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FEATURED GUEST SPEAKER

EARTHQUAKE HAZARDS IN THE CENTRAL U.S.

Presented by

Dr. Chris H. Cramer

Center for Earth Research and Information, University of Memphis



Major earthquakes have occurred in the central US (CUS), the most famous being the 1811-1812 New Madrid sequence of magnitude 7-8 earthquakes. Magnitude greater than 6 New Madrid earthquakes also occurred in 1843 and 1895. These earthquakes were felt over a wide area of the eastern US. More recently in 2008 a magnitude 5.2 earthquake struck near Mt. Carmel, Illinois in the Wabash Valley seismic zone. The geologic records of earthquake-induced liquefaction indicate large damaging earthquakes have occurred in the recent geologic past in both of these seismic zones. So the potential for damaging earthquakes is significant in the CUS. National, regional, and local seismic hazard maps help us understand what the earthquake hazard is in a region. My presentation will introduce you to the

basics of earthquake hazard, including the two kinds of seismic hazard maps, scenario and probabilistic. Seismic hazard depends on the expected magnitude and in some cases the rate of earthquakes in the surrounding region. I will review the geologic and geodetic evidence for large earthquakes in the New Madrid seismic zone and surrounding region. While there appears to be contradictions between geologic and geodetic observations, these contradictions are less in conflict than they seem. However, the reason for earthquakes occurring in the CUS is still poorly understood and lots of mechanisms for their occurrence have been suggested. Nonetheless, the geologic record suggests that earthquake hazard is fairly high. So preparing for the future occurrence of damaging earthquakes is important. A major effort to better understand why earthquakes occur in the CUS is associated with the Earthscope transportable array of seismographs that starts passing through the CUS in 2010.

Dr. Cramer worked for 23 years for the California Division of Mines and Geology (now California Geological Survey) and 7 years for the U.S. Geological Survey prior to coming to work for CERI at the University of Memphis. During that period he worked in several areas of seismology including probabilistic earthquake hazard and risk, strong ground motion and the effects of site geology, earthquakes and volcanoes, and field seismological studies of geothermal areas, aftershock sequences, reservoir induced seismicity, and the earthquake activity potential of faults. He also has extensive experience with programming and using computer systems to process, model, and interpret geophysical data. As an undergraduate and during his first two years as a graduate student, Chris worked on geophysical problems and did field work in the areas of gravity, magnetism, and geodesy.

Arkansas Academy of Science

SECTION PROGRAMS
ORAL PRESENTATIONS

SESSION 1: FRIDAY 1:00-2:30.
CHAIR: RONALD JOHNSON
LEDBETTER A, DONAGHEY STUDENT CENTER
Topics: Zoology, Ecology

1:00
NEW RECORDS OF THE BADGER (*TAXIDEA TAXUS*) IN ARKANSAS, WITH EMPHASIS ON RANGE EXPANSION INTO NORTHEASTERN ARKANSAS

Tumlinson, Renn; Sasse, D. Blake; Cartwright, Michael E.; Brandenbura, Stephen C.; Klotz, Tracy. Henderson State University. Arkansas Game and Fish Commission. Arkansas State University

1:15
NEW RECORDS AND NOTES ON THE NATURAL HISTORY OF SELECTED VERTEBRATES FROM SOUTHERN ARKANSAS

Tumlinson, Renn; Robison, Henry. Henderson State University. Southern Arkansas University

1:30
DISTRIBUTION OF THE SOUTHEASTERN SHREW (*SOREX LONGIROSTRIS*) IN ARKANSAS

Mikel, Garrett A.; Clark, David W. University of Arkansas at Little Rock

1:45
FUTURE CLIMATE CHANGE SPELLS CATASTROPHE FOR BLANCHARD'S CRICKET FROG (*ACRIS BLANCHARDI*)

McCallum, Malcolm. Herpetological Conservation and Biology

2:00
THE TEMPO OF AMPHIBIAN DECLINES AND EXTINCTIONS

McCallum, Malcolm. Herpetology Conservation and Biology

2:15
AMERICAN WOODCOCK MIGRATION CHRONOLOGY AND CLEARCUT USE WITHIN CENTRAL ARKANSAS

Long, Andrea; Felix-Locher, Alexandra. University of Arkansas at Monticello

SESSION 1: FRIDAY 1:00-2:30. CHAIR: BRIAN WAGNER
LEDBETTER C, DONAGHEY STUDENT CENTER
Topics: Marine Biology

1:00
STATUS AND DISTRIBUTION OF THE GAPPED RINGED CRAYFISH, *ORCONECTES NEGLECTUS CHAENODACTYLUS*, IN ARKANSAS

Wagner, Brian K.; Taylor, Christopher A.; Kottmyer, Mark D. Arkansas Game and Fish Commission

1:15
NOTEWORTHY DISTRIBUTION RECORDS FOR THE ENDEMIC REDSPOTTED STREAM CRAYFISH, *ORCONECTES ACARES* (DECAPODA: CAMBARIDAE) IN ARKANSAS

McAllister, Chris T.; Robison, Henry W. RapidWrite. Southern Arkansas University

1:30
DISTRIBUTION AND LIFE HISTORY ASPECTS OF THE FRESHWATER SHRIMPS, *MACROBRANCHIUM* AND *PALAEEMONETES* (DECAPODA: PALAEMONIDAE), IN ARKANSAS

Robison, Henry W.; McAllister, Chris T.; Harp, George L. Southern Arkansas University. RapidWrite. Arkansas State University

1:45
STRUCTURE AND FUNCTION OF LARGE WOOD IN OZARK HEADWATER STREAMS AND ITS EFFECT ON FISH COMMUNITY STRUCTURE

Mitchell, David; Entekin Sally; Adams, Ginny; Adams, Reid. University of Central Arkansas

2:00
MOVEMENT PATTERNS AND ENVIRONMENTAL INFLUENCES OF TWO CYPRINIDS IN AN INTERMITTENT REACH OF AN OZARK STREAM

Walker, Richard H.; Adams, Ginny; Adams, S. Reid. University of Central Arkansas

2:15
ACUTE EFFECTS OF ATRAZINE AND NITRATE ON *HYALELLA AZTECA* (AMPHIPODA) IN LABORATORY EXPOSURES

Pandey, Ram B.; Warren, Laurie; Adams, Ginny. University of Central Arkansas

SESSION 1: FRIDAY 1:00-2:30. CHAIR: MOSTAFA HEMMATI
ROOM D, DONAGHEY STUDENT CENTER
Topics: Physics

1:00
SHOCK CONDITIONS AND ELECTRON DRIFT VELOCITY RANGE

Kilbourn, Amanda; Hemmati, Mostafa; Massery, Michael; Bramlett, Rebecca; Childs, William. Arkansas Tech University

1:15
IMPACT OF SUBSTRATE TEMPERATURE ON PHOTOVOLTAIC OF CdS/SI SOLAR CELLS MADE BY CHEMICAL SPRAY PYROLYSIS

Abdulzariq, Omar A.; Ismaail, Radi A. University of Arkansas at Little Rock. University of Technology, Baghdad

1:30
SYNTHESIS AND DIELECTRIC MEASUREMENT OF POTASSIUM SODIUM TARTRATE ($KNaC_4H_4O_6 \cdot 4H_2O$)

Kendall, Barnett A.; Jones, Tori R.; Crowell, Vernon D.; Hutton, Stuart L. Lyon College

1:45
P-TYPE ZnO NANOWIRES DOPED WITH Ag BY A LOW TEMPERATURE ELECTROCHEMICAL PROCESS

Thomas, M. Allan; Cui, Jingbiao. University of Arkansas at Little Rock

2:00
INITIAL GROWTH STAGE OF INDIUM NITRIDE ON Si SUBSTRATE BY PLASMA-ASSISTED MOCVD

Norman, Dever P.; Hamad, Samir; Tu, Li-Wei; Chiang, Shu-You; Seo, Hye-Won. University of Arkansas at Little Rock. National Sun Yat-Sen University, Taiwan

2:15
FABRICATION AND CHARACTERIZATION OF $PrBa_2[Cu_xM_{1-x}]O_7$ ($x=0.2, Ga, Al$) EPITAXIAL THIN FILMS

Kandel, Hom; Iliev, Milko; Bourdo, Shawn; Chen, Tar-Pin; Seo, Hye-Won; Watanabe, Fumiya; Wang, SHou-Zheng; Cui, Jing-Biao; Vishwanathan, Tito. University of Arkansas at Little Rock. University of Houston

Meeting Report

**SESSION 1: FRIDAY 1:00-2:45. CHAIR: BRIAN BERRY
ROOM G, DONAGHEY STUDENT CENTER
Topics: Chemistry**

**1:00
AEROSOL AND OZONE IMPACTS ON CLIMATE:
AGRICULTURAL AND BIOGENIC FEEDBACKS**
Gaffney, Jeffrey S.; Marley, Nancy A. University of Arkansas at Little Rock

**1:15
THE UNIVERSITY OF ARKANSAS AT LITTLE ROCK (UALR)
ATMOSPHERIC OBSERVATORY**
Marley, Nancy A.; Gaffney, Jeffrey S. University of Arkansas at Little Rock

**1:30
COMPUTATIONAL MODELING OF METAL HYDRIDES FOR
USE IN HYDROGEN STORAGE**
Griffin, William O.; Darsey, Jerome A. University of Arkansas at Little Rock

**1:45
SPECTROSCOPIC CHARACTERIZATION AND CATALYTIC
OXIDATION STUDIES OF A Fe COMPLEX OF
TETRAAMIDOMACROCYCLIC LIGAND**
Sullivan, Shane Z.; Ghosh, Anindya; Pulla, Sharon; Pierce, Bradley S.; Schnackenberg, Laura. University of Arkansas at Little Rock University of Texas, Arlington National Center for Toxicological Research

**2:00
OXIDATION OF ALCOHOLS TO ALDEHYDES USING
ENVIRONMENTALLY BENIGN IRON(III) AND COPPER-AMIDE
COMPLEXES**
Pulla, Sharon; Ghosh, Anindya; Sullivan, Shane Z. University of Arkansas at Little Rock

**2:15
MOLECULAR MODELING STUDIES OF GELDANAMYCIN AND
ITS DERIVATIVES TO TREAT PARKINSON'S DISEASE**
Thotakura, Sushma; Darsey, Jerry. University of Arkansas at Little Rock

**2:30
PLATINUM NANOROD ARRAYS WITH ENHANCED
ELECTROCATALYTIC ACTIVITY FOR OXYGEN REDUCTION
REACTION**
Khudhayer, Wisam J.; Shaikh, Ali U.; Karabacak, Tansel. University of Arkansas at Little Rock

**SESSION 2: FRIDAY 3:00-4:30. CHAIR: DAVID SAUGEY
LEDBETTER A, DONAGHEY STUDENT CENTER
Topics: Herpetology, Birds**

**3:00
ULTRASTRUCTURAL OBSERVATIONS OF THE SECRETORY
EPITHELIUM OF THE DISTAL GENITAL TRACT IN THE
FLATHEAD SNAKE, TANTILLA GRACILIS**
Trauth, Stanley E. Arkansas State University

**3:15
THE HISTOLOGY, HISTOCHEMISTRY, AND
ULTRASTRUCTURE OF RATHKE'S GLANDS IN THE
MISSISSIPPI MUD TURTLE, KINOSTERNON SUBRUBRUM
HIPPOCREPIS, IN ARKANSAS**
Webb, Sarah J.; Trauth, Stanley E. Arkansas State University

**3:30
AN URBAN POPULATION OF WESTERN LESSER SIRENS, SIREN
INTERMEDIA NETTINGI**
Sawyer, Jacob A.; Trauth, Stanley E. Arkansas State University

**3:45
SEASONAL ACTIVITY OF THE OZARK HIGHLANDS LEECH,
MACROBELLA DIPLOTERTIA, IN NORTH-CENTRAL
ARKANSAS**
Connior, Matthew B.; Trauth, Stanley E. South Arkansas Community College. Arkansas State University

**4:00
EFFECTS OF LIGUSTRUM SINENSE ERADICATION ON AVIAN
ABUNDANCE AND SPECIES RICHNESS IN CENTRAL
ARKANSAS**
Needham, Jessica R.; Larson, Katherine C. University of Central Arkansas

**4:15
MERCURY CAUSES INAPPROPRIATE ACTIVATION IN B AND T
LYMPHOCYTES**
Weigand, Kara L.; Reno, J. Leigh; Rowley, Ben R. University of Central Arkansas

**SESSION 2: FRIDAY 3:00-4:30. CHAIR: LYNNE THOMPSON
LEDBETTER C, DONAGHEY STUDENT CENTER
Topics: Insects, Arthropods**

**3:00
PRESENCE OF THE ASIAN TIGER MOSQUITO (AEDES
ALBOPICTUS) IN NORTHWEST ARKANSAS**
Wilson, Jill; Jamieson, David H. NorthWest Arkansas Community College

**3:15
ARKANSAS BUG UPDATE 2010; INCLUDING 1 EXTREMELY
RARE BUG**
Chordas III, Stephen; Tumlinson, Renn; Robison, Henry; Connior, Matthew. The Ohio State University. Henderson State University. Southern Arkansas University. Southern Arkansas Community College

**3:30
ENDOCRINE DISRUPTION OF SEXUAL SELECTION IN THE
MEALWORM BEETLE (TENEBRIO MOLITOR)**
McCallum, Malcolm L.; Treas, Justin; Matlock, Mackenzie; Safi, Barroq; Sanson, Wendy; McCallum, Jamie L. Herpetological Conservation and Biology. Texas Tech University. Texas Tech University-Texarkana. Texas State University. Louisiana State University-Shreveport. McCallumsflock.com

**3:45
RARE COMANCHE HARVESTER ANTS IN ARKANSAS—WHAT
DO WE KNOW?**
Thompson, Lynne C.; General, David M. University of Arkansas at Monticello

**4:00
FURTHER SAMPLING IN ARKANSAS OF INSECTS INHABITING
THE BURROWS OF BAIRD'S POCKET GOPHER**
Kovarik, Peter W.; Connior, Matthew B.; Chordas III, Stephen W.; Skelley, Paul E.; Robison, Henry W. Columbus State Community College. Southern Arkansas University. The Ohio State University. Florida State Collection of Arthropods

**4:15
NEW RECORDS AND NOTES ON THE NATURAL HISTORY OF
SELECTED INVERTEBRATES FROM SOUTHERN ARKANSAS**
Tumlinson, Renn; Robison, Henry. Henderson State University. Southern Arkansas University

Arkansas Academy of Science

**SESSION 2: FRIDAY 3:00-4:30. CHAIR: JEFF ROBERTSON
ROOM D, DONAGHEY STUDENT CENTER
Topics: Physics, Engineering**

3:00

BIOSENSOR APPLICATIONS IN BIOLOGICAL SCIENCES AND ENGINEERING AND DESIGN OF A NOVEL ELECTROCHEMICAL BIOSENSOR FOR BIODIESEL QUALITY SENSING

Hossain, Md. Zakir; Shrestha, Dev; Kleve, Maurice G. University of Arkansas at Little Rock. University of Idaho

3:15

TEMPERATURE CONTROLLED NANO-INDENTATION OF GRAPHEN SHEET

Downs, Roy; Terdalkar, Sachin S.; Rencis, Joseph J. University of Arkansas

3:30

HYDROPHOBIC METALLIC NANORODS WITH TEFLON NANOPATCHES

Khudhayer, Wisam J.; Sharma, Rajesh; Karabacak, Tansel. University of Arkansas at Little Rock

3:45

Strain-Mediated Migration of Vacancy Defects in Graphene

Terdalkar, Sachin S.; Zhang, Sulin L.; Rencis, Joseph J. University of Arkansas. Pennsylvania State University

4:00

FORMATION OF NANO-INDIUM (III) SULFIDE/CADMIUM TELLURIDE STRUCTURES BY COMBINED EVAPORATION AND ELECTRODEPOSITION PROCESSES

Vangilder, Joshua A.; Engelken, Robert D.; Felizco, Frederick; Hall, John; Chaudhury, Z.; Thapa, S.; Karabacak, T.; Cansizoglu, F.; Seo, Hye-Won. Arkansas State University. University of Arkansas at Little Rock

4:15

SYNTHESIS OF BISMUTH (III) SULFIDE NANO/MICRO POWDERS FROM LOW COST/LOW HAZARD THIOSULFATE BATHS, AND VACUUM EVAPORATION AND SPRAY DEPOSITION OF SUCH

Felizco, Frederick M.; Engelken, Robert D.; Vangilder, Joshua A.; Hall, John; Thapa, Shyam; Chaudhury, Zariff. Arkansas State University

**SESSION 2: FRIDAY 3:00-4:45. CHAIR: WILLIAM DORIA
ROOM G, DONAGHEY STUDENT CENTER**

Topics: Chemistry

3:00

DEVELOPMENT OF A DOUBLE-ISOTOPE UPLC-MS/MS METHOD FOR THE DETERMINATION OF PLASMA CITRULLINE CONCENTRATION

Brown, Joshua D. University of Arkansas

3:15

SOL-GEL SYNTHESIS AND CHARACTERIZATION OF IRON TITANATES

Trujillo, Josh; Klishina, Ekaterina; Hardcastle, Franklin D. University of Arkansas

3:30

IRON-CARBONYL CLUSTER COUPLED TO MERCAPTOBENZOTHAZOLE AS A MIMIC OF HYDROGENASE ENZYMES

Felton, Charlette M.; Mebi, Charles A. Arkansas Tech University

3:45

A COMPUTATIONAL INVESTIGATION OF TROPANE AND ITS PHOSPHORUS ANALOGUE

Crowell, Vernon D.; Grafton, Anthony K.; Pace, R. David. Lyon College

4:00

SYNTHESIS AND CHARACTERIZATION OF RUTHENIUM COMPLEXES CONTAINING CHLORO-PHENANTHROLINE AND BIPYRIDINE

Bartlett, Jared; Kudo, Shotaro; Bhuiyan, Anwar A. Arkansas Tech University

4:15

USE OF GEOCHEMICAL PROXIES TO IDENTIFY WATERSHED INPUTS TO LAKE MAUMELLE, CENTRAL ARKANSAS

Johnson, Dawn M.; Robinson, Amelia C.; Smith, Jena P.; Payne, Forrest E.; McMillan, Margaret E.; Stites, Courtney E. University of Arkansas at Little Rock

4:30

CHEMICAL ANALYSES TO DETERMINE TRIBUTARY CONTRIBUTION TO THE SPRING RIVER, AR

Brueggen, Teresa R.; Downing, Carolyn B.; Bouldin, Jennifer L. Arkansas State University. Ball State University

**SESSION 3: SATURDAY 8:30-10:30. CHAIR: JOYCE HARDIN
LEDBETTER A, DONAGHEY STUDENT CENTER**

Topics: Molecular Biology, Biophysics, Genetics

8:30

SEARCH FOR A "SILVER BULLET."

Black, Viktoriya; Njewel, Guy. Southern Arkansas University

8:45

THE EFFECTIVENESS OF THE WEIGHT CONTROL THROUGH THE WEIGHT WATCH PROGRAMS

Black, Viktoriya; Boumtje, Pierre. Southern Arkansas University

9:00

SEQUENCE DIFFERENCES AMONG CYP3A MEMBERS SIGNIFICANTLY IMPACT THE METABOLISM OF R- AND S-WARFARIN

Jones, Drew R.; So-Young, Kim; Yun, Chul-Ho; Boysen, Gunnar; Miller, Grover P. University of Arkansas for Medical Sciences. Chonnam National University

9:15

CYP2C19 METABOLIZES BOTH R- AND S-WARFARIN TO ENANTIOMERS OF FOUR HYDROXYWARFARINS

Kim, So-Young; Jones, Drew R.; Yun, Chul-Ho; Boysen, Gunnar; Miller, Grover P. Chonnam National University. University of Arkansas for Medical Sciences

9:30

ANTIGENICITY DETERMINATION AND CHARACTERIZATION OF AN ANTI-PEPTIDE POLYCLONAL ANTIBODY AGAINST HUMAN MULTIPLE INOSITOL POLYPHOSPHATE PHOSPHATASE (MINPP) TO STUDY ITS PHYSIOLOGICAL FUNCTION

Hossain, Md. Zakir; Kleve, Maurice G. University of Arkansas at Little Rock

9:45

BINDING AND RECOGNITION OF BACILLUS CEREUS BY DICTYOSTELIUM DISCOIDEUM USING GLYCOCONJUGATES

Rasol, Aveen; Tevebaugh, Whitney; Bush, John; Tarasenko, Olga. University of Arkansas at Little Rock

Meeting Report

10:00

LINKAGES BETWEEN PARENTAL NUTRITION AND HEALTH KNOWLEDGE, AND CHILDHOOD OBESITY

Boumtje, Pierre I.; Huang, Chung L.; Lee, Jonq-Ying; Lin, Biing-Hwan. Southern Arkansas University. University of Georgia. University of Florida. US Department of Agriculture

10:15

KNOCKDOWN OF COG COMPLEX PROTEINS AFFECTS GLYCOSYLATION AND RETROGRADE TETHERING

Smith, Richard D.; Morelle, Wille; Lupashin, Vladimir. University of Arkansas for Medical Sciences. University of Lille, France

SESSION 3: SATURDAY 8:30-10:30. CHAIR: FORREST PAYNE LEDBETTER C, DONAGHEY STUDENT CENTER

Topics: Insects, Arthropods, Biology

8:30

A SURVEY FOR ENTAMOEBA FROM INVERTEBRATE HOSTS: INCREASING MOLECULAR DATA FOR THE ASSESSMENT OF EVOLUTIONARY HISTORY

Chang, Helen; Silberman, Jeffery D. University of Arkansas

8:45

STRATEGIES TO DOCUMENT DIVERSITY OF WATER MITES (ACARI: HYDRACHNIDIAE) FROM THE INTERIOR HIGHLANDS AND FACILITATE THEIR INCLUSION IN FRESHWATER CONSERVATION EFFORTS AND ECOLOGICAL RESEARCH

Radwell, Andrea J. University of Arkansas

9:00

FIRE AFFECTS FOOD AVAILABILITY FOR BIRDS: THE RESPONSE OF LEAF LITTER ARTHROPODS TO WOODLAND RESTORATION IN THE OZARK MOUNTAINS

McClung, Maureen R.; Smith, Kimberly G. University of Arkansas

9:15

ACUTE EFFECTS OF ATRAZINE AND NITRATE ON HYALELLA AZTECA (AMPHIPODA) IN LABORATORY EXPOSURES

Pandey, Ram B.; Warren, Laurie; Adams, Ginny. University of Central Arkansas

9:30

ACQUISITION OF IMMUNITY TO THE PROTOZOAN PARASITE EIMERIA ADENOIDEIS IN TURKEY POULTS AND THE PERIPHERAL BLOOD LEUKOCYTE RESPONSE TO A PRIMARY INFECTION

Gadde, Ujvala Deepthi; Chapman, Hilary D.; Rathinam, Thilkar; Erf, Gisela F. University of Arkansas

9:45

Bacterial Responses to Diurnal Processes in Lake Maumelle

Stites, Courtney E.; Robison, Amelia C.; Payne, Forrest E.; Johnson, Dawn; Sweeney, Sharon; Shry, Sam. University of Arkansas at Little Rock

10:00

STRUCTURE AND COMPOSITION OF STREAMSIDE MANAGEMENT ZONES FOLLOWING REPRODUCTION CUTTING IN SHORLEAF PINE STANDS

Leichty, Hal O.; Guldin, James M. University of Arkansas at Monticello

10:15

HURRICANE BIRDS IN ARKANSAS IN 2008

James, Douglas A.; Smith, Kimberly G.; Neal, Joseph C. University of Arkansas

SESSION 3: SATURDAY 8:30-10:00.

CHAIR: PATRICK TREUTHARDT

ROOM D, DONAGHEY STUDENT CENTER

Topics: Physics, Astronomy

8:30

MUON AND GAMMA RAY DETECTION

Bachri, Abdel G.; Goldschmidt, Azriel; Taylor, Amanda. Southern Arkansas University. Lawrence Berkeley National Laboratory. Oklahoma State University

8:45

BUILDING A COSMIC RAY DETECTOR

Grant, Perry; Bachri, Abdel; Goldschmidt, Azriel. Southern Arkansas University. Lawrence Berkeley National Laboratory

9:00

RADIATION FLUX VARIATION WITH SOLID ANGLE

Cuevas, Noe; Bachri, Abdel; Goldschmidt, Azriel. Southern Arkansas University. Lawrence Berkeley National Laboratory

9:15

THERMALIZATION AND MEMORY EFFECT IN RELATIVISTIC HEAVY ION COLLISIONS

Zhang, Bin; Wortman, Warner A. Arkansas State University

9:30

MODELING THE ECLIPSING BINARY STAR SYSTEM, T AURIGA

Conley, Ben; Musser, Jim. Arkansas Tech University

9:45

THE DESIGN OF A NOVEL METHOD TO MEASURE PAIN WITHDRAWAL THRESHOLD IN PHYSIOLOGICAL STUDIES

Walker, Azida; Thurman, Skipper; Roisen, Alan¹; Dobretsov, Maxim. University of Central Arkansas. University of Arkansas for Medical Sciences

SESSION 3: SATURDAY 8:30-10:30. CHAIR: DON BRAGG ROOM G, DONAGHEY STUDENT CENTER

Topics: Botany, Ecology

8:30

STAND CONDITIONS IMMEDIATELY FOLLOWING A RESTORATION HARVEST IN AN OLD-GROWTH PINE-HARDWOOD REMNANT

Bragg, Don C. USDA Forest Service

8:45

YUCCA (AGAVACEAE) IN ARKANSAS

Johnson, George P. Arkansas Tech University

9:00

CARBON MARKET IMPACTS ON ARKANSAS'S PINE FORESTS

Pelkki, Matthew H. University of Arkansas at Monticello

9:15

THE CRABS CLAW (CRC) GENE TREE: A PHYLOGENETIC ANALYSIS OF THE EUDICOTS

Narula, Nitish; Krosnick, Shawn. Southern Arkansas University

9:30

WHAT IS A NECTARY?

Krosnick, Shawn E. Southern Arkansas University

9:45

SECOND YEAR OF A MULTI-YEAR STUDY OF THE EFFECTS OF VARYING CROP PRODUCTION TREATMENTS ON WATER AND SEDIMENT QUALITY

Little, J. R.; Sappington, D. E.; Brueggen, T. R.; Bouldin, J. L. College of the Ozarks. Arkansas State University

Arkansas Academy of Science

10:00

EVOLUTIONARY HISTORY OF SEXUAL AND APOMICTIC ERIGERON TENUIS (ASTERACEAE)

Groff, Dulcinea; Noyes, Richard D. University of Central Arkansas

10:15

ARABIDOPSIS DEVELOPMENT IN LOW ATMOSPHERIC PRESSURE

Taylor, James G.; Leonard, Mark. Ouachita Baptist University

POSTER PRESENTATIONS

BIOLOGY POSTERS

1. EXTENDING THE VASE LIFE OF CUT ROSES (ROSA HYBRIDA) BY TREATMENT WITH DIFFERENT PRESERVATIVES

Anderson, L. Jr.; Islam, Shahidul. University of Arkansas at Pine Bluff

2. ECOLOGICAL DYNAMICS OF TWO COMMUNITIES OF LIGNICOLOUS MYXOMYCETES IN COSTA

Rojas, Carlos; Stephenson, Steven L. University of Arkansas

3. LEAF DECOMPOSITION OF A NON-NATIVE-SPECIES IN AN URBAN STREAM

Lewis, Sarah E.; Brown, Art V. University of Arkansas

4. MATE CHOICE IN MANTIDS: DOES SEXUAL CANNIBALISM ALLOW FEMALES TO AVOID INBREEDING

Hurley, Kyle; Davis, Nicholas. University of Central Arkansas

5. GENETIC DIVERSITY OF BUMBLE BEES IN ARKANSAS

Magnus, Roxane; Szalanski, Allen. University of Arkansas

6. A SURVEY OF ANTS IN SELECTED PRAIRIES IN ARKANSAS

Thompson, Lynne C.; General, David M. University of Arkansas at Monticello

7. DETECTION OF INOSITOL POLYPHOSPHATES BY POLYACRYLAMIDE GEL ELECTROPHORESIS (PAGE)

Zafar, Maroof; Rizan, Mohsin; Hassen, Samar; Agarwal, Rakhee; Ali, Nawab. University of Arkansas at Little Rock. University of Arkansas for Medical Sciences

8. MYXOMYCETES ASSOCIATED WITH BRYOPHYTES

Bates, Amanda; Doss, Robin; Rojas, Carlos; Stephenson, Steven. University of Arkansas

9. CHANGES IN INVERTEBRATE COMMUNITY STRUCTURE ALONG A LONGITUDINAL GRADIENT IN BIG PINEY CREEK, ARKANSAS

Fuller, Chris; Entrekin, Sally; Johnson, Clint; Adams, Ginny; Adams, Reid. University of Central Arkansas

10. THE EFFECTS OF NATURAL GAS DRILLING ON DECOMPOSITION RATES IN THE FAYETTEVILLE SHALE GAS PLAY

Troutman, Tyler; Lowry, Michael S.; Entrekin, Sally A. University of Central Arkansas

11. AN ECOLOGICAL STUDY OF WOOD-DECOMPOSING FUNGI IN NORTHWEST ARKANSAS

Doss, Robin; Rojas, Carlos; Stephenson, Steven L. University of Arkansas

12. AN ECOLOGICAL SURVEY OF ARUNDINARIA GIGANTEA IN COLUMBIA COUNTY, ARKANSAS

Dockter, Katherine S.; Krosnick, Shawn E. Southern Arkansas University

13. THE EFFECT OF HYDROPERIOD AND INVERTEBRATE FEEDING ON LEAF DECOMPOSITION RATES IN INTERMITTENT OZARK STREAMS

Nix, Kasey J.; Entrekin, Sally A. University of Central Arkansas

14. A REVIEW OF CONSERVATION RESEARCH PRACTICES IN MARINE AQUARIA

Canady, Candice S. Southern Arkansas University

15. THE PLANT DENSITY OF JUSTICIA AMERICANA IN LAKE MAUMELLE, AN IMPOUNDMENT OF THE BIG MAUMELLE RIVER, PULASKI COUNTY, ARKANSAS

Sweeney, Sharon M.; Meredith, Bradley G.; Peck, James H. University of Arkansas at Little Rock

16. PRELIMINARY DATA FROM INVERTEBRATE AND FISH SURVEYS OF BIG MAUMELLE RIVER, ARKANSAS

Meredith, Bradley J.; Reese, Jeremy P.; Stehle, Jeremy P.; Mikel, Garrett A; Stroman, Justin A.; Payne, Forrest E. University of Arkansas at Little Rock

17. IDENTIFICATION OF POLYPHENOLS IN TOMATO LEAVES BY HPLC WITH PHOTODIODE ARRAY DETECTION AND ELECTROSPRAY IONIZATION MASS SPECTROMETRY

Grace, Stephen C. University of Arkansas at Little Rock

18. PHOTOREGULATION OF POLYPHENOL BIOSYNTHESIS IN THE HP-2DG MUTANT OF TOMATO

Chen, Chen; Grace Stephen C. University of Arkansas at Little Rock

19. CALLING PHENOLOGY OF ANURAN POPULATIONS SURVEYED IN SOUTHWEST ARKANSAS USING ACOUSTIC SURVEYS

Risher, Sarah R.; Baker, Claude D. Southern Arkansas University

20. A KINEMATIC ANALYSIS OF DROP LANDING IN MILITARY BOOTS

Booker, Jacquelynn M.; Oliver, Gretchen D.; Stone, Audrey J.; Plummer, Hillary. University of Arkansas

21. STUDENT PERCEPTIONS OF THE BMI AS AN OVERALL INDICATOR OF HEALTH

Davis, Cory; Krosnick, Shawn E. Southern Arkansas University

22. A BIOLOGICAL INVENTORY OF MEACHAM CAVE (INDEPENDENCE COUNTY, AR)

Thomas, David J.; Ong, Han C.; Foll, Megan N.; Robinson, Greg; Middaugh, Chris R.; Morgan, Charles. Lyon College

23. PHOTOSYNTHETIC MICROORGANISMS FROM OZARK REGION CAVES

Kuehl, Melissa; McQueen, V. Michael; Moreno Martha; Ong, Han Chuan; Thomas, David J. Lyon College

24. THE TRANSFORMATION OF RUBUS AND ITS APPLICATION TO THE STUDY OF PLANT SECONDARY

Gates, Nadine; Parker, Kayla; Walker, Courtney; Skiver, Natasha. University of Central Arkansas

25. STIMULATORY AND PROTECTIVE ROLE OF GLYCOCONJUGATES ON RICE SEEDS FROM BACILLUS SPORES INFECTION DURING GERMINATION AND GROWTH

Hassen, Lahiani Mohamed; Tarasenko, Olga. University of Arkansas at Little Rock

26. AFLP MARKERS FOR MAPPING GENOMES IN PLANTS

Martin Jr., Darrell; Wild, Michael; Noyes, Richard D. University of Central Arkansas

Meeting Report

27. SEGREGATION FOR SEED FORMATION IN COMPLEX APOMICT SEXUAL CROSSES IN PLANTS

Burrow, Halee; Desrochers, Claire; Richardson, Harry; Brummett, Shawn; Noyes, Richard D. University of Central Arkansas

28. AFLP MARKERS FOR MAPPING GENOMES IN PLANTS

Roberds, Aaron; DiGiacomo, Rebecca; Noyes, Richard D. University of Central Arkansas

29. POLLEN SIZE VARIATION AND REPRODUCTIVE SUCCESS FOR TRIPLOID APOMICTIC PLANTS

Larson, Signe; Noyes, Ricard D. University of Central Arkansas

30. EFFECTIVENESS OF A GENTLE ON SPORE CONTAMINATED STAINLESS STEEL

Pavan, Casey; Tarasenko, Olga. University of Arkansas at Little Rock

31. GENETIC ANALYSIS OF REGIONS ON CHROMOSOME Z FOR CONTRIBUTION TO PULMONARY HYPERTENSION AND ASCITES IN THE CHICKEN

Chinn, Allison M.; Anthony, Nicholas B.; Erf, Gisela F.; Wideman, Robert F.; Rhoads, Doug D. University of Arkansas

32. MOLECULAR CHARACTERIZATION OF A FAMILY OF TRANSCRIPTIONAL REGULATORS – CCAAT-BINDING FACTORS – IN THE PLANT-PATHOGENIC FUNGUS FUSARIUM VERTICILLIOIDES THROUGH TARGETED GENE DISRUPTION

Ridenour, John B.; Bluhm, Burt H. University of Arkansas

33. THE DISTRIBUTION OF ERM A AND ERM C AMONG STAPHYLOCOCCI

Fu, Xing; Gilmore, David. Arkansas State University

34. BENTHIC MACROINVERTEBRATE FOOD WEB PATTERNS IN A HEADWATER STREAMS PRIOR TO RIPARIAN ZONE RESTORATION

Jensen, Nicki; Evans-White, Michelle; Haggard, Brian. University of Central Arkansas. University of Arkansas

35. SILVER SOLUTION AS AN ALTERNATIVE SURFACE DISINFECTANT

Fletcher, Diana; Black, Viktoriya. Southern Arkansas University

36. STATISTICAL ANALYSIS OF EBOLA OUTBREAKS

Fletcher, Diana; Black, Viktoriya; Bassett, Denene. Southern Arkansas University. University of Arizona

37. DO GIRDLES AND SALIVA PROMOTE GROWTH IN NOTODONTIC CATERPILLARS?

Moon, Deborah; Dussourd, David. University of Central Arkansas

38. IMMUNE RESPONSES TO A NICKEL-BASED COMPOUND

Bewley, Autumn. University of Central Arkansas

39. IS DIDYMIUM PERTUSUM A “GOOD” SPECIES OF MYXOMYCETE?

Parks, Shaina S; Stephenson, Steven. University of Arkansas

40. PHOTOTROPIC AND GRAVITROPIC RESPONSES OF ARABIDOPSIS THALIANA

Hunter, Charles N.; Taylor, James G. Ouachita Baptist University

41. ANALYSIS OF B-CELL ANTIBODY GENE SEGMENT USE IN RESPONSE TO MERCURY TREATMENT

Clarke, Heather. University of Central Arkansas

42. HYALURONIDASE GENE (*hysA1* AND *hysA2*) EXPRESSION IN STAPHYLOCOCCUS AUREUS

Ward, James; Waner, P.; Hart, M. E. Ouchita Baptist University. National Center for Toxicological Research

43. PHOTOSYNTHETIC EFFECTS OF LIGHT INTENSITY AND FREQUENCY ON TRANSGENIC ARABIDOPSIS THALIANA PLANTS WITH INCREASED LEVELS OF CHLOROPHYLL b.

Reyna, Nathan S. Ouachita Baptist University

44. ULTRASOUND EVALUATION OF HUMAN MOTION

Lieblong, Joshua. University of Central Arkansas

45. ASSESSMENT OF CHINQUAPIN (CASTANEA OZARKENSIS) IN OZARKS NORTHWEST ARKANSAS

Onduso, Francis N.; Paillet, Frederick L.; Stephenson, Steven L. University of Arkansas

CHEMISTRY POSTERS

1. BIS(M-NAPHTHALENE-2-THIOLATO) DIIRONHEXACARBONYL COMPLEX: A CATALYST FOR HYDROGEN PRODUCTION

Karr, Derek; Mebi, Charles A. Arkansas Tech University

2. COMPARISON OF LIGHT DEPENDENT AND LIGHT INDEPENDENT DNA REPAIR RATES IN UV IRRADIATED E. COLI

Sweet, Gary; Nelson, Lynda P. University of Arkansas at Fort Smith

3. ORGANICS IN PRECIPITATION: LINKS TO CARBONACEOUS AEROSOLS AND CLIMATE

Bridges, Gail L.; Gaffney, Jeffrey; Marley, Nancy. University of Arkansas at Little Rock

4. NATURAL RADIONUCLIDES AS INDICATORS OF ATMOSPHERIC AEROSOL WASHOUT

Begum, Mahbuba; Gaffney, Jeffrey S.; Marley, Nancy A. University of Arkansas at Little Rock

5. CHARACTERIZATION OF SECONDARY ORGANIC AEROSOL (SOA) FORMED BY THE REACTION OF B-CARYOPHYLLENE COATED SOOT AND OZONE: CLIMATE IMPACT

Sarkar, Amrita; Gaffney, Jeffrey A.; Marley, Nancy A. University of Arkansas at Little Rock

6. EVALUATION OF ALUMINUM CORROSION

Shepherd, Kyle M.; Hardcastle, Franklin D. Arkansas Tech University

7. OPTICALLY SENSING MERCURY IONS USING CARBON NANOTUBES

Kamel, Azhar; Deloach, Devethia; Zhao, Wei. University of Arkansas at Little Rock

8. SYNTHESIS AND CHARACTERIZATION OF POLYMER-TETHERED FULLERENES (PTFS)

Eller, Jonathan R.; Ali, Shariq; Alexander, Amy M.; Moore, Josh A.; Berry, Brian C. University of Arkansas at Little Rock

9. SYNTHESIS AND CHARACTERIZATION OF POLYMER-TETHERED NANOPARTICLES (PTNPS) USING AMINE-TERMINATED POLYSTYRENE

Alexander, Amy M.; Eller, Jonathan R.; Berry, Brian C. University of Arkansas at Little Rock

10. MOLECULAR STRUCTURE OF FAC-AQUADICHLOROTRIS (DIMETHYLSULFOXIDE) RUTHENIUM(II)

Foster, Les; Hardin, Jennifer; Draganjac, Mark. Arkansas State University

11. DEVELOPMENT OF MATHEMATICAL MODELS FOR DIELECTRIC HEATING IN AQUEOUS ENVIRONMENTS

Bejamin, Earl; Young, Michael; Benjamin, Ellis T. Arkansas State University

Arkansas Academy of Science

12. COMPUTATIONAL ANALYSIS OF SURFACTANT BINDING TO BACTERIAL MEMBRANE PROTEINS

Benjamin, Ellis T.; Young, Michael; Benjamin, Earl. Arkansas State University

13. NITRATE AND NITRITE IN SPINACH, ROMAINE, CILANTRO, AND NAPA CABBAGE

Willis, Mackenzie; Huang, Jimming. University of Arkansas at Monticello

14. HIGH PERFORMANCE LIQUID CHROMATOGRAPHY-MASS SPECTROMETRIC ANALYSIS OF WILD ANIMAL BILE ACIDS

Nasini, Udaya B.; Ghosh, Anindya; Shaikh, Ali U. University of Arkansas at Little Rock

15. THEORETICAL MOLECULAR MODELING FOR MELANINE-METAL ION COMPLEX IN SUBSTANTIA NIGRA OF PARKINSON'S DISEASE PATIENTS

Armstrong, Jazmine A.; Thotakura, Sushma X.; Griffin, Billy O.; Hahn, F. I.; Darsey, Jerry A. Philander Smith College. University of Arkansas at Little Rock

16. SYNTHESIS OF POLYURETHANE IN EXPANDED CARBON DIOXIDE SOLVENTS (CXLS) USING SOLUBLE TIN CATALYSTS

Gartia, Yashraj; Ghosh, Anindya; Munshi, Pradip; Berry, Brian. University of Arkansas at Little Rock

17. SUBSTITUTED N-CONFUSED TETRAPHENYL-PORPHYRINS: SYNTHESIS AND COBALT INSERTION

Martin, Zachary; Watson, C. Todd. University of Arkansas at Fort Smith

18. SYNTHESIS AND CHARACTERIZATION OF TANNINSULFONIC ACID DOPED POLYANILINE/METAL OXIDE COMPOSITES FOR USE IN SOLAR CELLS

Bairi, Venu Gopal; Warford, Brock A.; Saini, Viney; Bourdo, Shawn E.; Viswanathan, Tito. University of Arkansas at Little Rock

19. HIGHLY ACTIVE Co(III) COMPLEX OF TETRAAMIDOMACROCYCLIC LIGAND FOR CYCLIC CARBONATE SYNTHESIS

Ramidi, Punnamchandar; Ghosh, Anindya. University of Arkansas at Little Rock

20. COMPUTATIONAL STUDY OF MOLECULAR HYDROGEN PHYSISORPTION ON ACTIVATED HETEROCYCLIC ISORETICULAR METAL-ORGANIC FRAMEWORKS

Carranza, Arturo; Doria, William J. University of the Ozarks

PHYSICS POSTERS

1. ASSESSING THE VERTICAL ACCURACY OF ARKANSAS FIVE-METER DIGITAL ELEVATION MODEL FOR DIFFERENT PHYSIOGRAPHIC REGIONS

Weih, Robert C. Jr. University of Arkansas at Monticello

2. PATTERN SPEED ESTIMATES OF BARRED GALAXIES FROM CINGS: A CONNECTION BETWEEN CENTRAL DARK HALO CONCENTRATION AND SMBH MASS?

Treuthardt, Patrick M.; Seigar, Marc S.; Salo, Heikki. University of Arkansas at Little Rock. University of Oulu, Finland

3. BEHAVIOR OF A HELMHOLTZ RESONATOR DRIVEN AT HIGH AMPLITUDES

Morris, Dustin; Slaton, William V. University of Central Arkansas

4. THE EFFECT OF A HELMHOLTZ RESONATOR'S NECK GEOMETRY ON THE AERO-ACOUSTIC EXCITATION OF RESONANCE

Niskikawa, Asami; Slaton, William V. University of Central Arkansas

5. INVESTIGATING THE STRUCTURAL OPTIMIZATION OF NANO-ANTENNAS

Crain, Stephen G.; El-Shenawee, Magda. University of Arkansas

6. CARBONACEOUS AEROSOL IMPACTS ON PLANETARY BOUNDARY LAYER (PBL) EVOLUTION

Marchany-Rivera, Angie; Gaffney, Jeffrey S.; Marley, Nancy A. University of Arkansas at Little Rock

7. HIGH OPTICAL ABSORPTION OF INDIUM SULFIDE NANOROD ARRAYS FORMED BY GLANCING ANGLE DEPOSITION

Cazsizoglu, Mehmet F.; Engelken, Robert; Seo, Hye-Won; Karabacak, Tansel. University of Arkansas at Little Rock. Arkansas State University

8. OPTICAL CHARACTERIZATION OF AG DOPED PLY (VINYL ALCOHOL FILMS)

Jabbar, Wasmaa; Habubi, Nadir F.; Chiad, Sami S. Al Mustasiriyah University, Baghdad