morehead State University, Glenn E. Allen - Massachusetts Institute of Technology, Caleb K. Grimes - Morehead State University, Nathan D. Fite - Morehead State University, Emily J. Goff - Morehead State University, Joshua M. Tussey - Morehead State University
- 1:30 pm **Development of Physically-Motivated Cellular Automaton Models of Snow Crystal Growth.** James G. Kelly - Centre College
- 1:45 pm **The relationship between average dynamical lifetime and resonance population of asteroids in the 2:1, 3:2, and 3:1 mean-motion resonances with Jupiter.** Jeremy Wood - Kentucky Community and Technical College System
- 2:00 pm **The Optical Reflectivity of Graphene.**<sup>1</sup> Christopher Yaluma - Berea College
- 2:15 pm **Break - Hallway near Registration Area, TCCW**
- 2:30 pm **Special Cosmological Solutions for Coupled Nonlinear Einstein-Klein Gordon Field Equations.**<sup>1</sup> John M. Wilson - Western Kentucky University, Keith Andrew - Western Kentucky University
- 2:45 pm **Synthesis of Iron-Germanium.**<sup>1</sup> Rohan Isaac - Berea College, Tyler Vanover - Berea College, Tommy Boykin - Berea College, Amer S. Lahamer - Berea College
- 3:00 pm **Copper-Based Superconductors.**<sup>1</sup> Tommy Boykin - Berea College, Tyler Vanover - Berea College, Rohan Isaac - Berea College, Amer Lahamer - Berea College
- 3:15 pm **Optical Characterization of Phase Shifted Grating Waveguide Structures.**<sup>1</sup> Guoke Yang - Centre College, Jason Neiser - Centre College
- 3:30 pm **Pulsed Laser Ablation of Solids in Liquid Environment.**<sup>1</sup> Tyler Vanover - Berea College, Amer Lahamer - Berea College
- 3:45 pm **Quench Localization in Superconducting Radio-frequency Cavities.**<sup>1</sup> Ramesh Adhikari - Berea College, Elvin Harms - Fermi National Accelerator Laboratory
- 4:00 pm **Business Meeting and Selection of Officers**
- 4:15 pm **Plenary Session - Snell 2113**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## PHYSIOLOGY AND BIOCHEMISTRY

Michael Fultz, Chair  
Morehead State University

Stephanie Dew, Secretary  
Centre College

**SATURDAY, NOVEMBER 13, 2010**  
**SNELL 4114**

- 1:00 pm **Mechanisms of sound production in two loricariid catfish.<sup>2</sup>**  
Amanda Webb - Western Kentucky University, Michael E. Smith -  
Western Kentucky University
- 1:15 pm **The role of growth hormone in zebrafish (*Danio rerio*) auditory hair cell regeneration.<sup>2</sup>** Yajie Wang - Western Kentucky University, Huifang Sun - Western Kentucky University, Micheal E. Smith - Western Kentucky University
- 1:30 pm **Auditory physiology and anatomy of *Semaprochilodus insignis*.<sup>1</sup>**  
Ruth A. Sudbeck - Western Kentucky University, Michael E. Smith - Western Kentucky University
- 1:45 pm **Genetic differences in Porsolt forced swim behavior and peak corticosterone levels in PCB and corn oil-treated mice.<sup>1</sup>**  
Celestine Kamau-Cheggeh - Northern Kentucky University, Rikki Floyd - Northern Kentucky University, Emily Altenhofen - Northern Kentucky University, Breann Hays - Northern Kentucky University, Christine Perdan Curran - Northern Kentucky University
- 2:00 pm **Tissue Microarrays for Detection of pS6 Ribosomal Protein in Breast Cancer.<sup>1</sup>** Shane Mulvihill - Wood Hudson Cancer Research Laboratory
- 2:15 pm **Break** - *Hallway near Registration Area, TCCW*
- 2:30 pm **Conserved residues in HERG K<sup>+</sup> channels are not required for normal trafficking.<sup>1</sup>** Ashley Smith - University of Kentucky, Jonathan Powell - University of Kentucky, Christie McBride - University of Kentucky, Brian Delisle - University of Kentucky
- 2:45 pm **The Importance of Glia in Chemosensory Modulation of Respiration.<sup>1</sup>** Hodari-Sadiki James - Berea College, Nicholas M. Mellen - University of Louisville
- 3:00 pm **Genetic differences in adult stress response following gestational and lactational exposure to polychlorinated biphenyls (PCBs) in mice.<sup>1</sup>** Emily Altenhofen - Northern Kentucky University, Breann Hays - Northern Kentucky University, Celestine Kamau-Cheggeh - Northern Kentucky University, Amy Ashworth - Northern Kentucky University, Jocelyn Phillips - Northern Kentucky University, Christine Perdan Curran - Northern Kentucky University

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition



- 3:15 pm      **The Int7G24A Variant of the TGFBR1 Gene is Associated with the Most Common and Most Lethal Subtypes of Surface Epithelial Ovarian Cancers.**<sup>1</sup> Kevin Murray - Wood Hudson Cancer Research Laboratory, Jessica DeBrosse - Wood Hudson Cancer Research Laboratory, Briana Vogt - Wood Hudson Cancer Research Laboratory, Robert Shields - Wood Hudson Cancer Research Laboratory, James Deddens - University of Cincinnati, Larry Douglass - Wood Hudson Cancer Research Laboratory, James Schaeper - Wood Hudson Cancer Research Laboratory, Julia Carter - Wood Hudson Cancer Research Laboratory
- 3:30 pm      **Business Meeting & Selection of Officers**
- 4:00 pm      **Break** - *Hallway near Registration Area, TCCW*
- 4:15 pm      **Plenary Session** - *Snell 2113*

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## PSYCHOLOGY

KatieAnn Skogsberg, Chair  
Centre College

Jennifer Asmuth, Secretary  
Centre College

**SATURDAY, NOVEMBER 13, 2010**  
**TCCW 403**

- 8:00 am **Gender Difference in Discrimination of Emotion Depends on the Nature of Emotional Cue.**<sup>2</sup> Nicholas Rudd - Morehead State University, Ilun M. White - Morehead State University
- 8:15 am **Age and Cultural Effects on Emotional Accuracy.**<sup>2</sup> J. David Forman - Morehead State University, Jaekeun Lee - Korea National University of Education, Ilun M. White - Morehead State University
- 8:30 am **The Internal Working Model: Associations with children's social and behavioral functioning.**<sup>2</sup> Teresa Mueller - Morehead State University, Jacquelyn Lile - Morehead State University
- 8:45 am **Man's Best Friend...Pet-human relationships in aging and cognitive decline in a community-based sample.**<sup>2</sup> Andrea J. Williams - Morehead State University, Gregory A. Jicha - University of Kentucky
- 9:00 am **The Effects of Cognitive Defusion vs. Restructuring on Distress.**<sup>2</sup> Cory Ruffing - Morehead State University, Jared Dillow - Morehead State University, Joseph Hamil - Morehead State University, Jeffrey Dobson - Morehead State University, JT Blackledge - Morehead State University
- 9:15 am **The role of selective dopamine receptor agonists in amphetamine-induced withdrawal-related hypophagia.**<sup>2</sup> Ronald Patane - Morehead State University, Alyssa Addison - Morehead State University, Nicholas Holt - Morehead State University, Devin Gibbs - Morehead State University, Jared Dillow - , Wesley White -
- 9:30 am **Break - Hallway near Registration Area, TCCW**
- 9:45 am **Parent-Offspring Kin Recognition: the Influence of Maternal Care.**<sup>1</sup> Emily J. Gregory - Centre College, Kendra Montejos - Centre College, Annie Roessler - Centre College, Dr. Melissa Burns-Cusato - Centre College
- 10:00 am **Effects of Spiritual versus Secular Mindfulness Meditation on Anxiety, Mindfulness, and Spirituality.**<sup>1</sup> Andrew Hamilton - Asbury University, Faith Shaw - Asbury University, Irene Jordan - Asbury University, Jordan Stratton - Asbury University
- 10:15 am **Implications for Positive Parenting: Parental Sensitivity as a Predictor of Secure Attachment in Children.**<sup>1</sup> Kayla Sizemore - Morehead State University, Katelyn Fugate - Morehead State University, Paula Sexton - Morehead State University, Shari L. Kidwell - Morehead State University

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

- 10:30 am **Parent's expressed emotion and its correlation to child attachment styles.**<sup>1</sup> Leah Smith - Morehead State University, Chelsea Witt - Morehead State University
- 10:45 am **Children's affect and emotion-regulation on a delay task: Associations with attachment**<sup>1</sup> Chelsea Baker - Morehead State University
- 11:00 am **Investigating the Conditioned Fertility Effect in Japanese Quail When Only the Female is Conditioned.**<sup>1</sup> Alisen Huff - Centre College, Ryan Will - Centre College, Brian Cusato - Centre College
- 11:15 am **Gender Differences in Stress Response in Rats.**<sup>1</sup> Martina Wagoner - Morehead State University
- 11:30 am **Lunch**
- 1:00 pm **Non-Pharmaceutical Fertility Enhancement in Captive Birds Through Sexual Conditioning.**<sup>1</sup> Ryan Will - Centre College, Alisen Huff - Centre College, Brian Cusato - Centre College
- 1:15 pm **A novel procedure for investigating amphetamine-induced withdrawal-related hypophagia.**<sup>1</sup> Devin R. Gibbs - Morehead State University, Ronald R. Patane - Morehead State University, Alyssa D. Addison - Morehead State University, Nicholas A. Holt - Morehead State University, Jared A. Dillow - Morehead State University, Wesley O. White - Morehead State University
- 1:30 pm **Hostile attribution bias and children's social and behavioral functioning in school.**<sup>1</sup> Andrew Doan - Morehead State University, Kristina Schoo - Morehead State University, Erin Baker - Morehead State University, Shari Kidwell - Morehead State University
- 1:45 pm **An Example of a Cross Disciplinary Collaboration for the Programming of Research Experiments: A Win-Win combination.**<sup>1</sup> Qian xie - Centre College, William George - Centre College
- 2:00 pm **Acceptance & Commitment Therapy for Depression: The development of a Depression-specific Process Measure.**<sup>1</sup> Jeffery Dobson - Morehead State University, Joseph Hamil - Morehead State University, Cory Ruffing - Morehead State University, Zach Goble - University of Kentucky, JT Blackledge - Morehead State University
- 2:15 pm **Break - Hallway near Registration Area, TCCW**
- 2:30 pm **Two hours of amphetamine exposure is sufficient to produce longer-term withdrawal-related hypophagia.**<sup>1</sup> Nicholas A. Holt - Morehead State University, Ronald R. Patane - Morehead State University, Wesley White - Morehead State University
- 2:45 pm **Business Meeting & Selection of Officers**
- 4:15 pm **Plenary Session - Snell 2113**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## SCIENCE EDUCATION

Wilson Gonzalez-Espada, Chair  
Morehead State University

Brent Eldridge, Secretary  
Kentucky Community and Technical  
College System

**SATURDAY, NOVEMBER 13, 2010  
SNELL 1103**

- 1:00 pm **Assessing peer mentoring: The case of MSU and its Space Science program.** Wilson Gonzalez-Espada - Morehead State University
- 1:15 pm **Gender as a Performance Factor in Introductory Geology Courses.** Margaret E. Crowder - Western Kentucky University
- 1:30 pm **Student Poster Presentations as a Final Capstone Experience for Non-Physics Majors: Making a Connection to the "Real World."** Ignacio Birriel - Morehead State University, Wilson Gonzalez-Espada - Morehead State University
- 1:45 pm **Integrated patient scenarios implemented to increase relevance and improve student learning in a Microbiology course for RN student nurses.** Jennifer Leigh Myka - Galen College of Nursing
- 2:00 pm **The effects of online homework in first semester General College Chemistry.** Dr. Shawn A. Kellie - Kentucky Community and Technical College System
- 2:15 pm **Break** - *Hallway near Registration Area, TCCW*
- 2:30 pm **A Math Science Partnership in Western Kentucky.** Heather Johnson - Western Kentucky University, Janet Tassell - Western Kentucky University, Roger Pankratz - Western Kentucky University, Rico Tyler - Western Kentucky University, Tony Norman - Western Kentucky University, Kerrie McDaniel - Western Kentucky University
- 2:45 pm **Positive student retention effects by integrating student support services into an Anatomy.** Jay Kirchner - Galen College of Nursing, Joan Brummer - Galen College of Nursing, Jennifer L. Myka - Galen College of Nursing
- 3:00 pm **Was it something I said? Laughter and tears in biology.** John G. Shiber, PhD - Kentucky Community and Technical College System
- 3:15 pm **Year One Success and Frustrations: Robert Noyce Scholarship Program to Recruit, Prepare and Retain STEM Teachers for High Needs Areas.** Kerrie McDaniel - Western Kentucky University, Hope Marchionda - Western Kentucky University, Janet Tassell - Western Kentucky University, Vicki Metzgar - Western Kentucky University

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

- 3:30 pm      **Indoor Model Helicopters: A New Science Olympiad Event with a Long History.** David W. Erbach - Western Kentucky University
- 3:45 pm      **Business Meeting and Selection of Officers**
- 4:00 pm      **Break** - *Hallway near Registration Area, TCCW*
- 4:15 pm      **Plenary Session** - *Snell 2113*

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## ZOOLOGY

Sherry Harrel, Chair  
Eastern Kentucky University

José Pedro do Amaral, Secretary  
Western Kentucky University

**SATURDAY, NOVEMBER 13, 2010  
SNELL 4115**

- 1:15 pm **The caddisflies (Trichoptera) of Kentucky: a revised checklist and distributional study.** Michael A. Floyd - U. S. Fish and Wildlife Service, John K. Moulton - The University of Tennessee, Guenter A. Schuster - Eastern Kentucky University
- 1:30 pm **Conservation status of the Kentucky arrow darter, *Etheostoma sagitta spilotum*.** Michael A. Floyd - U. S. Fish & Wildlife Service, Matthew Thomas - Kentucky Department of Fish and Wildlife Resources
- 1:45 pm **A Post-restoration Survey of the Fishes and Macroinvertebrates of Mill Branch, Knox County, Kentucky, with Emphasis on the Federally Threatened Blackside Dace, *Chrosomus cumberlandensis* (Cyprinidae).**<sup>2</sup> Kevin Merrill - Eastern Kentucky University
- 2:00 pm **THE DIVERSITY OF SOUTH AFRICAN SPIDER BEETLES (COLEOPTERA:PTINIDAE), AND THEIR EVOLUTIONARY HISTORY.**<sup>2</sup> Matthew Wood - Western Kentucky University, Keith Philips - Western Kentucky University
- 2:15 pm **Break - Hallway near Registration Area, TCCW**
- 2:30 pm **Computer and Human Species Identification Error in Anuran Bioacoustic Monitoring Methods.**<sup>2</sup> Jacob Eldridge - Western Kentucky University, Dr. Pedro do Amaral - Western Kentucky University, Dr. Albert Meier - Western Kentucky University, Brenna Tinsley - Western Kentucky University, Victoria Nelin - Western Kentucky University, Mary Newton - Western Kentucky University
- 2:45 pm **Abiotic Influences on the Calling Activity of Four Anuran Species.**<sup>1</sup> Brenna E. Tinsley - Western Kentucky University, Jacob D. Eldridge - Western Kentucky University, Jose P. do Amaral - Western Kentucky University, Albert J. Meier - Western Kentucky University, Viktoria E. Nelin - Western Kentucky University, Maggie Wilder - Western Kentucky University, Cheryl C. Onwu - Western Kentucky University, Ashley M. Mefford - Western Kentucky University
- 3:00 pm **Business Meeting and Selection of Officers**
- 4:00 pm **Break - Hallway near Registration Area, TCCW**
- 4:15 pm **Plenary Session - Snell 2113**

<sup>1</sup>Undergraduate Research Competition

<sup>2</sup>Graduate Research Competition

## POSTER PRESENTATIONS

This year the posters will be presented for the entire day and will not be divided into a morning and afternoon session. Each presenter will be provided with an easel and a 4x6 ft. 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. Posters may be set up between 7:30 – 8:00 a.m. and will remain up till 4:00 p.m. The posters will be presented in two locations depending on the section.

The following sections: **Agriculture, Anthropology & Sociology, Botany, Cellular & Molecular Biology, Ecology & Environmental Sciences, Geology, Health Science, Microbiology, Physiology & Biochemistry, Psychology, Science Education and Zoology**: will be in the Snell Bldg. Presenters will check in with Dr. Claire Rinehart in Snell 2101 and will then be directed to their poster location.

The following sections: **Chemistry, Computer & Information Science, Engineering, Geography, Mathematics, Physics & Astronomy**: will be located on the 3<sup>rd</sup> floor hall way of the Thompson Complex Central Wing (TCCW). They will check in with Dr. Jason Fuller in room 3101 TCCW and will then be directed to their poster location.

Students entering the URC will have their posters judged starting at 1:00 p.m. **except** for Chemistry which will be judged starting at 9:00 a.m. URC presenters **must be present** in order to have their posters judged.

### SNELL 2101

#### AGRICULTURAL SCIENCES

1. **Fate of Endosulfan on Field-Grown Pepper and Melon**.<sup>1</sup> Kyla Ross, Regina Hill, George Antonious and Tejinder Kochhar - Kentucky State University
2. **Plant Cell Localization of Secreted Proteins from *Magnaporthe oryzae***. Angela V. Tronzo - Centre College
3. **Leaf Stomatal Density Variation in Eleven Pawpaw Cultivars**. Sheri B. Crabtree, Kirk W. Pomper, Kesi Neblett and Sierra Skaggs - Kentucky State University
4. **Differential growth response of honey bee (*Apis mellifera*) fungal associates to commercially-applied fungicide Pristine**.<sup>1</sup> Brian Z. Hedges, Derrick J. Heydinger and Jay A. Yoder - Wittenberg University, Dianna Sammataro and Gloria DeGrandi-Hoffman - Carl Hayden Honey Bee Research Center

5. **Genetic Diversity and Geographic Differentiation in Pawpaw [*Asimina triloba* (L.) Dunal] Populations from Five States as Revealed by SSR Markers.** Jacob Botkins, Jeremiah Lowe, Kirk Pomper, Li Lu and Sheri Crabtree - Kentucky State University
6. **Budding Success and Vigor of Two Cultivars and Eight Kentucky State University Advanced Selections.** Kirk W. Pomper, Sheri B. Crabtree and Jeremiah Lowe - Kentucky State University
7. **Competition Between Weeds and Primocane Fruiting Blackberries from the University of Arkansas Breeding Program Grown Under Organic Production in Kentucky.** Jeremiah D. Lowe, Kirk W. Pomper and Sheri B. Crabtree - Kentucky State University, John R. Clark - University of Arkansas, John G. Strang - University of Kentucky
8. **Implementation of Teaching Gardens at Western Kentucky University Farm.** Claudia Stetter - Western Kentucky University
9. **The evaluation of anomalous fruits found in field evaluation plots of 'Vinson Watts' tomatoes (*Solanum lycopersicon*).** <sup>1</sup> Joshua T. Riggsby, Jennifer Harman, C. Brent Rogers and Debby Johnson - Morehead State University
10. **Identification of High Annonaceous Acetogenin Activity in Ripe Fruit Pulp of Advanced Selections of Pawpaw.**<sup>1</sup> Brandon Bell, Jeremiah D. Lowe, Kirk W. Pomper and Sheri B. Crabtree - Kentucky State University

## ANTHROPOLOGY & SOCIOLOGY

11. **Managing the Unmet Psychosocial and Information Needs of Patients with Cancer.** Morgan Durham - Western Kentucky University
12. **Mining Archaeology and Production: Examining Stone Tools from the Prehistoric Copper Mining Complex of Phu Lon, Thailand.**<sup>1</sup> Aleshia Hospelhorn, Matthew Buttacavoli and Emrys Lynch - Northern Kentucky University
13. **The Effects of Video Game Play on Interpersonal Relationships.** Douglas Clayton Smith and Patrick J. Holt - Western Kentucky University

## BOTANY

14. **Somatic Embryogenesis Induction of Needle Palm (*Rhapidophyllum hystrix*).**<sup>1</sup> La'Quida Bowie and Li Lu - Kentucky State University
15. **Effects of Glyphosate and Imazapic on Native Warm-Season Plants in a Greenhouse Environment.**<sup>1</sup> Sydney Combs and Katie Goebel - Western Kentucky University



## CELLULAR AND MOLECULAR BIOLOGY

16. **Expression and Purification of Human Fibroblast Growth Factor Receptor from Inclusion Bodies.**<sup>1</sup> Zach Laux, Sumit Batra, Vivek Badwaik and Rajalingam Dakshinamurthy - Western Kentucky University
17. **Role of Protein Structure on Osmolytes-Induced Protein Stability.**<sup>1</sup> Jane J Bartonjo and Vivek Badwaik - Western Kentucky University, Malena Agyemang - Norfolk State University, Di Wu and Rajalingam Dakshinamurthy - Western Kentucky University
18. **The dynamics of lung 'natural helper' cells in response to cytokines.**<sup>1</sup> Winter Okoth - Thomas More College, Takao Kobayashi and Kita Hirohito - Mayo Clinic College of Medicine
19. **Nitric Oxide Synthase Isoform Expression in Regenerating Axolotl Retina.**<sup>1</sup> Charli Bobbitt and Jاليا Sturdivant - Berea College, Elizabeth Debski - University of Kentucky
20. **Engineering a bicistronic vector to advance the study of I<sub>Ks</sub>.** Eric S. Schmidt, Daniel C. Bartos and Brian P. Delisle - University of Kentucky
21. **Reconstructing the Evolution of Bostrichoid Beetles via Molecular Phylogenetics.** Kelsey L. Willen, Khushbu Patel, Karen L. Bell and T. Keith Philips - Western Kentucky University
22. **Using Fluorescent Microscopy to Study Apoptosis in HeLa Cells.** Heather Norman - Georgetown College
23. **The effects of staurosporine on apoptosis in ECC-1 cells.** Janna Starkey, Heather Norman and Tracy Livingston - Georgetown College
24. **Species boundaries and phylogenetic analysis of big-legged bat flies (Diptera: Streblidae), and potential coevolution with leaf-nosed bat hosts.** Hillary Jones - Georgetown College, Carl W. Dick - Western Kentucky University
25. **HIV-1 inhibitory technique comparisons.** Stephen Wechman - Georgetown College, Gisela Garcia-Ramos - University of Kentucky
26. **Development of an HPLC assay for the analysis of adducted DNA-protein cross-links.**<sup>1</sup> Chido Hambira - Berea College, Sarah C. Shuck, Phil. Kingsley and Lawrence J. Marnett - Vanderbilt University
27. **Evidence for an interaction between two G-protein coupled receptor-dependent pathways in *S. cerevisiae*.**<sup>1</sup> Adelle Eberhardt and Jennifer Brigati - Maryville College, Steve Wright - Tennessee Wesleyan College, Grant Willhite - Carson Newman College
28. **Correlation of Mercury levels in tissue samples of small mouth bass through AMA combustion analysis.**<sup>1</sup> Natosha Mulholland - Western Kentucky University

29. **Distribution and toxicity of poly(butylcyanoacrylate) (PBCA) nanoparticles in rats.**<sup>1</sup> Robert Spaulding, Megan Caroway, Joe Curcio, Heather A. Bullen and Kristi L. Haik - Northern Kentucky University
30. **Creating an Inducible System for the Study of Rod Cell Degeneration and Regeneration .**<sup>1</sup> Premila Samuel - Berea College, Marie E. Forbes and Ann C. Morris - University of Kentucky
31. **Investigating potential treatments of a zebrafish model of Parkinson's Disease.**<sup>1</sup> Hanna Dasenbrock, Robert Spaulding, Caroline Dahlem, Kristi L. Haik and David Thompson - Northern Kentucky University
32. **Role of Toll-like Receptors in the Human Innate Immune Response to Respiratory Viruses.**<sup>1</sup> Emma Hatfield, Andrew Jones and Joseph Mester - Northern Kentucky University
33. **Characterization of the promoter for NOSIII in *Norvegicus rattus* myofibroblasts.**<sup>1</sup> Jacob M. Strain and Nancy A. Rice - Western Kentucky University
34. **Restriction of Small Cell Lung Carcinoma Survival and Proliferation by Inhibition of Calcium/Calmodulin-Dependent Protein Kinase IV.**<sup>1</sup> Rachel Cary - Kentucky Wesleyan College, Ben Willcut - University of Louisville, Uma Sankar - Owensboro Cancer Research Project and James Graham Brown Cancer Center, Department of Toxicology
35. **Generating Unique Chromosome Sequencing Probes to Observe Telomere Instability in *Magnaporthe oryzae*.**<sup>1</sup> Kelli Chapman-Mimms - Berea College, Olga Novikova and Mark Farman - University of Kentucky

## ECOLOGY AND ENVIRONMENTAL SCIENCE

36. **Comparison of the Neotropical Migrant Breeding Bird Communities of the Preserve and Recreation Area of John James Audubon State Park, 2004-2007.** Micah W. Perkins - Owensboro Community and Technical College
37. **Human-Wildlife Conflict on Small, Subsistence Farms in Kenya.** Christopher B. Colonna and Michael K. Stokes - Western Kentucky University
38. **Effects of flooding duration, depth, and simulated canopy closure on the growth and survival of *Lonicera maackii* (Rupr.) Herder.** Meghan R. Langley, Kaycee E. Stone and Margaret M. Carreiro - University of Louisville
39. **Abundance of *Peromyscus* spp. from field to forest in retired farmland of eastern Ohio.** Joshua Courlas, Cory Shoemaker, Emily Linkous and Richard Phillips - Wittenberg University
40. **Increased arthropod abundance and diversity in *Microstegium vimineum* invasions.** Judith Metcalf and Sarah Emery - University of Louisville

41. **Differential gene expression in zebrafish (*Danio rerio*) and native sunfish following exposure to gaseous diffusion plant effluent and effluent receiving stream water.** Ben F. Brammell - Asbury University, David K. Peyton, Kelly R. Barnett and Joshua C. Ferrell - Morehead State University, Andrew Wigginton - University of Kentucky
42. **Habitat Repercussions of Converting Abandoned Farmland to Switchgrass (*Panicum virgatum* L.).**<sup>1</sup> Evan Duszynski - Asbury University, Ray Smith and Laura Schwer - University of Kentucky
43. **Evaluating Karst Disturbance in Puerto Rico.** Brandon Porter and Jason Polk - Hoffman Environmental Research Institute
44. **Not all Seeds are Created Equal: A Study on Food Choice.** Ryan Rowland and Mike Stokes - Western Kentucky University
45. **Community composition along a nearshore habitat gradient from the Atlantic Ocean to the Chesapeake Bay.** Abbey Bailes, Amy Clippinger and Charles Acosta - Northern Kentucky University
46. **The Effects of Lion Roars, Banging Pots, and Rhinoceros Snorts on Feeding Behaviors of Crop Predators.**<sup>1</sup> Anna Mantooth, Dr. Michael Stokes and Dr. Bruce A. Schulte - Western Kentucky University
47. **Salamanders are useful bioindicators of water quality and watershed health in eastern Kentucky.**<sup>1</sup> John Yeiser, Alice L. Jones and Stephen C. Richterl - Eastern Kentucky University
48. **A Comparison of Aquatic Benthic Macroinvertebrate communities found in a stream near the Paducah Gaseous Diffusion Plant (PGDP) in western Kentucky.** John Walker and Andrew Wigginton - University of Kentucky, Ben Brammell - Asbury University
49. **Pond Orientation and Terrestrial Microhabitat Use by *Ambystoma jeffersonianum* and *A. maculatum* in South Central Kentucky.** Christopher St. Andre and Stephen Richter - Eastern Kentucky University
50. **Initial findings on the influence of filamentous algae on riverine nutrients and sestonic algae.** Jeanne M. Shearer - Georgetown College, Brenna E. Tinsley, Mary D. Penick, Scott A. Grubbs and Albert J. Meier - Western Kentucky University
51. **Assessing Social Benefits of Rainwater Harvesting in Southern Kenya.**<sup>1</sup> Lindsey M. Filiatreau and Dr. Michael K. Stokes - Western Kentucky University
52. **Distribution and abundance of the southern two-lined salamander (*Eurycea cirrigera*) in a central Kentucky stream system.** Schlyler O. Nunziata and Stephen C. Richter - Eastern Kentucky University
53. **Survey of small mammal communities on reclaimed mountaintop removal and valley-fill habitats compared to non-impacted sites in eastern Kentucky.**<sup>1</sup> Robert Cline and Joseph C. Whittaker - Pikeville College

## GEOLOGY

54. **Mapping the distribution and severity of stream bank erosion in the Triplett Creek watershed, Rowan County, Kentucky.** Staggs, W. D. and Reid, S. K. - Morehead State University
55. **A petrographic and Raman microscopy study of the fibrous carbonates in coal ball concretions: toward an enhanced understanding of high magnesian calcite diagenesis.**<sup>1</sup> Stuart M. Kenderes. Fredrick D. Siewers and Aaron J. Celestian - Western Kentucky University
56. **Surface and groundwater connection in heavily mined communities derived through chemical analysis of water samples.**<sup>1</sup> Leslie Williams - Northern Kentucky University
57. **The Formation History of Layered Chondrules in Acfer-139 (CR).**<sup>1</sup> Matt Downen - Western Kentucky University, Denton Ebel - American Museum of Natural History

## HEALTH SCIENCES

58. **Creation of an anti-HIV Microbicide Using IgA177.**<sup>1</sup> Ashley Humphrey, Krystal Hamorsky, Brittney Metts and Sudha Sankaran - Owensboro Cancer Research Program, Morgane Bomsel - Institute Cochin, Nobuyuki Matoba - Owensboro Cancer Research Program
59. **Hormone Replacement Therapy in Turner Syndrome.**<sup>1</sup> Cecilia Albers - Berea College, Barynia Backeljauw, Iris Little and Philippe Backeljauw - Cincinnati Children's Hospital Medical Center, Leslie Ayensu-Coker, MD - Berea College
60. **Compositional changes in tear lipids with Meibomian Gland Dysfunction.**<sup>1</sup> Lauren Varble - Brescia University
61. **A Survey of Pesticide Use Practices Among Pesticide Applicators in Kentucky.** Frederick Bebe and Avinash Tope - Kentucky State University
62. **Expression of a Modified Form of Lunasin that Targets Cancer Cells Expressing Integrins.**<sup>1</sup> Kati Boles - Kentucky Wesleyan College, Lauren Seber - Owensboro Cancer Research Program, James Graham Brown Cancer Center, Dr. Keith Davis - Owensboro Cancer Research Program, James Graham Brown Cancer Center, Department of Pharmacology and Toxicology at the University of Louisville
63. **Western blot analysis of cell cycle regulatory proteins from lung cancer cells treated with *Ganoderma lucidum* (Curtis) P. Karst.**<sup>1</sup> T'shura S.A. Ali, Melissa D. Pawley, Sanda Zolj and Joann M. Lau - Bellarmine University
64. **Somatic mutations in the 3'UTR affect p53 expression.**<sup>1</sup> Jillian C. Goines - Bellarmine University, Michael W. Gordon, Xinqin Kang and Yong Li - University of Louisville

65. **Cellular Immune Response to Hemagglutinin Proteins of Pandemic Influenza Viruses** . <sup>1</sup> Kim Staudt, Andrew Jones and Joseph Mester - Northern Kentucky University
66. **Impact of the Hemagglutinin Protein of Seasonal H1N1 Influenza Virus on the Cytokine Response of Human Innate Immune Cells.** <sup>1</sup> Megan Reynolds, Andrew Jones and Joseph Mester - Northern Kentucky University
67. **Evaluating cancer statistics in eastern Kentucky.** Jennifer R. Dotson and Joseph C. Whittaker - Pikeville College
68. **Therapeutic Interventions in Toxicant-Associated Steatohepatitis.** <sup>1</sup> John J. Guardiola-Bright, K. Cameron Falkner, Brian E. Sansbury, Bradford G. Hill and Matt C. Cave – University of Louisville

## MICROBIOLOGY

69. **Commensal Fungi Found on Bats from Cumberland Gap Caverns.** <sup>1</sup> Samantha N. Kaiser, Marcelo Kramer, Sarah Rabe and Hazel A. Barton - Northern Kentucky University
70. **Impact of Yeast Essential Genes Mutants on Strand RNA Virus Replication.** <sup>1</sup> Emily Bachert - Centre College
71. **Molecular Probing for Adenylate Forming Enzymes in *Exiguobacterium acetylicum* With NRPS Oligos to Reveal an ABC Transporter.** <sup>1</sup> Yankuba Banda, Williard Madzawidza, Tejinder Kochhar and Narayanan Rajendran - Kentucky State University
72. **Comparisons of UmuD, a DNA damage-related protein required for SOS mutagenesis, in various species of *Acinetobacter*.** <sup>1</sup> Sara Wheeler, Jodi Wilder, Kasandra Lambert, James Bradley and Janelle Hare - Morehead State University
73. **Expression and Function of the DNA Damage Protein UmuD of *Acinetobacter*, and its N-terminus and Predicted Cleavage Site Mutants, in *Escherichia coli*.** Sabal Adhikari, Alison Grice, Gavin Howington, Matthew Whittaker and Janelle Hare - Morehead State University
74. **Inhibition of White Nose Syndrome in Hibernating Bat Colonies: Identification of Antifungal Agents.** <sup>1</sup> Virginia Shelley, Marcelo Kramer and Hazel A. Barton - Northern Kentucky University
75. **Honey bee diseases stonebrood and chalkbrood resistant to treatment with commercially applied antibiotics.** <sup>1</sup> Derrick Heydinger, Brian Hedges and Jay Yoder - Wittenberg University, Diana Sammataro and Gloria DeGrandi-Hoffman – USDA

76. **Selective/differential media analysis as a potential alternative to restriction fragment length polymorphism (RFLP) analysis in accurately identifying same-species isolates from a cave bacteria library.** Michael D. Johnston and Hazel A. Barton - Northern Kentucky University
77. **Escherichia coli Host Source Tracking in the Triplett Creek Watershed, Rowan County, Kentucky.** <sup>1</sup> Brittany Moore, Kristen Platt, Amy Potter, Nastassia Shields, Marisa Kamelgarn, April Haight and Geoffrey W. Gearner - Morehead State University
78. **Preliminary survey of tick vectors of human erlichiosis, Rocky Mountain Spotted Fever, and Lyme Disease in Warren County, Kentucky.** <sup>1</sup> Cheryl C. Onwu, Aric J. Johnson and Cheryl D. Davis - Western Kentucky University
79. **Genomic comparison of pyoverdine-mediated iron chelating gene regions of the cave-dwelling bacteria *Pseudomonas fluorescens* R124.** Michael Petronio, Michael Barton, Michael Johnston and Hazel Barton - Northern Kentucky University
80. **PCR amplification of Trypanosoma cruzi-specific DNA from raccoon blood samples.** <sup>1</sup> Colin Moss, Brian C. Groce and Cheryl D. Davis - Western Kentucky University
81. **Plasmid delivery to *Clostridium scatologenes* ATCC 25775 via Conjugation.** <sup>1</sup> Kathryn Brady and D. Kridelbaugh, K. C. Doerner - Western Kentucky University
82. **Escherichia coli contamination of the Triplett Creek Watershed, Rowan County, Kentucky.** <sup>1</sup> Marisa Kamelgarn, Brittany Moore, Kristen Platt, Nastassia Shields, April Haight and Geoffrey W. Gearner - Morehead State University
83. **Innate Immune Responses to Human Respiratory Syncytial Viruses.** <sup>1</sup> Loryn Facemire, Andrew Jones and Joseph Mester - Northern Kentucky University

## PHYSIOLOGY AND BIOCHEMISTRY

84. **The effect of pineal melatonin on locomotion and vocalization in the male zebra finch, *Taeniopygia guttata*.** <sup>1</sup> Jennifer O'Brien - Centre College, Gang Wang, Clifford Harpole and Vincent Cassone - University of Kentucky
85. **Pharmacological Correction of Trafficking Deficient hERG Mutations Linked to Long QT Syndrome does not require Protein Synthesis.** <sup>1</sup> Parvathi Nataraj, Jennifer Smith, Christie McBride and Brian Delisle - University of Kentucky
86. **Rho Kinase Regulation of Alpha- and Beta- Actin Remodeling in the Contracting A7r5 Smooth Muscle Cell.** <sup>1</sup> Josie Maione, William R. Hankinson, Suzzette Pike and Michael Fultz - Morehead State University
87. **The effects of mutated FUS on neurite outgrowth.** <sup>1</sup> Melanie Hackney - Pikeville College, Jiayu Zhang and Haining Zhu - University of Kentucky

88. **Energetic Cost of Immune Response in Old-field Mice, *Peromyscus polionotus* (Osgood).**<sup>1</sup> Callie Wilson and Erin Keeney - Murray State University

## PSYCHOLOGY

89. **The Influence of Children's Affective Ties on the Goal Clarification Step of Social Information Processing (SIP).** Amanda Thorn, Suzanne VanArsdall and Elizabeth A. Lemerise - Western Kentucky University
90. **The Influence of Affective Ties on the Response Evaluation Step of Social Information Processing (SIP).**<sup>1</sup> Kristen Nelson, Jessica Niedwick, Dana Wheeler and Elizabeth A. Lemerise - Western Kentucky University
91. **Effects of binge drinking on impulsivity in college students.**<sup>1</sup> Amy Henges and Cecile A. Marczynski, Ph.D. - Northern Kentucky University
92. **Acute effects of a glucose energy drink on the attentional blink.**<sup>1</sup> Chelsea Morley, Meagan Howard, Amy Henges and Cecile A. Marczynski, Ph.D. - Northern Kentucky University
93. **Priming effects of alcohol mixed with energy drinks.**<sup>1</sup> Meagan Howard, Amy Henges, Chelsea Morley and Cecile A. Marczynski, Ph.D. - Northern Kentucky University
94. **Preliminary Data on the Test-Retest Reliability of the Acceptance and Avoidance Questionnaire for Depression.**<sup>1</sup> Bobby Fitzpatrick, David Porter, Jeffrey Dobson, John Blackledge and Sean P. Reilley - Morehead State University
95. **Anxiolytic Effects of MDMA (Ecstasy) Requires Activation of 5-HT<sub>1B</sub> Receptors in Rats: Involvement of Amygdala.** Aaron E. Haas and Ilsun M. White - Morehead State University
96. **Preliminary Data on the Use of the MFAST to Assess Malingered AD/HD.**<sup>1</sup> Kelly Gruber and Sean P. Reilley - Morehead State University
97. **Preliminary Data on the Impact of AD/HD Malingering on the Digit Vigilance Test.**<sup>1</sup> Medina Jackson and Sean P. Reilley - Morehead State University
98. **The effect of expectations on responses to interracial interactions.**<sup>1</sup> Shayla Miller, Sydney Howard, Chassidy Ison, Kera King, Katie Klik and David Butz - Morehead State University
99. **Psychostimulant and Corticosterone(CORT) Produce Differential Effects on Adolescent Rats: Gender Difference.**<sup>1</sup> Aaron Ellis and Ilsun M. White - Morehead State University
100. **Methamphetamine on Food-Extraction in Rats: Involvement of Prefrontal Cortex.** Sarah-Lee Schoenhagen and Ilsun M. White - Morehead State University

101. **Prolactin and Nest Bond in Ring Neck Dove.**<sup>1</sup> Annie Roessler and Dr. Melissa Burns-Cusato - Centre College
102. **The Affects of Gender and Age on Soda Formula and Logo Preference.**<sup>1</sup> Rachele S. Johnson - Kentucky Community and Technical College System
103. **It Doesn't Matter if You're Black or White:The Effects of Openness on Interracial Interactions.**<sup>1</sup> Kera Ti V. King, Shayla Miler, Chassidy N. Ison, Sydney P. Howard, Kathleen A. Klik and David A. Butz - Morehead State University
104. **The Role of Motivation in Interracial Interactions.**<sup>1</sup> Chassidy N. Ison, Shayla Miller, Kera Ti V. King, Sydney P. Howard, Kathleen A. Klik and David A. Butz - Morehead State University
105. **The Effects of Alcohol on Stress Responses in Japanese Quail is Dose Dependent.**<sup>1</sup> Rachel McClain and Brian Cusato - Centre College
106. **The Effects of Presented Scenes on Cognitive Tasks.** Jenipher Dennis - Berea College
107. **Preliminary Data on the Test-Retest Reliability of the Acceptance and Action Questionnaire for Parents of Children Diagnosed with Autism.** Ashley Powell - Morehead State University, T. Zacharey Goble - University of Kentucky, John Blackledge - Morehead State University
108. **Selective Impairment in Discrimination of Emotion Following Alcohol Drinking.**<sup>1</sup> Josh Stephens, Nicholas Rudd and Ilsun M. White - Morehead State University
109. **Parental influences on children's understanding of their emotions.**<sup>1</sup> Jaclyn Simmons, Tina Ward, Erin Baker and Shari L. Kidwell - Morehead State University

## SCIENCE EDUCATION

110. **Coherence in Connecting Representations in Chemistry: Chemical Formulas and Particulate Models.** Erin Rowan and Dr. Kereen Monteyne - Northern Kentucky University
111. **KY-TN ASM: The Howard-Hughes Medical Institute-National Genomics Research Initiative at Western Kentucky University.** Rodney A. King, Claire Rinehart and Prasanna Tamaraparthasarathy - Western Kentucky University
112. **Educational Opportunities in Biotechnology and Other STEM Areas at Kentucky State University.** Li Lu, Kirk Pomper and Karan Kaul - Kentucky State University
113. **Pathways for Reasoning about Proportional Relationships.** Ruth Castellon and Kereen Monteyne - Northern Kentucky University



114. **Enhancing STEM interest and improving STEM education effectiveness - Science a'la Sensors and Actuators (SalSA).** Dr. Michael Vogt and Christopher Klaus - Western Kentucky University
115. **Pedagogy of Place: Development of an Invisible Curriculum.**<sup>1</sup> Zachary Danneman, Tara Shumate and William Coomes - Berea College

## ZOOLOGY

116. **Localization and characterization of photoreceptors in the cercariae of the trematode, *Proterometra macrostoma*.**<sup>1</sup> Abigail Wier and Kathryn Massana - Berea College
117. **Effect of Reproductive Effort on CORT Response in House Sparrows and Tree Swallows.**<sup>1</sup> Mary Benson - Centre College, Whitney Remy - Berea College
118. **Long-term nest site fidelity in green salamanders, *Aneides aeneus*.** Paul V. Cupp, Jr. - Eastern Kentucky University
119. **Nest site defense in green salamanders, *Aneides aeneus*.** Paul V. Cupp, Jr. - Eastern Kentucky University
120. **Ultrastructure analysis of spermiogenesis within the testis of the Mediterranean House Gecko, *Hemidactylus turcicus*.**<sup>1</sup> Katherine Venable - Wittenberg University, Justin Rheubert - S.E. Louisiana, Katherine Touzinsky and Kevin Gribbins - Wittenberg University
121. **Explorations into the Amazing Diversity of *Pseudomezium*: an Endemic and Enigmatic Genus from South Africa.** Michelle Smiley - and Keith Philips - Western Kentucky University
122. **Documentation of rates of infection by *Toxoplasma gondii* in house cats (*Felis catus*) in eastern Kentucky and southwestern Virginia.**<sup>1</sup> Maranda Elswick, Clare C. W. Whittaker and Joseph C. Whittaker - Pikeville College
123. **Aggression, hair whorls and handedness in horses (*Equus caballus*).** Bruce A. Schulte - Western Kentucky University, Rebeccah Hazelkorn and Mallori Hecht - Georgia Southern University
124. **The Spermatozoon of the American Alligator, *Alligator Mississippiensis*: An Ultrastructural Study.**<sup>1</sup> Katherine Touzinsky, Katherine Venable and Kevin Gribbins - Wittenberg University
125. **Population dynamics of rusty crayfish *Orconectes rusticus* in northern Kentucky streams.** Robert Seilhamer, Brandon Kathman, Emily Brockschmidt and Charles Acosta - Northern Kentucky University
126. **Using cellulose acetate electrophoresis to identify shifts in the populations of white-footed mice (*Peromyscus leucopus*) and deer mice (*P. maniculatus*).**<sup>1</sup> Emily Holbrook and Joseph C. Whittaker - Pikeville College

127. **Quantification and classification of ectoparasites of white-footed mice (*Peromyscus leucopus*) on reclaimed mining sites.**<sup>1</sup> Lacey Kyle Ferrell and Joseph C. Whittaker - Pikeville College
128. **Rate of Aggressive Behaviors in Lactating and Non-lactating Domestic Horses (*Equus caballus*).** Carly A. Sinderbrand and Bruce Schulte - Western Kentucky University

## **THOMPSON COMPLEX CENTRAL WING**

### 3rd Floor Hallway

#### **CHEMISTRY**

1. **Furan Derivatives: Utilization of Biomass Byproducts as Renewable Building Blocks.**<sup>1</sup> Andrew Preston and Jennifer Armstrong - Eastern Kentucky University
2. **A novel photosynthesis of *trans*-dioxoruthenium(VI) porphyrins.**<sup>1</sup> Helen Thompson, Chris Abebrese, Yan Huang, Eric Vanover and Rui Zhang - Western Kentucky University
3. **Expression and Purification of Human Fibroblast Growth Factor.**<sup>1</sup> Camille Turner, Sumit Batra, Vivek Badwaik and Rajalingam Dakshinamurthy - Western Kentucky University
4. **Synthetic Chaperone for the Recovery of Recombinant Proteins from Insoluble Form.**<sup>1</sup> Chad Willis, Vivek Badwaik, Jane J Bartonjo, Jesse Evans and Rajalingam Dakshinamurthy - Western Kentucky University
5. **On-Metal Synthesis of Some Aromatic Substituted Rhenium Complexes.** Daniel F. Honson and Chad A. Snyder, Ph.D. - Western Kentucky University
6. **Aromatic Substituted Rhenium Pyridazyl Complexes.** Jaron M. Thomas and Chad A. Snyder, Ph.D. - Western Kentucky University
7. **Gold(I)-catalyzed Annulation Reaction of Hydroxyaldehyde and Aryl Alkyne.**<sup>1</sup> James M. Keeler, David Roy, Kevin Bonfield, Erica Amato, Tony Bankemper, Hannah Agard, Stefan Paula, Lili Ma - Northern Kentucky University
8. **Synthesis and Structure-Activity Relationship Study of Isoflavanone Aromatase Inhibitors.**<sup>1</sup> Kevin Bonfield, Erica Amato, James M. Keeler, David Roy, Tony Bankemper, Hannah Agard, Stefan Paula, Lili Ma - Northern Kentucky University

9. **Synthesis, bioassays, and computational analysis of isoflavanone derivatives as novel inhibitors of aromatase, an anti-breast cancer target.**<sup>1</sup> Anthony Bankemper - Northern Kentucky University, Michael Lape - University of Kentucky, Kevin Bonfield, James Keeler, David Roy, Hannah Agard, Lili Ma and Stefan Paula - Northern Kentucky University
10. **Perylene diimide functionalized bridged-polysiloxane nanoparticles.** Byrichetti Kiranmai and Dr.Hemali Rathnayake - Western Kentucky University
11. **Addition of alcohols during cobalt catalyzed Fischer-Tropsch synthesis.** Chunfen Jin - Eastern Kentucky University
12. **Thermolysis of lignin in the presence of solvents.** Alexander Montavon - Eastern Kentucky University
13. **Carbon dioxide Adsorption on Metal-Organic Frameworks.** Raj Kishore Vakiti , Bangbo Yan, Wei-Ping Pan, Camille A Turner, Yan Cao and Hou-Yin Zhao - Western Kentucky University
14. **Nutrient and waste management at Berea College Farm: Analysis of soil samples for the availability of phosphorus.**<sup>1</sup> Casey T. Gray, Violet R. Katiyo, Alexcia Moore, Grace Par and Paul C. Smithson - Berea College
15. **Struvite precipitation in anaerobic swine lagoon liquid at Berea College Farm: Effect of pH and Mg:P ratio.**<sup>1</sup> James B. McCarty, Horton Li, Ivan Titaley and Paul C. Smithson - Berea College
16. **Chemical and phosphorus-31 NMR characterization of phosphorus in a swine facility waste stream.**<sup>1</sup> James B. Hamblin, Rebecca Linville, Zelalem Mekonnen and Paul C. Smithson - Berea College
17. **New Synthetic Pathway to Imidazolium and Trizolium Carbene Complexes.**<sup>1</sup> Jose Victoria, Dhadon Dhadon and Anes Kovacevic - Berea College
18. **Polystyrene/Alkyl-Functionalized Organoclay Nanocomposites: Effect of the Alkyl Chain Length on the Structure and Properties of the Composite.**<sup>1</sup> Thomas Morgan and Isabelle Lagadic - Northern Kentucky University
19. **Histidine-Functionalized Water Soluble Nanoparticles as Mimics of Hydrolytic Enzymes.**<sup>1</sup> Imelda Hot - Berea College, Hongkwan Cho and Yan Zhao - Iowa State University
20. **The Effect of Composition on the Photolysis of Aqueous Nitrate Solution.**<sup>1</sup> Natalie Schieber and Dr. Matthew Nee - Western Kentucky University
21. **Synthetic Developments Towards Ergovaline.**<sup>1</sup> Marika Wieliczko - Eastern Kentucky University

22. **Poly-thiophene Derivatives Functionalized Polysiloxane Nanohybrids: Synthesis, Characterization, and Particle Morphology.**<sup>1</sup> Amar Patel and Hemali Rathnayake - Western Kentucky University
23. **NKU Fullerene Research: Synthesis of supramolecular fullerene-corannulene/transition metal systems for photo-induced electron transfer applications.**<sup>1</sup> Alexa Abner, Wesley Baas, Derrick Gibbs and Keith Walters - Northern Kentucky University
24. **Implication of nutrients on pyoverdin and metal chelating compounds produced by *Pseudomonas aeruginosa*.**<sup>1</sup> Samantha Sutkamp, Melissa Toms, Hazel Barton and Heather Bullen - Northern Kentucky University
25. **Isolation and characterization of metal chelating compounds produced by *Pseudomonas aeruginosa*.**<sup>1</sup> Melissa Toms, Samantha Sutkamp, Hazel Barton and Heather Bullen - Northern Kentucky University
26. **Spectroscopic evaluation of the role of enterobactin in *Escherichia coli* adsorption to metal oxides.**<sup>1</sup> Alexander Yarawsky, Alyssa Smith and Heather Bullen - Northern Kentucky University
27. **NKU Fullerene Research: Spectroscopic studies of fullerene- and corannulene- organometallic supramolecular systems.**<sup>1</sup> Shelby Kozlowski, Elizabeth A. Walsh and Keith Walters - Northern Kentucky University
28. **A Raman study of the effect of hydrogen peroxide on the photolysis of potassium nitrate.**<sup>1</sup> Elizabeth Fugate and Matthew Nee - Western Kentucky University
29. **NKU Molecular Wire Research: New insights into transition metal/pi-conjugated polymer "molecular wire" design and synthesis.**<sup>1</sup> Chevelle Cason, Dustin Czirr, Alex Ivers and Keith Walters - Northern Kentucky University
30. **A New Approach to the Synthesis of Push-Pull O-Dehydrobenzoannulenes.**<sup>1</sup> Brittany Cramer, Wil Talbert, Robert Wherle, Jena Perleberg, Le Dao, Teddy McEntire and K.C. Russell - Northern Kentucky University
31. **Precipitation of Aqueous Copper(II) with a Synthetic Dithiol Ligand in the Presence of Competing Anions.**<sup>1</sup> Amelia Rosenberger and Chris Mullins - Campbellsville University, David Atwood - University of Kentucky
32. **Determining biological activities of novel bisphenol-based inhibitors of the Sarco/endoplasmic reticulum calcium ATPase.**<sup>1</sup> Rahul Patel, Matthew Woeste, Christopher Elam and Stefan Paula - Northern Kentucky University
33. **Predicting Heterogeneously Broadened Line-Shapes for Conjugated Oligomers.**<sup>1</sup> Sarah A Ward and Jeremy B Maddox - Western Kentucky University
34. **Electronic Structure Calculations for Di-acyl Organometallic Complexes.**<sup>1</sup> Aaron W. Daniel and Jeremy B. Maddox - Western Kentucky University

35. **Photocatalysis of Polycyclic Aromatic Hydrocarbons Studies with Time-Resolved Raman Spectroscopy.**<sup>1</sup> Paras Vora and Matthew Nee - Western Kentucky University
36. **Use of a Genetic Algorithm to Derive a Quantitative Structure Activity Relationship for Dihydrofolate Reductase Inhibitors.** John E. Burden - Spalding University
37. **The Effect of Counter Ions in Nitrate Photolysis and Raman Spectroscopy.**<sup>1</sup> Krysta Waldrop - Western Kentucky University, Matthew Nee - University of Louisville
38. **A Computational Examination of The Reaction Mechanism of Nitrate Snow Photolysis.**<sup>1</sup> Michael A. Phillips, Dr. Matthew Nee - Western Kentucky University
39. **Synthesis of Enantioenriched B-Ketoesters via a Ketene-Claisen Condensation.**<sup>1</sup> Dominic Suma - Berea College
40. **Sugar Quantitation by Direct Analysis in Real Time Mass Spectrometry (DART-MS) for Biofuels Production.** Daudi Saang'onoyo, Michael Mazzotta and Darrin Smith - Eastern Kentucky University
41. **Quantitative Sugar Analysis of Pretreatment Solutions by High Performance Liquid Chromatography for Biofuels Production.**<sup>1</sup> Michael Mazzotta, Gary Selby, Don Llewellyn and Darrin Smith - Eastern Kentucky University
42. **Photophysics of the natural estrogens estrone and 17-beta-estradiol.**<sup>1</sup> Andrew Stoeckel and Kara Chan - Northern Kentucky University, Bridget Gavaghan - Xavier University, Karla Irizarry and Patrick M. Hare - Northern Kentucky University
43. **Iridium-based Catalyst for the Production of Hydrogen Gas.**<sup>1</sup> Bayardo Solorza - Brescia University, Jacob Schneider and Dr. Jeff Seyler - University of Southern Indiana
44. **The Periodic Table of common prescription medicines.**<sup>1</sup> Natalie Gill and Cathleen Webb - Western Kentucky University
45. **Studies into the Direct Reduction/Aromatization of 2,6-Diaminoanthraquinone.**<sup>1</sup> Rachel Loomis, Rambhoopal Kantam and Kevin Revell - Murray State University
46. **Matrix Isolation Spectroscopy of Cu-Naphthalene.** Dallas W. Critchfield and Jason F. Fuller - Eastern Kentucky University
47. **Copper Mirrors.** Courtney Mueller, C.J. Megargel and Dr. Meghan Knapp - Georgetown College
48. **Reaction of Methionine with a Non-C2-Symmetrical Platinum(II) Diamine Compound.**<sup>1</sup> Nilesh V. Sahi and Kevin M. Williams - Western Kentucky University

49. **On the synthesis of anionic metal organic frameworks.**<sup>1</sup> Sydney Combs and Dr. Bangbo Yan - Western Kentucky University
50. **Effects of Platinum (II) Molecules With Selenium Containing Amino Acids.**<sup>1</sup> Stephanie Robey - Western Kentucky University
51. **Temperature dependent kinetic study of photolyzed nitrate.** Christopher Ginter and Matthew Nee - Western Kentucky University
52. **Synthesis of Enantioenriched  $\beta$ -Ketoesters via a Ketene-Claisen Condensation.** Parker Shuler - Berea College
53. **Development of interactive Pourbaix diagrams in 3D.**<sup>1</sup> Michael S. Crocker, Jeremy B. Maddox and Lester L. Pesterfield - Western Kentucky University, George K. Schweitzer - University of Tennessee
54. **The harmonic oscillator: A fundamental problem of quantum mechanics.**<sup>1</sup> Logan H. Eckler and Jeremy B. Maddox - Western Kentucky University

## COMPUTER AND INFORMATION SCIENCES

55. **The Sphinx Beowulf Cluster Project at Bellarmine University.**<sup>1</sup> Jovan Andjelich, Akhtar Mahmood and Faiz Ahmad - Bellarmine University
56. **Mapping Log Files Utilizing Reverse IP Lookup to Visually Analyze Trends in Source Locations.**<sup>1</sup> Kevin Andrew and Karla Andrew - Western Kentucky University
57. **Statistical analysis of micro array gene expression data from a mouse model of toxoplasmosis.** Shrikant Pawar, Dr. Cheryl Davis and Dr. Claire Rinehart - Western Kentucky University
58. **Cyber SCADA Research for the Nation's Critical Infrastructure .** Christopher Klaus, Keith Andrew and Michael Vogt - Western Kentucky University
59. **Cyber Security Data Warehouse Intrusion Detection Methodology at the Cyber Defense Laboratory.** Keith Andrew, Philip C. Womble, Christopher Klaus, Ronald Hopper, Karla Andrew, Stacy Wilson, Michael Vogt and Valentino A. Simpao - Western Kentucky University
60. **Quantum Phase-Space Based Neural Agent Scheme for Anomalous Feature Detection and Characterization via Cepstral Wavelet Autocorrelation on Bond Graphs.** Keith Andrew, Valentino A. Simpao, Christopher Klaus, Stacy Wilson and Michael Vogt - Western Kentucky University
61. **Signal Anomaly Detection via Novel Exact Methodologies in Phase-Space Cepstral Wavelet Analysis.** Keith Andrew, Valentino A. Simpao, Christopher Klaus, Stacy Wilson and Michael Vogt - Western Kentucky University

62. **Moving from the HS21 Blade Cluster to the Lipscomb HPC Cluster for Bioinformatic Applications: A Case Study for InterproScan and BLAST.** Daniel Harris, Jerzy W. Jaromczyk and Christopher L. Schardl - University of Kentucky

## GEOGRAPHY

63. **A Hazards Analysis of the Historic 1-2 May 2010 Mid-South Flood.**<sup>1</sup> Kyle Berry, Lee Campbell, Dustin Jordan, Josh Durkee, Greg Goodrich, Rezaul Mahmood and Stuart Foster - Western Kentucky University
64. **Field Methods in Weather Analysis and Forecasting: An Approach Toward Field-Based Meteorology Courses.**<sup>1</sup> Landon Hampton and Joshua Durkee - Western Kentucky University
65. **A climatology of precipitation days within the Green River watershed in Kentucky.** Joshua D. Durkee - Western Kentucky University, Clayton Hunt - University of Georgia, William Tollefson - Mississippi State University
66. **Illinois Tornado Outbreak of April 19th, 1996.**<sup>1</sup> Sarah McCann - Western Kentucky University
67. **Analysis of the January 3, 2000 tornado in Owensboro, Kentucky.**<sup>1</sup> Kyle Mattingly - Western Kentucky University
68. **A Mesoscale Analysis of the Campo, Colorado Tornado on May 31, 2010.**<sup>1</sup> Brittney Whitehead and Joshua Durkee - Western Kentucky University
69. **A Synoptic and Mesoscale Case Study Analysis of the Atmospheric and Physical Environmental Influences on Tornado Formations Across the High Plains During 25 May 2010.**<sup>1</sup> Dustin Jordan and Joshua Durkee - Western Kentucky University
70. **A Mesoscale Analysis of the May 22, 2010 Bowdle, South Dakota Tornado.**<sup>1</sup> Olivia Payne and Joshua Durkee - Western Kentucky University
71. **Bias Correction for the ERA-40 Temperature Data.**<sup>1</sup> Sarah McCann and Xingang Fan - Western Kentucky University

## MATHEMATICS

72. **Simulating Dermal/Epidermal Interactions in Wound Healing.**<sup>1</sup> Alexander Hare - University of Kentucky, Richard Schugart - Western Kentucky University
73. **Model Development for Lignocellulosic Biofuels.**<sup>1</sup> Amir Ahmadi - Morehead State University, Amanda Fisher - , Alex Toth - University of Notre Dame, Helen Vo - University of California, Berkeley

## PHYSICS AND ASTRONOMY

74. **Establishing Density Profile for Ultra-Cooled Gas in a Harmonic Potential.**<sup>1</sup> Justin McGlothlin and Martin Veillette - Berea College
75. **Determining Properties of HI Emission Regions in the ISM.**<sup>1</sup> Jonathan Newton - Western Kentucky University
76. **Using a Video Camera to Monitor Magnitude of Variable Star.**<sup>1</sup> Nicole Newton, Alex Orchner and Arthur Pallone - Murray State University
77. **A Simple, Portable Apparatus to Determine the Color Index of the Night Sky.**<sup>1</sup> J. Kevin Adkins and Jennifer J. Birriel - Morehead State University
78. **Computer simulation of detector geometry and particle interactions in C.R.E.S.T.**<sup>1</sup> Nicholas Vander Ende, Kirk Wallace and Dr. Scott Nutter - Northern Kentucky University
79. **Fabrication and Integration of the Veto System for the CREST Detector.**<sup>1</sup> Kirk Wallace - Northern Kentucky University
80. **Simulation and Testbed Studies Aimed at Detecting Earth-like Exoplanets with NASA's Next Generation Space-based SIM-Lite Astrometric Observatory.**<sup>1</sup> Benjamin Draper, Richard Jelsma and Akhtar Mahmood - Bellarmine University, Bijan Nemati - Jet Propulsion Lab
81. **A Search for X-ray Counterparts to Supernova Remnants in the Galaxy NGC 4258 (M106).**<sup>1</sup> Caleb K. Grimes - Morehead State University
82. **A multi-wavelength study of the Galactic supernova remnant CTA 1.** Emily Goff, Dr. Thomas Pannuti, Nathan Fite, Caleb Grimes and Joshua Tussey - Morehead State University
83. **Near-Infrared Reduction, Analysis and Photometry of IC133.**<sup>1</sup> Damika D. Jones, Rita Yalda and Tracy M. Hodge - Berea College
84. **BEC to BCS crossover in a rotating Fermionic gas.**<sup>1</sup> William Norris and Martin Veillette - Berea College



## Past Presidents of the Kentucky Academy of Science

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

## Past Meeting Locations of the Kentucky Academy of Science

1914-33	No records available	1968	Western Kentucky University
1935	University of Kentucky	1969	Murray State University
1936	Western Kentucky State College	1970	Georgetown College
1937	University of Louisville	1971	Eastern Kentucky University
1938	Morehead College	1972	Morehead State University
1939	Murray State College	1973	Transylvania College
1940	University of Kentucky	1974	Centre College
1941	Eastern Kentucky State College	1975	University of Louisville
1942	University of Kentucky	1976	University of Kentucky
1943	University of Louisville	1977	Western Kentucky University
1944	University of Kentucky	1978	Eastern Kentucky University
1945	No annual meeting	1979	Northern Kentucky University
1946	University of Louisville	1980	Transylvania University
1947	Western Kentucky State College	1981	Murray State University
1948	University of Kentucky	1982	Ashland Oil, Inc.
S1949	Cumberland Falls State Park	1983	University of Louisville
F1949	Eastern Kentucky State College	1984	Kentucky State University
1950	University of Louisville	1985	Morehead State University
1951	University of Kentucky	1986	Lexington, Ky (with SSMA)
1952	Georgetown College	1987	Western Kentucky University
S1953	Ashland	1988	Eastern Kentucky University
F1953	University of Kentucky	1989	University of Kentucky
S1954	Berea College	1990	Northern Kentucky University
F1954	University of Louisville	1991	Owensboro
S1955	Cumberland Falls State Park	1992	Ashland Community College
F1955	Kentucky State College	1993	Georgetown College
1956	Eastern Kentucky State College	1994	Paducah Community College
S1957	Western Kentucky State College and Mammoth Cave State Park	1995	Western Kentucky University (Joint Meeting with TAS)
F1957	Berea College	1996	Kentucky State University
S1958	National Bridge State Park	1997	Morehead State University
F1958	University of Kentucky	1998	Jefferson Community College, S.W.
S1959	Lake Cumberland State Park	1999	Eastern Kentucky University
F1959	Western Kentucky State College	2000	University of Kentucky
S1960	Murray State College	2001	Middle Tennessee State (Joint Meeting with TAS)
F1960	University of Louisville	2002	Northern Kentucky University
S1961	Morehead State College	2003	Western Kentucky University
F1961	University of Kentucky	2004	Murray State University
1962	Eastern Kentucky State College	2005	Eastern Kentucky University
1963	University of Kentucky	2006	Morehead State University
1964	Morehead State College	2007	University of Louisville
1965	University of Kentucky	2008	University of Kentucky
1966	Kentucky Wesleyan College	2009	Northern Kentucky University
1967	University of Louisville		

**97th Annual Meeting of the Kentucky Academy of Science  
November 2011  
Host: Murray State University**