Northern Kentucky University is pleased to host this year's annual meeting of the Kentucky Academy of Science. We are happy to have the opportunity to hold the meeting on campus and to have students as well as faculty interact with colleagues from across the state.

This year marks the largest KAS meeting in its 95-year history. More than 700 are expected to be in attendance, with 392 poster and oral presentations to be presented. In addition, we have exciting special presentations at the Symposium, Plenary Session and Awards banquet.

Friday evening we will celebrate the 400th anniversary of Galileo’s use of the telescope to view beyond the earth. Planetarium shows at NKU’s Haile Digital Planetarium and telescopes for star-gazing will complement the Symposium Lecture given in the Otto Budig Theater, located in the University Center. The evening will conclude with a social at the University Center.

All the poster and oral presentations will be on Saturday. Oral presentations will be held in either the Dorothy Westerman Herrmann Science Center or adjacent in the Landrum Academic Center. Posters will be presented in the University Center Ballroom. The Plenary Session will be held in the Otto Budig Theater, followed by a reception prior to the Annual Awards Banquet in the new Student Union.

Free parking will be provided both on Friday and Saturday in the Kenton Drive Parking Garage, located across from the Student Union on Kenton Drive. We wish you an enjoyable and engaging 95th KAS annual meeting.

The 95th KAS Annual Meeting
Local Arrangements Committee
Kentucky Academy of Science 2009 Annual Meeting

95th Annual Meeting
November 13 - 14, 2009
Hosted by Northern Kentucky University
Highland Heights, KY

GOVERNING BOARD
Executive Committee

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University of Kentucky

President-Elect .................................................. Nancy Martin
University of Louisville

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Eastern Kentucky University

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Kentucky State University

Director, Junior Academy of Science .................... Ruth Beattie
University of Kentucky

Division Representatives and At-Large Members

Sean O'Keefe (2009 - Biological Sciences) .................... Morehead State University
George F. Antonious (2009 - At - Large) ....................... Kentucky State University
Eric Jerde (2010 - Physical Sciences) ............................ Morehead State University
Judy Voelker (2010 - Social Sciences) ......................... Northern Kentucky University
Richard Dursche (2011 - Biological Science) ............... Northern Kentucky University
Cheryl Davis (2011 - At - Large) ................................. Western Kentucky University
K.C. Russell (2012 - Physical Sciences) ....................... Northern Kentucky University
Sean Reilley (2012 - Social Sciences) ......................... Morehead State University
Robert Creek (Program Coordinator) ......................... Eastern Kentucky University
Claire Rinehart (Editor, Webpage) ............................. Western Kentucky University
Nancy Martin (AAAS/NAAS Representative) .................. University of Louisville
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KAS Affiliates .......................................................................................... Inside Back Cover
“Massive Open Star Clusters in Our Galaxy: Studying the Known and Deducting the Unknowns”

Margaret Hanson, Ph.D.
University of Cincinnati

Margaret M. Hanson received her Ph.D. degree in Astrophysics from the University of Colorado at Boulder in 1995. That same year she was awarded a Hubble Space Telescope Post-doctoral Fellowship, used to fund a three year appointment at Steward Observatory, at the University of Arizona, in Tucson. She began her position as assistant professor of physics at the University of Cincinnati in 1998. She is now full professor of physics. Her research activities involve near-infrared spectral studies of stars with high mass and the massive clusters which form them. She has over 50 publications in scientific journals and has been awarded numerous national grants for her work totaling nearly a million dollars. She has been granted time on some of the largest and most competitive telescopes in the world, such as the 8-meter Subaru telescope on Mauna Kea, Hawaii, and most recently on the ESO Very Large Telescope, also 8-meter class, located in Northern Chile. In 2002, Dr. Hanson was awarded the Edith C. Alexander Award for Excellence in Teaching from the McMicken College of Arts & Science. She was honored in 2003 as a Leading Women in Cincinnati for her science outreach work to girls and young women in the community. Presently, she is in her 5th year serving as the Associate Editor-in-Chief of The Astronomical Journal, one of the leading international journals for astrophysics.
PLENARY SESSION

Saturday, November 14, 2009
Budding Theater - University Center
4:15 - 5:15 p.m.

Presiding: Dr. Robin Cooper
President - KAS
University of Kentucky

“Trace Analysis by Mass Spectrometry: Physics, Chemistry and Biology”

Graham Cooks, Ph.D.
Distinguished Professor of Chemistry
Purdue University

Graham Cooks was born in South Africa and received a Ph. D. at the University of Natal, Pietermaritzburg and also from Cambridge University, UK. He is a Distinguished Professor of Chemistry at Purdue University. His interests involve construction of mass spectrometers and their use in fundamental studies and applications. Early in his career, he worked on energy partitioning during metastable ion fragmentation and contributed to the concept and implementation of tandem mass spectrometry and to desorption ionization, especially matrix-based methods. His interest in minimizing sample work-up and avoiding chromatography contributed to the development of the ambient ionization methods, including desorption electrospray ionization (DESI).

Applications of this method in tissue imaging, forensics and pharmaceutics are in progress. These same interests also led to the construction of miniature ion trap mass spectrometers and their application to problems of trace chemical detection. His interests in the fundamentals of ion chemistry include chiral analysis and spontaneous chiral resolution in clusters and the possible role of the amino acid serine in the biochemical origins of life. Graham Cooks is a past President of the American Society for Mass Spectrometry and the International Mass Spectrometry Society and a Life Member of the British Mass Spectrometry Society. He has had the pleasure of working with several hundred collaborators from around the world including a hundred Ph. D. students.
**AWARDS BANQUET SPEAKER**

Saturday, November 14, 6:30 – 9:00 p.m.
Student Union, Room 107

“Engineers – Our Opportunities are Limitless”

**Dr. Len Peters, Ph.D.**
Secretary for Energy and Environmental Matters
Commonwealth of Kentucky

Governor Steve Beshear’s choice to oversee Kentucky’s energy and environmental protection program is an internationally renowned chemical engineer with demonstrated leadership in research, academia, and management. Dr. Leonard Peters served for the past five years with Battelle Memorial Institute, a leading non-profit applied science and technology development company. During his tenure at Battelle, Dr. Peters was senior vice president and director of the Pacific Northwest National Laboratory, where he oversaw a staff of 4,200. Under his leadership, he realigned the laboratory’s research priorities to meet the needs of its diverse customer base. Dr. Peters has held senior academic and administrative positions at leading universities, including Virginia Tech and the University of Kentucky. He holds a doctorate in chemical engineering from the University of Pittsburgh and is a prolific author and lecturer. Dr. Peters has been recognized for his achievements with honors ranging from the National Science Foundation Award to the Oak Ridge Associated Universities’ Outstanding Leadership Award.
The purpose of the Kentucky Society of Professional Geologists (KSPG) is to advance the profession, practice, and science of Geology within the Commonwealth of Kentucky. Building on the fifty-year history of the Geological Society of Kentucky, the KSPG was created in 1997 to support and promote Kentucky's program for registration of Professional Geologists. Additional objectives of the Society include providing a forum for disseminating information and educational activities throughout the geological community. Our membership comprises professional scientists, educators, and students. We are pleased to hold our 13th Annual Fall Conference in conjunction with the Kentucky Academy of Science.

More information about the KSPG including an application for membership is available on our website: http://www.kspg.org. Annual dues are $20.

**KSPG Meeting Schedule for Saturday, November 14.**

- **8:00am-9:30am** Geology Oral Papers...................... Room 304 Science Center
- **9:30am-10:00am** Refreshment Break ....................Science Center Room 300
- **10:00am -11:00am** KAS Geology Section Meeting and KSPG Business Meeting ..........Room 304 Science Center
- **11:00am -12:30am** Geology Posters.....................Ball Room-University Center
  - Lunch on your own
- **12:30pm-5:30pm** KSPG Field Trip departs ............... Science Center Lobby
- **5:30pm-6:30pm** KAS Business Meeting and Reception. ..........Room 104 - Student Union
- **5:30pm-6:30pm** Student Reception........Rooms 101 and 102 – Student Union
- **6:30pm-9:00pm** ANNUAL AWARDS BANQUET .......Room 107 - Student Union
PROGRAM SUMMARY

FRIDAY, NOVEMBER 13, 2009

9:00am-4:30pm  KBRIN - NIH Proposal Development Workshop .......................................................... Room 105 - Student Union
3:00pm-5:00pm  KAS Governing Board Meeting .......................................................... Room 108 - Student Union
5:30pm-7:00pm  Registration ........................................... Main Lobby - University Center
5:45pm-6:15pm  Planetarium Show - *Imagination, Art, Science* .................................................. Haile Digital Planetarium – 4th Floor - Science Center
6:30pm-7:30pm  SYMPOSIUM .............. Budding Theater - University Center
   "Massive Open Star Clusters in our Galaxy: Studying the Known and Deducting the Unknown."
   Margaret Hanson, Ph.D.
   Professor of Physics - University of Cincinnati
7:45pm-8:30pm  Planetarium Show - *Earth, Moon, Sun* ............................................................ Haile Digital Planetarium - 4th Floor - Science Center
8:30pm- 9:15pm  Planetarium Show - *Two Small Pieces of Glass* .................................................. Haile Digital Planetarium - 4th Floor - Science Center
7:45pm-8:15pm  KAS Sectional Officers Meeting .......................................................... Room 108 - Student Union
7:45pm-10:00pm Social .............................................................. Upper Lobby - University Center

SATURDAY, NOVEMBER 14, 2009

7:00am - 5:00pm  Registration ........................................... Main Lobby - University Center
7:00am - 10:00am Refreshments ......................... Main Lobby - University Center
8:00am - 4:00pm  Vendor’s Exhibits ......................... Main Lobby - University Center
8:00am - 9:30am Paper Sessions ................................................ See Table of Contents
9:30am -10:00am Refreshment Break .................. Science Center 300, Landrum 427, University Center
10:00am -11:00am Kentucky Society of Professional Geologists
    Business Meeting .................................................. SC - Room 304
10:00am-11:30am Paper Sessions ........................................ See Table of Contents
8:00am-11:30am  Scientific Posters on Display (Session 1) .................................................. Ballroom - University Center
10:00am-11:30am  Kentucky Community & Technical College Meetings
   Faculty Meeting.............................. Landrum Bldg. - Room 205
   Biology Faculty .............................. Landrum Bldg. - Room 205
   Chemistry Faculty .......................... Landrum Bldg. - Room 203
   Physics Faculty ............................. Landrum Bldg. - Room 207

11:30am- 12:45pm  Lunch (see list of possibilities in registration folder)

12:00pm- 12:45pm  Planetarium Show - *Two Small Pieces of Glass*
  .........................Haile Digital Planetarium - 4th Floor - Science Center

11:30am-12:45pm  KAS Past President’s Luncheon......Room 104 - Student Union

1:00pm-2:15pm  Paper Sessions ................................. See Table of Contents

2:15pm-2:45pm  Refreshment Break
   ......................Science Center 300, Landrum 427, University Center

1:00pm-4:00pm  Scientific Posters on Display (Session 2)
   ..............................................Ballroom - University Center

4:15pm-5:15pm  PLENARY SESSION..... Budding Theater - University Center
   “Trace Analysis by Mass Spectrometry: Physics, Chemistry and Biology”
   Graham Cooks, Ph.D.
   Purdue University

5:30pm - 6:30pm  Annual KAS Business Meeting and Reception
   ..................................................Room 104 - Student Union

5:30pm-6:30pm  Student Reception............. Rooms 101 and 102 - Student Union

6:30pm-9:00pm  ANNUAL AWARDS BANQUET
   .............................................Room 107 - Student Union
   “Engineers – Our Opportunities are Limitless”
   Len Peters, Ph.D.
   Secretary of the Energy and Environment Cabinet
   Commonwealth of Kentucky
Northern Kentucky University
Local Arrangement Committee

Charlie Bowen
Rick Boyce
Wayne Bresser
Heather Bullen
Chris Curran
Dan Curtain
Dick Durtsche
Tiffany Freytag
Patrick Hare
Vern Hicks
Miriam Steinitz-Kannan
Eimear Mullen
Scott Nutter
KC Russell
Dan Spence
Maggie Whitson
PRESENTATIONS

AGRICULTURAL SCIENCES

Martin Stone, Chair
Western Kentucky University

Karen Friley, Secretary
Kentucky State University

SATURDAY, NOVEMBER 14, 2009
LANDRUM 100

8:00 am  Flower and Synthetic HIPPO Attractancy of Four Common Lady Beetle Species  John D. Sedlacek - Kentucky State University, Daniel J. Sedlacek - St. Leo School, Versailles, KY, Karen L. Friley - Kentucky State University

8:15 am  Beneficial Insects in Organically Grown Late-Planted Sweet Corn Baited with Methyl Salicylate-Based PredaLure® Insect Attractant. Leslye S. Brent - Kentucky State University, John D. Sedlacek - Kentucky State University, Karen L. Friley - Kentucky State University, Michael K. Bomford - Kentucky State University

8:30 am  Effect of biofumigation and soil solarization on Sclerotinia sclerotiorum in high tunnel vegetable production systems in Kentucky  Brian Geier - Kentucky State University, Michael Bomford - Kentucky State University, Paul Vincelli - University of Kentucky, George Antonious - Kentucky State University

8:45 am  Kentucky yield projections for biofuel feedstock crops  Michael Bomford - Kentucky State University

9:00 am  The Economic Performance of Mulch Color and Cultivar Selection for Tomato (Lycopersicon esculentum) Production in Kentucky  Stephen A. King - Western Kentucky University, Martin J. Stone - Western Kentucky University, Stephen T. Flomo - Western Kentucky University

9:15 am  Identification of the Optimal Solvent for Acetogenin Compound Extraction from Pawpaw Ripe Fruit Pulp  Dorothy Badoo - Kentucky State University, Jeremiah D. Lowe - Kentucky State University, Kirk W. Pomper - Kentucky State University, Sheri B. Crabtree - Kentucky State University, Hideka Kobayashi - Kentucky State University, Changzheng Wang - Kentucky State University

9:30 am  Break - Science Center 300, Landrum 427, University Center

10:00 am  Seedling Rootstock, Scion Cultivar, and Pruning Effects on Yield of Pawpaw  Sheri B. Crabtree - Kentucky State University, Kirk W. Pomper - Kentucky State University, Jeremiah D. Lowe - Kentucky State University

1Undergraduate Research Competition
2Graduate Research Competition
10:15 am  Heirloom and Hybrid Tomato Yield in Organic and Conventional Production Systems.  
2 Diana Edlin - Western Kentucky University, Martin Stone - Western Kentucky University, Stephen Flomo - Western Kentucky University, Elmer Gray - Western Kentucky University, Nathan Howell -

10:30 am  Investigation of Yield and Quality of Grafted, Heirloom, and Hybrid Tomatoes.  
2 Stephen Flomo - Western Kentucky University, Dr. Martin Stone - Western Kentucky University, Dr. Elmer Gray - Western Kentucky University, Diana Edlin - Western Kentucky University, Nathan Howell - University of Kentucky

10:45 am  Generation of transgenic Medicago sativa expressing "osmotin-chitinase" gene chimera for conferring resistance towards various biotic and abiotic stresses  
2 Jahnavir Kancharla - Western Kentucky University, Ajay Jain - Western Kentucky University, Shivendra V. Sahi - Western Kentucky University

11:00 am  Watershed Land Use Impacts on Soil Organic Pools  
2 Robert S. Tokosh - Murray State University, Iin P. Handayani - Murray State University

11:15 am  Bensulide Residues in Runoff Water from Agricultural Soil  
George Antonious - Kentucky State University

11:30 am  Heavy Metals in Squash Fruits Grown in Soil Amended with Sewage Sludge  
George Antonious - Kentucky State University

11:45 am  Lunch (see list of possibilities in registration folder)

1:00 pm  Can Pawpaw Fruit Extract be Used to Manage Striped Cucumber Beetle on Squash?  
Karen L. Friley - Kentucky State University, John D. Sedlacek - Kentucky State University, Jeremiah D. Lowe - Kentucky State University, Kirk W. Pomper - Kentucky State University

1:15 pm  An evaluation of the chemopreventive properties of different pawpaw varieties.  
1 Stephanie M. Kortyka - Bellarmine University, Kirk W. Pomper - Kentucky State University, Dave L. Robinson - Bellarmine University, Joann M. Lau - Bellarmine University

1:30 pm  Quantification of Napropamide and Trifluralin in Soil  
1 Rachel Hayden - Kentucky State University

1:45 pm  Effects of Heat and Altered Precipitation on Overall Growth of Selected Species in Managed Grassland  
1 Jarred Earnest - Asbury College, Rebecca L. McCulley - University of Kentucky, Bruce Branan - Asbury College

2:00 pm  Using Simple Sequence Repeat Markers to Evaluate Genetic Diversity Among Native Pawpaw Patches in Iowa and Kentucky  
1 Jessica N. Durham - Kentucky State University, Li Lu - Kentucky State University, Kirk W. Pomper - Kentucky State University, Jeremiah D. Lowe - Kentucky State University, Sheri B. Crabtree - Kentucky State University

1 Undergraduate Research Competition
2 Graduate Research Competition
2:15 pm  Business Meeting & Selection of Officers
2:30 pm  Break - Science Center 300, Landrum 427, University Center
2:45 pm  Comparison of Two Spacing Methods for Mixed Plantings of Lettuce and radish. ¹ John Rodgers - Kentucky State University, Michael Bomford - Kentucky State University, Brian Geier - Kentucky State University
3:00 pm  Comparison of Morphotype Percentages of Three Different Genetic Strains of the Freshwater Prawn (Macrobrachium rosenbergii) Raised in Ponds in Kentucky ¹ Latovah N. Elliott - Kentucky State University
3:15 pm  Yield and Quality of Sweet Potatoes Grown in Municipal Sewage Sludge Eric T Turley - Kentucky State University, George F. Antonious - Kentucky State University
3:30 pm  Soil Amendments Modified Antioxidants Content of Sweet Potato Roots Regina Hill - Kentucky State University, George F. Antonious - Kentucky State University
3:45 pm  Effect of Different Schedules of Baby Corn (Zea Mays L.) Harvests on Baby Corn Yield, GrainYield, and Economic Profit Value Zheng Wang - Western Kentucky University, Elmer Gray - Western Kentucky University, Martin Stone - Western Kentucky University
4:00 pm  Break
4:15 pm  Plenary Session - Budding Theater - University Center

¹Undergraduate Research Competition
²Graduate Research Competition
ANTHROPOLOGY AND SOCIOLOGY

Cheryl Pan, Chair
University of Kentucky

Lincoln Sloas, Secretary
Morehead State University

SATURDAY, NOVEMBER 14, 2009
LANDRUM 203

8:00 a.m. Clear as Mud: Finding and Utilizing Nonprofits. Melony Stambaugh - Northern Kentucky University

8:15 a.m. Perception of sweet potatoes as a food source for people in Kentucky Changzheng Wang - Kentucky State University, Cecil Butler - Kentucky State University, Lingyu Huang - Kentucky State University

8:30 a.m. Cultural Models of Nature and Conservation in Northern Kentucky Dr. Douglas Hume - Northern Kentucky University

8:45 a.m. Technological advancement and adult learning/education opportunities Samantha Gambill - Northern Kentucky University, Yushi (Boni) Li - Northern Kentucky University

9:00 a.m. The Impacts of Technological Advancement on Local Community Attachment Jamie Cupp - Northern Kentucky University, Boni Li - Northern Kentucky University

9:15 a.m. Evaluation of a Chinese dance education program for school children Cheryl Pan - University of Kentucky

9:30 a.m. Business Meeting & Selection of Officers

9:45 a.m. Break - Science Center 300, Landrum 427, University Center

11:30 am Lunch (see list of possibilities in registration folder)

4:15 pm Plenary Session - Budding Theater - University Center

1Undergraduate Research Competition
2Graduate Research Competition
Kentucky Academy of Science 2009 Annual Meeting

BOTANY

Allen Risk, Chair
Morehead State University

Lawrence Alice, Secretary
Western Kentucky University

SATURDAY, NOVEMBER 14, 2009
SCIENCE CENTER 302

8:30 a.m. Additions, Confirmations, and Exclusions to the 2005 printing of Plant Life of Kentucky. Ronald L. Jones - Eastern Kentucky University

8:45 a.m. Epiphyllous bryophytes in the Appalachian Plateau of Kentucky and Tennessee Allen C. Risk - Morehead State University, Channing Richardson - Oklahoma State University, Paul G. Davison - University of North Alabama

9:00 a.m. Seven characteristics of highly effective (and ancient) angiosperm trees Neil Pederson - Eastern Kentucky University

9:15 a.m. The partitioning of vascular plant diversity in a sandstone gorge in eastern Kentucky: a mesohabitat approach. Allen C. Risk - Morehead State University

9:30 a.m. Break - Science Center 300, Landrum 427, University Center

10:00 a.m. Hybridization in Rubus (Rosaceae) including R. ursinus and the "kudzu of California." Lawrence Alice - Western Kentucky University, Ruby Chang - Western Kentucky University, Brittanay L. Sutherland - Eastern Kentucky University

10:15 a.m. Plant biodiversity surrogacy: a case study from a sandstone gorge ecosystem in eastern Kentucky Allen C. Risk - Morehead State University

10:30 a.m. Evaluation of Genetic Variation Among Native Pawpaw Patches at the Environmental Education Center at Kentucky State University ¹ La'Quida Bowie - Kentucky State University, Li Lu - Kentucky State University, Kirk W. Pomper - Kentucky State University, Jeremiah D. Lowe - Kentucky State University, Sheri B. Crabtree - Kentucky State University, William Stilwell - Kentucky State University

10:45 a.m. Business Meeting & Selection of Officers

11:30 am Lunch (see list of possibilities in registration folder)

4:15 pm Plenary Session - Budding Theater - University Center

¹Undergraduate Research Competition
²Graduate Research Competition
Apoptosis of pre-osteoclasts by novel bisphosphonate and alendronate ² Jivan Yewle, David Puleo and Leonidas Bachas - University of Kentucky

The Role of Chlamyrodopsin Protein in the Light Entrainment of the Circadian Clock in Chlamydomonas reinhardtii ² Shravya Maddi - Western Kentucky University

Association of Germline Variants of the TGFBR1 Gene in Colorectal Cancer Patients ¹ Kevin Murray, James Schaeper, Jessica DeBrosse, Briana, Sunnie Wang, Larry Douglass, Julia Carter, and Vogt - Wood Hudson Cancer Research Laboratory

DNA Sequence Variation in the wingless Gene Product: A Putative Morphogen for Patterning the Eyespot Foci of Buckeye Butterflies (genus Junonia). ¹ Bonnie S. McCullagh and Jeffrey M. Marcus - Western Kentucky University

Influence of ethanol on NKT cell function during hepatic fibrogenesis. ¹ Prerana P. Aghamkar - Asbury College, Ian N. Hines - University of North Carolina School of Medicine, Bobby R. Baldridge - Asbury College

Characterization of the protein pheromones of the salamander Plethodon cinereus ¹ Cristin C. Samuels - Bellarmine University, Kathleen E. Bowen, Damien B. Wilburn, Pamela W. Feldhoff and Richard C. Feldhoff - University of Louisville

Myelin-specific antibodies play an important role in PLP91-110 induced EAE in HLA transgenic mice ¹ Dikshya Bastakoty - Berea College, Ashutosh Mangalam and Chella A. David - Mayo Graduate School

Identification of breast tumorigenic cells in a three-dimensional bone colonization assay in vitro ¹ Kabindra Kafle - Berea College, Joel A. Cassler, Amanda Golemba and Ellen J. Gunn - Purdue University, Julia Kirshner - Purdue University Cancer Center

Colocalization of tyrosine hydroxylase with VIP and ChAT in

¹Undergraduate Research Competition
²Graduate Research Competition
interneurons in the developing rat cerebral cortex

1 Laura Hench, Donald Allen, Sarah Hawkins, Talha Ijaz and Steve Asmus - Centre College

10:45 a.m. A system for quantifying MutYh-mediated repair activity in mammalian cells using luminescence assays. 1 Oliver Munyaradzi - Berea College, Alan Raetz and Davis, Sheila S. David - University of California, Davis

11:00 a.m. The Effects of Oxidative Stress on the Expression of OAT1B3 and LMP7 in HCT-8 Colon Cancer Cells. 1 Joshua Spicer - Asbury College, Wooin Lee - University of Kentucky

11:15 a.m. Differential responses of CD4+ and CD8+ cells to super-antigen stimulation 1 Miluka Gunaratna - Berea College, Ashenafi Tilahun and Govindarajan Rajagopolan - Mayo Graduate School

11:30 am Lunch (see list of possibilities in registration folder)

1:00 p.m. The effect of two drug models on the metastatic migration and viability of PC3, DU145 and Talin-1 over-expressing prostate cancer cells. 1 Samantha Hargett - Asbury College, Shinichi Sakamoto, Meng Lei Zhu and Natasha Kyprianou - University of Kentucky

1:15 p.m. The Impact of Human Respiratory Syncytial Viral Peptides on Human Natural Killer Cells and Macrophages 1 Andrew Jones, El-Lantae’ Byrd and Joseph Mester - Northern Kentucky University

1:30 p.m. Development of Stable HeLa Cell Lines Expressing FLAG-tagged Syntaxin 6 1 Christy Read - Kentucky Biomedical Research Infrastructure Network, Dr. Krista Riggs and Dr. Chuan Hu - University of Louisville

1:45 p.m. Migration of fibroblasts involved in mammary carcinoma cell metastasis 1 Jacob Gunnell - Berea College, Aubie Shaw, Mary Aakre and Harold L. Moses - Vanderbilt-Ingram Comprehensive Cancer Center

2:00 p.m. Characterizing the anti-tumorigenic properties of K-RAS peptide inhibitors. 1 Kayla Kinker - Berea College, Nadya I. Tarasova, Alla I. Ivanova and David Carbone - Vanderbilt-Ingram Comprehensive Cancer Center

2:15 p.m. Business Meeting & Selection of Officers

4:00 pm Break

4:15 pm Plenary Session - Budding Theater - University Center
CHEMISTRY

Kentucky Academy of Science 2009 Annual Meeting

Kevin Revell, Chair
Murray State University

Rui Zhang, Secretary
Western Kentucky University

SATURDAY, NOVEMBER 14, 2009
SCIENCE CENTER 207

8:00 a.m.  Longitudinal Cutting of Intact Arrays of Nitrogen-Doped Multiwalled Carbon Nanotubes. 2  Nikhil D. Patil and Mark S. Meier - University of Kentucky

8:15 a.m.  Organic Conjugated Polymers: Synthesis and Structure-Property Studies. 2  Thilanga Liyanage and Mark Watson - University of Kentucky

8:30 a.m.  Studying the Morphological Changes in Birch Reduced Nitrogen Doped Multiwalled Carbon Nanotubes (N-MWNTs). 2  Aman Preet Kaur and Mark S. Meier - University of Kentucky

8:45 a.m.  Surface investigation of nanodiamond derived carbon nano-onions by oxidation 2  Mahendra Kumar Sreeramoju - University of Kentucky

9:00 a.m.  Role of vapor-phase mass transport during the liquid alkane spreading 2  Lingbo Lu and Yuguang Cai - University of Kentucky

9:15 a.m.  DNA assisted site-specific immobilization of protein 2  Meng Zhong, Jun Fang and Yinan Wei - University of Kentucky

9:30 a.m.  Break - Science Center 300, Landrum 427, University Center

10:00 a.m.  SYNTHETIC APPROACHES TO ACENE COMPLEXES OF RUTHENIUM OR MANGANESE 2  Uttam R. Pokharel - University of Kentucky

10:15 a.m.  Progress towards the total synthesis of 7-epi-clusianone 2  M.P. Suresh Jayasekara and Robert B. Grossman - University of Kentucky

10:30 a.m.  Detection of Vancomycin with Peptide Probe 2  Linliang Yu - University of Kentucky

10:45 a.m.  Partition and Change of Arsenic and Selenium Speciation in Flue Gas Desulfurization (FGD) Wastewater 2  Ying Wen - Western Kentucky University

11:00 a.m.  Surface interactions between biomolecules and Au nanoparticles 2  Manish Sethi, GaEun Joung and Marc R. Knecht - University of Kentucky

1Undergraduate Research Competition
2Graduate Research Competition
11:15 a.m. **Organic Electronics for Flexible Applications** 2 Marsha Loth - University of Kentucky

11:30 am **Lunch (see list of possibilities in registration folder)**

1:00 p.m. **Study of the Influenza A M2 Transmembrane Peptide and C-terminal Chain by Solid-State NMR.** 1 Theint Theint - Berea College, Sarah Cady and Mei Hong* - Iowa State University

1:15 p.m. **Synthesis of a new isocyanide ligand to maximize excited-state stability** 1 Stephanie Kramer and Keith A. Walters - Northern Kentucky University

1:30 p.m. **Synthesis and spectroscopic studies of fullerene-bipyridine organometallic supramolecular systems** 1 Elizabeth Walsh and Keith A. Walters - Northern Kentucky University

1:45 p.m. **Design and synthesis of organic-inorganic hybrid nanostructures for organic photovoltaics.** 1 Aaron D McKee and Hemali Rathnayake - Western Kentucky University

2:00 p.m. **Investigating Mesoporous Organosilicates as Carriers for Controlled Delivery of Doxorubicin** 1 Adam McCallum, Emilee Knue and Isabelle Lagadic - Northern Kentucky University

2:15 p.m. **Break - Science Center 300, Landrum 427, University Center**

2:45 p.m. **Characterization of Nanomaterial Interactions with Blood Brain Barrier Models** 1 Stephen Wall, Nana-ama, Anthony Haskamp, Kristi Haik and Heather Bullen - Northern Kentucky University

3:00 p.m. **Evaluating New Directions to Improve Biofouling Resistance of Metal(oxide) Substrates** 1 Anthony Haskamp, Aaron Swomley, Hazel Barton and Heather Bullen - Northern Kentucky University

3:15 p.m. **Synthesis of novel, asymmetric [14]-pyrdoannulenes.** 1 Brenda Barnes and K.C. Russell - Northern Kentucky University

3:30 p.m. **Highly conjugated polyphenylene ethynyl oligomers** 1 Aron Huckaba and Dr. Kevin Revell - Murray State University

3:45 p.m. **Business Meeting & Selection of Officers**

4:00 p.m. **Break**

4:15 p.m. **Plenary Session - Budding Theater - University Center**

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1 Undergraduate Research Competition
2 Graduate Research Competition
Kentucky Academy of Science 2009 Annual Meeting

COMPUTER AND INFORMATION SCIENCES

Jerzy Jaromczyk, Chair
University of Kentucky

Eric Rouchka, Secretary
University Of Louisville

SATURDAY, NOVEMBER 14, 2009
LANDRUM 205

8:00 a.m. Hierarchical Certification in Sensor Networks Biswajit Panja - Morehead State University

8:15 a.m. Building a LAM/MPI high performance computer cluster on a shoestring budget Earle Foskett - Bellarmine University, Muzaffar Ali - Bellarmine University

8:30 a.m. Intrusion Detection in Wireless Mobile Networks Christopher Estes - Morehead State University, Sherif Rashad - Morehead State University

8:45 a.m. Mass Spectrometry in a Flash: Animations for online tutorials in Analytical Science Kimberly Hatcher - Northern Kentucky University, Heather Bullen - Northern Kentucky University, Maureen Doyle - Northern Kentucky University

9:00 a.m. Facial Recognition in a Real Time Human Computer Interaction Application James Gibbs - Morehead State University, Sherif Rashad - Morehead State University

9:15 a.m. Mobile Data Mining Algorithms for Prediction of Mobile Nodes in Wireless Networks Joshua Bradley - Morehead State University, Sherif Rashad - Morehead State University

9:30 a.m. Business Meeting & Selection of Officers

9:45 a.m. Break - Science Center 300, Landrum 427, University Center

11:30 am Lunch (see list of possibilities in registration folder)

4:15 pm. Plenary Session - Budding Theater - University Center

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

Sarah Emery, Chair
University of Louisville

Albert Meier, Secretary
Western Kentucky University

SATURDAY, NOVEMBER 14, 2009
SCIENCE CENTER 201

8:00 a.m.  Conservation genetics of captive and natural populations of the critically endangered Dusky Gopher Frog, *Rana sevosa*  
Stephen C. Richter - Eastern Kentucky University, Natochia Henry - Eastern Kentucky University, Nina M. Hensley - Eastern Kentucky University, Erin Madeen - Eastern Kentucky University

8:15 a.m.  Restoration of native warm season grassland in a Kentucky tall fescue pasture using prescribed fire and herbicides  
Sarah L. Hall - Kentucky State University, Robert J. Barney - Kentucky State University, Rebecca L. McCulley - University of Kentucky

8:30 a.m.  Land snails as indicators of old growth forests  
Daniel Douglas - Eastern Kentucky University, David Brown - Eastern Kentucky University, Neil Pederson - Eastern Kentucky University

8:45 a.m.  Locating and Quantifying Old-Growth Forest in Eastern Kentucky  
Adrienne Cooper - Eastern Kentucky University, Dr. Neil Pederson - Eastern Kentucky University

9:00 a.m.  Macroinvertebrate communities and patterns of organic matter processing along temporary-perennial hydrologic stream channel gradients in a Cumberland Plateau catchment, U.S.A.  
Scott A. Grubbs - Western Kentucky University

9:15 a.m.  Impact of the invasive Amur honeysuckle (*Lonicera maackii*, Caprifoliaceae) on stand transpiration in a wetland forest  
Richard L. Boyce - Northern Kentucky University, Richard D. Durtsche - Northern Kentucky University, S. Lincoln Fugal - Northern Kentucky University, Andrew Wallace - Northern Kentucky University

9:30 a.m.  Break - Science Center 300, Landrum 427, University Center

10:00 a.m.  Watershed Land Use Effects on Organic Matter Pools in Sediment of Kentucky Lake.  
Robert S. Tokosh - Murray State University, Iin P. Handayani - Murray State University

10:15 a.m.  Tree-Ring Applications for Climate Reconstruction using Eastern Redcedar: An Exploratory Study  
Cari Leland - Eastern Kentucky University, Neil Pederson - Eastern Kentucky University, Amy Hessl - West Virginia University

1Undergraduate Research Competition
2Graduate Research Competition
10:30 a.m. **Demographics of American ginseng (Panax quinquefolius) in Mammoth Cave National Park**  
*Danielle M Racke - Western Kentucky University, Sara K Wigginton - Western Kentucky University, Victoria A Gilkison - Western Kentucky University, Larry Johnson - Mammoth Cave National Park, Albert J. Meier - Western Kentucky University*

10:45 a.m. **Factors influencing timing and orientation of breeding migrations of a pond-breeding amphibian community**  
*Michelle L. Guidugli - Eastern Kentucky University, Stephen C. Richter - Eastern Kentucky University*

11:00 a.m. **Effects of hydrologic gradients on woody debris breakdown and macroinvertebrate colonization patterns in a Cumberland Plateau watershed in eastern Kentucky, U.S.A.**  
*Robin R. Bernal - Western Kentucky University, Scott A. Grubbs - Western Kentucky University*

11:15 a.m. **Ecological Investigation of Vertebrate Utilization of Termitaria in the Tsavo Region of Kenya**  
*Margaret M Mahan - Western Kentucky University, Michael Stokes - Western Kentucky University*

11:30 a.m. **Lunch (see list of possibilities in registration folder)**

1:00 p.m. **Why is the Green River Still Green? : Algal biomass accrual in relation to nutrient availability in the Upper Green River, Kentucky.**  
*Mary D. Penick - Western Kentucky University, Scott A. Grubbs - Western Kentucky University*

1:15 p.m. **"Toxicity" of the fish-killing alga, Heterosigma akashiwo, to larval herring and sea urchins**  
*Tanner Yess - Northern Kentucky University, Paul Dinnel - Western Washington University*

1:30 p.m. **Temperature acclimation Lithasia obovata**  
*Kelly C Thayer - University of Louisville, James E Alexander - University of Louisville*

1:45 p.m. **Swarming Behavior in Daphnia lumholtzi, an Invasive Species in Lake Cumberland, KY.**  
*Chris Gillespie - Northern Kentucky University, Sara Neel - Northern Kentucky University, Miriam Steinitz Kannan - Northern Kentucky University*

2:00 p.m. **Business Meeting & Selection of Officers**

2:15 p.m. **Break - Science Center 300, Landrum 427, University Center**

4:15 p.m. **Plenary Session - Budding Theater - University Center**

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1 Undergraduate Research Competition  
2 Graduate Research Competition
8:00 a.m. Importance of civil engineering material class to the construction management students Sanjeev Adhikari - Morehead State University

8:15 a.m. Kentucky Space High Altitude Balloon Mission to Gather Tropospheric Comet Dust ¹ Marc Beck - University of Louisville, Clay Graves - Morehead State University, Nathan Fite - Morehead State University, Brandon Molton - Morehead State University, Katie Brown - Morehead State University, Jonathan Fitzpatrick - Morehead State University, Dr. Benjamin Malphrus - Morehead State University, Zach Jacobs - University of Kentucky

8:30 a.m. AdamaSat: Proving CubeSats Viability in Sub-Orbital Launches ² Twyman Clements - University of Kentucky

8:45 a.m. Subwatershed Characterization, Massac Creek KY. ¹ Brian S. Jennings - Murray State University

9:00 a.m. SOCEM: Sub-Orbital CubeSat Experimental Mission ¹ Anthony Karam - University of Kentucky

9:15 a.m. Business Meeting & Selection of Officers

9:30 a.m. Break - Science Center 300, Landrum 427, University Center

11:30 am Lunch (see list of possibilities in registration folder)

4:15 pm. Plenary Session - Budding Theater - University Center

¹Undergraduate Research Competition
²Graduate Research Competition
GEOGRAPHY
Stuart Foster, Chair
Western Kentucky University

Christine McMichael, Secretary
Morehead State University

SATURDAY, NOVEMBER 14, 2009
SCIENCE CENTER 304

1:00 p.m. Northern Kentucky University's Greenhouse Gas Emissions Inventory and Analysis John Metz - Northern Kentucky University, W. Chris Kaeff - Northern Kentucky University, Jennifer Lantz - Northern Kentucky University

1:15 p.m. Assessing Forest Response to Ice Storm Damage Using Multi-temporal Landsat Imagery Christi McMichael - Morehead State University

1:30 p.m. Geography Locked Up Glenn Campbell - Eastern Kentucky University

1:45 p.m. Placenames in Kentucky Steven Parkansky - Morehead State University

2:00 p.m. Groundwater and Air Temperature Relationship: A Look Back Glen Conner - Western Kentucky University

2:15 p.m. Break - Science Center 300, Landrum 427, University Center

2:45 p.m. LOST TRACKS (?) KENTUCKY PASSENGER RAIL RENAISSANCE Glenn Campbell - Eastern Kentucky University

3:00 p.m. "Hidden" Land Cover: Assessing Dynamic Change in Small, 2-D Water Bodies with Landsat 5 and Aerial Imagery and Derivatives Demetrio P. Zourarakis - Kentucky Division of Geographic Information

3:15 pm An Overview and Update of Site Identification and Selection Activities for the Kentucky Mesonet Stuart Foster - Western Kentucky University, Rezaul Mahmood - Western Kentucky University

3:30 p.m. Business Meeting & Selection of Officers

4:00 pm Break

4:15 pm Plenary Session - Budding Theater - University Center
Kentucky Academy of Science 2009 Annual Meeting

GEOLOGY
Thomas Brackman, Chair
Northern Kentucky University

Michael May, Secretary
Western Kentucky University

SATURDAY, NOVEMBER 14, 2009
SCIENCE CENTER 304

8:00 a.m.  
**Brine Chemistry in the Appalachian and Illinois Basins of Kentucky-- Implications for Geologic Carbon Sequestration**  

8:15 a.m.  
**Pacific Glacier Fluctuations Through the Little Ice Age Transition: Insights from Tree-ring Based and Glacial Geologic Records**  
Nathan Malcomb - Eastern Kentucky University, Greg Wiles - The College of Wooster

8:30 a.m.  
**Unraveling The Origin Of Pennsylvanian Coal Ball Concretions: Insights From Thin Section Petrography And Scanning Electron Microscopy**  
Siewers, Fredrick D. - Western Kentucky University

8:45 a.m.  
**Three Dimensional Modeling of KentuckyOil Fields**  
Christopher Robards - Murray State University, Tin Nguyen - Murray State University

9:15 a.m.  
**Sequestration Mechanisms in a Gallosilicate Nanoporous Framework**  
Kristin Leftwich - Western Kentucky University, Aaron Celestian - Western Kentucky University

9:30 a.m.  
**Break** - Science Center 300, Landrum 427, University Center

10:00 a.m.  
**Business Meeting & Selection of Officers**

11:30 am  
**Lunch (see list of possibilities in registration folder)**

4:15 pm  
**Plenary Session** - Budding Theater - University Center

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1Undergraduate Research Competition
2Graduate Research Competition
10:00 a.m.  Pb, As, Cd and Hg in canned sardines commercially available in Central and Eastern Kentucky  
John Shiber, PhD - Kentucky Community and Technical College System

10:15 a.m.  Immunologic effect of the Ayurvedic herb, Ashwagandha (Withania somnifera), on a human sample.  
Lincey Knox - Asbury College, Heather Zwickey - Helfgott Research Institute, Portland, OR, Andrew Murison - Helfgott Research Institute, Portland, OR, Andrew Erlandsen - Helfgott Research Institute, Portland, OR, Jeremy Mikolai - Helfgott Research Institute, Portland, OR

10:30 a.m.  Prevalence of Obesity Linked Metabolic Syndrome in Young Adults in a College Setting  
De'Andra Robertson - Kentucky State University, Avinash M. Tope - Kentucky State University, Phyllis F. Rogers - Kentucky State University

10:45 a.m.  Elevation and EGCG: How Do Growing Conditions Affect Tea (Camellia Sinensis)?  
Kenton L. Sena - Asbury College, Bruce Branan - Asbury College

11:00 a.m.  Quantities of L-Theanine Present in Varieties of Green Tea  
Lucas Rohrer - Asbury College, Bruce Branan - Asbury College

11:15 a.m.  Can two different forms of breast cancer therapy be combined to reduce cell proliferation of both female and male lung cancer cells?  
Shakeeb S. Ahmad - Bellarmine University, Joann M. Lau - Bellarmine University

11:30 a.m.  Business Meeting & Selection of Officers

11:45 a.m.  Lunch (see list of possibilities in registration folder)

4:15 pm  Plenary Session - Budding Theater - University Center
A Few Cantor Sets John Spraker - Western Kentucky University, Emily Burns - Western Kentucky University

Sierpinski Portraits Bruce Kessler - Western Kentucky University

Graphs with Disjoint Dominating Sets and Identifying Codes R. Duane Skaggs - Morehead State University

Centrosymmetric solutions to the n + k queens problem R. Douglas Chatham - Morehead State University, Maureen Doyle - Northern Kentucky University, Robert J. Jeffers - Northern Kentucky University, Walter Kosters - Universiteit Leiden, Jeffrey Ward - Northern Kentucky University

Fourier Series - The Gibbs Phenomenon Andy Martin - Kentucky State University

Convergence Analysis of Newton's Method Mark P. Robinson - Western Kentucky University

Break - Science Center 300, Landrum 427, University Center

Destroying all cycles and the existence of a small cycle in a digraph. Peter Hamburger - Western Kentucky University

Curvature in the Classroom Robert Riehemann - Thomas More College

Economic Optimization with Mathematica: Lagrangian Multiplier Method. Amir Ahmadi - Morehead State University

Using Percentage Change as the Universe of Discourse in Fuzzy Time Series Forecasting Meredith Stevenson - Murray State University

College Algebra Redesign Project at MSU Julie Lang - Morehead State University

Mathematical problems in super-resolution image reconstruction Tichaona Chiwandamira - Berea College, Sara Evans - Berea College, Larry Gratton - Berea College

Business Meeting & Selection of Officers

Lunch (see list of possibilities in registration folder)

Plenary Session - Budding Theater - University Cente
MICROBIOLOGY

Hazel Barton, Chair  Bill Staddon, Secretary
Northern Kentucky University  Eastern Kentucky University

SATURDAY, NOVEMBER 14, 2009
SCIENCE CENTER 302

1:00 p.m.  Sequencing and Annotation of the Bacteriophage HK239 Genome  
           2 Ali Wright - Western Kentucky University, Rodney King - Advisor

1:15 p.m.  Is Transcription of the Bacteriophage HK639 Right Operon Antiterminated?  
           2 Chandrika Kunapuli - Western Kentucky University, Rodney King - Advisor

1:30 p.m.  Diverse capacities for DNA damage responses across the genus Acinetobacter  
           1 Tyler J. Elam - Morehead State University, Janelle M. Hare - Morehead State University

1:45 p.m.  The role of Y1aJ on the function and localization of SleB in Bacillus anthracis  
           1 Crystal Thomas - Berea College, Casey V. Jakubowski - Virginia Polytechnic Institute & State University, 
           2 David L. Popham - Virginia Polytechnic Institute & State University

2:00 p.m.  Improving current ELISAs used for the detection of Sarcocystis neurona in equines.  
           1 Sarah P. Lance - Asbury College, Daniel K. Howe - University of Kentucky, Bobby R. Baldridge - Asbury College

2:15 p.m.  Break - Science Center 300, Landrum 427, University Center

2:45 p.m.  The effects of epigallocatechin-gallate on the photokilling of Staphylococcus aureus by curcumin.  
           1 Christin Cummins - Midway College, William M. McGowan - Midway College

3:00 p.m.  Diverse Capacities for DNA Damage Survival across the Genus Acinetobacter  
           1 Tyler Elam - Morehead State University, Janelle Hare - Morehead State University

3:15 p.m.  Business Meeting & Selection of Officers

4:00 p.m.  Break

4:15 p.m.  Plenary Session - Budding Theater - University Center

1Undergraduate Research Competition  
2Graduate Research Competition
PHYSICS AND ASTRONOMY

Akhtar Mahmood, Chair
Bellarmine University

Arthur Pallone, Secretary
Murray State University

SATURDAY, NOVEMBER 14, 2009
SCIENCE CENTER 301

8:00 a.m. Mossbauer Study of Iron Rich Cereal and Iron Supplement
Amer S. Lahamer - Berea College, Matthew M. Baily - Berea College, Mohammed H. Yusuf - Berea College

8:15 a.m. Criteria of Wavefunction Goodness
Ed Montgomery - Centre College

8:30 a.m. Atmospheric and Technological Exploration with the POPACS Satellite
Nathan D. Fite - Morehead State University, Dr. Benjamin Malphrus - Morehead State University, Gil Moore - Utah State University and United States Air Force Academy, Walter Holemans - Space Dynamics Laboratory, Dr. Adam Huang - , Bob Twiggs - , Jeff Kruth -

8:45 a.m. Change Is Hard: Evolution of Student Ideas about Motion that Changes Direction
Scott Bonham - Western Kentucky University

9:00 a.m. Mass Predictions of Charmed and Beauty Baryons
Ben Draper - Bellarmine University, Akhtar Mahmood - Bellarmine University

9:15 a.m. Magnetic Shielding for Neutron EDM Experiments
Ramesh Adhikari - Berea College

9:30 a.m. Break
Science Center 300, Landrum 427, University Center

10:00 a.m. High Altitude Comet Dust Collection Experiment
Daniel C. Graves - Morehead State University, Dr. Benjamin K. Malphrus - Morehead State University, Brandon L. Molten - Morehead State University, Marc B. Beck - University of Louisville, Zach A. Jacobs - University of Kentucky

10:15 a.m. The Transitions between the Normal, Superfluid, and FFLO states in a Fermi gas
William D. Norris - Berea College, Martin Veillette - Berea College

10:30 a.m. An Observation of the Galactic Supernova Remnant G352.7-0.1 with the Chandra X-ray Observatory
Thomas Pannuti - Morehead State University, Tiffany Murray - Morehead State University

10:45 a.m. A re-examination of mid-infrared ISOCAM images of HII regions in M33
Emily Worinkeng - Berea College, Hodari Sadiki James - Berea College, Tracy Hodge - Berea College

1Undergraduate Research Competition
2Graduate Research Competition
11:00 a.m.  **Etching of Single layer Graphene** ¹ Jimmy Rop - Berea college
11:30 a.m.  **Lunch** *(see list of possibilities in registration folder)*
1:00 p.m.  **Formation Energy of Clusters and the Nucleation Rate** Stetson Roof - Murray State University, Hamid Kobraei - Murray State University
1:15 p.m.  **CREST veto system status** ¹ Sean Bodine - Northern Kentucky University
1:30 p.m.  **Metamaterials: Perfect Absorber** Daniel E Benton - Morehead State University, Dr. Willie Padilla - Boston College
1:45 p.m.  **Measuring Coronal Magnetic Twist Injected by Photospheric Rotation** ¹ Mohammed Humed Yusuf - Berea College
2:00 p.m.  **Business Meeting & Selection of Officers**
2:15 p.m.  **Break** - Science Center 300, Landrum 427, University Center
4:15 pm  **Plenary Session** - Budding Theater - University Center

¹Undergraduate Research Competition
²Graduate Research Competition
PHYSIOLOGY AND BIOCHEMISTRY

Michael Smith, Chair
Western Kentucky University

Michael Fultz, Secretary
Morehead State University

SATURDAY, NOVEMBER 14, 2009

LANDRUM 201

8:00 a.m. Effects of tomato and broccoli on uterine weight of ovariectomized rats Lingyu Huang - Kentucky State University, Cecil Butler - Kentucky State University, Changzheng Wang - Kentucky State University

8:15 a.m. Effect of Growth Hormone on Cell Proliferation in the Zebrafish (Danio rerio) Ear 2 Chia-Hui Lin - Western Kentucky University, Huifang Sun - Western Kentucky University, Julie B. Schuck - Western Kentucky University, Michael E. Smith - Western Kentucky University

8:30 a.m. Effect of rho kinase inhibition alpha-actin, beta-actin, myosin remodeling in the contracting A7r5 smooth muscle cell. William R. Hankinson - Morehead State University, Suzette Pike - Morehead State University, Josie M. Maione - Morehead State University, Michael E. Fultz - Morehead State University

8:45 a.m. The Effect of Endothelin-1 and 5-Fluorouracil on Wound Healing of Corneal Endothelial Cells. Leah Frazier - Western Kentucky University, Justin Jatczak - Western Kentucky University, Kenneth Crawford - Western Kentucky University

9:00 a.m. Effects of Toxic Metals on the Activity of MutM (Fpg) via a Hyperchromicity Assay Andrew Crisologo - Asbury College, Bruce Branan - Asbury College, Laura Busenlehner - Asbury College

9:15 a.m. Biochemical characterization of MurA in Escherichia coli in the presence of inhibitors. Jordan Feigerle - Centre College, Sarah Wilson - Centre College, Matt Spencer - Centre College, January Haile - Centre College

9:30 a.m. Break - Science Center 300, Landrum 427, University Center

10:00 a.m. Endothelin-1 reduces expression of the cyclin dependent kinase inhibitor p27kip1 in bovine corneal endothelial cells. James Huffman - Western Kentucky University, Kenneth M. Crawford - Western Kentucky University

10:15 a.m. Reduction of copper by Bisphenol A and the potential for DNA damage Logan Murphy - Morehead State University, David Saxon - Morehead State University

1Undergraduate Research Competition
2Graduate Research Competition
10:30 a.m. Identification and characterization of acyl CoA:retinol acyltransferase in the hepatopancreas of the crayfish (Procambarus clarkii) 1 Emily Green - Centre College, Rebecca Lindhorst - Centre College, Bryan Fioret - Centre College, Chase Palisch - Centre College, Stephanie E. Dew - Centre College

10:45 a.m. Rotating speed of the tumbler used for brining affected the water phase salt content of smoked paddlefish meat. 1 Tasia Smith - Kentucky State University, Cecil Butler - Kentucky State University, Lingyu Huang - Kentucky State University, Steven D. Mims - Kentucky State University, Changzheng Wang -

11:00 a.m. The Association of Pak 1 Expression in Cell Density and in Avoidance of Anoikis in Breast Cancer Cells 1 Robert Spaulding - Wood Hudson Cancer Research Laboratory, Robert Shields - Wood Hudson Cancer Research Laboratory, Briana Vogt - Wood Hudson Cancer Research Laboratory, Larry Douglass - Wood Hudson Cancer Research Laboratory, Bonnie Richmond - Wood Hudson Cancer Research Laboratory, Ruth Hemmer - Wood Hudson Cancer Research Laboratory, Julia Carter - Wood Hudson Cancer Research Laboratory

11:15 a.m. Energy costs and trade-offs of the adaptive immune system in Peromyscus polionotus 1 Sarah Hargis - Murray State University, Renee Levesque - Murray State University, Terry L. Derting - Murray State University

11:30 a.m. Business Meeting & Selection of Officers

11:45 a.m. Lunch (see list of possibilities in registration folder)

4:15 pm Plenary Session - Budding Theater - University Center

1 Undergraduate Research Competition
2 Graduate Research Competition
"A Headache is a Hot Poker in Your Brain Matter" Metaphoric Production about Health Experiences in Adults  
Nicholas Rudd - Morehead State University, Alena Hromish - Morehead State University, Caitlin Linepensil - Morehead State University, Lynn Haller - Morehead State University

The Reliability and Validity of the Adult Knowledge of Attention Deficit Disorders Scales  
Julia Dahmane - Morehead State University, Dr. Sean P. Reilley - Morehead State University

The Apple Doesn't Fall Far From the Tree. Insightfulness and the transmission of attachment between parent and child.  
Sexton, Paula - Morehead State University, Fugate, Katelyn - Morehead State University, Vetter, Stacey - Morehead State University, Kidwell, Shari - Morehead State University

The Internal Working Model: How parents' behavior may influence children's perceptions of relationships.  
Jacquelyn Lile - Morehead State University, Britney Maynard - Morehead State University, Shari L. Kidwell - Morehead State University

Attachment and children's emotion regulation skills  
Nicolette Lowe - Morehead State University, Chelsea Baker - Morehead State University, David Turner - Morehead State University, Shari L. Kidwell - Morehead State University

The Efficiency of Japanese Quail Sexual Interactions is Enhanced by Sexual Conditioning  
Emily Sither - Centre College, Mariel Smith - Centre College, Brian Cusato - Centre College

Event Related Potentials Can Predict Sleep-Restricted Cognitive Performance  
Catherine A. Moonan - Centre College, Neil A. Wright - Depauw University, Krista N. Garrod - University of Louisville, Dennis L. Molfese - University of Louisville

STIMULATION OF HISTAMINE H3 RECEPTORS IMPROVES MEMORY IN AN ANIMAL MODEL OF MEMORY DISORDERS  
Meredith Blankenship - Northern Kentucky University, Molly S. Griffith - Northern Kentucky University, Mark E. Bardgett - Northern Kentucky University
10:30 a.m. The Impact of Studying AD/HD Diagnostic Criteria and Case Histories on Successful Malingering on the Adult AD/HD Self-Report Scale-vs.1.1. ¹ Katherin Austin - Morehead State University, Amy Kiser - Morehead State University, Leah Smith - Morehead State University

10:45 a.m. "Causal" amphetamine administration and changes in stimulant- and withdrawal-related activity in rats. ¹ Devin R. Gibbs - Morehead State University, Wesley White - Morehead State University

11:00 a.m. The Ability of the CAT-A to Detect Malingered Current AD/HD Symptoms in Adults With and Without Enhanced AD/HD Knowledge. ¹ Medina Jackson - Morehead State University, Dr. Sean P. Reilley - Morehead State University

11:15 a.m. Preliminary Evaluation of the Detection of Malingered Childhood AD/HD Symptoms in Adults on the CAT-A. ¹ Kelly D. Gruber - Morehead State University, Nora Weyh - Morehead State University, Dr. Sean P. Reilley - Morehead State University

11:30 a.m. Lunch (see list of possibilities in registration folder)

1:00 p.m. The Effects of Personality and Preparedness on Group Work ¹ Christine Morris - Berea College

1:15 p.m. The ability of adults to distinguish similarity between pairs of house images and face images both in the upright and inverted position. ¹ Corwin R. Butler - Asbury College, Jane E. Joseph - University of Kentucky, Bobby R. Baldridge - Asbury College

1:30 p.m. Mate Preference and Mating Strategies in Male Japanese Quail (Coturnix japonica). ¹ Amanda Glueck - Centre College, Brian Cusato - Centre College

1:45 p.m. Repeated Exposure to Psychostimulants on Appetitive Behavior. ¹ Steven Osbourne - Morehead State University, David Book - Morehead State University, Nicholas Holt - Morehead State University, Lauren May - Morehead State University, Ilsun M. White - Morehead State University

2:00 p.m. Business Meeting & Selection of Officers

4:15 pm Plenary Session - Budding Theater - University Center

¹Undergraduate Research Competition
²Graduate Research Competition
SCIENCE EDUCATION
Beth Nolte, Chair
Spalding University
Wilson Gonzales-Espada, Secretary
Morehead State University

SATURDAY, NOVEMBER 14, 2009
LANDRUM 207

8:00 a.m.  Undergraduate Fellowship Program at Morehead State University: Impact Assessment  Wilson Gonzalez-Espada - Morehead State University

8:15 a.m.  Regional College Student Perceptions and Reactions to Evolutionary Theory  David E. Long - University of Kentucky

8:30 a.m.  The Development of Summer Science Inquiry Institute  Jessica Carnes - Berea College, Amy Jones - Berea College, Chris Yaluma - Berea College, Jon Saderholm - Berea College

8:45 a.m.  KY Girls STEM Collaborative  Carol Hanley - University of Kentucky, Sherie Kindall - Midway College

9:00 a.m.  Examination of Geoscience Education Practices  Stuart Kenderes - Western Kentucky University, Margaret E. Crowder - Western Kentucky University

9:15 a.m.  What science majors want in a career? Can school science teaching offer it?  Wilson Gonzalez-Espada - Morehead State University

9:30 a.m.  Business Meeting & Selection of Officers

11:30 am  Lunch  (see list of possibilities in registration folder)

4:15 pm  Plenary Session - Budding Theater - University Center

1Undergraduate Research Competition
2Graduate Research Competition
ZOOLOGY
Anthony Lentz, Chair
Bellarmine University
Sherry Harrel, Secretary
Eastern Kentucky University

SATURDAY, NOVEMBER 14, 2009
SCIENCE CENTER 305

8:30 a.m. Aquatic systems hypoxia from allochthonous litter of the invasive Amur honeysuckle and its effects on wood frog tadpoles. Richard D. Durtsche - Northern Kentucky University, Andrew J. Wallace - Northern Kentucky University, Elizabeth K. Droessler - Northern Kentucky University

8:45 a.m. Relationship among Stream Discharge, pH and Fish Abundance in Three Headwater Streams in Southeastern Kentucky Amy S. Wilson - Eastern Kentucky University

9:00 a.m. Genetic isolation as a result of dam construction: A look at the effects on two species of darters. Kerstin Edberg - Western Kentucky University, Philip Lienesch - Western Kentucky University

9:15 a.m. Territoriality of Neolamprologus multifaciatus in clumped and dispersed resource habitats. Piyumika S Suriyampola - University of Louisville, Perri K Eason - University of Louisville

9:30 a.m. Break - Science Center 300, Landrum 427, University Center

10:00 a.m. Factors Affecting the Singing Activity of Carolina Wrens (Thryothorus ludovicianus) in Urban and Rural Areas. Shannon R. Trimboli - Western Kentucky University, ALBERT J. MEIER - Western Kentucky University, JOSÉ PEDRO DO AMARAL - Western Kentucky University, RAFAEL MÁRQUEZ - Western Kentucky University

10:15 a.m. The Incredible Mrs. Cichlid: An Examination of Parental Care Behaviors of a Monogamous Fish. Bethany Westrick - Eastern Kentucky University, Dr. Nick Santangelo - Eastern Kentucky University

10:30 a.m. Life History traits of Morone mississippiensis. Peter Zervas - Western Kentucky University, Philip Lienesch - Western Kentucky University

10:45 a.m. Bird species associations with hemlock forests of Kentucky and predictions of the effects of Hemlock Woolly Adelgid on those communities. Todd Weinkam - Eastern Kentucky University, David Brown - Eastern Kentucky University

11:00 a.m. Prey-induced phenotypic plasticity in the teeth of hatchery vs. large mouth bass. Tamilselvi Selvaraj - Western Kentucky University

1Undergraduate Research Competition
2Graduate Research Competition
University, Dr. Steve Huskey - Western Kentucky University, Margaret Mahan - Western Kentucky University

11:30 a.m. **Lunch** (see list of possibilities in registration folder)

1:00 p.m. **Randomly amplified fingerprints (RAF) and their applications to butterfly population structure.**¹ Joseph R. Marquardt - Western Kentucky University, Jeffrey M. Marcus - Western Kentucky University

1:15 p.m. **Pattern of suction generation during prey-capture in an elongate fish**¹ Jason Hall - Western Kentucky University, Steve Huskey - Western Kentucky University

1:30 p.m. **Messing with the Thermostat and Frog Effects: tadpole development at different water temperatures**¹ Bethany Coffey - Western Kentucky University, Mellissa Roy - Western Kentucky University, Juan F. Beltrán - Universidad de Sevilla, Rafael Márquez - MNCN - CSIC, Julia Toja Santillana - , José C. Muñoz Reinoso - , Manuel Chirosa Ríos - , José Pedro S. do Amaral -

1:45 p.m. **Comparison of Eastern Kentucky brook trout populations to native Virginia populations**² Grayson R. Patton - Eastern Kentucky University, Sherry L. Harrel - Eastern Kentucky University

2:00 p.m. **Business Meeting & Selection of Officers**

2:15 pm **Break** - Science Center 300, Landrum 427, University Center

4:15 pm **Plenary Session** - Budding Theater - University Center

¹Undergraduate Research Competition
²Graduate Research Competition
POSTER PRESENTATIONS

We will this year, as we did last year, 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 4x6 ft. poster board. Each poster board will be identified with a number that matches the presenter’s number in the poster portion of the program booklet. Poster presenters must check in at the Ballroom in the University Center.

The Saturday A.M. session will include the following sections: Agricultural Sciences, Botany, Cellular & Molecular Biology, Chemistry, Geology, Engineering and Health Sciences. These posters will be set up between 7:30 - 8:00 a.m. Students entering the URC will have their posters judged starting at 9:00 a.m and the presenters must be present in order to have their posters judged. The A.M. posters must be removed or arrangements made to take them down between 11:30 - 12:00. It is very important that the posters are removed at this time in order to allow the P.M. session to set up.

The Saturday PM session will include Computer and Information Science, Ecology and Environmental Science, Mathematics, Microbiology, Physics & Astronomy, Physiology & Biochemistry, Psychology, Science Education and Zoology. These posters will be 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 at their posters. These posters can be removed at 4:00 p.m. The individual in charge of the poster session is Dr. Patrick Hare. He and his assistants will be available to provide any help that may be necessary for you to set up.

SATURDAY MORNING

AGRICULTURAL SCIENCES

1. Analysis of Hot Pepper Fruits for Capsaicin Content. 1 Shanae Kincannon - Kentucky State University

2. Establishment of Educational Display Gardens at Western Kentucky University Farm. Claudia Stetter - Western Kentucky University

3. Effect of praziquantel on natural infections of the snail, Elimia semicarinata (Gastropoda: Pleurocerida), with the trematode, Proterometra macrostoma (Digenea: Azygiidae). 1 Cecilia Albers* - Berea College, Adam Chambers* - Berea College, Adam Meador - Berea College, Krystina Sandefur - Berea College, Lee Ware - Berea College, Ronald Rosen - Berea College

1Undergraduate Research Competition
4. A Two-year Evaluation of Disease Susceptibility and Fruit Yield of Selected Heirloom and Hybrid Cultivars of Tomato (Solanum lycopersicum). 1 Joshua Riggsby - Morehead State University, Jennifer Harman - Morehead State University, Brent Rogers - Morehead State University, Debbie Johnson - Morehead State University

5. Using ultrasound as a quantitative tool to assess body condition score in Quarter and Thoroughbred horses. 1 Lauren Melzer - Morehead State University, Alecia Raymer - Morehead State University, Niki Wheeler - Morehead State University, Judy Willard - Morehead State University, Troy Wistuba - Morehead State University, Phil Prater - Morehead State University, Broc Sandelin - California State Polytechnic University – Pomona

6. Is Collema sp., a Gelatinous Lichen, a Sustainable Source of Nitrogen for Greenhouse and Nursery Crop Production? 1 Clarice Esch - Western Kentucky University, Martin Stone - Western Kentucky University

7. Effects of light conditions on incubating chicks, Gallus domesticus. 1 Crystal Walker - Transylvania University, Vincent Cassone - University of Kentucky

8. Using Simple Sequence Repeat Markers to Distinguish Scion and Rootstock Tissues on Grafted Pawpaw (Asimina triloba) Trees. 1 Myesha Hollins - Kentucky State University, Li Lu - Kentucky State University, Kirk W. Pomper - Kentucky State University, Jeremiah D. Lowe - Kentucky State University, Sheri B. Crabtree - Kentucky State University

9. Yield and Fruiting Characteristics of the Pawpaw Variety K8-2; a New Cultivar Release from Kentucky State University. Kirk W. Pomper - Kentucky State University, Sheri B. Crabtree - Kentucky State University, Jeremiah D. Lowe - Kentucky State University

10. Third Year Yield Characteristics of Advanced Floricane Fruiting Blackberry Selections from the University of Arkansas Grown in Kentucky. 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

11. Testing for Clonality of Pawpaw (Asimina triloba) Patches in Kentucky with Simple Sequence Repeat and Inter-simple Sequence Repeat Markers. LU, LI - Kentucky State University, KIRK W. POMPER - Kentucky State University, JEREMIAH D. LOWE - Kentucky State University, SHERI B. CRABTREE - Kentucky State University, LAUREN A. COLLINS - Kentucky State University

12. Evaluation of New Simple Sequence Repeat Markers for Pawpaw (Asimina triloba) Genetic Diversity Analysis. 1 DAVIES, CHANIECE - Kentucky State University, LI LU - Kentucky State University, KIRK W. POMPER - Kentucky State University

1Undergraduate Research Competition
Kentucky Academy of Science 2009 Annual Meeting

State University, JEREMIAH D. LOWE - Kentucky State University, SHERI B. CRABTREE - Kentucky State University

13. Soil Properties Changes following Yard Restoration in Sedalia, Kentucky. Dianna Johnson - Murray State University, Iin Handayani - Murray State University

14. Antioxidant capacity, phenolic content and cytotoxicity of whole and fractioned pawpaw extracts. Hideka Kobayashi - Kentucky State University, Changzheng Wang - Kentucky State University, Kirk Pomper - Kentucky State University

BOTANY

15. The role of pappus ultrastructure in regulating seed hydration in North American dandelions (Taraxacum officinale). Chloé E. Hart - Wittenberg University, Samantha M. Imfeld - Wittenberg University, Kevin M. Gribbins - Wittenberg University, Jay A. Yoder - Wittenberg University, Matthew H. Collier - Wittenberg University

16. Bioinformatics analysis of a thaumatin-like protein isolated from giant ragweed. Catherine M. Brumm - Bellarmine University, Dave L. Robinson - Bellarmine University, Joann M. Lau - Bellarmine University

17. A clinostat for evaluating plant response to microgravity. Sarah M. Roebker - Bellarmine University, Joann M. Lau - Bellarmine University, Dave L. Robinson - Bellarmine University

18. Screening of a cDNA library from giant ragweed pollen. Kaitlin A. Kurilla - Bellarmine University, Katherine M. Ennes - Bellarmine University, Joann M. Lau - Bellarmine University, Dave L. Robinson - Bellarmine University

CELLULAR AND MOLECULAR BIOLOGY

19. Neurochemical characterization of tyrosine hydroxylase-expressing interneurons in the human cerebral cortex. Sarah Hawkins - Centre College, Laura Hench - Centre College, Steve Asmus - Centre College


21. Monomeric laforin is likely the biological relevant form in Lafora Disease. Devin M. Rogers - University of Kentucky, Vikas V. Dukhande - University of Kentucky, Matthew S. Gentry - University of Kentucky

22. ABO Blood Group Genotyping by PCR-RFLP. Travis Wheeler - Eastern Kentucky University, Rebekah L. Waikel - Eastern Kentucky University

1Undergraduate Research Competition
23. **Stereological Analysis of Neurons and Glial Cells in the CA1 Region of the Hippocampus in a Rat Model of Wernicke Korsakoff's Syndrome.** ¹ Robert Spaulding - Northern Kentucky University, Megan Caroway - Northern Kentucky University, Megan Kramer - Northern Kentucky University, Jared Patton - Northern Kentucky University, Leslie Fausnacht - Northern Kentucky University, Kristi L. Haik - Northern Kentucky University

24. **Analysis in the defect of beta-catenin in dendritic cells from NOC mice.** ¹ Alisha Holmberg - Berea College, Sarah Parnell - University of Louisville, Michelle Kosiewicz - University of Louisville, Pascale Alard - University of Louisville

25. **Striatal Nitric Oxide Synthase Neurons in an Animal Model of Wernicke-Korsakoff Syndrome.** ¹ Veronica Alamilla - Northern Kentucky University, Megan Caroway - Northern Kentucky University, Megan Kramer - Northern Kentucky University, Jared Patton - Northern Kentucky University, Leslie Fausnacht - Northern Kentucky University, Kristi L. Haik - Northern Kentucky University

26. **Mueller cell injury responses in the regenerating axolotl retina.** ¹ Aric J. Johnson* - Western Kentucky University, Justin C. Penticuff* - Transylvania University, Elizabeth A. Debski - University of Kentucky

27. **Mapping clk-3 in the nematode C. elegans.** ¹ Khushbu Patel* - Western Kentucky University, Efua Wilmot* - Berea College, Jim Lund - University of Kentucky

28. **Function of Upd3 in the Drosophila JAK/STAT pathway.** ¹ Sarah Specht - University of the Cumberlands, Carlos Sandfoss - University of Kentucky, Travis Sexton - University of Kentucky, Dustin Perry - University of Kentucky, Douglas Harrison - University of Kentucky

29. **Sex specific predisposition of left ventricular hypertrophy via microRNA regulation.** ¹ Daniel VanDerPloeg - Eastern Kentucky University, Rebekah Waikel, PhD - Eastern Kentucky University

30. **Generation of a GFP Fusion Protein as an Aid in the Observation of Rage Receptor Activity in Macrophages.** Joshua B. Jones - Eastern Kentucky University, Dr. Rebekah L. Waikel - Eastern Kentucky University

31. **Restriction of Hematopoietic Stem Cell Proliferation by a Pro-Quiescence Kinase.** ¹ Rachel L. Cary - Kentucky Wesleyan College, Lance R. Todd - Kentucky Wesleyan College, Uma Sankar - University of Louisville

32. **Soluble Rage Isolation for Use in Competitive Binding of Advanced Glycation End Products.** Jeffrey Rogers - Eastern Kentucky University, Rebekah Waikel, Ph.D. - Eastern Kentucky University

¹Undergraduate Research Competition
33. **Pathophysiology of amyloid beta peptides and cells of the human central nervous system.** ¹ Osniel Gonzalez Ramos - Northern Kentucky University, Joseph Mester - Northern Kentucky University

34. **Creating a GAL4 enhancer trap line for studying expression of the CRMP gene.** ¹ Khristina Locker Meissner - Midway College, Deanna Morris - University of Kentucky, John Rawls - University of Kentucky

**CHEMISTRY**

35. **Organometallic Pyridazine Complexes for Electronic Materials Applications.** Nathan Tice - Eastern Kentucky University, Andrew Preston - Eastern Kentucky University, Marika Wieliczko - Eastern Kentucky University

36. **Synthesis of novel fullerene/bipyridine ligands for photo-induced electron transfer applications.** ¹ Wesley Baas - Northern Kentucky University, Keith A. Walters - Northern Kentucky University

37. **Modified strategy for transition metal/pi-conjugated polymer "molecular wire" synthesis.** ¹ Jessica Baumann - Northern Kentucky University, Alex Ivers - Northern Kentucky University, Dustin Czirr - Northern Kentucky University, Keith A. Walters - Northern Kentucky University

38. **A Novel Pervious Cement Reaction Barrier (PCRB) In Situ Arsenic Remediation System.** Morgan Jones - Western Kentucky University

39. **Design of Fluorescent Glucose Biosensors Employing Genetically Engineered Proteins.** Trajen Head - University of Kentucky, Smita Joel - University of Kentucky, Sylvia Daunert - University of Kentucky

40. **Photochemical production of highly reactive metal-oxo species for the selective oxidation catalysis.** ¹ Eric Vanover - Western Kentucky University, Alice Pan - Western Kentucky University, Gerald Lowery - Western Kentucky University, Rui Zhang - Western Kentucky University

41. **Immobilization of ruthenium complexes in one- or two-dimensional networks of polyoxometallates.** ¹ Samantha A. Hodsdon - Western Kentucky University, Bangbo Yan - Western Kentucky University, Sean Parkin - University of Kentucky

42. **Evaluation of Potential Xanthine Oxidase Inhibitors by Molecular Docking and Bioassays.** ¹ Rahul Patel - Northern Kentucky University, Rachel Medlock - Northern Kentucky University, Chris Elam - Northern Kentucky University, Mike Lape - Northern Kentucky University, Stefan Paula

43. **On-Metal Study for the Synthesis of a Bulky Pyridazine Complex.** Jacob Strain - Western Kentucky University, Chad Snyder - Western Kentucky University

44. **Synthesis and Characterization of Some Substituted Pyridazines.** Justin Mobley - Western Kentucky University, Daniel Hinson - Western Kentucky University

¹ Undergraduate Research Competition
45. **On-Metal Synthesis of Some Substituted Rhenium Pyridazyl Complexes.**
   Chad L. Phillips - Western Kentucky University, Chad A. Snyder, Ph.D. - Western Kentucky University

46. **Discovery of Novel SERCA Inhibitors by Virtual and Experimental Screening of a Compound Library.**
   Robert Ratliff - Northern Kentucky University, Chris Elam - Northern Kentucky University, Choke Estifanos - Northern Kentucky University, Mike Lape - Northern Kentucky University, David Stanton - , Stefan Paula - Northern Kentucky University

47. **Synthesis and photophysical studies of tungsten(0) isocyanide complexes.**
   Svitalana Karasiova - Northern Kentucky University, Andrew Ankenbauer - Northern Kentucky University, Keith A. Walters - Northern Kentucky University

48. **Synthesis, structures and characterizations of two new organic-inorganic hybrid compounds containing polyoxometallates and tris-2,2'-bipyridyl ruthenium(II) ions.**
   Yan-Fen LI - Western Kentucky University

49. **Exploring Synthetic Parameters for the Preparation and Properties of Functional Organoclay.**
   Jennifer Hand - Northern Kentucky University, Isabelle Lagadic - Northern Kentucky University

50. **Synthesis of Polymer-Layered Silicate Nanocomposites using One-Step Prepared Organoclay.**
   Tommy Morgan - Northern Kentucky University, Isabelle Lagadic - Northern Kentucky University

51. **A Computational Study of Solvent Effects on Estrone and 17beta-Estradiol Excited States.**
   Bridget Gavaghan - Northern Kentucky University, Dr. Patrick M. Hare - Northern Kentucky University

52. **Evaluation of a Molecular Docking Program for Pose Prediction and Virtual Screening Against Dihydrofolate Reductase.**
   John E. Burden - Spalding University

53. **Off-Metal Synthesis of Some Aryl Substituted Rhenium η5-Cyclopenta[c]pyridazyl Complexes.**
   Leif Neathery - Western Kentucky University, Chad A. Snyder, Ph.D. - Western Kentucky University

54. **Normal and Abnormal Carbene Complexes.**
   Clarin Ellard - Berea College, Samuel M. Rosolina - Berea College, Justin Baldwin - Berea College, Anes Kovacevic - Berea College

55. **Characterization of Pseudomonas aeruginosa and Eschericia coli Biofilm Formation on Metal Oxide Substrates.**
   Jonathan Pahren - Northern Kentucky University, Allen Morris - Northern Kentucky University, Aaron Swomley - Northern Kentucky University, Hazel Barton - Northern Kentucky University

1Undergraduate Research Competition
56. **Evaluation of Functional Nanomaterials for Biosensing and Alternative Energy Applications.** ¹ Nana-ama Quansah - Northern Kentucky University, Stephen Wall - Northern Kentucky University, Anthony Haskamp - Northern Kentucky University, Wesley Bass - Northern Kentucky University, Keith Walters - Northern Kentucky University, Kristi Haik - Northern Kentucky University, Heather Bullen - Northern Kentucky University

57. **Spectroscopic Analysis of Pseudomonas aeruginosa and Esherichia coli Adsorption to Metal Oxides.** ¹ Allen Morris - Northern Kentucky University, Jonathan Pahren - Northern Kentucky University, Aaron Swomley - Northern Kentucky University, Hazel Barton - Northern Kentucky University, Heather Bullen - Northern Kentucky University

58. **Reaction of Platinum (II) Complexes with Peptides.** Khaja Muneeruddin - Western Kentucky University, Dr. Kevin Williams - Western Kentucky University

59. **Elucidating Loline Alkaloid Biosynthesis.** Sujit Pawar - University of Kentucky

60. **Detection of Hydroxylate Polychlorinated Biphenyls Employing a Molecular Switch.** ¹ Brittney Metts - Kentucky Wesleyan College, Dr. Sylvia Daunert - University of Kentucky, Krystal Teasley Hamorsky - University of Kentucky

61. **The Bio-Accumulation of Mercury(Hg) in Bat Hair from Atmospheric Deposition.** ¹ Natosha Mulholland - Western Kentucky University, Melinda Rucks - Western Kentucky University

62. **Evaluating the Implication of Siderophore/Aluminum Oxide Interactions on Biofilm Formation.** ¹ Alyssa Smith - Northern Kentucky University, Heather Bullen - Northern Kentucky University

63. **Evaluation of Oligo(ethylene glycol) Coatings on Stainless Steel as Biofouling Resistant Surfaces.** ¹ Mary Claire Brady - Northern Kentucky University, Anthony Haskamp - Northern Kentucky University, Jonathan Pahren - Northern Kentucky University, Aaron Swomley - Northern Kentucky University, Heather Bullen - Northern Kentucky University

64. **The effects of humidity on the conductivity of DNA.** ¹ Carmen Dibaya - Berea College, John M. Leveritt, III - Tulane University, Ray Shrestha - Tulane University, Sarah Tesar - Tulane University, Alexander L. Bruin - Tulane University

65. **Bi-Functional Mesoporous Silicates as Non-Steroidal Anti-Inflammatory Drug (NSAIDs) Carriers.** ¹ Chrshitina Duffy - Northern Kentucky University, Isabelle Lagadic - Northern Kentucky University

¹Undergraduate Research Competition
66. **Probing Protein Conformational Changes with Atomic Force Microscopy (AFM).** Sanja Trajkovic - University of Kentucky, Sylvia Daunert - University of Kentucky, Yuguang Cai - University of Kentucky

67. **Solvent Dependence of Estrogen Flourescence Quantum Yields.** ¹ Karla Irizarry - Northern Kentucky University, Kit Yan Chan - Northern Kentucky University, Patrick Hare - Northern Kentucky University

68. **Utilizing 2,6-Dichlorophenolindophenol (DCIP) Towards the Development of a Novel Undergraduate Chemistry Laboratory for Distribution Coefficients.** ¹ Chad W. Chumbley - Eastern Kentucky University, Darrin L. Smith - Eastern Kentucky University

69. **Electron-rich annulenes suitable for coupling to electron deficient cores.** ¹ Emma Hatfield - Northern Kentucky University, Linda Schutzman - Northern Kentucky University

70. **Incorporation of Europium (III) Complexes into Silica Microspheres.** ¹ John Brantley - Western Kentucky University, Les Pesterfield - Western Kentucky University, Stuart Burris - Western Kentucky University

71. **Metal Complexation of Pyoverdin Siderophores Produced by Pseudomonas Environmental Isolate: Implications in Survival and Growth.** ¹ Aaron Swomley - Northern Kentucky University, Allen Morris - Northern Kentucky University, Jonathan Pahren - Northern Kentucky University, Hazel Barton - Northern Kentucky University, Heather Bullen - Northern Kentucky University

72. **The bipolar trajectory surface hopping (BTSH) approach for reactive scattering problems.** Jeremy B. Maddox - Western Kentucky University, Bill Porier - Texas Tech University

73. **Analysis of Alpha-galactosidase from Aspergillus Niger.** ¹ Lauren E. Lane - Berea College, Matthew J. Saderholm - Berea College

74. **Optimizing the Synthesis of Asymmetric [14]-Dehydrobenzoannulenes.** ¹ Catharine Horner - Northern Kentucky University, Wil Talbert - Northern Kentucky University, Le Dao - Northern Kentucky University, Jeff Fortin - Northern Kentucky University, Brenda Barnes - , K.C. Russell –

75. **Service Learning in Analytical Chemistry: Water quality analysis of Bee Creek and Clarks River, Kentucky.** ¹ Kristi Adair - Murray State University, Harry Anderson - Murray State University, Ashley Driver - Murray State University, Emily Morris - Murray State University, Erica Riley - , Ashley Winkler - , Bomman Loganathan –

76. **The Synthesis of Proline-containing Peptides.** Matthew Meter - Berea College, Matthew Saderholm - Berea College

77. **Compositional Changes in Human Tear Lipids with Meibomian Gland Dysfunction.** ¹ Sara Ratliff - Eastern Kentucky University

¹Undergraduate Research Competition
GEOLGY

78. Depositional Environment of Split Rock Conglomerate. ¹ Michael Glassmeyer - Northern Kentucky University

79. Quaternary Geologic Map of the Alexandria 7.5-Minute Quadrangle East of the Licking River, Northern Kentucky. ¹ Zach Mergenthal - Northern Kentucky University

80. Improving approximations of the Mohr-Coulomb failure envelope. ¹ Jesse Amundsen - Northern Kentucky University

81. SEDIMENTOLOGY OF THE BRUSHY BASIN MEMBER OF THE MORRISON FORMATION ASSOCIATED WITH THE AARON SCOTT DINOSAUR SITE (JURASSIC), FERRON, UTAH. ¹ Zach Mergenthal - Northern Kentucky University

82. Weathering and Erosion of Bones from the Aaron Scott Site near Ferron, Utah (Morrison Formation, Jurassic). ¹ Katybeth Coode - Northern Kentucky University

83. Updates to the Taphonomy of the Aaron Scott Site dinosaur site (Jurassic, Morrison Formation) in Central Utah. ¹ Kevin R. Donaldson - Northern Kentucky University, Janet L. Bertog - Northern Kentucky University

ENGINEERING

84. Synthesis and cytotoxicity of gold/golds nanoparticles with controllable near-infrared resonance and biocompatible surface coating for cancer therapy. ¹ Deborah Hickman - Transylvania University, Guandong Zhang - University of Kentucky, Andre Gobin - University of Kentucky

85. KySat-1: A Test-Bed for Small Satellite Technology. Daniel Erb - University of Kentucky, Dr. James Lumpp - University of Kentucky, Dr. Benjamin Malphrus - Morehead State University

HEALTH SCIENCES

86. Preliminary Investigation into Human Life Expectancy as Influenced by Country, Age Scale, and Gender for the Period of 1990 to 2006. Pramod Gupta - Western Kentucky University, Zheng Wang - Western Kentucky University, Elmer Gray - Western Kentucky University

87. Understanding Glutamate Neurotransmission Before, During, and After Status Epilepticus in Young and Aging Rats. ¹ M. Elizabeth Deel - University of Kentucky, Michelle L. Stephens - University of Kentucky, Francois Pomerleau - University of Kentucky, Peter Huettl - University of Kentucky, G. A. Gerhardt - University of Kentucky

88. Pesticide Use and Safety Practices of Small/Limited Resource Farm and Greenhouse Workers in KY. Frederick N. Bebe - Kentucky State University,

¹Undergraduate Research Competition
Myna Panemangalore - Kentucky State University

89. **Immobilization of antiviral lectin Griffithsin on magnetic beads**. ¹ Andrew Johannemann - Kentucky Wesleyan College, Kenneth Palmer - University of Louisville

90. **Expression, purification and characterization of recombinant Microcystis viridis Lectin**. ¹ Stacy Webb - Kentucky Wesleyan College, Kenneth Palmer - University of Louisville

91. **Attitudes toward and Influences upon HPV Vaccine Acceptance among Male and Female Filipinos**. ¹ Viktoria Safarian - Transylvania University, Morgan Richardson - Transylvania University, Ruth Kloha - Transylvania University, April Young - University of Kentucky, Dr. Kathleen Jagger - Transylvania University

92. **An evaluation of the chemopreventive properties from venus flytrap (Dionaea muscipula Ellis)**. ¹ Daniel G. Eschenbach - Bellarmine University, Jillian C. Goines - Bellarmine University, Dave L. Robinson - Bellarmine University, Joann M. Lau - Bellarmine University

93. **Effect of high isoflavone soy diets on serum cholesterol and triglyceride levels in C57BL/6J mice**. ¹ Daniel Schucter - Northern Kentucky University, April Biddle - Northern Kentucky University, Dr. Falicia Edwards - Northern Kentucky University, Dr Eimear Mullen - Northern Kentucky University

94. **Are Amino Acid Variations in Interleukin-1 Alpha Linked to Alzheimer's Disease?**. ¹ Kyle Brosmore - Northern Kentucky University, Joseph Mester - Northern Kentucky University

¹Undergraduate Research Competition
SATURDAY AFTERNOON

COMPUTER AND INFORMATION SCIENCES

1. **Alignment of genomes of C.scatologenes to NC_009699 (C.botulinum F str.Langeland)**. Haitao Yu - Western Kentucky University, Chia-Hui Lin - Western Kentucky University, Lipeng Bi - Western Kentucky University, Claire Rinehart - Western Kentucky University

2. **Genomic Comparison of C. Scatologenes to M. Thermoacetica**. 1 Alexander Hare - Western Kentucky University, Ben Neal - Western Kentucky University, Jae Lee - Western Kentucky University, Paul Kasinski - Western Kentucky University, Kinchel Doerner - Western Kentucky University, Claire Rinehart - Western Kentucky University

3. **Genomic Comparison of C.scatologenes to C. acetobutylicum**. 1 Malika Ahmed - Western Kentucky University, Eric Johnson - Western Kentucky University, Eeswarachandra Chamarthi - Western Kentucky University

4. **Finding Reliable Indicators of False Positive Sequence Matches for C. scatologenes Genome Assembly**. 1 Alan Simmons - Western Kentucky University, Claire Rinehart - Western Kentucky University

ECOLOGY AND ENVIRONMENTAL SCIENCE

5. **Effect of Al & Ca soil availability on Picea rubens(Pinaceae) & Abies balsamea(Pinaceae) foliar physiology and chemistry in northern New England**. Richard L. Boyce - Northern Kentucky University

6. **Nutrient Limitations in Low Alkalinity, Low Nutrient, Eagle Lake Reservoir, Rowan Co., KY**. 1 Susan R. Brown - Morehead State University, Brian C. Reeder - Morehead State University

7. **Construction of Thermal Dissipation Probes for Sap Flow Measurement**. 1 Lincoln Fugal - Northern Kentucky University

8. **Ecology and Geology of the Belize Barrier Reef: Changes since 1973**. 1 Jessica Webster - Northern Kentucky University, Denice N. Robertson - Northern Kentucky University, Sarah E. Johnson - Northern Kentucky University

9. **Three Centuries of Fire and Forest History in an Old-Growth Quercus Forest on the Cumberland Plateau**. 1 Josh Taylor - Eastern Kentucky University, Justin Price - Eastern Kentucky University, Adrienne Cooper - Eastern Kentucky University, Ryan McEwan - Dayton University, Neil

1Undergraduate Research Competition
10. Impacts of surface mining on Asian Clam growth and mortality in tributary streams. ¹ Maranda Elswick - Pikeville College, Jane Argentina - Virginia Polytechnic Institute and State University, Joseph Whittaker - Pikeville College

11. Impacts of surface mining on sediments and water quality in tributary streams. ¹ Maranda Elswick - Pikeville College, Jane Argentina - Virginia Polytechnic Institute and State University, Joseph Whittaker - Pikeville College

12. Identification of DNA biomarkers for determining sources of fecal pollution in water. Kevin Andrew - Gatton Academy of Mathematics and Science in Kentucky, Rick Fowler - Western Kentucky University, Claire Rinehart - Western Kentucky University, Jonathan Quiton - Western Kentucky University

13. Comparison of amphibian communities in artificial and natural ponds in forested ecosystems. Andrea Drayer - Eastern Kentucky University, Stephen Richter - Eastern Kentucky University


15. Accumulation of heavy metals in mayflies (Heptageniidae) at the Paducah Gaseous Diffusion Plant, then (1987-1991) and now (2008-2009). Andrew J Wigginton - University of Kentucky, Ben F Brammell - University of Kentucky, Alissa M Carlton - University of Kentucky, Scott J Holliday - University of Kentucky


17. A Dendrochronological Study of Uncommonly Sensitive Post Oak and Pignut Hickory Populations With Implications for Future Stand Development. Nicholas D. Tomko - Eastern Kentucky University, Emily Downer - Eastern Kentucky University, Neil Pederson - Eastern Kentucky University

18. Influences of Pasture and CREP Tallgrass Plantings on Avian Community Composition in Summer and Winter. Aaron Hulsey - Western Kentucky University, Cabrina Hamilton - Western Kentucky University, Wayne Mason - Western Kentucky University, Albert J. Meier - Western Kentucky University

19. Influences of Microbial Networks on Food Webs. Justine Missik - Western Kentucky University, Kati Coates - Western Kentucky University, Jonathan L. Bowers - Western Kentucky University, Stuart Borrett - University of North

¹Undergraduate Research Competition
20. **Horizontal Transmission of Dengue viruses among Aedes aegypti and Aedes albopictus Larvae.** Jeffrey Bara - University of Louisville, Susanna Remold – Carolina, Wilmington, Albert J. Meier - Western Kentucky University

21. **An assessment of water quality within the Green River, Kentucky watershed using the Kentucky Division of Water (KDOW) Diatom Bioassessment Index (DBI).** Richard E. Schultz - University of Louisville, James E. Alexander - University of Louisville, David A. Word - University of Louisville, Jeffrey D. Jack - University of Louisville

22. **Fiber Optic Biosensors for In Situ Monitoring of Hydroxylated PCB's.** Neha Ray - Henry Clay High School, Joel Smita - University of Kentucky, Kendrick Turner - University of Kentucky, Sylvia Daunert - University of Kentucky

**MATHEMATICS**

23. **e-Statistics: Teaching Without a Physical Textbook.** Bradley A. Schneider - Morehead State University, Dr. Lloyd R. Jaisingh - Morehead State University

**MICROBIOLOGY**

24. **Development of an improved replicating plasmid for Myxococcus xanthus.** Stacy Assan - Berea College, Wesley Black - Virginia Polytechnic Institute & State University, Zhaomin Yang - Virginia Polytechnic Institute & State University

25. **Revealing the potential ABC transporter genes of a soil bacterium Exiguobacterium acetylicum by using signature NRPS primers.** Williard Mazhawidza - Kentucky State University, Narayanan Rajendran - Kentucky State University

26. **Strategies for Identification of Polyhydroxyalkanoate Inclusion Proteins.** Tiffany Stacy - Morehead State University, Jacob Jordan - Morehead State University, Lynn Eisenhour - Morehead State University, Douglas Dennis - Morehead State University

27. **Characterization of a potential Type I secretion system in Burkholderia pseudomallei.** Emmanuel Davis - Berea College, William Grose - University of Georgia, Eric LaFontaine - University of Georgia

28. **Archaeal diversity in a marble cave of Northeastern Brazil.** Marcelo Augusto de Freitas Kramer - Laboratório de Biologia Molecular e Genômica, CB, DBG, UFRN, Natal, RN, Brazil, Lucymara Fassarela Agnez Lima - Laboratório de Biologia Molecular e Genômica, CB, DBG, UFRN, Natal, RN,

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1Undergraduate Research Competition
Kansas City: The Culturable Fungal Diversity of Caves. \(^1\) Alexis Henry - Northern Kentucky University, Hazel A. Barton - Northern Kentucky University

29. Wind Cave Lakes: The Purest Water on Earth? \(^1\) Mckenzie Vater - Northern Kentucky University, Juan Giarrizzo - Northern Kentucky University, Jens Kallmeyer - University of Potsdam, Hazel A. Barton - Northern Kentucky University

30. Microbial Atrazine Degradation in Cave and Karst Aquifers. \(^1\) Katarina Schneider - Northern Kentucky University, Brandon Iker - Northern Kentucky University, Hazel A. Barton - Northern Kentucky University

31. Decontamination Strategies to Stop the Spread of White-Nose Syndrome. \(^1\) Elizabeth Shelley - Northern Kentucky University, Tim Williams - Northern Kentucky University, Hazel A. Barton - Northern Kentucky University

32. Testing the Effectiveness of Filtration, Iodine Tablets, Bleach, Chlorine Dioxide, Boiling, and Ultra Violet Light as Methods to Remove Bacterial Contamination from Water. \(^1\) David M. Henson - Georgetown College, Mark C. Johnson - Georgetown College

PHYSICS AND ASTRONOMY

34. Measurement of Muon Flux and Lifetime Using a Cosmic Ray Muon Detector. \(^1\) Richard Jelsma - Bellarmine University, Akhtar Mahmood - Bellarmine University

35. A Study of Ultra-Cold Atoms in the Strongly Interacting Regime. \(^1\) Brandon Brown - Berea College, Martin Veillette - Berea College

36. Mid-Infrared Observations of IC133. \(^1\) Hodari-Sadiki James - Berea College, Emily Worinkeng - Berea College, Tracy Hodge - Berea College

37. Tracking the Moon: An Open-Ended Laboratory Activity in Astronomy for Non-Science Majors. Raymond C. McNeil - Northern Kentucky University

38. Using Commercial Digital Cameras to Document Night Sky Brightness in Morehead, KY. James Kevin Adkins - Morehead State University, Jennifer Birriel - Morehead State University


40. A multi wavelength (X-ray, optical, and radio) survey for supernova

\(^1\)Undergraduate Research Competition
remnants in nearby galaxies M101 and NGC4258. 1 Tabitha Aldridge - Morehead State University, Doug Staggs - Morehead State University, Thomas Pannuti - Morehead State University

41. Development of an online INSPIRE VLF-3 receiver at Morehead State University. Douglas Haase - Morehead State University, Jennifer Birriel - Morehead State University

42. Structural and Magnetic Studies of Cobalt-ferrite for Potential Pressure Sensor Applications. 1 Michael Fuehner - Northern Kentucky University, Wayne J. Bresser - Northern Kentucky University, Chari Ramkumar - Northern Kentucky University

PHYSIOLOGY AND BIOCHEMISTRY

43. Inhibition by Metal Ions in the Horseradish Peroxidase/o-Phenylenediamine System. Thomas Owens - Georgetown College, Todd M. Hamilton - Georgetown College

44. Using heart rate as a bioindex to assess various sensory perceptions in non-sighted cave crayfish. 1 Marti Robinson - University of Kentucky, Michael Baker - University of Kentucky, Sonya Bierbower - University of Kentucky, Dr. Robin L. Cooper, Ph.D. - University of Kentucky

45. Developing A Biomarker for Pre-clinical and Clinical Lafora Disease Treatment. 1 Mary Beth Johnson - University of Kentucky, Matthew Gentry, PhD. - University of Kentucky

46. Effects of Estrogenic Action in the Aging Lung. 1 JEFF MARSCHALL - University of Louisville, SHANE MCDONALD - University of Louisville, ERIN SHARIFF - University of Louisville, N. COLE PHELPS - University of Louisville, ANDREW M. ROBERTS - University of Louisville, CYNTHIA CORBITT - University of Louisville

47. Leaf Leachates of the Invasive Shrub Amur Honeysuckle in Aquatic Systems: Oxygen-binding Proteins. 1 Stephanie J. Hayes - Northern Kentucky University, Richard D. Durtsche - Northern Kentucky University

48. Parameters affecting immune system development in nestlings house sparrows, Passer domesticus. 1 Lily Thompson - Centre College, Ian R. K. Stewart - University of Kentucky, David F. Westneat - University of Kentucky

49. Development and Role of Peripheral Auditory Structures in Otocinclus affinis. SRI KIRAN KUMAR REDDY BOTTA - Western Kentucky University, MICHAEL E. SMITH - Western Kentucky University

50. A rapid procedure to obtain accurate body weight of experimemntal rats . Cecil Butler - Kentucky State University, Lingyu Huang - Kentucky State University, Changzheng Wang - Kentucky State University

51. Genetic Susceptibility to PCB-induced Neurotoxicity. 1 Cellesitne Kamau-
Cheggeh - Northern Kentucky University, Rikki Floyd - Northern Kentucky University, Andrea Mynhier - Eastern Kentucky University, Emily Altenhofen - Northern Kentucky University, Sarah Kraemer - Northern Kentucky University, Breeann Hays - Northern Kentucky University, Amber Evans - Northern Kentucky University

52. **Marble-burying behavior in PCB-treated mice varying at the Cyp1a2 locus.** ¹Breeann Hays - Northern Kentucky University, Rikki Floyd - Northern Kentucky University, Emily Altenhofen - Northern Kentucky University, Sarah Kraemer - Northern Kentucky University, Cellestine Kamau-Cheggeh - Northern Kentucky University, Christine Perdan Curran - Northern Kentucky University

53. **Genetic Susceptibility to PCB-induced Motor Dysfunction.** ¹Emily Altenhofen - Northern Kentucky University, Sarah Kraemer - Northern Kentucky University, Rikki Floyd - Northern Kentucky University, Breeann Hays - Northern Kentucky University, Cellestine Kamau-Cheggeh - , Amber Evans - , Christine Perdan Curran –

54. **Autonomic Response to Multiple Sensory Modalities In Crayfish.** Michael Baker - University of Kentucky, Marti Robinson - University of Kentucky, Sonya Bierbower - University of Kentucky, Robin L Cooper - University of Kentucky

55. **Testing acidity in the gastric tissue of model vertebrates with a microelectrode/microinjection perfusion system.** ¹Kelly M. Stuard – Northern Kentucky University, Suzanne Q. Summe - Northern Kentucky University, Richard D. Durtsche - Northern Kentucky University

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**PSYCHOLOGY**

56. **Influence of Marijuana Use on the Effects of d-Amphetamine.** ¹Sean J. Durkin - University of Kentucky, Megan M. Poole - University of Kentucky, Craig R. Rush - University of Kentucky

57. **The Effects of Physical Attractiveness, Gender, and Job-type on Personnel Selection.** ¹Bozhidar Bashkov - Berea College

58. **Evoked brain potential study of the stages of information processing abnormalities in autism.** ¹Tommy Carroll - Asbury College, Tato Sokhadze - University of Louisville, Bobby R. Baldridge - Asbury College

59. **-Offspring Kin Recognition in Japanese Quail.** ¹Emily Gregory - Centre College, Melissa Burns-Cusato - Centre College

60. **INTRACELLULAR pH IN OLFACTORY NEUROEPITHELIAL CELLS DERIVED FROM BIPOLAR SUBJECTS AND PSYCHIATRICALLY NORMAL CONTROLS.** Sarah Rae Killingbeck - Transylvania University, YongLin Gao - University of Louisville, Fred Roisen - University of Louisville, Rif S El-Mallakh - University of Louisville

¹Undergraduate Research Competition
61. **Differential Effects of Physiological Stress and Cortisol on Simple Learning**. ¹ Jeffery Dobson - Morehead State University, Ilsun White - Morehead State University

62. **An Examination of Achievement Goal Types and Academic Self-Efficacy**. ¹ Debra Blaacker - Berea College, Robert Smith - Berea College, Hope Reuschel - Berea College, Alyssa Seibers - Berea College

63. **A Time Course of Methamphetamine (METH) Effects on Food Consumption and Interaction With an Object**. ¹ Amanda Adkins - Morehead State University, Chelsea Baker - Morehead State University, Nora Weyh - Morehead State University

64. **The Effects of Cognitive Defusion vs Restructuring on Distress**. Jared Dillow - Morehead State University, J T Blackledge - Morehead State University

65. **Acute effects of energy drinks on behavioral control**. ¹ Meagan A. Howard - Northern Kentucky University, Cecile A. Marczinski - Northern Kentucky University

66. **Success through Creativity: How Academic Orientations are Affected by Creative Self-Efficacy**. ¹ Alyssa Seibers - Berea College, Hope Reuschel - Berea College, Debra Blaacker - Berea College, Dr. Robert Smith - Berea College

67. **Comparing Male Quail Responses to Arbitrary and Species Typical Auditory Cues**. ¹ Ryan Will - Centre College, Stephanie Lipstreu - Centre College, Lindsey Lewis - Centre College, Brian Cusato - Centre College

68. **Impact of Multiple AD/HD Case Studies on Malingering**. ¹ Tina Ward - Morehead State University, Medina Jackson - Morehead State University, Jonathan Rakes - Morehead State University, Dr. Sean Reilley - Morehead State University

69. **The Bulls-Eye Value Survey on Value Based Living: An Examination of Validity**. ¹ Cory Ruffing - Morehead State University, Cassiah Winkle - Morehead State University, Zach Goble - Morehead State University, Jared Dillow - Morehead State University, Jennifer Taylor - Morehead State University, J.T. Blackledge - Morehead State University

70. **Linking creative self-efficacy with academic outlooks in adolescents**. ¹ Hope Reuschel - Berea College, Debra Blaacker - Berea College, Alyssa Seibers - Berea College, Robert Smith - Berea College

71. **Personality, one's preferred worship style, and current worship satisfaction**. ¹ Jessica Abner - Asbury College, Dr. Janet B. Dean - Asbury College

¹Undergraduate Research Competition
72. **Dissociation between Priming and Regonition of Facial Expressions.** [David Book](#) - Morehead State University, [Steven Osborne](#) - Morehead State University, [Ilsun White](#) - Morehead State University

73. **Acute Effects of MDMA (Ecstasy) on Simple Learning and Social Interaction in Rats.** ¹ [Lauren May](#) - Morehead State University, [Katherine Ledger](#) - Morehead State University, [Alyssa Addison](#) - Morehead State University, [Shayla Miller](#) - Morehead State University, [Dr. Ilsun M. White](#) - Morehead State University

74. **The Big Five: Relations with behavioral approach, inhibition and interpersonal problems.** ¹ [Keri Burge](#) - Morehead State University, [Katie Grigsby](#) - Morehead State University, [Alyssa Addison](#) - Morehead State University, [Dr. David Olson](#) - Morehead State University

**SCIENCE EDUCATION**

75. **Chemistry Unwired.** [Brent Eldridge](#) - Kentucky Community and Technical College System

76. **Assessing Undergraduate Genetic Literacy and the Impact Instruction.** ¹ [Laura Rihm](#) - Northern Kentucky University, [Bethany V. Bowling](#) - Northern Kentucky University

77. **Engaging students in natural variation in the introductory biology laboratory via a statistics-based inquiry approach.** [David Thompson](#) - Northern Kentucky University, [Bethany V. Bowling](#) - Northern Kentucky University, [Maggie Whitson](#) - Northern Kentucky University

78. **SKyTeach: A New Model for Math and Science Teacher Preparation.** [Scott Bonham](#) - Western Kentucky University

79. **Biodiversity Outreach Program: Dioramas in the Classroom.** ¹ [Sarah Hamilton](#) - Northern Kentucky University, [Bethany Vice Bowling](#) - Northern Kentucky University, [Richard D. Durtsche](#) - Northern Kentucky University

**ZOOLOGY**

80. **The effects of enhanced sensory perception on learning and memory retention in Drosophila.** ¹ [Ann S. Cooper](#) - University of Kentucky, [Kim Changsoo](#) - Sch. of Biol. Sci. and Technol., Chonnam National Univ. Gwangju, [Robin L. Cooper](#) - University of Kentucky

81. **Size comparisons of the bottlebrush crayfish (Barbicambarus cornutus) in the upper Green River, KY.** ¹ [Amy Etherington](#) - Campbellsville University, [Richard K. Kessler](#) - Campbellsville University

¹Undergraduate Research Competition
82. **Aggregation in the cave cricket by a pheromone (propionic acid) present in feces by experiments conducted on cave walls.** Michael R. Condon - Wittenberg University, Travis J. Croxall - Wittenberg University, Brady S. Christensen - Wittenberg University, Jay A. Yoder - Wittenberg University, Horton H. Hobbs III - Wittenberg University

83. **Preliminary ultrastructural analysis of spermiogenesis in the American Alligator (Alligator mississippiensis; Crocodylidae, Reptilia).** Daniel P. Jackson - Wittenberg University, Marla L. Anzalone - Wittenberg University, Kevin M. Gribbins - Wittenberg University

84. **Cave orb weaver spiders as a possible source of fungal pathogens to cave crickets in a small northeastern Kentucky cave.** Horton H. Hobbs III - Wittenberg University, Travis J. Croxall - Wittenberg University, Brady S. Christensen - Wittenberg University, Jay A. Yoder - Wittenberg University

85. **Behavioral Context of Sound Production in Otoacinclus affinis.** 1 Amanda M. Beers - Western Kentucky University, Michael E. Smith - Western Kentucky University

86. **Responses of salamanders to simulated environmental vibration.** 1 Marie Damron - Pikeville College, Robert Arts - Pikeville College, Joseph Whittaker - Pikeville College

87. **Isolation of mitochondrial DNA to identify Peromyscus leucopus and P. maniculatus.** 1 Kimberly Williams - Pikeville College, Mark Bolt - Pikeville College, Joseph C. Whittaker - Pikeville College

88. **In vitro retraction of the distome body of Proterometra macrostoma into it's cercarial tail: Effect of selected ions, light, and subsequent cercarial swimming.** 1 Adam Meador* - Berea College, Kelly Njine Mouapi* - Berea College, Krystina Sandefur* - Berea College, Lee Ware* - Berea College, Cecilia Albers - Berea College, Adam Chambers - Berea College, Ronald Rosen

89. **Kentucky Spring Salamanders, Gyrinophilus porphyriticus, Avoid Eastern Garter Snake Odors.** Paul Cupp - Eastern Kentucky University

90. **Effects of Swim Bladder Deflation on Sound Localization in Otoacinclus affinis.** 1 Patrick Stewart - Western Kentucky University, Michael E. Smith - Western Kentucky University

91. **Sound Production in Polyphylla decemlineata.** 1 Gayatri Bhaskar - Western Kentucky University, Michael E. Smith - Western Kentucky University

92. **Evaluation of a commercial sound recorder as a tool to determine anuran species diversity and abundance in a wetland.** 1 Amanda K. Bourne - Northern Kentucky University, Richard D. Durtsche - Northern Kentucky University

1Undergraduate Research Competition
University

93. **Effects of Lonicera maackii Leaf Consumption.** ¹ Andrew J. Wallace - Northern Kentucky University, Richard D. Durtsche - Northern Kentucky University

94. **Variation in Critical Thermal Maxima of Eastern Narrowmouth Toads, *Gastrophryne carolinensis*, over a Latitudinal Gradient.** Paul Cupp - Eastern Kentucky University

¹Undergraduate Research Competition
Past Presidents of the Kentucky Academy of Science

1918-1919  J.E. Barton  1965-1966  John M. Carpenter
1921-1922  George D. Smith  1968-1969  Orville Richardson
1924-1925  Cloyd M. McAllister  1971-1972  Louis Krumholz
1926-1927  W.G. Burroughs  1973-1974  Donald Batch
1931-1932  Anna A. Schnieb  1978-1979  Sanford Jones
1932-1933  George Roberts  1979-1980  Ted M. George
1934-1935  Alfred M. Peter  1981-1982  J.G. Rodriguez
1939-1940  A.W. Homberger  1986-1987  Charles V. Covell
1941-1942  G.B. Pennebaker  1989  Richard N. Hannan.
1943-1944  J.B. Pennebaker  1991  W. Blaine Early, III
1945-1946  L.A. Brown  1993  Charles N. Boehms
1948-1949  Alfred Brauer  1996  Marcus McEllistrem
1949-1950  Morris Scherago  1997  Patricia K. Doolin
1951-1952  R.H. Weaver  1999  Blaine R. Ferrell
1955-1956  Thomas Herndon  2003  Robert Kingsolver
1956-1957  C.B. Hamann  2004  Bruce Mattingly
1958-1959  William B. Owsley  2006  Nigel Cooper
1959-1960  Pete Panzera  2007  John Mateja
1960-1961  H.H. LaFuze  2008  Robin Cooper
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  Ted M. George
1981-1982  J.G. Rodriguez
1982-1983  Gary Boggess
1983-1984  Joe Winstead
1984-1985  Larry P. Elliott
1985-1986  Charles V. Covell
1986-1987  Larry Giesmann
1988  Richard N. Hannan.
1989  Debra K. Pearce
1990  W. Blaine Early, III
1991  Douglas L. Dahlman
1992  Charles N. Boehms
1993  Robert O. Elliott
1994  Robert S. Bryant
1995  Marcus McEllistrem
1996  Patricia K. Doolin
1997  Gordon K. Weddle
1998  Blaine R. Ferrell
1999  Ron Rosen
2000  Jerry Warner
2001  Robert Barney
2002  Robert Kingsolver
2003  Bruce Mattingly
2004  Miriam Kannan
2005  Nigel Cooper
2006  John Mateja
2007  Robin Cooper
2008  John Mateja
2009  Robin Cooper
## Past Meeting Locations of the Kentucky Academy of Science

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<th>Year(s)</th>
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