EXHIBITORS AND SPONSORS

SPONSORS

Platinum Level: Agilent Technologies
American Synthetic Rubber Company

Gold Level: MPD, Inc.
Sud-Chemie, Inc

Silver Level: Eastern Kentucky University Graduate School

Friend Level: Warren Rural Electric Cooperative Corporation

EXHIBITORS

Agilent Technologies
American Synthetic Rubber Company
B & B Microscopes, Ltd.
Hancock Biological Station
Journal of Kentucky Academy of Science
KBRIN (Kentucky Biomedical Research Infrastructure Network)
Kentucky Institute of International Studies at WKU
Midway College School of Pharmacy
Murray State University Graduate School
University of Kentucky College of Pharmacy
University of Kentucky Integrated Biomedical Science
University of Louisville Integrated Programs in Biomedical Sciences
University of Louisville School of Interdisciplinary and Graduate Studies
University Press of Kentucky
VWR International
Western Kentucky University Biotechnology Center
Western Kentucky University Ogden College of Science and Engineering

2011 KAS AFFILIATES

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

SUSTAINING MEMBERS
Campbellsville University

MEMBERS
Asbury University
Kentucky Wesleyan College
Lindsey Wilson College
Thomas More College
University of the Cumberlands
University of Pikeville
Wood Hudson Cancer Research Laboratory

ASSOCIATE MEMBER
WKU Crawford Hydrology Laboratory
WKU Hoffman Environmental Research Institute

HONORARY PATRON
Lumins Associates
Kentucky Academy of Science 2011 Annual Meeting

WELCOME

TO THE 97TH ANNUAL MEETING OF THE KENTUCKY ACADEMY OF SCIENCE

Murray State University welcomes the Kentucky Academy of Science to Murray for its 97th annual meeting. The westernmost of Kentucky’s regional comprehensive universities is known for its high-quality academic programs and warm hospitality. The university has grown to more than 10,400 students on the main campus in Murray and our regional campuses in Paducah, Hopkinsville, Madisonville, and Henderson. Many of these students are pursuing degree programs in the College of Science, Engineering and Technology, which is comprised of six academic departments: Biological Sciences, Chemistry, Engineering and Physics, Geosciences, Industrial and Engineering Technology, and Mathematics and Statistics.

Our college is proud to showcase the two newest buildings on campus, both of which will be on display for conference attendees. The Biological Sciences building was completed in 2007, followed in 2009 by Jesse D. Jones Hall, home of our Department of Chemistry. Both facilities are equipped with state-of-the art instrumentation and together they provide 67,000 square feet of comfortable, modern instructional and research space for faculty and students in those disciplines. They are joined by the Jones Family Clock Tower, a beautiful structure that has already become an iconic part of the Murray State landscape.

In addition to our academic buildings, we are proud to be home to a number of prestigious scientific research centers. The Watershed Studies Institute, a Commonwealth Center of Excellence coordinates multidisciplinary research and educational initiatives that focus on water-related ecological systems. Hancock Biological Station (HBS), located less than 20 minutes from the campus on Kentucky Lake, is a year-round teaching and ecosystem research facility where students have unique opportunities to interact with faculty and visiting scientists. The Mid-America Remote Sensing Center is involved in teaching, research, and service to the region in the fields of remote sensing and GIS. The Chemical Services Laboratory provides analytical and environmental services to individuals, corporations, agencies and other institutions in the mid-south region.

Murray State University is committed to its educational mission in expanding opportunities in the sciences to the citizens of our commonwealth. We are pleased to support the Kentucky Academy of Science as host of this year’s annual meeting, and pledge our continued dedication to the achievement of our mutual goals. Our local arrangements committee has worked to provide the Academy with a comfortable and convenient venue for its meeting. If we can be of any assistance to you, please let us know. Best wishes for an enjoyable and productive meeting.

Steve Cobb, Dean
Murray State University
College of Science, Engineering and Technology
GOVERNING BOARD
Executive Committee

President ............................................................................................... Barbara Ramey
Eastern Kentucky University

President-Elect .................................................................................... Dawn Anderson
Berea College

Vice President ........................................................................................... Cheryl Davis
Western Kentucky University

Past President ......................................................................................... Nancy Martin
University of Louisville

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 (2014 - Physical Sciences) .................Morehead State University
K.C. Russell (2012 - Physical Sciences) ............... Northern Kentucky University
Judy Voelker (2014 - Social & Behavioral Sciences)…Northern Kentucky University
Sean Reilley (2012 - Social & Behavioral Sciences)…Morehead State University
KatieAnn Skogsberg (2011 - At - Large)...............Centre College
Mary Jansen (2013 - At - Large)............................................................. KCTCS
Robert Creek (Program Coordinator)....................... Eastern Kentucky University
Claire Rinehart (Editor, Webpage).................................Western Kentucky University
Nancy Martin (AAAS/NAAS Representative)..............University of Louisville
# TABLE OF CONTENTS

Exhibitors and Sponsors ................................................................. Inside Front Cover
Welcome .......................................................................................... 1
KAS Governing Board ....................................................................... 2
Symposium ......................................................................................... 4
Plenary Session ................................................................................ 6
Kentucky Association of Physics Teachers Workshop ....................... 7
Program Summary ............................................................................ 8
Map .................................................................................................. 10
Local Arrangement Committee ....................................................... 11

**Presentations:**
- Agricultural Sciences ................................................................... 13
- Anthropology and Sociology ........................................................ 16
- Biochemistry and Physiology ....................................................... 18  *(see Physiology and Biochemistry)*
- Botany .......................................................................................... 18
- Cellular and Molecular Biology .................................................... 19
- Chemistry ....................................................................................... 20
- Computer and Information Science ............................................. 22
- Ecology and Environmental Science .......................................... 23
- Engineering .................................................................................... 25
- Geography ..................................................................................... 26
- Geology ........................................................................................... 28
- Health Sciences ............................................................................ 29
- Mathematics .................................................................................. 30
- Microbiology ................................................................................ 31
- Physics and Astronomy ............................................................... 32
- Physiology and Biochemistry ...................................................... 33
- Psychology .................................................................................... 35
- Science Education ....................................................................... 37
- Zoology ......................................................................................... 38

**Scientific Posters [All sessions are located in the Curris Center]:**

| AM Session, Small Ballroom: Agriculture, Anthropology & Sociology, Botany, Chemistry and Computer & Information Science | 39 |
| AM Session, Dance Lounge: Cellular & Molecular Biology and Health Sciences | 45 |
| PM Session, Small Ballroom: Ecology & Environmental Sciences, Engineering, Geography, Geology, Mathematics, Microbiology, Physics & Astronomy, Psychology and Science Education | 48 |
| PM Session, Dance Lounge: Physiology & Biochemistry (Biochemistry & Physiology), and Zoology | 53 |

Past Presidents ............................................................................... 56
Past Meeting Locations ..................................................................... 57
KAS Affiliates ................................................................................. Inside Back Cover
SYMPOSIUM
“Kentucky Museum of Natural History: Present and Future”
Panel Discussion

Friday, November 4, 2011
Collins I & T Building Room 231 (FreedCurd)
7:00 – 8:00 p.m.

Introduction of Panel
Dr. Dawn Anderson
President Elect – KAS
Berea College

Presiding: Dr. Judy Voelker
Associate Professor of Anthropology
Northern Kentucky University
Former KAS Representative to the Commonwealth of the Kentucky Natural History Museum Board

Panel Members:
Dr. Donald R. Chesnut, Jr. – Kentucky Museum of Natural History Project
Dr. Frank Ettensohn – UK Dept. of Earth & Environmental Sciences
Mr. Don Dott – Kentucky State Nature Preserves Commission

Don Chesnut, Jr, Ph.D.
President
Board of Directors of the Kentucky Museum of Natural History Project

Dr. Chesnut has been a driving force behind efforts to establish a Kentucky History Museum for many years. He is currently the Board President of the Kentucky Museum of Natural History Project, a private non-profit foundation whose goal is the foundation and development of a Kentucky Natural History Museum. Dr. Chesnut served as geologist, chief paleontologist, and stratigrapher for the Kentucky Geological Survey beginning in 1979 and retiring in 2001. He also served as an Adjunct Assistant Professor at the University of Kentucky in the Geosciences Department for many years starting in 1998.

Dr. Chesnut serves as an advisor to the Kentucky Paleontological Society and has served as the President of the Kentucky Society for Professional Geologist (1998). He is a fellow of the Geological Society of America and a past fellow of the Geological Society I(London, England) as well as a member of the International Pateontological Association, the Kentucky Academy of Science, the Kentucky Paleontological Society, the National Center for Science Education, the Society for Sedimentary Geology and other other professional societies. Dr. Chesnut received his B.S., M.S, and Ph.D. in Geology all from the University of Kentucky.
Frank Ettensohn, Ph.D.
Faculty member
Department of Earth & Environmental Sciences
University of Kentucky

Dr. Ettensohn has been involved in efforts to establish a Kentucky Natural History Museum for many years. Dr. Ettensohn’s work in geology and paleontology is highly regarded worldwide and has widely published his work on black oil and gas shales, Kentucky limestone deposits, seismites, and the Appalachian Basin to name just a few. Dr. Ettensohn joined the Department of Geological Sciences at the University of Kentucky as a faculty member in 1975 and served as the Chairman of the department from 1997-2005. Currently he is the Director of the Honors Program at the University of Kentucky. Dr. Ettensohn has also served as a guest visiting professor around the world including China, Ecuador and Nepal. Dr. Ettensohn has been the President of the American Institute of Professional Geologists. He is a current member of the Kentucky Academy of Science and received the 2010 KAS Distinguished University Scientist Award. Dr. Ettensohn received his B.S. (Geology) and M.S. from the University of Cincinnati and his PhD. From the University of Illinois at Urbana-Campaign.

Donald S. Dott, JD
Executive Director
Kentucky State Nature Preserves Commission

As Executive Director of the Kentucky State Nature Preserves Commission, Mr. Dott sets overall policy and direction for the conservation agency with the state natural heritage data program, state nature preserve acquisition and management program. He also serves as an Ex officio board member of the Kentucky Heritage Land Conservation Fund Board, a member on the US Council of NatureServe, and a board member of the Kentucky Natural Lands Trust. Prior to the Kentucky State Nature Preserves Commission, he was with the Office of Legal Services in the Natural Resources and Environmental Protection Cabinet.

Mr. Dott earned a Bachelor of Arts in Political Science with High Distinction, Phi Beta Kappa in the Honors Program from the University of Kentucky and received a Juris doctor from the National Law Center at George Washington University.
PLENARY SESSION

Saturday, November 5, 2011
Collins I & T 231 (Freed Curd)
4:15 - 5:15 p.m.

Welcome
Dr. Barbara Ramey
President - KAS
Eastern Kentucky University

Presiding: Dr. Dawn Anderson
President-elect - KAS
Berea College

“Fields of Learning:
The Student Farm Movement in North America”

Sean Clark, Ph.D.
Associate Professor/Program Coordinator
Department of Agriculture and Natural Resources
Berea College

Dr. Sean Clark received his B.S. and M.S. degrees from Virginia Tech and a Ph.D. from Michigan State University. Before coming to Berea in 1998 he was research manager for the Sustainable Agriculture Farming Systems Project at the University of California, Davis, a long-term comparison of farming systems that examined agronomic, ecological, and economic aspects of conventional and alternative food production systems. In recent years he has worked on projects including ground beetles as ecological indicators, honey bee selection for parasite resistance, economics of small-scale intensive agriculture, and the feasibility of pond aquaculture. His current research focuses student farms as educational laboratories on college campuses. He and Dr. Laura Sayre, researcher at the French National Institute for Agronomic Research, are the editors of the recently published book Fields of Learning: The Student Farm Movement in North America (University Press of Kentucky, 2011) profiling student-run, campus farms in the United States and Canada.
A half day (three hours) workshop for physics teachers is being offered in room 159 of the Blackburn Science Building on Saturday morning from 9 a.m. till noon. The first activity in this two-part workshop will be the interactive, hands-on experience, "Making Magnetism Visible," followed by a panel presentation entitled, "Benefits and Costs of Student Participation in State and National Science Competitions."

Magnetic fields are a notoriously difficult concept. In the "Making Magnetism Visible" workshop participants will interact with a series of illustrative, motivating demonstrations of magnetism in action. Tips and tricks will be shared for integrating these demonstrations into all levels of classrooms and some of the relatively inexpensive materials for these activities will be distributed to participants so they can immediately replicate the demonstrations in their own classrooms.

Participation in science competitions can provide some of the best memories - and the biggest headaches - of any activity in which a science teacher might be involved. A panel of teacher/mentors and event organizers will share their experiences and answer questions regarding science competitions involving rockets, robots, construction, calculation, solo excellence, and solid teamwork.
PROGRAM SUMMARY

FRIDAY, NOVEMBER 4-5, 2011

9:00 am - 4:30 pm  KBRIN - NIH Proposal
Development Workshop ........... Curris Center, Mississippi Rm.

3:30 pm - 5:30 pm  KAS Governing
Board Meeting ..................... Collins I &T Bldg., Room 237

5:45pm - 6:45 pm  Registration..................Curris Center, 3rd Floor Concourse

7:00 pm - 8:00 pm  SYMPOSIUM ..................Collins I&T Bldg., Rm 231
(Freed Curd Auditorium)

“Kentucky Museum of Natural History:
Present and Future”
Panelists:
Dr. Donald Chesnut, Jr., President, Board of Directors of the
Kentucky Museum of Natural History Project
Dr. Frank Ettensohn, U.K. Dept. of Earth & Environmental
Science
Mr. Don Dott, Director, Kentucky State Nature Preserves
Commission

8:15 pm - 9:00 pm  KAS Sectional Officers
Meeting.............................Collins I &T Bldg., Room 237

8:15 pm - 10:30 pm  Social...............................Collins I&T Bldg., Rm 231
(Freed Curd Auditorium)

SATURDAY, NOVEMBER 5, 2011

7:00 am - 5:00 pm  Registration..................Curris Center, 3rd Floor Concourse

8:00 am - 4:00 pm  Vendor’s Exhibits ............Curris Center, 3rd Floor Concourse

8:00 am - 9:30 am  Power Point Presentations ............... See Table of Contents

8:00 am - 4:00 pm  Scientific Posters on Display ..................Curris Center,
Small Ballroom &Dance Lounge

9:00 am - 12:00 pm  Physics Education Workshop
H.S. Teachers.................. Blackburn Science Bldg. Room 159

9:30 am - 9:45 am  Refreshment Breaks........Curris Center, 3rd Floor Concourse
and Collins I&T Bldg. outside Room 231
9:30 am - 11:30 am  Hancock Biological Station Tour.................. Outside North Door of Curris Center

9:45 am - 11:30 am  Power Point Presentations .................. See Table of Contents

10:00 am - 11:30 am  Kentucky Community & Technical College Meetings: ..................Collins I & T Bldg. Room 237 Biology Faculty ..................Collins I & T Bldg. Room 237 Chemistry Faculty ..................Collins I & T Bldg. Room 242 Physics Faculty ..................Collins I & T Bldg. Room 229

11:30 am - 12:45 pm  Lunch - Restaurant options available at registration

11:30 am - 12:45 pm  KAS Past President's Luncheon..................Curris Center, Commonwealth Room

1:00 pm - 2:15 pm  Power Point Presentations ..................See Table of Contents

1:00 pm - 4:00 pm  The Mid America Remote sensing Center (MARC) of Murray State University will host a Symposium on Geotechnologies and Geography Synergies ..................Blackburn Science Bldg., Room 320

2:00 pm - 4:00 pm  Hancock Biological Station Tour ...............Outside North Door of Curris Center

2:15 pm - 2:30 pm  Refreshment Breaks ........Curris Center, 3rd Floor Concourse and Collins I&T Bldg. outside Room 231

2:30 pm - 4:00 pm  Power Point Presentations ..................See Table of Contents

4:15 pm - 5:15 pm  PLENARY SESSION ..................Collins I&T Bldg., Room 231 (Freed Curd Auditorium)

“Fields of Learning: The Student Farm Movement in North America”
Dr. Sean Clark, Associate Professor
Dept. of Agriculture and Natural Resource
Berea College

5:30 pm - 6:30 pm  Annual KAS Business Meeting / Reception ..................Curris Center, Theater

6:45 pm - 9:00 pm  ANNUAL AWARDS BANQUET ..................Curris Center, Large Ballroom
Murray State University
Local Arrangement Committee

College of Science, Engineering & Technology
  Robert Pervine – Chair, Local Arrangements
  Rhonda Rogers – Assistant Chair, Local Arrangements
  Angela Guyton – Chair, Poster Presentations
  Cathy Bazar – Chair, Volunteers
  Steve Cobb

Department of Biological Sciences
  Michael Flinn
  Kate He

Department of Chemistry
  Beth Brubaker – Chair, Exhibitors/Sponsors
  Daniel Johnson
  Bomman Loganathan

Department of Engineering & Physics
  Ted Thiede

Department of Geosciences
  Carruth Kitrell
  Robin Zhang

Department of Mathematics & Statistics
  Donald Adongo

Department of Industrial & Engineering Technology
  Dwaine Willoughby – Technical Support
  Diane Thiede – Chair, Clerical Support
  Andrew Kellie

Hancock Biological Station
  Gerry Harris
  David White

MARC (Mid-American Remote Sensing Center)
  Jane Benson
  Charletta Ellis
PRESENTATIONS

AGRICULTURAL SCIENCES

Stephen King, Chair  Sheri Crabtree, Secretary
Western Kentucky University  Kentucky State University

SATURDAY, NOVEMBER 5, 2011
CURRIS - BARKLEY RM.

8:00 am  Evaluation of Sunflower (Helianthus annuus L.) Cultivars for Cut Flowers. Elmer Gray - Western Kentucky University, Christopher G. Ferguson - Western Kentucky University, Martin J. Stone - Western Kentucky University

8:15 am  Lady Beetles Associated with Sweet Corn Bordered by Pasture, Buckwheat or Sunflower Borders. John D. Sedlacek - Kentucky State University, Karen L. Friley - Kentucky State University, Marquita L. Grayson-Holt - Kentucky State University, Christopher M. Wales - Kentucky State University, Rachel S. Hayden - Kentucky State University

8:30 am  Economics Systems, Role of Government, and Agriculture. Stephen A. King - Western Kentucky University

8:45 am  Evaluation of Constructed Wetlands for Nitrate and Phosphorus Removal. Eric T. Turley - Kentucky State University, George F. Antonious - Kentucky State University

9:00 am  Developing a Biofilter for Remediation of Pesticide Residues in Runoff Water. George Antonious - Kentucky State University

9:15 am  Will Mowing of Primocane-Fruiting Blackberries Affect Fruit Ripening? Karen L. Friley - Kentucky State University, John D. Sedlacek - Kentucky State University, Kirk W. Pomper - Kentucky State University, Jeremiah D. Lowe - Kentucky State University, Michael K. Bomford - Kentucky State University, Sheri B. Crabtree - Kentucky State University, Marquita L. Grayson-Holt - Kentucky State University, Christopher M. Wales - Kentucky State University

9:30 am  Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg. outside Room 231

9:45 am  An Update on the KSU Pawpaw Breeding Program. Kirk W. Pomper - Kentucky State University, Sheri B. Crabtree - Kentucky State University, Jeremiah D. Lowe - Kentucky State University

10:00 am  Kentucky State University Pawpaw Processing: An Update. Sheri B. Crabtree - Kentucky State University, Kirk W. Pomper - Kentucky State University

1Undergraduate Research Competition
2Graduate Research Competition
Jeremiah D. Lowe - Kentucky State University, Kirk W. Pomper - Kentucky State University, Sheri B. Crabtree - Kentucky State University, John R. Clark - University of Arkansas, John G. Strang - University of Kentucky

10:30 am  Intensive production of paddlefish, Polyodon spathula, in decommissioned waste water treatment plants: an economic model.  
William Rimmele - Kentucky State University, Siddhartha Dasgupta - Kentucky State University

10:45 am  Effect of Tassel Removal for Baby Corn Production in Kentucky.  
Christopher Ferguson - Western Kentucky University, Zheng Wang - University of Kentucky, Martin Stone - Western Kentucky University, Elmer Gray - Western Kentucky University

11:00 am  Effects of plastic and hay mulches on soil temperature and moisture in organic heirloom tomato production.  
Joni Thompson - Kentucky State University, Michael Bomford - Kentucky State University, Jon Cambron - Kentucky State University, Michael Ward - Kentucky State University, Anthony Silvernail - Kentucky State University, Cristen Flewellen - Kentucky State University, Christopher Gaines - Kentucky State University

11:15 am  Long-term Impact of Chicken Waste on Soil Physical Characteristics.  
X. Liu - Murray State University, I.P. Handayani - Murray State University

11:30 am  Lunch - Restaurant options available at registration

1:00 pm  Kentucky performance of a high-yielding sweet potato (Ipomoea batatas L.) variety bred for biofuel feedstock production.  
Jon Cambron - Kentucky State University, Michael Bomford - Kentucky State University, Anthony Silvernail - Kentucky State University, Michael Ward - Kentucky State University, Raven Ward - Kentucky State University, Joni Thompson - Kentucky State University

1:15 pm  A Model-Based Determination of Human Carrying Capacity of Kentucky’s Ecoregions.  
Terrell H. Holder - Kentucky State University, Michael M. Bomford - Kentucky State University, Ken Bates - Kentucky State University

1:30 pm  Small Farm Biomass Production from Native Perennial Field Grasses.  
Brandon May - Kentucky State University, Tamara Sluss - Kentucky State University

1:45 pm  Half-lives of Endosulfan Isomers on Field Treated Vegetables.  
Kyla Ross - Kentucky State University, George Antonious - Kentucky State University, Tejinder Kochhar - Kentucky State University

1Undergraduate Research Competition
2Graduate Research Competition
2:00 pm  The continued evaluation of non-typical fruits found in field evaluation plots of 'Vinson Watts' tomatoes (*Solanum lycopersicum*).\(^1\) Joshua Riggsby - Morehead State University, Emily Bucklew - Morehead State University, Jennifer Harman - Morehead State University, C. Brent Rogers - Morehead State University, Debby Johnson -

2:15 pm  Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg. outside Room 231

2:30 pm  Antioxidants and Heavy Metals Content of Hot Pepper.\(^1\) Mckenzie Johnson - Kentucky State University, George Antonious - Kentucky State University, Tejinder Kochhar - Kentucky State University

2:45 pm  Characteristics of and Reasons why Farmers Choose Off-Farm Work.\(^1\) Caitlin N. Carter - Western Kentucky University

3:00 pm  Does a Methyl Salicylate-Based Lure Attract Lady Beetles to Blackberries?\(^1\) Justina Riddick - Kentucky State University, John D. Sedlacek - Kentucky State University, Karen L. Friley - Kentucky State University, Joy Birike - Kentucky State University

3:15 pm  Effects of Organic and Conventional Systems on Nitrate Toxicity in Sorghum-sudangrass.\(^1\) Julianne Wyrick - Asbury University, Larry Olsen - Asbury University, S. Ray Smith - University of Kentucky

3:30 pm  Changes in Soil Properties as Affected by Farming Systems in Calloway County, Kentucky.\(^1\) Katie LeBlanc - Murray State University, Iin P. Handayani - Murray State University

3:45 pm  The Effects of Land Utilization on Soil Physical Properties in White County Illinois.\(^1\) John McKinney - Murray State University, Iin P. Handayani - Murray State University

4:15 pm  Plenary Session - Collins I&T Bldg., Room 231 (Freed Curd Auditorium)

\(^1\)Undergraduate Research Competition

\(^2\)Graduate Research Competition
ANTHROPOLOGY AND SOCIOLOGY
Changzheng Wang, Chair
Kentucky State University
Benjamin Freed, Secretary
Eastern Kentucky University

SATURDAY, NOVEMBER 5, 2011
I & T 155

9:30 am  Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg. outside Room 231

9:45 am  The transmission of ritual knowledge among kin groups in eastern Madagascar. Douglas Hume - Northern Kentucky University

10:00 am  Surveying sympatric lemurs and fallback food species in northern Madagascar. Benjamin Z. Freed - Eastern Kentucky University

10:15 am  Examining habitation and craft production at Non Mak La, central Thailand. Judy Voelker - Northern Kentucky University

10:30 am  Monitoring howling monkey ranging behavior using vocalizations in Ometepe, Nicaragua. ¹ Erik Wilson - Eastern Kentucky University

10:45 am  Body weight perception and willingness to adopt healthy eating and activity behaviors among Kentucky adults. ¹ Erica Coleman - Kentucky State University, Cecil Butler - Kentucky State University, Lingyu Huang - Kentucky State University, Changzheng Huang - Kentucky State University

11:30 am  Lunch - Restaurant options available at registration

2:15 pm  Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg. outside Room 231

4:15 pm  Plenary Session - Collins I&T Bldg., Room 231 (Freed Curd Auditorium)

¹Undergraduate Research Competition
²Graduate Research Competition
BIOCHEMISTRY AND PHYSIOLOGY*

* Please see PHYSIOLOGY AND BIOCHEMISTRY
BOTANY

Nilesh Sharma, Secretary  Maggie Whitson, Secretary
Western Kentucky University  Northern Kentucky University

SATURDAY, NOVEMBER 5, 2011
CURRIS - OHIO RM

11:30 am  Lunch - Restaurant options available at registration

1:00 pm  Opportunities for Botanical Research and Study in Costa Rica and Ecuador. Ronald L. Jones - Eastern Kentucky University

1:15 pm  Taxonomy and ecology of the Bartonberry, Rubus bartonianus (Rosaceae): a narrow endemic of Hells Canyon. Lawrence A. Alice - Western Kentucky University, Jenifer Ferriel - USDA Forest Service, Roger Ferriel - Bureau of Land Management

1:30 pm  Pawpaw Patch Genetic Diversity and Clonality and its Impact on the Establishment of Invasive Species in the Forest Understory. Jacob Botkins - Kentucky State University

1:45 pm  Effect of coconut oil on ulcerative colitis in a murine model. Pranav Chandra - Western Kentucky University, Nilesh Sharma - Western Kentucky University

2:00 pm  Genetic Diversity in Kentucky Spicebush Populations using Simple Sequence Repeat Markers. Re'Gie Smith - Kentucky State University, Kirk W. Pomper - Kentucky State University, Jeremiah D. Lowe - Kentucky State University, Jacob Botkins - Kentucky State University, Sheri B. Crabtree -

2:15 pm  Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg. outside Room 231

2:30 pm  Plasticity and habitat differences in photosystem and growth responses to sunflecks in a tropical plant. Alexandra J. Weiser - Georgetown College, D.N. McCletchie - University of Kentucky, C. Stieha - University of Kentucky

2:45 pm  Red and White Mulberries (Moraceae: Morus rubra and M. alba) and Their Interspecific Hybrids. Brandy N. Bradford - Murray State University, Leslie J. Potts - Murray State University, Nathaniel C. Bundy - Murray State University, Dayle E. Saar - Murray State University

3:00 pm  Woody plant and fern inventory and species richness patterns at Greenbo Lake State Resort Park, Greenup Co., KY. Alexia Callihan - Morehead State University, Allen C. Risk - Morehead State University, Byron Newland - Morehead State University

4:15 pm  Plenary Session - Collins I&T Bldg., Room 231 (Freed Curd Auditorium)

1Undergraduate Research Competition
2Graduate Research Competition
CELLULAR AND MOLECULAR BIOLOGY

Rajalingam Dakshinamurthy, Secretary
Ajay Srivastava, Secretary
Western Kentucky University
Western Kentucky University

SATURDAY, NOVEMBER 13, 2011
I & T 132

9:30 am  Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg. outside Room 231

9:45 am  Cryptochrome as the candidate photoreceptor for entrainment of the circadian clock by blue light in Chlamydomonas. 2
Jonathan Howton - Western Kentucky University, Sigrid Jacobshagen - Western Kentucky University

10:00 am  EST database approach to identify fatty acid biosynthesis genes involved in metabolic channeling to anacardic acid biosynthesis. 2
Richa A. Singhal - University of Louisville, David J. Schultz - University of Louisville

10:15 am  Proteomic Analysis of a Fertility-Regulating Aminopeptidase in Caenorhabditis elegans. 2
Hannah M. Flood - Murray State University, Chris Trzepacz - Murray State University

10:30 am  The mechanism of action of Prevotella histocola in the immunomodulation of experimental autoimmune encephalomyelitis (EAE). 1
Premila Samuel - Berea College, Ashutosh K. Mangalam - Mayo Clinic, Arika Wussow - Mayo Clinic

10:45 am  Reverse Genetic Analysis of the M1 Aminopeptidase Family in Caenorhabditis elegans. 1
Mark Althoff - Murray State University, Laura Samples - Murray State University, Chris Trzepacz - Murray State University

11:00 am  Effects of DNA Damage on Disappearance of UmuDAb Site-Directed Mutants. 1
Alexander Hare - Morehead State University, Sabal Adhikari - Morehead State University, Alison Grice - Morehead State University, Janelle Hare - Morehead State University

11:15 am  The genus Acinetobacter possesses a unique error-prone DNA damage response: the story of UmuD. 1
James Bradley - Morehead State University, Janelle Hare - Morehead State University

11:30 am  Lunch - Restaurant options available at registration

4:15 pm  Plenary Session - Collins I&T Bldg., Room 231 (Freed Curd Auditorium)

1Undergraduate Research Competition
2Graduate Research Competition
CHEMISTRY

Bommanna Loganathan, Chair
Murray State University

KC Russell, Secretary
Northern Kentucky University

SATURDAY, NOVEMBER 5, 2011
I & T 231 (FREED CURD)

8:00 am  Development and Validation of a DART-MS Method for the Quantitation of Glucose for Biofuels Production.  Darrin Smith - Eastern Kentucky University, Daudi Saang’onyo - Eastern Kentucky University, Gary Selby - Eastern Kentucky University

8:15 am  Photochemical production of trans-dioxoruthenium(VI) porphyrins.  Eric Vanover - Western Kentucky University, Yan Huang - Western Kentucky University, Chris Abebrese - Western Kentucky University, Helen Thompson - Western Kentucky University, Cathleen Webb - Western Kentucky University, Rui Zhang - Western Kentucky University

8:30 am  Trace elemental analysis in tree cores.  Brahmaiah Patibandla - Murray State University

8:45 am  Explanation for the Formation of Branched Hydrocarbons.  Chufen Jin - Eastern Kentucky University, Alexander Montavon - Eastern Kentucky University, Buchang Shi - Eastern Kentucky University

9:00 am  Greenhouse and Field Studies of Flue Gas Desulphurization By-Products Amended Soil.  kelin Wang - Western Kentucky University, William Orndorff - Western Kentucky University, Yan Cao - Western Kentucky University, Wei-ping Pan - Western Kentucky University

9:15 am  The preparation of copper-based oxygen carriers supported by titanium dioxide.  Yaowen Cui - Western Kentucky University

9:30 am  Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg. outside Room 231

9:45 am  Size Dependent Antimicrobial Activity of Sugar Encapsulated Gold Nanoparticles.  Lakshmisri M Vangala - Western Kentucky University, Vivek Badwaik - Western Kentucky University

10:00 am  Blood Plasma Coagulation Induced by Poly(ethylene glycol) Materials.  Imelda Hot - Berea College, Christopher A. Siedlecki - Biomedical Engineering Institute, Department of Surgery and Bioengineering, Penn State College of Medicine, Hershey, PA

10:15 am  Combinatorial synthesis of a thiourea library for the aminolysis of N-acyl homoserine lactones.  Chido M. Hambira - Berea College, Michael Bertucci - University of North Carolina at Chapel Hill, Michel Gagné - University of North Carolina at Chapel Hill

1Undergraduate Research Competition
2Graduate Research Competition
10:30 am Development of a New Class of Aromatase Inhibitors: Design, Synthesis, and Inhibitory Activity of 3-Phenylchroman-4-one (Isoflavanone) Derivatives. ¹ Adam McCallum - Northern Kentucky University, Kevin Bonfield - Northern Kentucky University, Erica Amato - Northern Kentucky University, Hannah Agard - Washington and Lee University, Tony Bankemper - Northern Kentucky University, Jeff Steller - Northern Kentucky University, James Keeler - Northern Kentucky University, Lili Ma - Northern Kentucky University

10:45 am Organic Synthesis of Novel Inhibitors of Bacterial Enzyme MurA. ¹ Natalie Orms - Centre College, Selena Li - Centre College, Ben Boone - Centre College, Jennifer Muzyka - Centre College

11:00 am Synthesis and Identification of Electron Rich Annulenes. ¹

11:15 am Using Computer Based Algebra for Visualization in the Physical Sciences. Jason Fuller - Eastern Kentucky University

11:30 am Lunch - Restaurant options available at registration

1:00 pm Astrochemistry: A Case Study of Time-dependent Modeling of Interstellar O₂. Donghui Quan - Eastern Kentucky University

1:15 pm Design and Synthesis of STAT3 Inhibitor. ¹ Chyna Johnson - Berea College, Nate Carmen - Miami University, Philias Daka - Miami University, Dr. Hong Wang - Miami University

1:30 pm Synthesis of a Series of Push-Pull O-Dehydrobenzoannulenes. ¹

1:45 pm Selective Hydrogen Bonding between Uracil and the Superoxide Radical. ¹ Sijin Ren - Murray State University, Wafaa M. Fawzy - Murray State University

2:00 pm Solvent Effects on the Excited State Lifetimes of Natural Estrogens. ¹ Kara Chan - Northern Kentucky University

2:15 pm Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg. outside Room 231

2:30 pm Environmentally Friendly Synthesis, Characterization and Bactericidal Activity of Starch Encapsulated Gold nanoparticles. ¹ Dillon S Pender - Western Kentucky University, Lakshmisri M Vangala - Western Kentucky University, Rajalingam Dakshinamurthy - Western Kentucky University

2:45 pm Intermolecular Interactions between the Superoxide Radical and Hydrogen Fluoride. Yuchen Zhang - Murray State University, Wafaa M. Fawzy - Murray State University

4:15 pm Plenary Session - Collins I&T Bldg., Room 231 (Freed Curd Auditorium)

¹Undergraduate Research Competition
²Graduate Research Competition
COMPUTER AND INFORMATION SCIENCES
Jerzy Jaromczyk, Chair
Sherif Rashad, Secretary
University of Kentucky
Morehead State University

SATURDAY, NOVEMBER 5, 2011
CURRIS - CUMBERLAND RM

11:30 am  Lunch - Restaurant options available at registration

1:00 pm  Parsing Tool for Creating a Genome Sequence Database Using Affymetrix Microarray Expression Data. Earle Foskett - Bellarmine University, Dr. Muzaffar Ali - Bellarmine University

1:15 pm  Privacy Preserving Distributed Data Mining. Zhenmin Lin - University of Kentucky, Jerzy W. Jaromczyk - University of Kentucky

1:30 pm  Visual Tools for Queries and Visual Display of Quantitative Information in a Cancer Research Database. JESSE STEWART - University of Kentucky, JERZY W. JAROMCZYK - University of Kentucky

1:45 pm  Novel Load Balancing Techniques for Wireless Heterogeneous Networks. Benjamin Caldwell - Morehead State University, Sherif Rashad - Morehead State University

2:00 pm  Intrusion Detection in Wireless Mobile Networks using Data Mining Techniques. John Hargett - Morehead State University, Sherif Rashad - Morehead State University

2:15 pm  Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg. outside Room 231

4:15 pm  Plenary Session - Collins I&T Bldg., Room 231 (Freed Curd Auditorium)

1Undergraduate Research Competition
2Graduate Research Competition
ECOLOGY AND ENVIRONMENTAL SCIENCE

Richard Boyce, Chair
Northern Kentucky University

Scott Grubbs, Secretary
Western Kentucky University

SATURDAY, NOVEMBER 5, 2011
CURRIS - MISSISSIPPI RM.

11:30 am  Lunch - Restaurant options available at registration

1:00 pm  Spatial distribution and economic consequences of human-elephant conflict in Kenya.  Michael Stokes - Western Kentucky University, Simon Kasaine Kagwa - Western Kentucky University, Bruce Schulte - Western Kentucky University, Charles Kimwele - University of Nairobi

1:15 pm  Sound Production in Freshwater Invertebrates: Documentation and Applications in Biomonitoring.  Nissa Rudh - Murray State University, Michael Flinn - Murray State University, James Hereford - Murray State University

1:30 pm  Movement, Habitat Use, and Diet Selectivity of Re-introduced Juvenile Alligator Gar, Atractosteus spatula, in Clarks River Kentucky.  Jared Militello - Murray State University, Michael Flinn - Murray State University

1:45 pm  Atrazine exposure lengthens time until cannibalistic response in a dragonfly larva (Libellula luctuosa)  Coy R. St. Clair - Murray State University

2:00 pm  Factors affecting recruitment of crappie populations in Kentucky and Barkley Lakes.  Adam D. Martin - Murray State University

2:15 pm  Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg. outside Room 231

2:30 pm  Influences of a Cladophora Bloom on the Diets of Elliptio dilatata and Amblema plicata in the Upper Green River, Kentucky.  Jennifer M. Yates - Western Kentucky University, Scott A. Grubbs - Western Kentucky University, Albert J. Meier - Western Kentucky University

2:45 pm  The role of Podostemum ceratophyllum in providing habitat for net-spinning caddisflies.  Brenna E. Tinsley - Western Kentucky University, Scott A. Grubbs - Western Kentucky University, Albert J. Meier - Western Kentucky University

3:00 pm  Assessment of water usage and photosynthesis in invasive Amur honeysuckle and native spicebush and pawpaw.  Molly Brown - Northern Kentucky University, Richard Boyce - Northern Kentucky University

1 Undergraduate Research Competition
2 Graduate Research Competition
3:15 pm  An Analysis of Call Frequencies Based on Time of Day and Habitat for Seven Species of Anurans.\textsuperscript{1} Mary Newton - Western Kentucky University, Albert Meier - Western Kentucky University, Ouida Meier - Western Kentucky University, Jacob Eldridge - Western Kentucky University

3:30 pm  Impacts on Small Mammal Biodiversity of Converting Abandoned Farmland to Switchgrass.\textsuperscript{1} Kenton Sena - Asbury University, Ray Smith - University of Kentucky, Bruce Branan - Asbury University

4:15 pm  Plenary Session - Collins I&T Bldg., Room 231 (Freed Curd Auditorium)

\textsuperscript{1}Undergraduate Research Competition
\textsuperscript{2}Graduate Research Competition
ENGINEERING
Sally Krijestorac, Chair
Morehead State University
Sanjeev Adhikari, Secretary
Morehead State University

SATURDAY, NOVEMBER 5, 2011
I & T 237

8:00 am Experimental Results of a New Swarm Search Algorithm based
on Honey Bees. Kyle Frye - Murray State University

8:15 am The Effects of the Addition of SrCl₂ and HoF₃ on Photo
Luminescent Z-BLAN Glass. Hodari-Sadiki James - Berea
College, Russell L. Leonard - University of Tennessee Space
Institute, Jacqueline A. Johnson - University of Tennesse Space
Institute

8:30 am Performance of Ruthenium Doped LaSrFeCrO₃ Perovskite
Solid Oxide Fuel Cells. Ben Slone - Centre College, Scott Barnett
- Northwestern University

8:45 am Solar Radiation Measurements for Eastern Kentucky. Scotty
White - Morehead State University, Hans Chapman - Morehead
State University

9:30 am Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg.
outside Room 231

11:30 am Lunch - Restaurant options available at registration

2:15 pm Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg.
outside Room 231

4:15 pm Plenary Session - Collins I&T Bldg., Room 231 (Freed Curd
Auditorium)

1 Undergraduate Research Competition
2 Graduate Research Competition
Kentucky Academy of Science 2011 Annual Meeting

GEOGRAPHY

Glenn Campbell, Chair
Eastern Kentucky University

Demetrio Zourarakis, Secretary
Kentucky Div. of Geographic Information

SATURDAY, NOVEMBER 5, 2011
BLACKBURN SCI. BLDG, RM 320

8:30 am Complexities of Subtropical Precipitation Variability from Climate Change Reconstruction in Florida. Jason Polk - WKU Crawford Hydrology Laboratory, Philip van Beynen - University of South Florida, Yemane Asmerom - University of New Mexico, Kristine DeLong - Louisiana State University

8:45 am Herbicide Contamination of Shallow Karst Groundwater on Kentucky's Mississippian Plateau. Chris Groves - Western Kentucky University, Sean Vanderhoff - Western Kentucky University, Jason Polk - Western Kentucky University, Ben Miller - Western Kentucky University, Robert Lerch -

9:00 am Influence of Direct Insolation on Supraglacial Stream Channel Incision. Gilman Ouellette - Western Kentucky University, Derrick Lampkin - the Pennsylvania State University, Nathan Amador - the Pennsylvania State University

9:15 am Evidence of change in the intensity of wet and dry spells impacting Kentucky. Austin Boys - Western Kentucky University, Brian R. Urbancic - Western Kentucky University, Stuart A. Foster - Western Kentucky University

9:30 am Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg. outside Room 231

9:45 am A spatial statistical correlation of drainage density and surface water quality degradation in Kentucky. Nicholas Lawhon - Hoffman Environmental Research Institute

10:00 am Mapping burned area in Huascaran National Park, Peru using remote sensing imagery. Justin King - Western Kentucky University, John All - Western Kentucky University

10:15 am Time Series Vegetation Analysis in Huascaran National Park, Peru. Joshua E Montgomery - Western Kentucky University, Dr. John All - Western Kentucky University

10:30 am Modeling Seasonality of Fire Occurrences in the Cordillera Blanca. Tommy Woodall - Western Kentucky University, John All - Western Kentucky University

1Undergraduate Research Competition
2Graduate Research Competition
10:45 am  Use of remotely sensed data to examine climate variability and vegetation response in the Cordillera Blanca, Peru.  
Justin Sowers - Western Kentucky University, Dr. John All - Western Kentucky University

11:30 am  Lunch - Restaurant options available at registration

1:00 pm  LiDAR Intensity Images and Land Cover Class Assessment.  
Demetrio Zourarakis - Kentucky Division of Geographic Information

1:15 pm  Mapping urban areas using DMSP-OLS nighttime lights data.  
Robin Zhang - Murray State University

1:30 pm  Dynamic spatial modeling and interpolation of near-surface atmospheric variables based on the Kentucky Mesonet.  
Stuart A. Foster - Western Kentucky University, Jonathan Quiton - Western Kentucky University, Rezaul Mahmood - Western Kentucky University

John All - Western Kentucky University, David Evans - Western Kentucky University, Robert Zomer - ICIMOD, Nepal

2:00 pm  Land Use and Land Cover Change in Sagarmatha National Park (1979-2009), Nepal.  
Kamal Humagain - WKU Hoffman Environmental Research Institute, Dr John D All - Western Kentucky University

2:15 pm  Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg. outside Room 231

4:15 pm  Plenary Session - Collins I&T Bldg., Room 231 (Freed Curd Auditorium)

1Undergraduate Research Competition  
2Graduate Research Competition
GEOLOGY
Andrew Kellie, Chair
Murray State University
Thomas Brackman, Secretary
Northern Kentucky University

SATURDAY, NOVEMBER 5, 2011
I & T 132

11:30 am  Lunch - Restaurant options available at registration
1:00 pm   *Edestus giganteus* shark fossil from the Carbondale Formation
(Middle Pennsylvanian, Desmoinesian), western Kentucky, Illinois Basin. Richard A. Smath - Kentucky Geological Survey
1:30 pm   The 3D Subsurface of the Illinois Basin. Andrew C. Kellie - Murray State University
1:45 pm   Adventures in Geophysics: Using ReMi for Void Detection at a Tunnel Site in Northern Kentucky. Thomas B. Brackman - Northern Kentucky University
2:00 pm   A GIS approach to identifying the spatial distribution of knickpoints in the Buffalo National River Watershed, northern Arkansas. Matthew Ryan Prusinski - Murray State University
2:15 pm   Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg. outside Room 231
2:30 pm   Understanding Late Mississippian Echinoderm Faunas from eastern Kentucky. Ann W. Harris - University of Kentucky, Frank R. Ettensohn - University of Kentucky
2:45 pm   Ore Analysis of KY-IL Fluorspar District. Jeffrey Molloy - Western Kentucky University, Andrew Wulff - Western Kentucky University
3:00 pm   3D modeling of the Bartletsville, Stringtown, and Wadesville North fields. Brett Wiggins - Murray State University
3:15 pm   The Micro- and Macro- Faunal Diversity of a Devonian Dysaerobic Environment. Larry Tackett - Morehead State University, Kara Wells - Morehead State University, Charles E. Mason - Morehead State University
3:30 pm   Mineral characterization of the Macraes mine in New Zealand. Michael R. Powers - Western Kentucky University, Andrew H. Wulff - Western Kentucky University
4:15 pm   Plenary Session - Collins I&T Bldg., Room 231 (Freed Curd Auditorium)

1Undergraduate Research Competition
2Graduate Research Competition
HEALTH SCIENCES
Lingyu Huang, Chair
Kentucky State University
Cecil Butler, Secretary
Kentucky State University

SATURDAY, NOVEMBER 5, 2011
I & T 155

11:30 am  Lunch - Restaurant options available at registration

1:00 pm  Innate Immune Responses to Pandemic Influenza Virus Hemagglutinin Proteins.¹ Megan Reynolds - Northern Kentucky University, Kimberly Staudt - Northern Kentucky University, Amy Weinstock - Northern Kentucky University, Joseph Mester - Northern Kentucky University

1:15 pm  CSF and Plasma Ascorbic Acid Concentrations in Horses with PPID Compared to Age-Matched Controls.¹ Jeffrey Chalfant - Georgetown College, Dr. Dianne McFarlane - Oklahoma State University Center for Veterinary Health Sciences

1:30 pm  Plumbagin ameliorates ulcerative colitis in the experimental murine model.¹ Justin Pile - Western Kentucky University, Dr. Nilesh Sharma - Western Kentucky University

1:45 pm  HPLC Analysis of Resveratrol Content in Over-the-Counter Supplements.¹ Heather Stamper - Asbury University, Bruce Branan - Asbury University

2:15 pm  Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg. outside Room 231

4:15 pm  Plenary Session - Collins I&T Bldg., Room 231 (Freed Curd Auditorium)

¹Undergraduate Research Competition
²Graduate Research Competition
MATHEMATICS

R. Douglas Chatham, Chair
Morehead State University

John Porter, Secretary
Murray State University

SATURDAY, NOVEMBER 5, 2011

I & T 229

11:30 am  Lunch - Restaurant options available at registration

1:00 pm  Winning in the worst way. R. Douglas Chatham - Morehead State University

1:15 pm  Montezuma's Revenge: Learn Math to Save a Life.¹ Bryce Norris - Murray State University, Dr. Renee Fister - Murray State University, Glenna Buford - Murray State University

1:30 pm  Sawmill Potential for Bio-Oil Production.¹ Amir Ahmadi - Morehead State University

2:15 pm  Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg. outside Room 231

4:15 pm  Plenary Session - Collins I&T Bldg., Room 231 (Freed Curd Auditorium)

¹Undergraduate Research Competition
²Graduate Research Competition
Kentucky Academy of Science 2011 Annual Meeting

MICROBIOLOGY

Janelle Hare, Chair
Morehead State University

Marcia Pierce, Secretary
Eastern Kentucky University

SATURDAY, NOVEMBER 5, 2011
CURRIS - CUMBERLAND RM.

8:00 am
Abundance of the alpha-Proteobacteria, Blastomomas in the sediment of Ledbetter Creek Embayment, Kentucky Lake. 2
Emily J. P. D'Angelo - Murray State University, Timothy C. Johnston - Murray State University

8:15 am
Abundance of Methanoseta concillii-like species in the sediment of Ledbetter Creek Embayment of Kentucky Lake. 2
Juanita Von Dwingelo - Murray State University, Timothy C. Johnston - Murray State University

8:30 am
Previously unknown species of Archaea in the sediments of Kentucky Lake. 1
Amber Mills - Murray State University

8:45 am
Differential gene expression of the lux operon of Vibrio harveyi by mRNA processing. 1
Mara S. Varvil - Murray State University, Timothy C. Johnston - Murray State University

9:00 am
Characterization of the mRNA from the lux operon of Photobactidus luminescens. 1
William Hunt - Murray State University, Timothy C. Johnston - Murray State University

9:15 am
Effects of manganese on growth and resistance of probiotic bacteria and Deinococcus radiodurans to ultraviolet radiation and hydrogen peroxide. 1
J. Wes Morris - Kentucky Community and Technical College System, Samuel Fobid - Kentucky Community and Technical College System, Larry Porter - Kentucky Community and Technical College System, Norm Strobel - Kentucky Community and Technical College System

9:30 am
Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg. outside Room 231

9:45 am
Exploring White Nose Syndrome: The Differential Growth of Geomyces Species in North American Bats. 1
Samantha Kaiser - Northern Kentucky University, Hazel A. Barton - Northern Kentucky University

10:00 am
Inhibition of White Nose Syndrome in Hibernating Bat Colonies: Identification of Antifungal Agents. 1
Virginia Shelley - Northern Kentucky University, Andrea Price - Northern Kentucky University, Dr. Hazel A. Barton - Northern Kentucky University

11:30 am
Lunch - Restaurant options available at registration

2:15 pm
Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg. outside Room 231

4:15 pm
Plenary Session - Collins I&T Bldg., Rm 231 (Freed Curd Auditorium)

1Undergraduate Research Competition
2Graduate Research Competition
PHYSICS AND ASTRONOMY

Akhtar Mahmood, Chair
Bellarmine University

Arthur Pallone, Secretary
Murray State University

SATURDAY, NOVEMBER 5, 2011
I & T 237

11:30 am  Lunch - Restaurant options available at registration

1:00 pm  Inexpensive scanning photo-induced current microscope experiment suitable for an undergraduate laboratory. ARTHUR K. PALLONE - Northern Kentucky University

1:15 pm  The X-ray Properties of Four Galactic Supernova Remnants Detected by the Spitzer GLIMPSE Survey. Thomas Pannuti - Morehead State University, William Moffitt - Morehead State University

1:30 pm  An alternative approach to account for uncertainty in photometric data from science images. ARTHUR PALLONE - Northern Kentucky University

1:45 pm  High Altitude Balloons as a Methodology for Increasing STEM Activities in the Classroom. Eric A. Jerde - Morehead State University, Eric T. Thomas - Morehead State University

2:00 pm  Densities and Compressibilities of Chiral Molecules in the Liquid State: Chiral Discrimination. Amer S. Lahamer - Berea College, Imelda Hot - Berea College

2:15 pm  Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg. outside Room 231

2:30 pm  Copper-Based Superconductors. Tommy Boykin - Berea College, Rohan Isaac - Berea College, Mackenzie Endres - Berea College, Marissa Brown - Berea College, Amer S. Lahamer -

2:45 pm  The Effect of a Magnetic Field on a Small Silver Ring. Julia Smith - Georgetown College, Joseph Straley - University of Kentucky

3:00 pm  Synthesis and characterization of Half-Metallic Heusler Alloys. Rohan Isaac - Berea College, Dr. Amer Lahamer - Berea College, Tommy Boykin - Berea College, Marissa Brown - Berea College, Mackenzie Endres -

3:15 pm  Efficiency of the SuN Detector. Jessica Peace - Morehead State University

3:30 pm  Working WASTED? Comparison of the performance of the Webcam Alpha Spectrometer TEchnology Detector to a standard surface barrier detector. Joseph Fryman - Northern Kentucky University, Arthur Pallone - Northern Kentucky University

4:15 pm  Plenary Session - Collins I&T Bldg., Room 231 (Freed Curd Auditorium)

¹Undergraduate Research Competition
²Graduate Research Competition
PHYSIOLOGY AND BIOCHEMISTRY

Stephanie Dew, Chair
Centre College

Julia Carter, Secretary
Wood Hudson Cancer Research Laboratory

SATURDAY, NOVEMBER 5, 2011
CURRIS - MISSISSIPPI RM.

8:00 am  Two Germline Variants of the TGFBR1 Gene are Associated with Initiation, Progression and Clinical Outcome of Colorectal Cancer. Hillary Restle and Shane Mulvihill - Wood Hudson Cancer Research Laboratory, Jonathan Bender - Wood Hudson Cancer Research Laboratory, Kevin Murray - Wood Hudson Cancer Research Laboratory, Bruce Colligan - 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

8:15 am  Thermally Induced Spadefoot Plasticity. Cailynn West - Centre College

8:30 am  Examining Pathways Regulated in Zebrafish Auditory Hair Cell Regeneration using Next Generation Sequencing. Gopinath Rajadinakaran - Western Kentucky University, Huifang Sun - Western Kentucky University, Eric Rouchka - University of Louisville, Michael E. Smith - Western Kentucky University

8:45 am  Growth Hormone Promotes Auditory Hair Cell Regeneration in Zebrafish (Danio rerio). Yajie Wang - Western Kentucky University, Huifang Sun - Western Kentucky University, Michael E. Smith - Western Kentucky University

9:00 am  Enzymatic Activities of Renal H\(^+\)-K\(^+\)-ATPase in Hypokalemic Mice. Lynsey Bochenek - Murray State University, Suguru Nakamura - Murray State University

9:15 am  H\(^+\)-ATPase activity in selective disruption of H\(^+\)K\(^+\)-ATPase alpha 1 gene of mice under normal and K-depleted conditions. James Ravellette - Murray State University, Suguru Nakamura - Murray State University

9:30 am  Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg. outside Room 231

9:45 am  Next Generation Sequencing Identifies Regulation of Pathways in Zebrafish Auditory Hair Cell Regeneration. Gopinath Rajadinakaran - Western Kentucky University, Huifang Sun - Western Kentucky University, Abdallah Eteleeb - University of Louisville, Eric Rouchka - University of Louisville, Michael E. Smith - Western Kentucky University
10:00 am  A combinatorial approach towards investigating pervasive binding specificity. Brian Chaffin - Georgetown College, Emerson Dick - University of Kentucky, Luke H. Bradley - University of Kentucky

10:15 am  Biomass Assisted Synthesis of Antibacterial Nanomaterial.\(^1\) Chad Willis - Western Kentucky University, Vivek Badwaik - Western Kentucky University, Lakshmisri M Vangala - Western Kentucky University, Rajalingam Dakshinamurthy - Western Kentucky University

10:30 am  Epitope Mapping of Vimentine in Arthritis-susceptible HLA-DRB1*0401 and resistant *0402 mice.\(^1\) Kelly Mouapi - Berea College, Chella David - Department of Immunology, Mayo Clinic, Veena Taneja - Department of Immunology, Mayo Clinic

10:45 am  Regulation of EMT Proteins in Breast Cancer Cell Lines.\(^1\) Mary Wiechart - Wood Hudson Cancer Research Laboratory, Jackie Jansen - Wood Hudson Cancer Research Laboratory, Arielle Marasligiller - Wood Hudson Cancer Research Laboratory, Shane Mulvihill - Wood Hudson Cancer Research Laboratory, Hillary Restle - Wood Hudson Cancer Research Laboratory, Stefan Siwko - Wood Hudson Cancer Research Laboratory, Julia Carter - Wood Hudson Cancer Research Laboratory

11:30 am  Lunch - Restaurant options available at registration

4:15 pm  Plenary Session - Collins I&T Bldg., Room 231 (Freed Curd Auditorium)

\(^1\)Undergraduate Research Competition
\(^2\)Graduate Research Competition
PSYCHOLOGY

Jennifer Asmuth, Chair
Centre College

Brian Cusato, Secretary
Centre College

SATURDAY, NOVEMBER 5, 2011
CURRIS - OHIO RM.

8:00 am  Tangled up in blue.¹ Kayla Sizemore - Morehead State University, Katelyn Fugate - Morehead State University, Jacob Burress - Morehead State University, Ryan Jones - Morehead State University, Shari Kidwell - Morehead State University

8:15 am  Relationships Between Self Compassion, Mindfulness, and Acceptance.² Cassie Watkins - Morehead State University

8:30 am  A dog or a cookie?: Differential prediction of two child emotion regulation procedures.¹ Shelby House - Morehead State University, Samantha Spencer - Morehead State University

8:45 am  Perceptions of Aging: The Power of Knowledge and Action.¹ Raven Weaver - Berea College

9:00 am  The effects of gender and writing assignment on implicit attitudes of gender roles.¹ Rachel Krebs - Berea College

9:15 am  Behavioral Characterization of Atp13a2 Deficient Mice Carrying a Transgenic Alzheimer's Gene.¹ Amy K. Clippinger - Northern Kentucky University, Molly Griffith - Northern Kentucky University, Abbey Bailes - Northern Kentucky University, Lindsey Griffith - Northern Kentucky University, Mark Bardgett - Northern Kentucky University, Patrick J. Schultheis - Northern Kentucky University

9:30 am  Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg. outside Room 231

10:00 am  The Use of Male Calls in the Sexual Conditioning of Male and Female Japanese Quail (coturnix japonica).¹ Hillary Botts - Centre College, Tayllor Vetter - Centre College, Lan Nguyen - Centre College, Emma Julia Jones - Centre College

10:15 am  Subchronic Exposure to Alcohol during Adolescence Disrupts Learning in Adulthood: Involvement of NMDA Receptors.¹ Gianni P. Maione - Morehead State University, Taylor Patrick - Morehead State University, Ilsun M. White - Morehead State University

10:30 am  Prolactin and Nest Attachment.¹ Annie Roessler - Centre College, Melissa Burns-Cusato - Centre College

¹Undergraduate Research Competition
²Graduate Research Competition
10:45 am **Relationships Between Psychological Flexibility, Physical Health, and Psychological Distress.** ¹ Aaron Ellis - Morehead State University

11:30 am **Lunch** - Restaurant options available at registration

2:15 pm **Break** - Curris Center, 3<sup>rd</sup> Floor Concourse or Collins I&T Bldg. outside Room 231

4:15 pm **Plenary Session** - Collins I&T Bldg., Room 231 (Freed Curd Auditorium)

¹Undergraduate Research Competition
²Graduate Research Competition
SCIENCE EDUCATION

Brent Eldridge, Chair
Kentucky Community and Technical College System

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

SATURDAY, NOVEMBER 5, 2011
I & T 135

9:30 am  Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg.
outside Room 231

9:45 am  Sharing ideas about assessing student learning. John G. Shiber, PhD - Kentucky Community and Technical College System

10:00 am  Teaching Chemistry Online to Non-science Majors. Lori Wilson
- Eastern Kentucky University

10:15 am  Student perceptions of online chemistry classes. Dr. Shawn Kellie
- Kentucky Community and Technical College System

10:30 am  Evaluating Informal Karst Education in the United States and Aboard. Leslie North - Western Kentucky University

10:45 am  Positive student retention effects in an Anatomy & Physiology course for RN student nurses via integrating student support services, year two. Jay Kirchner - Galen College of Nursing, Cincinnati Campus, Joan Brummer - Galen College of Nursing, Cincinnati Campus, Jennifer Myka - Galen College of Nursing, Cincinnati Campus

11:30 am  Lunch - Restaurant options available at registration

2:15 pm  Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg.
outside Room 231

4:15 pm  Plenary Session - Collins I&T Bldg., Room 231 (Freed Curd Auditorium)
ZOOLOGY
Richard Durtsche, Chair
Northern Kentucky University
Michael Floyd, Secretary
US Fish & Wildlife Service

SATURDAY, NOVEMBER 5, 2011
I & T 135

11:30 am  Lunch - Restaurant options available at registration
1:00 pm   Distribution and Conservation Status of the Cumberland Darter, Etheostoma susanae. Michael A. Floyd - U.S. Fish and Wildlife Service, Matthew R. Thomas - Kentucky Dept. of Fish & Wildlife Resources, Stephanie L Brandt - Kentucky Dept. of Fish & Wildlife Resources
1:15 pm   Measuring anuran population dynamics using a combination of automatic call recognition software and conventional field survey methods. Jacob Eldridge - Western Kentucky University, Pedro do Amaral - University of Cincinnati, Albert Meier - Western Kentucky University, Richard Bowker - Western Kentucky University, Rafael Marquez - , Juan Francisco Beltran -
1:30 pm   Employing Creel Survey Data and Simple Sampling Techniques to Evaluate the Pit-lakes Fisheries of Muhlenberg County, KY. Derek L. Rupert - Western Kentucky University, Philip W. Lienesch - Western Kentucky University
1:45 pm   Aggressive Acoustic Behavior in Yasuhikotakia modesta: Does the Lombard Effect Hold Water? Bethany N. Coffey - Western Kentucky University, Michael E. Smith - Western Kentucky University
2:00 pm   Amphibian Population Dynamics of a Rejuvenating Brown Field. Mitch Mercer - Northern Kentucky University
2:15 pm   Break - Curris Center, 3rd Floor Concourse or Collins I&T Bldg. outside Room 231
4:15 pm   Plenary Session - Collins I&T Bldg., Room 231 (Freed Curd Auditorium)

1 Undergraduate Research Competition
2 Graduate Research Competition
POSTER PRESENTATIONS

This year we will divide the poster presentations into a morning (AM) session and an afternoon (PM) session according to sections. Each presenter will be provided with an easel and a 4x4 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. All posters will be located in the Curris Center and will be presented in two locations depending on the section. NOTE: Biochemistry and Physiology: see Physiology and Biochemistry.

THE SATURDAY A.M. SESSION:

<table>
<thead>
<tr>
<th>Curris Center, Small Ballroom</th>
<th>Curris Center, Dance Lounge</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sections:</strong> Agriculture, Anthropology &amp; Sociology, Botany, Chemistry, Computer and Information Science</td>
<td><strong>Sections:</strong> Cellular &amp; Molecular Biology and Health Sciences</td>
</tr>
<tr>
<td>Check in with Ms. Angela Guyton in the small Ballroom</td>
<td>Check in with Mr. Carl Woods in the small Dance Lounge</td>
</tr>
</tbody>
</table>

**Presenters:** set up between 7:30 - 8:00 a.m. Students entering the URC will have their posters judged starting at 9:00 a.m and the presenters must be present in order to have their posters judged. The A.M. posters must be removed or arrangements made to take them down between 11:30 - 12:00.

THE SATURDAY P.M. SESSION:

<table>
<thead>
<tr>
<th>Curris Center, Small Ballroom</th>
<th>Curris Center, Dance Lounge</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sections:</strong> Ecology &amp; Environmental Sciences, Engineering, Geography, Geology, Mathematics, Microbiology, Physics &amp; Astronomy, Psychology and Science Education</td>
<td><strong>Sections:</strong> Physiology and Biochemistry, Zoology</td>
</tr>
<tr>
<td>Presenters will check in with Ms. Angela Guyton in the small Ballroom to be directed to their poster location</td>
<td>Presenters will check in with Mr. Carl Woods in the small Dance Lounge to be directed to their poster location</td>
</tr>
</tbody>
</table>

**Presenters:** set up between 12:00 - 1:00 p.m. The URC posters will be judged starting at 2:00 p.m. during which time the presenters must be present at their posters. These posters can be removed at 4:00 p.m.

SATURDAY MORNING
CURRIS CENTER, SMALL BALLROOM

AGRICULTURAL SCIENCES

1. **Effect of Additonal Nitrogen Application on Wheat.**¹ Trent Briscoe - Murray State University, I.P. Handayani - Murray State University

¹Undergraduate Research Competition
2. **Stink Bug Species in Organic Blackberries.** 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, Sheri B. Crabtree - Kentucky State University, Christopher M. Wales - Kentucky State University

3. **The Process of Evaluating the Progeny of an Unanticipated Cross between a 'Vinson Watts' Tomato (Solanum lycopersicum) and an Unknown Cherry Tomato.** Emily Bucklew - Morehead State University, Joshua Riggsby - Morehead State University, C. Brent Rogers - Morehead State University, Debby Johnson - Morehead State University

4. **Beneficial Insects Associated with Fall Established Native Perennial Plant Border Plots.** Jermaine Dunigan - Kentucky State University, John D. Sedlacek - Kentucky State University, Karen L. Friley - Kentucky State University

5. **Soil Organic Carbon and Water Content Associated with Crop Land and Forested Ecosystems.** John McKinney - Murray State University, Iin P. Handayani - Murray State University

6. **Soil Quality Parameters in Response to Agricultural Management Practices.** Katie M. LeBlanc - Murray State University, Iin P. Handayani - Murray State University

7. **Incorporating Winter Annuals into Pasture Rotations for Beef Cattle at the Berea College Farm.** Lisa L. Baxter - Berea College

8. **Out with the hogs and in with the fish: Feasibility of tilapia farming in a former hog-waste lagoon.** Sean Clark - Berea College, Kyle Watkins - Berea College

9. **Ethanol Production Potential from Pawpaw Fruit Agricultural Waste.** Brandon May - Kentucky State University, Michael Bomford - Kentucky State University, Kirk Pomper - Kentucky State University, Jon Cambron - Kentucky State University, Anthony Silvernail - Kentucky State University

10. **Soil Properties Improvements Following Broiler Litter Applications.** X. Liu - Murray State University, I. P. Handayani - Murray State University

11. **Outdoor hog production: average daily gains and behavioral differences of growing hogs with and without access to pasture.** Samantha Kindred - Berea College, Michael Panciera - Berea College

**ANTHROPOLOGY AND SOCIOLOGY**

12. **Acculturation and body weight status of Chinese American immigrants in Kentucky.** Cecil Butler - Kentucky State University, Lingyu Huang - Kentucky State University, Changzheng Wang - Kentucky State University

---

1Undergraduate Research Competition
BOTANY


CHEMISTRY

14. **Synthesis of Enantioenriched β-Ketoesters via an Azaferrocene-Catalyzed Ketene-Claisen Condensation**.1 Chelsey Lloyd - Berea College, Michelle Bloom - Berea College, Mary Robert Garrett - Berea College

15. **Synthesis of Enantioenriched β-Ketoesters via a Quinine-Catalyzed Ketene-Claisen Condensation**.1 Trena Payton - Berea College, Amanuel Tesfamichael - Berea College, Mary Robert Garrett - Berea College

16. **Synthesis of Isoflavanone Derivatives and Isocoumarins**.1 Erica Amato - Northern Kentucky University, Kevin Bonfeild - Northern Kentucky University, Adam McCallum - Northern Kentucky University, James M. Keeler - Northern Kentucky University, Tony Bankemper - Northern Kentucky University, Jeff Steller – Northern Kentucky University

17. **Single Step Synthesis of Antibiotic Kanamycin Embedded Nanoparticles**. Gavva Shravan - Western Kentucky University, Lakshmisri M Vangala - Western Kentucky University, Rajalingam Dakshinamurthy - Western Kentucky University

18. **Hydrothermal synthesis, structural and thermal properties of two calcium based metal-organic frameworks**. Raj Kishore Vakiti - Western Kentucky University, Dr.Hou-yin Zhao - Western Kentucky University, Dr.Yan Cao - Western Kentucky University, Dr.Wei-Ping Pan - Western Kentucky University, Dr.Bangbo Yan – Western Kentucky University

19. **Kinetics of Michael Addition Reactions in Ionic Liquids**.1 Brandy N. Bradford - Murray State University, Kevin M. Miller - Murray State University

20. **On- and Off-Metal Synthetic Route to Some Group (VII) Complexes**. Jason Young - Western Kentucky University, Chad Snyder, PhD - Western Kentucky University

21. **Assessment of nanoparticle toxicity using atomic force microscopy**.1 Matthew Stark - Northern Kentucky University, Joseph Squeri - Northern Kentucky University, Adam Gottula - Northern Kentucky University, Samantha Sutkamp - Northern Kentucky University, Kristi Haik - Northern Kentucky University, Heather Bullen - Northern Kentucky University

1Undergraduate Research Competition
22. **Assessment of nanoparticle toxicity using Langmuir compression isotherms.** ¹ Adam Gottula - Northern Kentucky University, Joseph Squeri - Northern Kentucky University, Matthew Stark - Northern Kentucky University, Samantha Sutkamp - Northern Kentucky University, Kristi Haik - Northern Kentucky University, Heather Bullen - Northern Kentucky University

23. **Evaluating the implication of enterobactin in Escherichia coli biofilm formation on bone.** ¹ Alexander Yarawsky - Northern Kentucky University, Heather Bullen - Northern Kentucky University

24. **A New Metal Organic Framework Containing Ruthenium Polypyridyl Complex.** Yanfen Li - Western Kentucky University

25. **Synthesis, purification, and characterization of analogs of the anticancer drug oxaliplatin.** ¹ Virginia Martin - Western Kentucky University, Kevin Williams - Western Kentucky University

26. **Computational Calculations of the Photophysical Properties of Perylenediimide Bridged Silanes.** ¹ Sarah Ward - Western Kentucky University, Jeremy Maddox - Western Kentucky University

27. **Ambient Mass Spectral Analysis of Lignin Solubilized in Ionic Liquid Media.** Michael G. Mazzotta - Eastern Kentucky University, Robert B. Pace - Eastern Kentucky University, Darrin L. Smith - Eastern Kentucky University, Laurel A. Morton - Eastern Kentucky University

28. **Synthetic Developments Towards Ergovaline.** ¹ Allison Galassie - Eastern Kentucky University, Darrin L. Smith - Eastern Kentucky University, Nathan Tice - Butler University

29. **Reactivity of oxaliplatin and derivatives with biologically relevant ligands.** ¹ Amy Poynter - Western Kentucky University, Kevin Williams - Western Kentucky University

30. **Synthesis ad structure of a Novel Layered Metalloporphyrin coordination polymer.** ¹ Chris Carmichael - Western Kentucky University, Yan-fen Li - Western Kentucky University, Bangbo Yan - Western Kentucky University

31. **Kinetic studies of oxygen atom transfer reaction from trans-dioxoruthenium(VI) porphyrins to sulfides.** ¹ Zhibo Yuan - Western Kentucky University, Chrisis Abebrese - graduated from Western Kentucky University, Alice Pan - University of Kentucky, Yan Huang - graduated from Western Kentucky University, Rui Zhang - Western Kentucky University

32. **Synthesis of Branched Hydrocarbons.** ¹ Alexander Montavon - Eastern Kentucky University, Chufen Jin - Eastern Kentucky University, Buchang Shi - Eastern Kentucky University

¹Undergraduate Research Competition
33. **Using confocal Raman spectroscopy to analyze nitrate structure at and near the air-water interface.**¹ Heather Shockley - Western Kentucky University, Matthew J Nee - Western Kentucky University

34. **Photocatalytic Degradation of the X-Ray Contrast Agent Diatrizoate with Raman Spectroscopy.** Sabina Salkic - Western Kentucky University

35. **Development of an Analytical Morse Oscillator Model for Multi-Dimensional Reactive Scattering.**¹ Aaron W Daniel - Western Kentucky University, Jeremy B Maddox - Western Kentucky University

36. **The Reaction of Halogenated Hydrocarbons with Cysteine and DNA.**¹ Brittany S. Morgan - Western Kentucky University, Kevin M. Williams - Western Kentucky University

37. **Organohalogen Concentrations in Soil and Pine Needles from Western Kentucky.**¹ Shirish reddy Boddireddy - Murray State University

38. **An examination of atmospheric composition data from Mammoth Cave National Park.**¹ Mary Spraggs and Cheyenne Ullrey - Western Kentucky University, Matthew J. Nee - Western Kentucky University

39. **Contamination Profiles of Glyphosate in Agricultural Environment.** Prasanthi Yerneni - Murray State University

40. **Donor-Acceptor Functionalized Siloxane Nanohybrids: Synthesis, Characterization and Particle Morphology.**¹ Aaron D McKee - Western Kentucky University, Hemali Rathnayake - Western Kentucky University

41. **Reactive group functionalized silsesquioxane nanoparticles for drug delivery applications: Synthesis, characterization, and particle morphology.**¹ Leslie Wilson - Western Kentucky University

42. **Synthesis of an Ionic Liquid-Tagged Salen Ligand and Its Use in Lignin Oxidation.** Jeremy G. Wallace - Eastern Kentucky University, Joseph Baker - Eastern Kentucky University, Samuel A. Morton, III - University of Kentucky, Laurel A. Morton - Eastern Kentucky University

43. **Synthesis of homoleptic nickel(II) complexes and examination of their coordination dynamics in solution.**¹ Laura Bishop - Chris Mullins, Dr. Chris Mullins - Campbellsville University, Davinder Kumar - University of Louisville, Dr. Craig Grapperhaus - University of Louisville

44. **Syntheses of Assymetric Dehydrobenzoannulenes.**¹ Virginia Perleberg-Nobbe - Northern Kentucky University

45. **Reduction of heavy metals from drinking water by adsorption from limestone with a focus on zinc, copper and lead applications.** Swarna Latha Somasani - Western Kentucky University, Keerthy Mandadi - Western Kentucky University, Sindhu Tumati - Western Kentucky University, Dr. Cathleen Webb - Western Kentucky University

¹Undergraduate Research Competition

47. Synthesis of Fluorescence-Quenching Amino Acids. Dallas Cook - Berea College, Russell Hammond - Berea College, Haotin Li - Berea College, Matthew Saderholm - Berea College


49. Molecular Dynamics Modeling of Aqueous Nitrate Solutions. Logan Eckler - Western Kentucky University, Dr. Matthew Nee - Western Kentucky University

50. Poly (3-hexylthiophene)-functionalized silsesquioxane nanoparticles by "grafting-from" method using Grignard Metathesis. Nicholas Wright - Western Kentucky University, Amar Patel - Western Kentucky University, Jenna Binion - Western Kentucky University, Hemali Rathnayake - Western Kentucky University

51. Enzyme Stability Studies in Ionic Liquids. Kendra Hargis - Eastern Kentucky University, L. Hope Ellison - Eastern Kentucky University, Martin Brock - Eastern Kentucky University, Laurel A. Morton - Eastern Kentucky University

52. Synthesis of Porous Elastomeric Beads for Solid Phase Micro Extraction. Brandon Farmer - Western Kentucky University, Matthew Nee - Western Kentucky University

53. Quantification of Ethylene Glycol in Biological Samples Using Direct Analysis in Real Time Mass Spectrometry (DART-MS). Stephanie Kimball - Eastern Kentucky University, Darrin Smith - Eastern Kentucky University, Lori Smith - Veterinary Diagnostic Laboratory, Cynthia Gaskill - Veterinary Diagnostic Laboratory

COMPUTER AND INFORMATION SCIENCES

54. Statistical Analysis of Microarray Gene Expression Data from a Mouse Model of Toxoplasmosis. Shrikant Pawar - Western Kentucky University, Claire Rinehart - Western Kentucky University, Cheryl Davis - Western Kentucky University

55. The ATLAS Tier3 Grid-Supercomputer at Bellarmine University. Meghan Allen - Bellarmine University, Akhtar Mahmood - Bellarmine University, Faiz Ahmad - Bellarmine University

1 Undergraduate Research Competition
56. Models of Cyber Security Data Warehouse Intrusion Detection. Karla Andrew - Western Kentucky University, Phillip Womble - Western Kentucky University, Keith Andrew - Western Kentucky University, Christopher Klaus - Drighton Research, Stacy Wilson - Western Kentucky University

57. Bioinformatics support for collaborative research. Daniel Harris - University of Kentucky, Elisaveta Arnaudova - University of Kentucky, Hannah Atkinson - University of Kentucky, Tommy Bullock - University of Kentucky, Zhenmin Lin - University of Kentucky, Neil Moore - University of Kentucky, Christopher L. Schardl - University of Kentucky, Jerzy W. Jaromczyk - University of Kentucky

58. Next Allele: A pipeline for calling haplotypes in next generation sequencing datasets. Charles Bullock - University of Kentucky, Eric O'neill - University of Kentucky, Rachel Schwartz - Colorado State University, David Weisrock - University of Kentucky

SATURDAY MORNING, DANCE LOUNGE

CELLULAR AND MOLECULAR BIOLOGY

59. LKB1 effect on MicroRNA expression in lung adenocarcinoma. Horton Li - Berea College, Jacob M. Kaufman - Vanderbilt University, Joseph M. Amann - Vanderbilt University, David P. Carbone - Vanderbilt University

60. Synthesis and Characterization of beta-Lactum Antibiotic Capped Gold Nanoparticles. Helen Thompson - Western Kentucky University, Lakshmisri M Vangala - Western Kentucky University, Rajalingam Dakshinamurthy - Western Kentucky University

61. Identification of Candidate Basement Membrane Degraders in Drosophila. Sean Shannon - Western Kentucky University, Ajay Srivastava - Western Kentucky University

62. Identification of the sox11b promoter region and creation of transgenic sox11b promoter reporter lines. Lillian Seitz - Bellarmine University, Lakshmi Pillai - University of Kentucky, Wen Wen - University of Kentucky, Ann Morris - University of Kentucky

63. The role of Activated Leukocyte Cellular Adhesion Molecule in Triple Negative Breast Cancer. Cecilia Albers - Berea College, Bojana Jovanovic - Vanderbilt University, Brian Lehmann - Vanderbilt University, Shanna Arnold - Vanderbilt University, Joshua Bauer - Vanderbilt University, Jennifer Pietenpol - Vanderbilt University, Harold Moses - Vanderbilt University, Andreis Zijlstra - Vanderbilt University

1Undergraduate Research Competition
64. Genetic and biochemical analysis of germline stem cell development in Drosophila. ¹ Sudan Loganathan - Murray State University, T. Michael Creed - Murray State University, Ming Gao - Murray State University, Jordan Davis - Murray State University, Yanyan Lin - Murray State University, Benjamin Turley - Murray State University, Alexey L. Arkov - Murray State University

65. The Role of Bone Morphogentic Proteins in Mammary Gland Differentiation. ¹ Charli Bobbitt - Berea College, Mary Aakre - Vanderbilt University, Agnes Gorska - Vanderbilt University, Anna Chytil - Vanderbilt University, Phil Owens - Vanderbilt University, Hal Moses - Vanderbilt University

66. A Study of the Unique Potassium Transport of the MDA-MB453 Breast Cancer Cell Line. ¹ Jordan R. Olberding - Western Kentucky University, Sarah A. Salyer - University of Louisville, Eleanor D. Lederer - University of Louisville, Syed J. Khundmire - University of Louisville

67. Runx1 Interacts With Delta Np63alpha to Regulate Target Genes. ¹ Marceline G. Aengwanama - Berea College, Christopher E. Barton - Department of Biochemistry, Vanderbilt Ingram Cancer Center, Vanderbilt University, Nashville TN, 37232, Jennifer A. Pietenpol - Director, Vanderbilt Ingram Cancer Center, Vanderbilt University, Nashville TN, 37232

68. Mapping Knobs in the Maize Genome. ¹ Andrew M. Donovan - Kentucky Wesleyan College, Rasheen Ghaffari - University of Georgia, R. Kelly Dawe - University of Georgia

69. Recombination Rates Between Variants of Chromosome-10 in Zea mays.² Josiah Zachary - Kentucky Wesleyan College, Lisa Kanizay - University of Georgia, R. Kelly Dawe - University of Georgia

70. Study of hematopoietic development in Drosophila using loss of function RNAi analysis. ¹ Sorna Kamara - Georgetown College, Cory J. Evans - UCLA, Utpal Banerjee – UCLA

71. The Effect of Melatonin and Staurosporine on Apoptosis in ECC-1 Cells. Emily Greene - Georgetown College, Katie Greer - Georgetown College, Dr. Tracy Livingston - Georgetown College

72. The Effects of Estrogen and Progesterone on Apoptosis in ECC-1 Cells.¹ Katherine Greer - Georgetown College, Emily Greene - Georgetown College, Tracy Livingston - Georgetown College

73. Elucidation of Mechanism of Anti H.pylori activity of Hesperidin by Determination of Modulated Expression Endogenous Biomarkers in Laboratory Rats. Shrikant Pawar - Western Kentucky University, Pinaki Ghosh - Bharati Vidyapeeth Deemed University, Amit D. Kandhare - Bharati Vidyapeeth Deemed University, Tejas P. Gosavi - Bharati Vidyapeeth Deemed University, S. L. Bodhankar - Bharati Vidyapeeth Deemed University

¹Undergraduate Research Competition
HEALTH SCIENCES


76. Utilization of Plant-derived Cholera Toxin B subunit for Mass Vaccination against Cholera. ¹ Lauren Bennett - Kentucky Wesleyan College, Krystal Hamorksy - Owensboro Cancer Research Program, Nobuyuki Matoba - Owensboro Cancer Research Program, Department of Pharmacology and Toxicology and James Graham Brown Cancer Center

77. Preventive methods for controlling allergy and asthma-inducing molds in Madagascar hissing-cockroach colonies. ¹ Brian Z. Hedges - Wittenberg University, Andrew J. Jajack - Wittenberg University, Patrick T. Tomko - Wittenberg University, Jay A. Yoder - Wittenberg University

78. Prevalence of Metabolic Syndrome (MetS) in a Historically Black College and University Student Population. ¹ Courtney Pottinger - Kentucky State University, Avinash M. Tope - Kentucky State University, Phyllis F. Rogers - Kentucky State University

79. Nitric Oxide Synthase Isoforms Plays a Role in Damaged and Regenerating Retina. Brennan Carrithers - Georgetown College, Markie Dohrenwend - Centre College

80. Innate Immune Recognition of Homologous Regions of the G Protein of Human Respiratory Syncytial Virus and Human Metapneumovirus. ¹ Beris Dizdar - Northern Kentucky University, El-Lante Byrd - Northern Kentucky University, Andrew Jones - Northern Kentucky University, Amy Weinstock - Northern Kentucky University, Joseph Mester - Northern Kentucky University

81. Procedure for preparing purple sweet potato powder. Lingyu Huang - Kentucky State University, Cecil Butler - Kentucky State University, Changzheng Wang - Kentucky State University

¹Undergraduate Research Competition
SATURDAY AFTERNOON
CURRIS CENTER, SMALL BALLROOM

ECOLOGY AND ENVIRONMENTAL SCIENCE

1. Macroinvertebrate community response to disturbance from thermoerosional gullies in two Arctic headwater streams. Jeffrey R. Kampman - Murray State University, Michael B. Flinn - Murray State University

2. The effects of Phragmites management on aunuran diversity at Clear Creek Wildlife Management Area. Katlyn Hitz - Murray State University

3. Assessing the effects of Amur honeysuckle control on native plant communities at Woodland Mound Park: Year 6. Tyler Broering - Northern Kentucky University, Richard Boyce - Northern Kentucky University

4. The Fishes of the Jessamine Creek Watershed. Graham H. Howell - Asbury University, Ben F. Brammell - Asbury University

5. Citizen Awareness of Invasive Plant Species in Kentucky. John D. Sedlacek - Kentucky State University, Adam Gerughty - Kentucky State University, Jacob Botkins - Kentucky State University, Russell Williams - Kentucky State University, Mara Merlino - Kentucky State University, Tierra Freeman - Kentucky State University

6. Winter Management of an Invasive Species, Garlic Mustard, Alliaria petiolata, in Wooded Habitat. Jacob Botkins - Kentucky State University, Russell Williams - Kentucky State University, Adam Gerughty - Kentucky State University, John D. Sedlacek - Kentucky State University

7. Testing the use of Lotek archival tags (LATs) for monitoring foraging activity in the Lake Erie Watersnake (Nerodia sipedon insularum). Lindsey Korfel - Wittenberg University

8. A survey of the distribution and habitat preferences of the crayfish of Hickman and Jessamine Creek watersheds. Matthew W. Engler - Asbury University, Ben F. Brammell - Asbury University

9. White Tailed Deer in Frankfort, Kentucky: Population Assessment and Implications for the Community. Jon Cambron - Kentucky State University, Terrell Holder - Kentucky State University, Mark Rasche - Kentucky State University, Kiah Rodriguez - Kentucky State University, Mike Ward - Kentucky State University, John D. Sedlacek - Kentucky State University

\(^{1}\)Undergraduate Research Competition
10. **The effect of temperature on weight gain in hatchling Variable Kingsnakes, Lampropeltis mexicana thayeri.**¹ Benjamin A. Rausch - Wittenberg University, Stephanie K. Hurst - Wittenberg University, Richard S. Phillips - Wittenberg University

11. **Avian species diversity at seed feeders in rural and urban Ohio.**¹ Patrick M. Tomko - Wittenberg University, Lauren A. Meeks - Wittenberg University, Nicole E. Vrettos - Wittenberg University, Tiffany M. Edler - Wittenberg University, Richard S. Phillips - Wittenberg University

12. **Movement of Peromyscus in retired farmland habitat of Ohio.**¹ Alec M. Van Dyke - Wittenberg University, Richard S. Phillips - Wittenberg University

13. **Assessing Kentucky State University's Recycling Program.** Regie Smith - Kentucky State University, Rodney Ripberger - Kentucky State University, Brandon Burfict - Kentucky State University, Dustin Hodges - Kentucky State University, John D. Sedlacek - Kentucky State University

14. **Detection and mapping of invasive plant species and hiking trails at Indian Fort Mountain in Berea, KY.**¹ Katherine D. Webb - Berea College, Alyssa B. Hanna - Berea College

15. **Chemical alarm cue response in two centrarchid species exhibiting varying degrees of piscivory.**¹ Demetria M. Todd - Asbury University, Ben F. Brammell - Asbury University

16. **The Effect of Growing Tall Fescue Grass on Soil Organic Matter.** Topaz Prawito - Murray High School, Iin P. Handayani - Murray State University

17. **The effects of prescribed fire on amphibian and reptile diversity in an oak-grassland restoration area.** Robert Knopp - Murray State University, Howard Whitman - Watershed Studies Institute

**ENGINEERING**

18. **Reinventing the Electric Vehicle: Design of a flexible research vehicle for future studies at Berea College.**¹ Tierah Ellard - Berea College, Brian Easterday - Berea College, Jordan Monger - Berea College, Matthew Jenkins - Berea College

19. **A custom Matlab program for ERP feature detection in psychological and physiological disorders using wavelets.** Zachary A Clemans - University of Louisville, Ayman El-Baz Ph.D. - University of Louisville, Tato Sokhadze Ph.D - University of Louisville

20. **Toyota Prius Hybrid Plug-in.** Krishnanunni Unnikannan - Western Kentucky University, Dr Michael Mcintyre - University of Louisville, Dr Doug Harper - Western Kentucky University, Robert Kessinger - Western Kentucky University, Megan Young - Western Kentucky University, Joesaph Lantham - Western Kentucky University

¹Undergraduate Research Competition
21. **Analysis of Induced Gamma Waveforms in ADHD and Autism via Data Alignment.** Eric Gross - University of Louisville, Ayman El-Baz - University of Louisville, Estate Sokhadze - University of Louisville, Lonnie Sears

22. **Electron Backscatter and Parametric Fracture Characterization of Concrete Disk Surfaces Imaged in a Large Chamber SEM.** Keith Andrew - Western Kentucky University, Shane Palmquest - Western Kentucky University, Edward Kintzel - Western Kentucky University, Marshall Henson - Western Kentucky University

**GEOGRAPHY**

23. **Multiple Storm Event Impacts on Epikarst Storage and Transportation of Organic Soil Amendments in South-Central Kentucky.** Sean Vanderhoff - Western Kentucky University, Jason Polk - Western Kentucky University, Chris Groves - Western Kentucky University, Ben Miller - WKU Hoffman Environmental Research Institute, Carl Bolster

24. **Evolving Tools for the Evaluation of Human/Landscape Interactions in Limestone Karst Terrains.** Victoria Allen - Western Kentucky University, Jason Polk - Western Kentucky University, Leslie North - Western Kentucky University, Taylor Hutchinson - Western Kentucky University

25. **Using Infographics to Promote Public Awareness of the Water Cycle and the Worldwide Water Crisis.** Jonathan Oglesby, Dr Leslie North, Dr Chris Groves and Dr Jason S Polk - WKU Hoffman Environmental Research Institute

**GEOLOGY**

26. **Dryosaurus specimens from the Aaron Scott Quarry (Jurassic, Morrison Formation) of Utah.** Nathaniel Hall - Northern Kentucky University, Janet Bertog - Northern Kentucky University

27. **Using ReMi to Develop a Subsurface Velocity Profile of a Landslide in Northern Kentucky.** Sean Reed - Northern Kentucky University, Thomas Brackman - Northern Kentucky University

**MATHEMATICS**

28. **Modeling Heat Transfer on Various Grids with Discrete Exterior Calculus.** Julie Lang - Morehead State University

29. **A mathematical approach to polyphenisms in Ambystoma tigrinum nebulosum.** Jeffrey Young - Murray State University, Morgan Geile - Murray State University

¹Undergraduate Research Competition
MICROBIOLOGY

30. Growth kinetics of Pseudomonas subgroups isolated from a single human home. Ogochukwu Onyiri - University of Louisville, Susanna Remold - University of Louisville

31. Seroprevalence of Trypanosoma cruzi and other vector-borne pathogens in Kentucky canines. Travis W. Beeler - Western Kentucky University, Alison R. Emmert - Western Kentucky University, Debbie Reed - Murray State University, Cheryl D. Davis - Western Kentucky University

PHYSICS AND ASTRONOMY


33. Monte-Carlo Simulation Studies using the ATLAS Detector at the Large Hadron Collider (LHC) at CERN. Sean Dockery - Bellarmine University, Antonin Verlet-Benadine - Bellarmine University, Meghan Alllen - Bellarmine University, Akhtar Mahmood - Bellarmine University, Faiz Ahmad - Bellarmine University

34. Seismic Planar Wave Modeling. Jacob Holbrook - Morehead State University, Dr. Babiuc - Marshall

35. Spacetime Diagram Approach to Mapping Tachyonic (non)Causality. John M. Wilson - Western Kentucky University, Akhil Ghanta - Gatton Academy, Shane Masuda - Gatton Academy, Keith Andrew - Western Kentucky University

36. Exploring Natural VLF Radio Emissions Using the INSPIRE VLF-3 Receiver. Daniel Wayne Burton - Morehead State University, Jennifer Birriel - Morehead State University, Ignacio Birriel - Morehead State University

37. Reflectance Properties of Ground Surfaces and The Implications for Night-Time Light Pollution. James T. Little - Morehead State University, Jennifer J. Birriel - Morehead State University

38. Ground state energies and configurations of nanoclusters in 2 and 3 dimensions. James Peruggia - Berea College, Fidel Tewolde - Berea College, Martin Veillette - Berea College


¹Undergraduate Research Competition
40. Forensic Physics Application: A Stress Analysis on Ballistic Fabrics Using a Large Chamber Scanning Electron Microscope. Jason J. Leszczewicz - Western Kentucky University, Edward Kintzel - Western Kentucky University, Keith Andrew - Western Kentucky University


42. Examination of Fossil Samples from an Electron Backscatter and SEM Survey of Surface Morphology Including the Cambrian Trilobite. Kristopher Andrew - South Warren High School, Edward Kintzel - Western Kentucky University, Keith Andrew - Western Kentucky University, Karla Andrew - Western Kentucky University

PSYCHOLOGY

43. A survey on the attitudes of athletes, coaches and athletic trainers toward sport-related concussions. Laura Hansen - Centre College, Chelsea Benham - Centre College, Kent Crick - Centre College, William George - Centre College, Leah Oberst - Centre College

44. Dissociable Alcohol Effects on Emotion Recognition in College Students. Josh Stephens - Morehead State University, Sarah Schoenhagen - Morehead State University, Dr. Ilsun M. White - Morehead State University

45. Brief Instruments to Assess Knowledge of Attention Deficit / Hyperactivity Disorder. Sean P. Reilley - Morehead State University, Shawna K. McPherson - Morehead State University

46. The Robust Beauty of Using Path Analysis to Explore Retention, Graduation, and Academic Performance at a Small Liberal Arts College. Kristina Carter - Berea College, Sara Dean - Berea College, Valerie Frost - Berea College, Alena Gordienko - Berea College, David Porter - Berea College

47. Differential relations of shame and guilt to relational problems and coping styles. Lauren Young - Morehead State University, Carole J. Olson - Morehead State University, David R. Olson - Morehead State University

SCIENCE EDUCATION

48. Graphing Skills in the General Chemistry Laboratory. Kevin Beers - Northern Kentucky University, Kereen Monteyne - Northern Kentucky University

1Undergraduate Research Competition
SATURDAY AFTERNOON, DANCE LOUNGE

PHYSIOLOGY AND BIOCHEMISTRY

49. Crayfish hindgut: a model system for examining central and peripheral control mechanisms.¹ Potenza, J.B. - Transylvania University, Holsinger, R.C. - University of Kentucky, LeBlancq, M.J. - Brock University, St. Catharines, Mercier, A.J. - Brock University, St. Catharines, Cooper, R.L. - University of Kentucky

50. Heart and ventilatory measures in crayfish during copulation. R.M. Cooper - Lafayette High Sch, H. SCHAPKER-FINUCANE - University of Kentucky, M. ADAMI - University of Kentucky, R.L. Cooper - University of Kentucky

51. Analysis of Lipid Composition of Human Meibum, Using Matrix Assisted Laser-Desorption Ionization Time-of-Flight Mass Spectrometry, in Relation to Age.¹ Evelyn Robuck - Asbury University, Douglas Borchman - University of Louisville, Bruce Branan - Asbury University

52. Metabolism of Alkylanilines by Genetic Variants of Human N-acetyltransferase 1.¹ Aaron Carrithers - Transylvania University, Mark Doll - University of Louisville, David Hein - University of Louisville

53. Motor nerve transection produces rapid synaptic depression.¹ Ann S. Cooper - University of Kentucky, R.L. Cooper - University of Kentucky

54. GlioLab: Development of a CubeLab Platform for International Space Station Based Biomedical Research.¹ Will L. Grey - Morehead State University, Cara E. DeMoss - Morehead State University, Darrin L. DeMoss - Morehead State University, Benjamin K. Malphrus - Morehead State University

55. Pathophysiological conditions with hypercalcemia.¹ M. Crum - University of Kentucky, M.M. Robinson - University of Kentucky, A.D. Robinson - University of Kentucky, R.L. Cooper - University of Kentucky

56. Utilizing Split-Ubiquitin Membrane Yeast Two-Hybrid System in order to Identify Protein Interactions With G-Protein Coupled Receptor nob₅.¹ Matthew G. Dudgeon - Georgetown College, MATTHEW C. SMITH - University of Louisville, RONALD G. GREGG - University of Louisville

57. Adenosine Receptors Modulate Sodium Uptake in Human Renal Proximal Tubule Cells.¹ Andrew Howard - Centre College, Earl H. Rudolph - Georgetown University, William J. Welch - Georgetown University

¹Undergraduate Research Competition
58. **Spermiogenesis and spermatid ultrastructure within the Imbricate Alligator Lizard, Barisia imbricate.**\(^1\) Katherine F. Touzinsky - Wittenberg University, Justin Rheubert - Saint Louis University, Kevin Gribbins - Wittenberg University

59. **Use of gene expression in native sunfish as a biomarker of contaminant exposure.** Ben F. Brammell - Asbury University, David K. Peyton - Morehead State University, Kelly R. Barnett - Morehead State University, Joshua C. Ferrell - Morehead State University, Andrew J. Wigginton - University of Kentucky

60. **Comparison of Motor and Cognitive Function in Two Substrains of C57BL/6 Mice.**\(^1\) Amy Ashworth - Northern Kentucky University, Jocelyn Fowler - Northern Kentucky University, Mary McKay - Northern Kentucky University, Christine Perdan Curran - Northern Kentucky University

61. **Genetic differences in motor function in mice exposed to polychlorinated biphenyls (PCBs) during gestation and lactation.**\(^1\) Helen Garber - Northern Kentucky University, Amy Ashworth - Northern Kentucky University, Jocelyn Fowler - Northern Kentucky University, Mary McKay - Northern Kentucky University, Christine Perdan Curran - Northern Kentucky University

62. **Is there evidence of trade-offs in cognitive ability and immunocompetence in adult white-footed mice (Peromyscus leucopus)?**\(^1\) Shelby Blalock - Murray State University, Laura Francisco - Murray State University

**ZOOLOGY**

63. **Proterometra macrostoma** (Trematoda: Azygiidae): Location of the Redia and Emergence Path from the Snail Intermediate Host, Elimia semicarinata (Gastropoda: Pleuroceridae).\(^1\) Ericka Berg - Berea College, Bailey King - Berea College, Michon Martin - Berea College

64. **An observational study of a parasitic blowfly (Protocalliphora deceptor) in the nests of Carolina chickadees (Poecile carolinensis).**\(^1\) Cassie Volker - Northern Kentucky University, Allison Rigger - Northern Kentucky University, Ashley Haws - Northern Kentucky University, Lindsey Walters - Northern Kentucky University

65. **Parental care by Carolina chickadees, Poecile carolinensis.**\(^1\) Ashley Haws - Northern Kentucky University, Allison Rigger - Northern Kentucky University, Cassie Volker - Northern Kentucky University, Lindsey Walters - Northern Kentucky University

66. **White-footed Mice (Peromyscus leucopus) and Deer Mice (Peromyscus maniculatus): Identification and Potential Population Shifts in Kentucky and Minnesota.**\(^1\) Samantha Stewardson - University of Pikeville, Stephanie Blair - University of Pikeville, Joseph Whittaker - Concordia College

\(^1\)Undergraduate Research Competition
67. Ectoparasites load on *Peromyscus* from Kentucky forest sites.\(^1\) Stephanie Blair - University of Pikeville, Samantha Stewardson - University of Pikeville, Joseph C. Whittaker - Saint Catharine College

68. High temperature resistance for success of the red velvet mites in the landscape.\(^1\) Nicole A. Perry - Wittenberg University, Patrick M. Tomko - Wittenberg University, Brian Z. Hedges - Wittenberg University, Jay A. Yoder - Wittenberg University

69. Female beds bugs exhibit reduced ability to maintain water balance after multiple traumatic insemination events.\(^1\) Andrew J. Jajack - Wittenberg University, Nicole A. Perry - Wittenberg University, Brian Z. Hedges - Wittenberg University, Jay A. Yoder - Wittenberg University

70. Effect of water on the hatching success of tick eggs. Jay A. Yoder - Wittenberg University, Benjamin A. Rausch - Wittenberg University, Brian Z. Hedges - Wittenberg University

71. DNA Barcodes and the Origin of the Caribbean Cicada Killer Wasp.\(^1\) Whitney Thomas - Northern Kentucky University, Amanda Couch - Northern Kentucky University, Zach Malmstrom - Northern Kentucky University, Jon M. Hastings - Northern Kentucky University, Maggie Whitson - Northern Kentucky University, Patrick J. Schultheis - Northern Kentucky University

72. Beyond mtDNA: morphology and nuclear gene flow suggests taxonomic oversplitting in the ringneck snake *Diadophis punctatus*. Frank M. Fontanella - Morehead State University

73. Measurement of differential acid concentration along the developing gastrointestinal tract of tadpoles with an improved pH microprobe.\(^1\) Sarah Cross - Northern Kentucky University

74. A dissolved oxygen microprobe for measuring gut anaerobic fermentation in developing vertebrates.\(^1\) Katherine Bachman - Northern Kentucky University, Kelsey Carnahan - Northern Kentucky University, Dr. Richard Durtsche - Northern Kentucky University

75. Male green salamanders, *Aneides aeneus*, may help defend some nest sites. Paul V. Cupp, Jr. - Eastern Kentucky University

76. Thermal tolerance and acclimation in house crickets, *Acheta domesticus*. Paul V. Cupp, Jr. - Eastern Kentucky University

\(^1\)Undergraduate Research Competition
Past Presidents of the Kentucky Academy of Science

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

<table>
<thead>
<tr>
<th>Year</th>
<th>Location</th>
<th>Year</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1914-33</td>
<td>No records available</td>
<td>1969</td>
<td>Murray State University</td>
</tr>
<tr>
<td>1935</td>
<td>University of Kentucky</td>
<td>1970</td>
<td>Georgetown College</td>
</tr>
<tr>
<td>1936</td>
<td>Western Kentucky State College</td>
<td>1971</td>
<td>Eastern Kentucky University</td>
</tr>
<tr>
<td>1937</td>
<td>University of Louisville</td>
<td>1972</td>
<td>Morehead State University</td>
</tr>
<tr>
<td>1938</td>
<td>Morehead College</td>
<td>1973</td>
<td>Transylvania College</td>
</tr>
<tr>
<td>1939</td>
<td>Murray State College</td>
<td>1974</td>
<td>Centre College</td>
</tr>
<tr>
<td>1940</td>
<td>University of Kentucky</td>
<td>1975</td>
<td>University of Louisville</td>
</tr>
<tr>
<td>1941</td>
<td>Eastern Kentucky State College</td>
<td>1976</td>
<td>University of Kentucky</td>
</tr>
<tr>
<td>1942</td>
<td>University of Kentucky</td>
<td>1977</td>
<td>Western Kentucky University</td>
</tr>
<tr>
<td>1943</td>
<td>University of Louisville</td>
<td>1978</td>
<td>Eastern Kentucky University</td>
</tr>
<tr>
<td>1944</td>
<td>University of Kentucky</td>
<td>1979</td>
<td>Northern Kentucky University</td>
</tr>
<tr>
<td>1945</td>
<td>No annual meeting</td>
<td>1980</td>
<td>Transylvania University</td>
</tr>
<tr>
<td>1946</td>
<td>University of Louisville</td>
<td>1981</td>
<td>Murray State University</td>
</tr>
<tr>
<td>1947</td>
<td>Western Kentucky State College</td>
<td>1982</td>
<td>Ashland Oil, Inc.</td>
</tr>
<tr>
<td>1948</td>
<td>University of Kentucky</td>
<td>1983</td>
<td>University of Louisville</td>
</tr>
<tr>
<td>S1949</td>
<td>Cumberland Falls State Park</td>
<td>1984</td>
<td>Kentucky State University</td>
</tr>
<tr>
<td>F1949</td>
<td>Eastern Kentucky State College</td>
<td>1985</td>
<td>Morehead State University</td>
</tr>
<tr>
<td>1950</td>
<td>University of Louisville</td>
<td>1986</td>
<td>Lexington, Ky (with SSMA)</td>
</tr>
<tr>
<td>1951</td>
<td>University of Kentucky</td>
<td>1987</td>
<td>Western Kentucky University</td>
</tr>
<tr>
<td>1952</td>
<td>Georgetown College</td>
<td>1988</td>
<td>Eastern Kentucky University</td>
</tr>
<tr>
<td>S1953</td>
<td>Ashland</td>
<td>1989</td>
<td>University of Kentucky</td>
</tr>
<tr>
<td>F1953</td>
<td>University of Kentucky</td>
<td>1990</td>
<td>Northern Kentucky University</td>
</tr>
<tr>
<td>S1954</td>
<td>Berea College</td>
<td>1991</td>
<td>Owensboro</td>
</tr>
<tr>
<td>F1954</td>
<td>University of Louisville</td>
<td>1992</td>
<td>Ashland Community College</td>
</tr>
<tr>
<td>S1955</td>
<td>Cumberland Falls State Park</td>
<td>1993</td>
<td>Georgetown College</td>
</tr>
<tr>
<td>F1955</td>
<td>Kentucky State College</td>
<td>1994</td>
<td>Paducah Community College</td>
</tr>
<tr>
<td>1956</td>
<td>Eastern Kentucky State College</td>
<td>1995</td>
<td>Western Kentucky University</td>
</tr>
<tr>
<td>S1957</td>
<td>Western Kentucky State College and Mammoth Cave State Park</td>
<td>1996</td>
<td>Kentucky State University (Joint Meeting with TAS)</td>
</tr>
<tr>
<td>F1957</td>
<td>Berea College</td>
<td>1997</td>
<td>Morehead State University</td>
</tr>
<tr>
<td>F1958</td>
<td>University of Kentucky</td>
<td>1999</td>
<td>Eastern Kentucky University</td>
</tr>
<tr>
<td>S1959</td>
<td>Lake Cumberland State Park</td>
<td>2000</td>
<td>University of Kentucky</td>
</tr>
<tr>
<td>F1959</td>
<td>Western Kentucky State College</td>
<td>2001</td>
<td>Middle Tennessee State (Joint Meeting with TAS)</td>
</tr>
<tr>
<td>S1960</td>
<td>Murray State College</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F1960</td>
<td>University of Louisville</td>
<td>2002</td>
<td>Northern Kentucky University</td>
</tr>
<tr>
<td>S1961</td>
<td>Morehead State College</td>
<td>2003</td>
<td>Western Kentucky University</td>
</tr>
<tr>
<td>F1961</td>
<td>University of Kentucky</td>
<td>2004</td>
<td>Murray State University</td>
</tr>
<tr>
<td>1962</td>
<td>Eastern Kentucky State College</td>
<td>2005</td>
<td>Eastern Kentucky University</td>
</tr>
<tr>
<td>1963</td>
<td>University of Kentucky</td>
<td>2006</td>
<td>Morehead State University</td>
</tr>
<tr>
<td>1964</td>
<td>Morehead State College</td>
<td>2007</td>
<td>University of Louisville</td>
</tr>
<tr>
<td>1965</td>
<td>University of Kentucky</td>
<td>2008</td>
<td>University of Kentucky</td>
</tr>
<tr>
<td>1966</td>
<td>Kentucky Wesleyan College</td>
<td>2009</td>
<td>Northern Kentucky University</td>
</tr>
<tr>
<td>1967</td>
<td>University of Louisville</td>
<td>2010</td>
<td>Western Kentucky University</td>
</tr>
<tr>
<td>1968</td>
<td>Western Kentucky University</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

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