

AGRICULTURAL SCIENCES

Stephen King, Chair
Western Kentucky University

Sheri Crabtree, Secretary
Kentucky State University

SATURDAY, NOVEMBER 05, 2011
CURRIS - BARKLEY RM.

- 8:00 a.m. **Evaluation of Sunflower (*Helianthus annuus* L.) Cultivars for Cut Flowers** Elmer Gray - Western Kentucky University, Christopher G. Ferguson - Western Kentucky University, Martin J. Stone - Western Kentucky University
- 8:15 a.m. **Lady Beetles Associated with Sweet Corn Bordered by Pasture, Buckwheat or Sunflower Borders** John D. Sedlacek - Kentucky State University, Karen L. Friley - Kentucky State University, Marquita L. Grayson-Holt - Kentucky State University, Christopher M. Wales - Kentucky State University, Rachel S. Hayden - Kentucky State University
- 8:30 a.m. **Economics Systems, Role of Government, and Agriculture** Stephen A. King - Western Kentucky University
- 8:45 a.m. **Evaluation of Constructed Wetlands for Nitrate and Phosphorus Removal** Eric T. Turley - Kentucky State University, George F. Antonious - Kentucky State University
- 9:00 a.m. **Developing a Biofilter for Remediation of Pesticide Residues in Runoff Water** George Antonious - Kentucky State University
- 9:15 a.m. **Will Mowing of Primocane-Fruiting Blackberries Affect Fruit Ripening?** Karen L. Friley - Kentucky State University, John D. Sedlacek - Kentucky State University, Kirk W. Pomper - Kentucky State University, Jeremiah D. Lowe - Kentucky State University, Michael K. Bomford - Kentucky State University, Sheri B. Crabtree - Kentucky State University, Marquita L. Grayson-Holt - Kentucky State University, Christopher M. Wales - Kentucky State University
- 9:30 a.m. **Break** -
- 9:45 a.m. **An Update on the KSU Pawpaw Breeding Program** Kirk W. Pomper - Kentucky State University, Sheri B. Crabtree - Kentucky State University, Jeremiah D. Lowe - Kentucky State University
- 10:00 a.m. **Kentucky State University Pawpaw Processing: An Update** Sheri B. Crabtree - Kentucky State University, Kirk W. Pomper - Kentucky State University, Jeremiah D. Lowe - Kentucky State University
- 10:15 a.m. **Prime-Ark 45 and Prime-Jan Primocane Fruiting Blackberry Production Grown Under Organic Culture 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
- 10:30 a.m. **Intensive production of paddlefish, *Polyodon spathula*, in decommissioned waste water treatment plants: an economic model** ² William Rimmele - Kentucky State University, Siddhartha Dasgupta - Kentucky State University
- 10:45 a.m. **Effect of Tassel Removal for Baby Corn Production in Kentucky** ² Christopher

- Ferguson - Western Kentucky University, Zheng Wang - University of Kentucky, Martin Stone - Western Kentucky University, Elmer Gray - Western Kentucky University
- 11:00 a.m. **Effects of plastic and hay mulches on soil temperature and moisture in organic heirloom tomato production.** ² Joni Thompson - Kentucky State University, Michael Bomford - Kentucky State University, Jon Cambron - Kentucky State University, Michael Ward - Kentucky State University, Anthony Silvernail - Kentucky State University, Cristen Flewellen - Kentucky State University, Christopher Gaines - Kentucky State University
- 11:15 a.m. **Long-term Impact of Chicken Waste on Soil Physical Characteristics** ² X. Liu - Murray State University, I.P. Handayani - Murray State University
- 1:00 p.m. **Kentucky performance of a high-yielding sweet potato (*Ipomea batatas*L.) variety bred for biofuel feedstock production.** ² Jon Cambron - Kentucky State University, Michael Bomford - Kentucky State University, Anthony Silvernail - Kentucky State University, Michael Ward - Kentucky State University, Raven Ward - Kentucky State University, Joni Thompson - Kentucky State University
- 1:15 p.m. **A Model-Based Determination of Human Carrying Capacity of Kentucky's Ecoregions.** ² Terrell H. Holder - Kentucky State University, Michael M. Bomford - Kentucky State University, Ken Bates - Kentucky State University
- 1:30 p.m. **Small Farm Biomass Production from Native Perennial Field Grasses** ² Brandon May - Kentucky State University, Tamara Sluss - Kentucky State University
- 1:45 p.m. **Half-lives of Endosulfan Isomers on Field Treated Vegetables** ¹ Kyla Ross - Kentucky State University, George Antonious - Kentucky State University, Tejinder Kochhar - Kentucky State University
- 2:00 p.m. **The continued evaluation of non-typical fruits found in field evaluation plots of 'Vinson Watts' tomatoes (*Solanum lycopersicum*).** ¹ Joshua Riggsby - Morehead State University, Emily Bucklew - Morehead State University, Jennifer Harman - Morehead State University, C. Brent Rogers - Morehead State University, Debby Johnson -
- 2:15 p.m. **Break -**
- 2:30 p.m. **Antioxidants and Heavy Metals Content of Hot Pepper.** ¹ Mckenzie Johnson - Kentucky State University, George Antonious - Kentucky State University, Tejinder Kochhar - Kentucky State University
- 2:45 p.m. **Characteristics of and Reasons why Farmers Choose Off-Farm Work** ¹ Caitlin N. Carter - Western Kentucky University
- 3:00 p.m. **Does a Methyl Salicylate-Based Lure Attract Lady Beetles to Blackberries?** ¹ Justina Riddick - Kentucky State University, John D. Sedlacek - Kentucky State University, Karen L. Friley - Kentucky State University, Joy Birike - Kentucky State University
- 3:15 p.m. **Effects of Organic and Conventional Systems on Nitrate Toxicity in Sorghum-sudangrass** ¹ Julianne Wyrick - Asbury University, Larry Olsen - Asbury University, S. Ray Smith - University of Kentucky
- 3:30 p.m. **Changes in Soil Properties as Affected by Farming Systems in Calloway County, Kentucky** ¹ Katie LeBlanc - Murray State University, Iin P. Handayani - Murray State University
- 3:45 p.m. **The Effects of Land Utilization on Soil Physical Properties in White County Illinois**

¹ John McKinney - Murray State University, Iin P. Handayani - Murray State University
4:15 p.m. **Plenary Session -**

¹Undergraduate Research Competition

²Graduate Research Competition

ANTHROPOLOGY AND SOCIOLOGY

Changzheng Wang, Chair
Kentucky State University

Benjamin Freed, Secretary
Eastern Kentucky University

SATURDAY, NOVEMBER 05, 2011
I & T 155

- 9:45 a.m. **The transmission of ritual knowledge among kin groups in eastern Madagascar**
Douglas Hume - Northern Kentucky University
- 10:00 a.m. **Surveying sympatric lemurs and fallback food species in northern Madagascar.**
Benjamin Z. Freed - Eastern Kentucky University
- 10:15 a.m. **Examining habitation and craft production at Non Mak La, central Thailand** Judy
Voelker - Northern Kentucky University
- 10:30 a.m. **Monitoring howling monkey ranging behavior using vocalizations in Ometepe,**
Nicaragua¹ Erik Willson - Eastern Kentucky University
- 10:45 a.m. **Body weight perception and willingness to adopt healthy eating and activity**
behaviors among Kentucky adults¹ Erica Coleman - Kentucky State University, Cecil
Butler - Kentucky State University, Lingyu Huang - Kentucky State University,
Changzheng Huang - Kentucky State University

¹Undergraduate Research Competition

²Graduate Research Competition

BIOCHEMISTRY AND PHYSIOLOGY*

* Please go to **PHYSIOLOGY AND BIOCHEMISTRY**

BOTANY

Nilesh Sharma, Chair
Western Kentucky
University

Maggie Whitson, Secretary
Northern Kentucky University

SATURDAY, NOVEMBER 05, 2011

CURRIS - OHIO RM.

- 1:00 p.m. **Opportunities for Botanical Research and Study in Costa Rica and Ecuador**
Ronald L. Jones - Eastern Kentucky University
- 1:15 p.m. **Taxonomy and ecology of the Bartonberry, *Rubus bartonianus* (Rosaceae): a narrow endemic of Hells Canyon.** Lawrence A. Alice - Western Kentucky University, Jenifer Ferriell - USDA Forest Service, Roger Ferriell - Bureau of Land Management
- 1:30 p.m. **Pawpaw Patch Genetic Diversity and Clonality and its Impact on the Establishment of Invasive Species in the Forest Understory** ² Jacob Botkins - Kentucky State University
- 1:45 p.m. **Effect of coconut oil on ulcerative colitis in a murine model** ² Pranav Chandra - Western Kentucky University, Nilesh Sharma - Western Kentucky University
- 2:00 p.m. **Genetic Diversity in Kentucky Spicebush Populations using Simple Sequence Repeat Markers** ² Re'Gie Smith - Kentucky State University, Kirk W. Pomper - Kentucky State University, Jeremiah D. Lowe - Kentucky State University, Jacob Botkins - Kentucky State University, Sheri B. Crabtree -
- 2:15 p.m. **Break -**
- 2:30 p.m. **Plasticity and habitat differences in photosystem and growth responses to sunflecks in a tropical plant** ¹ Alexandra J. Weiser - Georgetown College, D.N. McLetchie - University of Kentucky, C. Stieha - University of Kentucky
- 2:45 p.m. **Red and White Mulberries (Moraceae: *Morus rubra* and *M. alba*) and Their Interspecific Hybrids** ¹ Brandy N. Bradford - Murray State University, Leslie J. Potts - Murray State University, Nathaniel C. Bundy - Murray State University,

Dayle E. Saar - Murray State University

3:00 p.m. **Woody plant and fern inventory and species richness patterns at Greenbo Lake State Resort Park, Greenup Co., KY.** ¹ Alexia Callihan - Morehead State University, Allen C. Risk - Morehead State University, Byron Newland - Morehead State University

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

¹Undergraduate Research Competition

²Graduate Research Competition

CELLULAR AND MOLECULAR BIOLOGY

Rajalingam Dakshinamurthy, Chair
Western Kentucky University

Ajay Srivastava, Secretary
Western Kentucky University

SATURDAY, NOVEMBER 05, 2011
I & T 132

- 9:30 a.m. **Break -**
- 9:45 a.m. **Cryptochrome as the candidate photoreceptor for entrainment of the circadian clock by blue light in *Chlamydomonas***² Jonathan Howton - Western Kentucky University, Sigrid Jacobshagen - Western Kentucky University
- 10:00 a.m. **EST database approach to identify fatty acid biosynthesis genes involved in metabolic channeling to anacardic acid biosynthesis.**² Richa A. Singhal - University of Louisville, David J. Schultz - University of Louisville
- 10:15 a.m. **Proteomic Analysis of a Fertility-Regulating Aminopeptidase in *Caenorhabditis elegans***² Hannah M. Flood - Murray State University, Chris Trzepacz - Murray State University
- 10:30 a.m. **The mechanism of action of *Prevotella histocola* in the immunomodulation of experimental autoimmune encephalomyelitis (EAE)**¹ Premila Samuel - Berea College, Ashutosh K. Mangalam - Mayo Clinic, Arika Wussow - Mayo Clinic
- 10:45 a.m. **Reverse Genetic Analysis of the M1 Aminopeptidase Family in *Caenorhabditis elegans***¹ Mark Althoff - Murray State University, Laura Samples - Murray State University, Chris Trzepacz - Murray State University
- 11:00 a.m. **Effects of DNA Damage on Disappearance of UmuDAb Site-Directed Mutants**¹ Alexander Hare - Morehead State University, Sabal Adhikari - Morehead State University, Alison Grice - Morehead State University, Janelle Hare - Morehead State University
- 11:15 a.m. **The genus *Acinetobacter* possesses a unique error-prone DNA damage response: the story of UmuD**¹ James Bradley - Morehead State University, Janelle Hare - Morehead State University

¹Undergraduate Research Competition

²Graduate Research Competition

CHEMISTRY

Bommanna
Loganathan, Chair
Murray State
University

KC Russell, Secretary
Northern Kentucky
University

SATURDAY, NOVEMBER 04, 2011
I & T 231 (FREED CURD)

- 8:00 a.m. **Development and Validation of a DART-MS Method for the Quantitation of Glucose for Biofuels Production** Darrin Smith - Eastern Kentucky University, Daudi Saang'onyo - Eastern Kentucky University, Gary Selby - Eastern Kentucky University
- 8:15 a.m. **Photochemical production of *trans*-dioxoruthenium(VI) porphyrins** ² Eric Vanover - Western Kentucky University, Yan Huang - Western Kentucky University, Chris Abebre - Western Kentucky University, Helen Thompson - Western Kentucky University, Cathleen Webb - Western Kentucky University, Rui Zhang - Western Kentucky University
- 8:30 a.m. **Trace elemental analysis in tree cores** ² Brahmaiah Patibandla - Murray State University
- 8:45 a.m. **Explanation for the Formation of Branched Hydrocarbons** ² Chufen Jin - Eastern Kentucky University, Alexander Montavon - Eastern Kentucky University, Buchang Shi - Eastern Kentucky University
- 9:00 a.m. **Greenhouse and Field Studies of Flue Gas Desulphurization By-Products Amended Soil** ² kelin Wang - Western Kentucky University, William Orndorff - Western Kentucky University, Yan Cao - Western Kentucky University, Wei-ping Pan - Western Kentucky University
- 9:15 a.m. **the preparation of copper-based oxygen carriers supported by titanium dioxide** ² Yaowen Cui - Western Kentucky University
- 9:30 a.m. **Break** -
- 9:45 a.m. **Size Dependent Antimicrobial Activity of Sugar Encapsulated Gold Nanoparticles** ² Lakshmisri M Vangala - Western Kentucky University, Vivek Badwaik - Western Kentucky University
- 10:00 a.m. **Blood Plasma Coagulation Induced by Poly(ethylene glycol) Materials** ¹ Imelda Hot - Berea College, Christopher A. Siedlecki - Biomedical Engineering Institute, Department of Surgery and Bioengineering, Penn State College of Medicine, Hershey, PA
- 10:15 a.m. **Combinatorial synthesis of a thiourea library for the aminolysis of N-acyl homoserine lactones** ¹ Chido M. Hambira - Berea College, Michael Bertucci - University of North Carolina at Chapel Hill, Michel Gagné - University of North Carolina at Chapel Hill
- 10:30 a.m. **Development of a New Class of Aromatase Inhibitors: Design, Synthesis, and Inhibitory Activity of 3-Phenylchroman-4-one (Isoflavanone) Derivatives** ¹

- Adam McCallum - Northern Kentucky University, Kevin Bonfield - Northern Kentucky University, Erica Amato - Northern Kentucky University, Hannah Agard - Washington and Lee University, Tony Bankemper - Northern Kentucky University, Jeff Steller - Northern Kentucky University, James Keeler - Northern Kentucky University, Lili Ma - Northern Kentucky University
- 10:45 a.m. **Organic Synthesis of Novel Inhibitors of Bacterial Enzyme MurA** ¹ Natalie Orms - Centre College, Selena Li - Centre College, Ben Boone - Centre College, Jennifer Muzyka - Centre College
- 11:00 a.m. **Synthesis and Identification of Electron Rich Annulenes** ¹ ROBERT WEHRLE - Northern Kentucky University
- 11:15 a.m. **Using Computer Based Algebra for Visualization in the Physical Sciences** Jason Fuller - Eastern Kentucky University
- 1:00 p.m. **Astrochemistry: A Case Study of Time-dependent Modeling of Interstellar O₂** Donghui Quan - Eastern Kentucky University
- 1:15 p.m. **Design and Synthesis of STAT3 Inhibitor** ¹ Chyna Johnson - Berea College, Nate Carmen - Miami University, Philiias Daka - Miami University, Dr. Hong Wang - Miami University
- 1:30 p.m. **Synthesis of a Series of Push-Pull O-Dehydrobenzoannulenes** ¹ William Talbert - Northern Kentucky University, K.C. Russell - Northern Kentucky University
- 1:45 p.m. **Selective Hydrogen Bonding between Uracil and the Superoxide Radical** ¹ Sijin Ren - Murray State University, Wafaa M. Fawzy - Murray State University
- 2:00 p.m. **Solvent Effects on the Excited State Lifetimes of Natural Estrogens** ¹ Kara Chan - Northern Kentucky University
- 2:15 p.m. **Break** -
- 2:30 p.m. **Environmentally Friendly Synthesis, Characterization and Bactericidal Activity of Starch Encapsulated Gold nanoparticles** ¹ Dillon S Pender - Western Kentucky University, Lakshmisri M Vangala - Western Kentucky University, Rajalingam Dakshinamurthy - Western Kentucky University
- 2:45 p.m. **Intermolecular Interactions between the Superoxide Radical and Hydrogen Fluoride** Yuchen Zhang - Murray State University, Wafaa M. Fawzy - Murray State University
- 4:15 p.m. **Plenary Session** -

¹Undergraduate Research Competition

²Graduate Research Competition

COMPUTER AND INFORMATION SCIENCES

Jerzy Jaromczyk, Chair
University of Kentucky

Sherif Rashad, Secretary
Morehead State University

SATURDAY, NOVEMBER 05, 2011

CURRIS - CUMBERLAND RM.

- 1:00 p.m. **Parsing Tool for Creating a Genome Sequence Database Using Affymetrix
Microarray Expression Data** Earle Foskett - Bellarmine University, Dr. Muzaffar
Ali - Bellarmine University
- 1:15 p.m. **Privacy Preserving Distributed Data Mining** Zhenmin Lin - University of
Kentucky, Jerzy W. Jaromczyk - University of Kentucky
- 1:30 p.m. **Visual Tools for Queries and Visual Display of Quantitative Information in a
Cancer Research Database** ² JESSE STEWART - University of Kentucky, JERZY
W. JAROMCZYK - University of Kentucky
- 1:45 p.m. **Novel Load Balancing Techniques for Wireless Heterogeneous Networks** ¹
Benjamin Caldwell - Morehead State University, Sherif Rashad - Morehead State
University
- 2:15 p.m. **Break -**
- 4:15 p.m. **Plenary Session -**

¹Undergraduate Research Competition

²Graduate Research Competition

ECOLOGY AND ENVIRONMENTAL SCIENCE

Richard Boyce, Chair
Northern Kentucky University

Scott Grubbs, Secretary
Western Kentucky University

SATURDAY, NOVEMBER 05, 2011

CURRIS - MISSISSIPPI RM.

- 1:00 p.m. **Spatial distribution and economic consequences of human-elephant conflict in Kenya** Michael Stokes - Western Kentucky University, Simon Kasaine Kagwa - Western Kentucky University, Bruce Schulte - Western Kentucky University, Charles Kimwele - University of Nairobi
- 1:15 p.m. **Sound Production in Freshwater Invertebrates: Documentation and Applications in Biomonitoring** ² Nissa Rudh - Murray State University, Michael Flinn - Murray State University, Brian West - Murray State University, James Hereford - Murray State University
- 1:30 p.m. **Movement, Habitat Use, and Diet Selectivity of Re-introduced Juvenile Alligator Gar, *Atractosteus spatula*, in Clarks River Kentucky** ² Jared Militello - Murray State University, Michael Flinn - Murray State University
- 1:45 p.m. **Atrazine exposure lengthens time until cannibalistic response in a dragonfly larva (*Libellula luctuosa*)** ² Coy R. St. Clair - Murray State University
- 2:00 p.m. **Factors affecting recruitment of crappie populations in Kentucky and Barkley Lakes.** ² Adam D. Martin - Murray State University
- 2:15 p.m. **Break -**
- 2:30 p.m. **Influences of a Cladophora Bloom on the Diets of *Elliptio dilatata* and *Amblema plicata* in the Upper Green River, Kentucky** ² Jennifer M. Yates - Western Kentucky University, Scott A. Grubbs - Western Kentucky University, Albert J. Meier - Western Kentucky University
- 2:45 p.m. **The role of *Podostemum ceratophyllum* in providing habitat for net-spinning caddisflies.** ¹ Brenna E. Tinsley - Western Kentucky University, Scott A. Grubbs - Western Kentucky University, Albert J. Meier - Western Kentucky University
- 3:00 p.m. **Assessment of water usage and photosynthesis in invasive Amur honeysuckle and native spicebush and pawpaw** ¹ Molly Brown - Northern Kentucky University, Richard Boyce - Northern Kentucky University
- 3:15 p.m. **An Analysis of Call Frequencies Based on Time of Day and Habitat for Seven Species of Anurans** ¹ Mary Newton - Western Kentucky University, Albert Meier - Western Kentucky University, Ouida Meier - Western Kentucky University, Jacob Eldridge - Western Kentucky University
- 3:30 p.m. **Impacts on Small Mammal Biodiversity of Converting Abandoned Farmland to Switchgrass** ¹ Kenton Sena - Asbury University, Ray Smith - University of Kentucky, Bruce Branan - Asbury University
- 4:15 p.m. **Plenary Session -**

¹Undergraduate Research Competition

²Graduate Research Competition

ENGINEERING

Sally Krijestorac, Chair
Morehead State University

Sanjeev Adhikari, Secretary
Morehead State University

SATURDAY, NOVEMBER 05, 2011

I & T 237

- 8:00 a.m. **Experimental Results of a New Swarm Search Algorithm based on Honey Bees**
¹ Kyle Frye - Murray State University
- 8:15 a.m. **The Effects of the Addition of SrCl₂ and HoFl₃ on Photo Luminescent Z-BLAN Glass.** ¹ Hodari-Sadiki James - Berea College, Russell L. Leonard - University of Tennessee Space Institute, Jacqueline A. Johnson - University of Tennessee Space Institute
- 8:30 a.m. **Performance of Ruthenium Doped LaSrFeCrO₃ Perovskite Solid Oxide Fuel Cells** ¹ Ben Slone - Centre College, Scott Barnett - Northwestern University
- 8:45 a.m. **Solar Radiation Measurements for Eastern Kentucky.** ¹ Scotty White - Morehead State University, Hans Chapman - Morehead State University
- 9:30 a.m. **Break -**

¹Undergraduate Research Competition

²Graduate Research Competition

GEOGRAPHY

Glenn Campbell, Chair
Eastern Kentucky University

Demetrio Zourarakis, Secretary
Kentucky Division of Geographic Information

SATURDAY, NOVEMBER 05, 2011
BLACKBURN SCI. BLDG, RM 320

- 8:30 a.m. **Complexities of Subtropical Precipitation Variability from Climate Change Reconstruction in Florida** Jason Polk - WKU Crawford Hydrology Laboratory, Philip van Beynen - University of South Florida, Yemane Asmerom - University of New Mexico, Kristine DeLong - Louisiana State University
- 8:45 a.m. **Herbicide Contamination of Shallow Karst Groundwater on Kentucky's Mississippian Plateau** Chris Groves - Western Kentucky University, Sean Vanderhoff - Western Kentucky University, Jason Polk - Western Kentucky University, Ben Miller - Western Kentucky University, Robert Lerch -
- 9:00 a.m. **Influence of Direct Insolation on Supraglacial Stream Channel Incision** Gilman Ouellette - Western Kentucky University, Derrick Lampkin - the Pennsylvania State University, Nathan Amador - the Pennsylvania State University
- 9:15 a.m. **Evidence of change in the intensity of wet and dry spells impacting Kentucky** Austin Boys - Western Kentucky University, Brian R. Urbancic - Western Kentucky University, Stuart A. Foster - Western Kentucky University
- 9:30 a.m. **Break -**
- 9:45 a.m. **A spatial statistical correlation of drainage density and surface water quality degradation in Kentucky** ² Nicholas Lawhon - Hoffman Environmental Research Institute
- 10:00 a.m. **Mapping burned area in Huascarán National Park, Peru using remote sensing imagery.** ¹ Justin King - Western Kentucky University, John All - Western Kentucky University
- 10:15 a.m. **Time Series Vegetation Analysis in Huascarán National Park, Peru** ¹ Joshua E Montgomery - Western Kentucky University, Dr. John All - Western Kentucky University
- 10:30 a.m. **Modeling Seasonality of Fire Occurrences in the Cordillera Blanca** ¹ Tommy Woodall - Western Kentucky University, John All - Western Kentucky University
- 10:45 a.m. **Use of remotely sensed data to examine climate variability and vegetation response in the Cordillera Blanca, Peru.** ¹ Justin Sowers - Western Kentucky University, Dr. John All -

Western Kentucky University

- 1:00 p.m. **LiDAR Intensity Images and Land Cover Class Assessment.** Demetrio Zourarakis - Kentucky Division of Geographic Information
- 1:15 p.m. **Mapping urban areas using DMSP-OLS nighttime lights data** Robin Zhang - Murray State University
- 1:30 p.m. **Dynamic spatial modeling and interpolation of near-surface atmospheric variables based on the Kentucky Mesonet** Stuart A. Foster - Western Kentucky University, Jonathan Quiton - Western Kentucky University, Rezaul Mahmood - Western Kentucky University
- 1:45 p.m. **Remote Sensing of Vegetation Changes in Makalu National Park, Nepal from 1990 to 2010** John All - Western Kentucky University, David Evans - Western Kentucky University, Robert Zomer - ICIMOD, Nepal
- 2:00 p.m. **Land Use and Land Cover Change in Sagarmatha National Park (1979-2009), Nepal** Kamal Humagain - WKU Hoffman Environmental Research Institute, Dr John D All - Western Kentucky University
- 2:15 p.m. **Break -**
- 4:15 p.m. **Plenary Session -**

¹Undergraduate Research Competition

²Graduate Research Competition

GEOLOGY

Andrew Kellie, Chair
Murray State University

Thomas Brackman, Secretary
Northern Kentucky University

SATURDAY, NOVEMBER 05, 2011

I & T 132

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

¹Undergraduate Research Competition

²Graduate Research Competition

HEALTH SCIENCES

Lingyu Huang, Chair
Kentucky State University

Cecil Butler, Secretary
Kentucky State University

SATURDAY, NOVEMBER 05, 2011

I & T 155

- 1:00 p.m. **Innate Immune Responses to Pandemic Influenza Virus Hemagglutinin Proteins** ¹ Megan Reynolds - Northern Kentucky University, Kimberly Staudt - Northern Kentucky University, Amy Weinstock - Northern Kentucky University, Joseph Mester - Northern Kentucky University
- 1:15 p.m. **CSF and Plasma Ascorbic Acid Concentrations in Horses with PPID Compared to Age-Matched Controls** ¹ Jeffrey Chalfant - Georgetown College, Dr. Dianne McFarlane - Oklahoma State University Center for Veterinary Health Sciences
- 1:30 p.m. **Plumbagin ameliorates ulcerative colitis in the experimental murine model** ¹ Justin Pile - Western Kentucky University, Dr. Nilesh Sharma - Western Kentucky University
- 1:45 p.m. **HPLC Analysis of Resveratrol Content in Over-the-Counter Supplements** ¹ Heather Stamper - Asbury University, Bruce Branan - Asbury University
- 2:15 p.m. **Break -**
- 4:15 p.m. **Plenary Session -**

¹Undergraduate Research Competition

²Graduate Research Competition

MATHEMATICS

R. Douglas Chatham, Chair
Morehead State University

John Porter, Secretary
Murray State University

SATURDAY, NOVEMBER 05, 2011

I & T 229

- 1:00 p.m. **Winning in the worst way** R. Douglas Chatham - Morehead State University
- 1:15 p.m. **Montezuma's Revenge: Learn Math to Save a Life** ¹ Bryce Norris - Murray State University, Dr. Renee Fister - Murray State University, Glenna Buford - Murray State University
- 1:30 p.m. **Sawmill Potential for Bio-Oil Production** ¹ Amir Ahmadi - Morehead State University
- 2:15 p.m. **Break -**
- 4:15 p.m. **Plenary Session -**

¹Undergraduate Research Competition

²Graduate Research Competition

MICROBIOLOGY

Janelle Hare, Chair
Morehead State University

Marcia Pierce, Secretary
Eastern Kentucky University

SATURDAY, NOVEMBER 05, 2011
CURRIS - CUMBERLAND RM.

- 8:00 a.m. **Abundance of the alpha-Proteobacteria, *Blastomonas* in the sediment of Ledbetter Creek Embayment, Kentucky Lake** ² Emily J. P. D'Angelo - Murray State University, Timothy C. Johnston - Murray State University
- 8:15 a.m. **Abundance of *Methanosaeta concillii*-like species in the sediment of Ledbetter Creek Embayment of Kentucky Lake.** ² Juanita Von Dwingelo - Murray State University, Timothy C. Johnston - Murray State University
- 8:30 a.m. **Previously unknown species of Archaea in the sediments of Kentucky Lake** ¹ Amber Mills - Murray State University
- 8:45 a.m. **Differential gene expression of the *lux* operon of *Vibrio harveyi* by mRNA processing** ¹ Mara S. Varvil - Murray State University, Timothy C. Johnston - Murray State University
- 9:00 a.m. **Characterization of the mRNA from the *lux* operon of *Photorhabdus luminescens*** ¹ William Hunt - Murray State University, Timothy C. Johnston - Murray State University
- 9:15 a.m. **Effects of manganese on growth and resistance of probiotic bacteria and *Deinococcus radiodurans* to ultraviolet radiation and hydrogen peroxide.** ¹ J. Wes Morris - Kentucky Community and Technical College System, Samuel Fobid - Kentucky Community and Technical College System, Larry Porter - Kentucky Community and Technical College System, Norm Strobel - Kentucky Community and Technical College System
- 9:30 a.m. **Break -**
- 9:45 a.m. **Exploring White Nose Syndrome: The Differential Growth of *Geomyces* Species in North American Bats** ¹ Samantha Kaiser - Northern Kentucky University, Hazel A. Barton - Northern Kentucky University
- 10:00 a.m. **Inhibition of White Nose Syndrome in Hibernating Bat Colonies: Identification of Antifungal Agents** ¹ Virginia Shelley - Northern Kentucky University, Andrea Price - Northern Kentucky University, Dr. Hazel A. Barton - Northern Kentucky University

¹Undergraduate Research Competition

²Graduate Research Competition

PHYSICS AND ASTRONOMY

Akhtar Mahmood, Chair
Bellarmine University

Arthur Pallone, Secretary
Northern Kentucky University

SATURDAY, NOVEMBER 05, 2011

I & T 237

- 1:00 p.m. **Inexpensive scanning photo-induced current microscope experiment suitable for an undergraduate laboratory** ARTHUR K. PALLONE - Northern Kentucky University
- 1:15 p.m. **The X-ray Properties of Four Galactic Supernova Remnants Detected by the Spitzer GLIMPSE Survey** Thomas Pannuti - Morehead State University, William Moffitt - Morehead State University
- 1:30 p.m. **An alternative approach to account for uncertainty in photometric data from science images** ARTHUR PALLONE - Northern Kentucky University
- 1:45 p.m. **High Altitude Balloons as a Methodology for Increasing STEM Activities in the Classroom** Eric A. Jerde - Morehead State University, Eric T. Thomas - Morehead State University
- 2:00 p.m. **Densities and Compressibilities of Chiral Molecules in the Liquid State: Chiral Discrimination.** Amer S. Lahamer - Berea College, Imelda Hot - Berea College
- 2:15 p.m. **Break -**
- 2:30 p.m. **Copper-Based Superconductors** ¹ Tommy Boykin - Berea College, Rohan Isaac - Berea College, Mackenzie Endres - Berea College, Marissa Brown - Berea College, Amer S. Lahamer -
- 2:45 p.m. **The Effect of a Magnetic Field on a Small Silver Ring** ¹ Julia Smith - Georgetown College, Joseph Straley - University of Kentucky
- 3:00 p.m. **Synthesis and characterization of Half-Metallic Heusler Alloys** ¹ Rohan Isaac - Berea College, Dr. Amer Lahamer - Berea College, Tommy Boykin - Berea College, Marissa Brown - Berea College, Mackenzie Endres -
- 3:15 p.m. **Efficiency of the SuN Detector** ¹ Jessica Peace - Morehead State University
- 3:30 p.m. **Working WASTED? Comparison of the performance of the Webcam Alpha Spectrometer Technology Detector to a standard surface barrier detector** ¹ Joseph Fryman - Northern Kentucky University, Arthur Pallone - Northern Kentucky University
- 4:15 p.m. **Plenary Session -**

¹Undergraduate Research Competition

²Graduate Research Competition

PHYSIOLOGY AND BIOCHEMISTRY

Stephanie Dew, Chair
Centre College

Julia Carter, Secretary
Wood Hudson Cancer Research Laboratory

SATURDAY, NOVEMBER 05, 2011
CURRIS - MISSISSIPPI RM.

- 8:00 a.m. **Two Germline Variants of the TGFBR1 Gene are Associated with Initiation, Progression and Clinical Outcome of Colorectal Cancer** Hillary Restle and Shane Mulvihill - Wood Hudson Cancer Research Laboratory, Jonathan Bender - Wood Hudson Cancer Research Laboratory, Kevin Murray - Wood Hudson Cancer Research Laboratory, Bruce Colligan - Wood Hudson Cancer Research Laboratory, James Deddens - University of Cincinnati, Larry Douglass - Wood Hudson Cancer Research Laboratory, James Schaeper - Wood Hudson Cancer Research Laboratory, Julia Carter - Wood Hudson Cancer Research Laboratory
- 8:15 a.m. **Thermally Induced Spadefoot Plasticity** Cailynn West - Centre College
- 8:30 a.m. **Examining Pathways Regulated in Zebrafish Auditory Hair Cell Regeneration using Next Generation Sequencing**² Gopinath Rajadinakaran - Western Kentucky University, Huifang Sun - Western Kentucky University, Eric Rouchka - University of Louisville, Michael E. Smith - Western Kentucky University
- 8:45 a.m. **Growth Hormone Promotes Auditory Hair Cell Regeneration in Zebrafish (*Danio rerio*)**² Yajie Wang - Western Kentucky University, Huifang Sun - Western Kentucky University, Michael E. Smith - Western Kentucky University
- 9:00 a.m. **Enzymatic Activities of Renal H⁺-K⁺-ATPase in Hypokalemic Mice**² Lynsey Bochenek - Murray State University, Suguru Nakamura - Murray State University
- 9:15 a.m. **H⁺-ATPase activity in selective disruption of H⁺K⁺-ATPase alpha 1 gene of mice under normal and K-depleted conditions**² James Ravellette - Murray State University, Suguru Nakamura - Murray State University
- 9:30 a.m. **Break -**
- 9:45 a.m. **Next Generation Sequencing Identifies Regulation of Pathways in Zebrafish Auditory Hair Cell Regeneration**² Gopinath Rajadinakaran - Western Kentucky University, Huifang Sun - Western Kentucky University, Abdallah Eteleeb - University of Louisville, Eric Rouchka - University of Louisville, Michael E. Smith - Western Kentucky University
- 10:00 a.m. **A combinatorial approach towards investigating pervasive binding specificity** Brian Chaffin - Georgetown College, Emerson Dick - University of Kentucky, Luke H. Bradley - University of Kentucky
- 10:15 a.m. **Biomass Assisted Synthesis of Antibacterial Nanomaterial**¹ Chad Willis - Western Kentucky University, Vivek Badwaik - Western Kentucky

University, Lakshmisri M Vangala - Western Kentucky University,
Rajalingam Dakshinamurthy - Western Kentucky University

10:30 a.m.

Epitope Mapping of Vimentine in Arthritis-susceptible HLA-DRB1*0401 and resistant *0402 mice ¹ Kelly Mouapi - Berea College, Chella David - Department of Immunology, Mayo Clinic, Veena Taneja - Department of Immunology, Mayo Clinic

10:45 a.m.

Regulation of EMT Proteins in Breast Cancer Cell Lines ¹ Mary Wiechart - Wood Hudson Cancer Research Laboratory, Jackie Jansen - Wood Hudson Cancer Research Laboratory, Arielle Marasligiller - Wood Hudson Cancer Research Laboratory, Shane Mulvihill - Wood Hudson Cancer Research Laboratory, Hillary Restle - Wood Hudson Cancer Research Laboratory, Stefan Siwko - Wood Hudson Cancer Research Laboratory, Julia Carter - Wood Hudson Cancer Research Laboratory

¹Undergraduate Research Competition

²Graduate Research Competition

PSYCHOLOGY

Jennifer Asmuth, Chair
Centre College

Brian Cusato, Secretary
Centre College

SATURDAY, NOVEMBER 05, 2011
CURRIS - OHIO RM.

- 8:00 a.m. **Tangled up in blue.** ² Kayla Sizemore - Morehead State University, Katelyn Fugate - Morehead State University, Jacob Burress - Morehead State University, Ryan Jones - Morehead State University, Shari Kidwell - Morehead State University
- 8:15 a.m. **Relationships Between Self Compassion, Mindfulness, and Acceptance.** ² Cassie Watkins - Morehead State University
- 8:30 a.m. **A dog or a cookie?: Differential prediction of two child emotion regulation procedures** ¹ Shelby House - Morehead State University, Samantha Spencer - Morehead State University
- 8:45 a.m. **Perceptions of Aging: The Power of Knowledge and Action** ¹ Raven Weaver - Berea College
- 9:00 a.m. **The effects of gender and writing assignment on implicit attitudes of gender roles.** ¹ Rachel Krebs - Berea College
- 9:15 a.m. **Behavioral Characterization of Atp13a2 Deficient Mice Carrying a Transgenic Alzheimer's Gene** ¹ Amy K. Clippinger - Northern Kentucky University, Molly Griffith - Northern Kentucky University, Abbey Bailes - Northern Kentucky University, Lindsey Griffith - Northern Kentucky University, Mark Bardgett - Northern Kentucky University, Patrick J. Schultheis - Northern Kentucky University
- 9:30 a.m. **Break -**
- 9:45 a.m. **Perceptions of Aging: the power of knowledge and action** ¹ Raven Weaver - Berea College
- 10:00 a.m. **The Use of Male Calls in the Sexual Conditioning of Male and Female Japanese Quail (*coturnix japonica*)** ¹ Hillary Botts - Centre College, Tayllor Vetter - Centre College, Lan Nguyen - Centre College, Emma Julia Jones - Centre College
- 10:15 a.m. **Subchronic Exposure to Alcohol during Adolescence Disrupts Learning in Adulthood: Involvement of NMDA Receptors** ¹ Gianni P. Maione - Morehead State University, Taylor Patrick - Morehead State University, Ilsun M. White - Morehead State University
- 10:30 a.m. **Prolactin and Nest Attachment** ¹ Annie Roessler - Centre College, Melissa Burns-Cusato - Centre College
- 10:45 a.m. **Relationships Between Psychological Flexibility, Physical Health, and Psychological Distress** ¹ Aaron Ellis - Morehead State University

SCIENCE EDUCATION

Brent Eldridge, Chair
Kentucky Community and
Technical College System

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

SATURDAY, NOVEMBER 05, 2011
I & T 135

- 9:30 a.m. **Break -**
- 9:45 a.m. **Sharing ideas about assessing student learning** John G. Shiber, PhD - Kentucky Community and Technical College System
- 10:00 a.m. **Teaching Chemistry Online to Non-science Majors** Lori Wilson - Eastern Kentucky University
- 10:15 a.m. **Student perceptions of online chemistry classes.** Dr. Shawn Kellie - Kentucky Community and Technical College System
- 10:30 a.m. **Evaluating Informal Karst Education in the United States and Aboard Le:**
North - Western Kentucky University
- 10:45 a.m. **Positive student retention effects in an Anatomy & Physiology course for 1**
student nurses via integrating student support services, year two. Jay Kirchner
- Galen College of Nursing, Cincinnati Campus, Joan Brummer - Galen College
of Nursing, Cincinnati Campus, Jennifer Myka - Galen College of Nursing,
Cincinnati Campus

¹Undergraduate Research Competition

²Graduate Research Competition

ZOOLOGY

Richard Durtsche, Chair
Northern Kentucky
University

Michael Floyd, Secretary
US Fish & Wildlife Service

SATURDAY, NOVEMBER 05, 2011

I & T 135

- 1:00 p.m. **Distribution and Conservation Status of the Cumberland Darter, *Etheostoma susanae*.** Michael A. Floyd - U.S. Fish and Wildlife Service, Matthew R. Thomas - Kentucky Dept. of Fish & Wildlife Resources, Stephanie L Brandt - Kentucky Dept. of Fish & Wildlife Resources
- 1:15 p.m. **Measuring anuran population dynamics using a combination of automatic call recognition software and conventional field survey methods**² Jacob Eldridge - Western Kentucky University, Pedro do Amaral - University of Cincinnati, Albert Meier - Western Kentucky University, Richard Bowker - Western Kentucky University, Rafael Marquez - , Juan Francisco Beltran -
- 1:30 p.m. **Employing Creel Survey Data and Simple Sampling Techniques to Evaluate the Pit-lakes Fisheries of Muhlenberg County, KY.**² Derek L. Rupert - Western Kentucky University, Philip W. Lienesch - Western Kentucky University
- 1:45 p.m. **Aggressive Acoustic Behavior in *Yasuhikotakia modesta*: Does the Lombard Effect Hold Water?**¹ Bethany N. Coffey - Western Kentucky University, Michael E. Smith - Western Kentucky University
- 2:00 p.m. **Amphibian Population Dynamics of a Rejuvenating Brown Field**¹ Mitch Mercer - Northern Kentucky University
- 2:15 p.m. **Break -**
- 4:15 p.m. **Plenary Session -**

¹Undergraduate Research Competition

²Graduate Research Competition