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Keynote Speaker and Meeting Program

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University of Arkansas at Little Rock

Academy Editors

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KEYNOTE ADDRESS

"The Need for Baseline Measurements in Climate Change Research: Ethene, a Case Study"

By Dr. Jeff Gaffney, Professor
Department of Chemistry, University of Arkansas- Little Rock.



Climate change is typically focused on carbon dioxide and its effects as a greenhouse gas. Many other greenhouse species are also important to consider, and there is a real need for baseline measurements of greenhouse and aerosol species measurements as we move forward in mitigation plans as well as development of alternate energy sources. Specifically this talk will examine the potential impacts of the simplest alkene - ethene.

It is well known that combustion of ethanol/gasoline blends will lead to enhanced emissions of methane, ethene, aldehydes, and NO when compared to gasoline alone. However, the impacts of increases in atmospheric ethene levels from use of biofuels with higher ethanol content, i.e. E85, has not received much attention. Ethene is a well known air pollutant. It is a very potent plant growth hormone that can cause reduction in agricultural yields. It is also associated with the formation of ozone and peroxyacetyl nitrate (PAN) that can also lead to enhanced plant damage. Ethene is also produced in significant quantities from biomass burning including natural wildfires and agricultural burning. The potential consequences of ethene will be discussed along baseline data recently published (Gaffney, et. al, 2012) and carbon-14 data taken at UALR indicating the significant amounts of biomass burning that impacts the southern states. The case will be made for establishing the use of long-path FTIR high resolution spectrometers across the country for baseline measurements in order to determine if mitigation or changing energy technologies are working.

Dr. Gaffney joined the UALR Dept. of Chemistry as Chair and tenured Professor in July of 2006 after conducting research for the Department of Energy at three of their national labs (Brookhaven, Los Alamos, and most recently Argonne National Laboratory) in Atmospheric and Environmental Chemistry and in Climate Change research. He is completing work as the Mentoring Coordinator for the Department of Energy Global Change Education Program that supported both Summer Undergraduate Research Experience Fellows and Graduate Research Environmental Fellows from 1998-2013 as a national program. He was also the Lead Scientist for the DOE portion of the Megacity Initiative: Local and Global Research Observations (MILAGRO) research project that was a cooperative effort with DOE, NSF, NASA, and Mexican Science Agencies in Mexico City in 2006. Dr. Gaffney was recognized by the College of Science in 2012 as the Faculty Excellence Award winner in Research, and he is a nationally and internationally known chemist in atmospheric, environmental, biogeochemical, and nuclear chemistry. Most recently he served as the Chair of the Expert Panel External Review Committee for the EPA report entitled: Biofuels and the Environment: the First Triennial Report to Congress, and was a contributing author to the Southeast Regional Climate Change Assessment Chapter 12: Mitigation of Greenhouse Gases in the Southeast USA.

J.S. Gaffney, N.A. Marley, and D.R. Blake, "Biofuel Impacts on Air Quality: Ethene, PAN, and Ozone Enhancements from Ethanol Combustion." *Atmospheric Environment*, 56 161-16 (2012).

Arkansas Academy of Science

SECTION PROGRAMS
ORAL PRESENTATIONS

(Presenter is underlined)

ORAL SESSIONS 1: FRIDAY 1:00-2:45.

COMPUTATIONAL SCIENCES
CHAIR: Dr. Marc Seigar

GRAND 1

BIOLOGY I
CHAIR: Dr. Schurko

GRAND 3

1:00
A COMPUTATIONAL INVESTIGATION OF THE STABILITY OF
MONOHYDROXYLATED FLAVYLIUM
Jacob Haddock and Anthony K. Grafton. Lyon College.

1:15
TRAJECTORY GENERATION USING MUTUALLY COUPLED
RAYLEIGH OSCILLATORS FOR STAIR ASCENT WALKING IN
BIPEALS
Taimoor Afzal and Andrew Wright.
University of Arkansas at Little Rock, Arkansas.

1:30
ACCURACY ASSESSMENT OF THE 2006 NATIONAL LAND
COVER DATABASE'S IMPERVIOUS SURFACES DATASET
Daniel E. Long II and J. David Carr. University of Arkansas at Monticello.

1:45
EXAMINING THE UNIQUENESS OF THE SKY ISLAND PINES
Adam Bigott and Ann Willyard. Hendrix College.

2:00
UNTITLED as of program development
Trevor Drury. Harding University. Department of Chemistry.

ENVIRONMENTAL SCIENCE
CHAIR: Dr. Urbaneck

GRAND 2

1:00
WATER QUALITY ASSESSMENT OF SAGER CREEK UTILIZING
PHYSICOCHEMICAL PARAMETERS AND A FAMILY-LEVEL
BIOTIC INDEX
T.S. Wakefield. John Brown University.

1:15
REMOVING COLIFORMS AND E. COLI IN CONTAMINATED
DRINKING WATER USING BIOSAND FILTRATION
Michelle Henry¹, Ed Wilson² and Steve Moore³.
¹Dept. of Biology, ²Dept. of Chemistry, ³College of Biology, Harding
University.

1:30
SPATIAL DISTRIBUTION OF SOIL DENSITY AT A BOTTOMLAND
HARDWOOD FOREST WETLAND RESTORATION SITE IN
CHICOT COUNTY, ARKANSAS
Benjamin Sleeper and Robert Ficklin. University of Arkansas at
Monticello.

1:45
ENVIRONMENTAL POLLUTION THROUGH INDISCRIMINATE
ARSENIC SLUDGE DISPOSAL
Miah M Adel. University of Arkansas at Pine Bluff.

2:00
DOWNSTREAM WATER PIRACY STRATEGY
Miah M Adel. University of Arkansas at Pine Bluff.

2:15
UPSTREAM WATER PIRACY CONTAMINATES DOWNSTREAM
WATER
Miah M Adel. University of Arkansas at Pine Bluff.

1:00
ASSESSING THE ROLE OF A CONSERVED HYPOTHETICAL
PROTEIN, BB0238, DURING *BORRELIA BURGENDORFERI*
MAMMALIAN INFECTION
Ashley Groshong and Jon Blevins.
University of Arkansas for Medical Sciences, Department of Microbiology
and Immunology.

1:15
GENE EXPRESSION IN BDELLOID ROTIFERS DURING DNA
DAMAGE REPAIR
Emily Cariker, James Williams, Youmna Moufarrej and Andrew M.
Schurko. Hendrix College.

1:30
ISOLATION AND GENOMIC ANALYSIS OF MYCOBACTERIUM
PHAGE RONRAYGUN
Tyler Williams, Ruth Plymale, and Nathan Reyna. Ouachita Baptist
University.

1:45
FUNCTIONAL ORGANIZATION AND ARCHITECTURAL
FEATURES OF SOMATOSENSORY CORTEX IN THE NINE-
BANDED ARMADILLO (*DASYPUS NOVEMCINCTUS*)
Johnathan C Rylee and Jeffrey J. Padberg. University of Central Arkansas

2:00
IN VITRO UGT-MEDIATED METABOLISM OF
5-FLUOROURACIL
Julia R. Davis¹ and Landry K. Kamdem². ¹Harding University, Department
of Chemistry; ²Harding University, College of Pharmacy

2:15
ASSESSMENT OF BIOCHEMICAL CHANGES IN STRESSED AND
UNSTRESSED WHEAT VARIETIES.
Michelle Poe and Joseph Onyilagha. University of Arkansas at Pine Bluff.

APPLIED ECOLOGY I
CHAIR: Dr. Willyard

GRAND 4

1:00
PERCH-SITE CHARACTERISTICS IN RELATION TO PREY AND
VEGETATION COVER DENSITIES OF OVERWINTERING RED-
TAILED HAWKS (*BUTEO JAMAICENSIS*) AND AMERICAN
KESTRELS (*FALCO SPARVERIUS*)
Alexander J. Worm, Melissa M. Bobowski, and Thomas Risch.
Arkansas State University.

1:15
RELATIVE ABUNDANCE OF OVERWINTERING RED-TAILED
HAWKS (*BUTEO JAMAICENSIS*) AND AMERICAN KESTRELS
(*FALCO SPARVERIUS*) IN AN AGRICULTURAL LANDSCAPE IN
NORTHEASTERN ARKANSAS
Melissa M. Bobowski, Thomas Risch, and Virginie Rolland.
Arkansas State University

1:30
THE SCOOP ON POOP GROUPS: ELK AND MULE DEER
POPULATIONS ON THE SOUTH RIM OF THE GRAND CANYON
Deana Hughes. Southern Arkansas University.

Meeting Report

1:45
SUMMER REPRODUCTION AND SURVIVAL OF *OVIS CANADENSIS* THROUGHOUT BIGHORN CANYON NATIONAL RECREATION AREA, WY AND MT

Ali Slusher, Robert Kissell, Emily Boyd and Dani Techentin. University of Arkansas at Monticello.

2:00
SPATIAL ECOLOGY OF ROCKY MOUNTAIN BIGHORN SHEEP
Emily S. Boyd and Robert E. Kissell. University of Arkansas at Monticello.

ORAL SESSIONS II: FRIDAY 3:00-4:45.

PHYSICS **GRAND 1**
CHAIR: Dr. Hemmati

3:00
A MODEL FOR INTERACTING DARK ENERGY
Hamed Shojaei and Dacen Waters. Arkansas Tech University.

3:15
VARIANT CRYSTAL LATTICE STRUCTURE OF IRON OXIDE NANOPARTICLES UNDER SUCCESSIVE LOADINGS INTO AN ALGINATE POLYMER MATRIX
J.S. Pennington and R.J. Tackett. Arkansas Tech University.

3:30
FLUID MODEL FOR LIGHTNING RETURN STROKE
Jesse Christenson and Mostafa Hemmati. Arkansas Tech University.

3:45
WAVE PROFILE FOR CURRENT BEARING ANTIFORCE WAVES
Haley Morris and Mostafa Hemmati. Arkansas Tech University.

4:00
SIGNAL PROCESSING OF ELASTIC WAVES IN STRUCTURAL ELEMENTS
Ramanan Sivasubramanian, Dr. J. Zhang and Dr. S. Midturi. EIT/UALR.

4:15
OUTDOOR SAFEST SHELTER FROM LIGHTNING STRIKES
Miah M Adel. University of Arkansas at Pine Bluff.

4:30
A COMPARISON OF SUPERMASSIVE BLACK HOLE MASSES MEASUREMENTS USING TWO INDEPENDENT TECHNIQUES
Ismaeel Al-Baidhany¹, Marc S. Seigar¹, Benjamin Davis², Daniel Kennefick², Julia Kennefick², and Claud H.S. Lacy².
¹University of Arkansas at Little Rock. ²University of Arkansas at Fayetteville.

CHEMISTRY **GRAND 2**
CHAIR: Dr. Bhuiyan

3:00
ATOMIC ORBITAL EXPONENTS FROM VALENCE-LENGTH CORRELATIONS FOR CHEMICAL BONDS
Franklin D. Hardcastle. Arkansas Tech University.

3:15
SYNTHESIS AND CHARACTERIZATION OF RUTHENIUM MONOMER AND DIMER COMPLEXES CONTAINING PHENANTHROLINE AND CHLORO-PHENANTHROLINE
Xiaohan Du and Anwar A. Bhuiyan. Arkansas Tech University.

3:30
TITANIUM-OXYGEN BOND VALENCE-LENGTH RELATIONSHIP AND THE ORBITAL EXPONENT OF TITANIUM
Devon Dodd and Franklin D. Hardcastle. Arkansas Tech University.

3:45
MICROWAVE ASSISTED SYNTHESIS OF CHLOROPENTAHAPTO-CYCLOPENTADIENEDIPHENYL-PHOSPHINOETHANERUTHENIUM(II)
Srikanth Muthyala and Mark Draganjac. Arkansas State University.

4:00
SILICON-OXYGEN BOND VALENCE-LENGTH RELATIONSHIP AND DETERMINATION OF THE ORBITAL EXPONENT OF SILICON
Summer Laffoon and Franklin D. Hardcastle. Arkansas Tech University.

4:15
SEMICONDUCTOR FILM ELECTRODEPOSITION RESEARCH AT ARKANSAS STATE UNIVERSITY
Joshua Vangilder, Dr. Robert Engelken, Maqsood Ali Mughal and Michael Jason Newell. Arkansas State University.

4:30
MOLECULAR STRUCTURE OF PENTAHAPTO-CYCLOPENTADIENE BIS (TETRAHYDROTHIOPHENE)-TRIPHENYLPHOSPHINERUTHENIUM(II) TRIFLATE
Mark Draganjac¹, P. Nave¹ and A. W. Cordes².
¹Arkansas State University, ²University of Arkansas.

BIOLOGY II **GRAND 3**
CHAIR: Dr. Megan Powell

3:00
USE OF HIGH THROUGHPUT RNA SEQUENCING TO REVEAL TACC2s-MEDIATED BLOCKS TO MYOBLAST DIFFERENTIATION
Mariah Small, Nicholas Bailey, and Ivan H. Still. Arkansas Tech University.

3:15
Osh6 EXTENDS THE LIFESPAN VIA DOWN-REGULATION OF TORC1
Xeniya Rudolf, Yufeng Xia, and Fusheng Tang. University of Arkansas-Little Rock.

3:30
STRUCTURE OF PYRAZOLE DERIVATIVES IMPACT THEIR AFFINITY, STOICHIOMETRY, AND COOPERATIVE INTERACTIONS FOR CYP2E1 COMPLEXES
Jessica H. Hartman¹, Amber M. Burch² and Grover P. Miller¹.
¹University of Arkansas for Medical Sciences, ²Vanderbilt University.

3:45
TRICKY TRICHOMES: CHEMICAL DEFENSE IN GERANIUM AND COUNTERADAPTATION BY SOYBEAN LOOPERS
Kyle Hurley and David Dussourd. University of Central Arkansas.

4:00
EXPLORING KILLING RATES OF GERMINATED SPORES DURING INHALATION ANTHRAX INFECTION
Megan Powell. Lyon College.

4:15
COMPARATIVE BIOCHEMICAL ANALYSIS OF THREE WATER STRESSED WHEAT LINES
Jessica Bailey, Kerian J. Trice, Andra Bates, and Joseph Onyilagha. University of Arkansas at Pine Bluff.

APPLIED ECOLOGY II **GRAND 4**
CHAIR: Dr. Kirkconnell

3:00
PREVALENCE OF FELINE LEUKEMIA VIRUS AND FELINE IMMUNODEFICIENCY VIRUS IN EXURBAN FERAL CATS
Catherine Normand and Rachael E. Urbanek. Arkansas Tech University.

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- 3:15**
COMPARISON OF THE MODERN FISH ASSEMBLAGE IN MOUND POND (LONOKE COUNTY, ARKANSAS) WITH THE ARCHEOLOGICAL RECORD
Anthony V. Fernando and Michael A. Eggleton.
 University of Arkansas at Pine Bluff, Department of Aquaculture and Fisheries.
- 3:30**
ASSESSING COMMERCIAL HARVESTING PRESSURE ON AQUATIC TURTLES IN ARKANSAS – THE TRUE ‘SHELLACKING’ OF THE CENTURY
John Kelly and Stanley E. Trauth, Ph.D. Arkansas State University.
- 3:45**
MICROSATELLITE ANALYSIS OF TROPHY LARGEMOUTH BASS FROM ARKANSAS RESERVOIRS
Karl A. Lamothe and Ronald L. Johnson. Arkansas State University.
- 4:00**
NEW DISTRIBUTIONAL RECORDS AND NATURAL HISTORY NOTES ON SELECTED FISHES FROM ARKANSAS
 H. W. Robison¹, D. A. Neely², U. Thomas³, C. T. McAllister⁴, K. E. Shirley⁵, and J. K. Whalen⁶.
¹9717 Wild Mountain Drive, Sherwood, AR; ²Tennessee Aquarium Conservation Institute, ³450 Longwood Drive, Chicago Heights, IL; ⁴Science and Mathematics Division, Eastern Oklahoma State College; ⁵Arkansas Game and Fish Commission; ⁶USDA Forest Service.
- 4:15**
NEW HOST RECORDS FOR THE FISH LEECH *CYSTOBRANCHUS KLEMMI* (HIRUDINIDA: PISCICOLIDAE) ON CYPRINID FISHES FROM ARKANSAS AND OKLAHOMA
Dennis J. Richardson¹, Renn Tumilson², William E. Moser³, Chris T. McAllister⁴, Stan E. Trauth⁵ and Henry W. Robison⁶.
¹Quinnipiac University, Hamden, Connecticut, ²Henderson State University, ³Smithsonian Institution, Suitland, Maryland, ⁴Eastern Oklahoma State College, Idabel, Oklahoma, ⁵Arkansas State University, ⁶Southern Arkansas University.
- ORAL SESSIONS III: SATURDAY 9:00-11:30**
- APPLIED ECOLOGY III GRAND 1**
CHAIR: Dr. Chris Kellner
- 9:00**
EFFECTS OF BRIDGE DESIGN ON PLACEMENT AND SHAPE OF CLIFF SWALLOW NESTS IN SOUTHERN ARKANSAS
Kirsten Kendall and Renn Tumilson. Henderson State University.
- 9:15**
THE EASTERN SPOTTED SKUNK (*SPILOGALE PUTORIUS*) AT THE OUACHITA MOUNTAINS BIOLOGICAL STATION, POLK COUNTY, ARKANSAS
 Laurence M. Hardy. Ouachita Mountains Biological Station.
- 9:30**
SIZE SIMILARITY OF *SCELOPORUS CONSOBRINUS* IN TWO THERMALLY DIFFERENT HABITATS
Chris Kellner. Arkansas Tech University.
- 9:45**
DISTRIBUTION OF YELLOW GRUB (*CLINOSTOMUM* SP.) IN BLACK BASS FROM ARKANSAS OZARK AND OUACHITA RESERVOIR LAKES
James J. Daly Sr. UAMS (retired).
- 10:00**
DIRECT AND INDIRECT METHODS OF ESTIMATING DEER DENSITY ON PINE BLUFF ARSENAL
 Danielle M. Techentin and Robert E. Kissell, Jr. University of Arkansas at Monticello.
- 10:15**
OBSERVATIONS OF THE BEHAVIOR OF THE GIANT PRAIRIE ROBBER FLY (*MICROSTYLUM MOROSUM*) AT TERRE NOIRE NATURAL AREA, CLARK COUNTY, ARKANSAS
Renn Tumilson and Kristen Benjamin. Henderson State University.
- INVERTEBRATE RECORDS GRAND 2**
CHAIR: Dr. Kirkconnell
- 9:00**
MILLIPEDS (ARTHROPODA: DIPLOPODA) OF THE ARK-LA-TEX. VI. NEW GEOGRAPHIC DISTRIBUTIONAL RECORDS FROM SELECT COUNTIES OF ARKANSAS
 C. T. McAllister¹, H. W. Robison², M. B. Connior³ and L. C. Thompson⁴.
¹Science and Mathematics Division, Eastern Oklahoma State College, Idabel, OK; ²9717 Wild Mountain Drive, Sherwood, AR; ³Health and Natural Sciences, South Arkansas Community College, El Dorado, AR; and ⁴School of Forest Resources, University of Arkansas–Monticello, Monticello, AR.
- 9:15**
CHECKLIST OF ARKANSAS LEPIDOPTERA
Eric Lovely and Jim Ettman. Arkansas Tech University.
- 9:30**
DISTRIBUTION, CONSERVATION AND CURRENT STATUS OF THREE ENDEMIC HETEROSTERNUTA (COLEOPTERA: DYTISCIDAE: HYDROPORINAE) IN ARKANSAS
 Scott D. Longing¹, Pablo A. Bacon², and George L. Harp³.
¹Department of Plant and Soil Science, Texas Tech University, ²Biology Department, Southern Arkansas University, ³Professor Emeritus Department of Biological Sciences, Arkansas State University.
- 9:45**
FILLING IN THE FEW REMAINING PUZZLE PIECES; CONTINUED SAMPLING OF INSECTS INHABITING THE BURROWS OF BAIRD'S POCKET GOPHER IN ARKANSAS
Peter W. Kovarik¹, Matthew B. Connior² and Stephen W. Chordas III³.
¹Columbus State Community College, ²South Arkansas Community College, ³The Ohio State University.
- 10:00**
THE GENUS *REUTERIA* (HEMIPTERA : MIRIDAE) WITH 4 SPECIES NEW FOR ARKANSAS, USA
Steve Chordas III¹, Renn Tumilson² and Kristen Benjamin².
¹The Ohio State University, ²Henderson State University.
- 10:15**
FOUR UNCOMMON ASSASSIN BUG SPECIES (HEMIPTERA : REDUVIIDAE : EMESINAE) NEW FOR ARKANSAS, USA
Steve Chordas III¹ and Renn Tumilson².
¹The Ohio State University, ²Henderson State University.
- BOTANY GRAND 3**
CHAIR: Dr. Cynthia Jacobs
- 9:00**
DERIVING BIOMASS MODELS FOR SMALL-DIAMETER LOBLOLLY PINE ON THE CROSSETT EXPERIMENTAL FOREST
Kristin M. McElligott¹ and Don C. Bragg².
¹Arkansas Forest Resources Center, University of Arkansas, ²USDA Forest Service.
- 9:15**
COMPARING ABOVEGROUND BIOMASS PREDICTIONS FOR AN UNEVEN-AGED PINE-DOMINATED STAND USING LOCAL, REGIONAL, AND NATIONAL MODELS
Don C. Bragg¹ and Kristin McElligott².
¹USDA Forest Service, ²University of Arkansas-Monticello.

Meeting Report

9:30

ANNOUNCING PUBLICATION OF THE *ATLAS OF THE VASCULAR PLANTS OF ARKANSAS*

Brent T. Baker¹, Jennifer D. Ogle, Johnnie L. Gentry², C. Theo Witsell¹, and George P. Johnson³.

¹Arkansas Natural Heritage Commission, ²University of Arkansas, ³Arkansas Tech University.

9:45

A FIRST SPONTANEOUS RECORD OF *ACTINIDIA CHINENSIS* VAR. *DELICIOSA* (ACTINIDIACEAE) IN ARKANSAS AND THE UNITED STATES

Jeremy Palmer¹, ¹Brett Serviss¹, Troy Bray¹, and David Mason².

¹Department of Biology, Henderson State University, Arkadelphia, AR; ²Arkansas State Plant Board, Little Rock, AR.

10:00

THE STATUS OF *TRIDENS* × *OKLAHOMENSIS* (POACEAE) IN ARKANSAS AND AN UPDATED TREATMENT OF THE GENUS IN THE STATE

C. Theo Witsell and Brent T. Baker.

Arkansas Natural Heritage Commission.

10:30

ARKANSAS'S NEWEST HERBARIUM: THE HERBARIUM OF THE ARKANSAS NATURAL HERITAGE COMMISSION (ANHC)

C. Theo Witsell and Brent T. Baker.

Arkansas Natural Heritage Commission.

10:45

SOIL NEMATODES OF *BRASSICA RAPA*: ECOLOGICAL CONSIDERATIONS

M. M. Matute. University of Arkansas-Pine Bluff.

VERTEBRATE RECORDS GRAND 4

CHAIR: Dr. Stan Trauth

9:00

FIRST RECORD OF THE ORNATE BOX TURTLE (*TERRAPENE ORNATA ORNATA*) FROM THE GRAND PRAIRIE ECOREGION SINCE 1981

C. Theo Witsell¹ and Michael D. Warriner.

¹Arkansas Natural Heritage Commission, ²Texas Parks and Wildlife Department.

9:15

ADDITIONAL VERTEBRATE RECORDS AND NATURAL HISTORY NOTES FROM ARKANSAS

M. B. Connior^{1*}, R. Tumilson², H. W. Robison³, and C. T. McAllister⁴.

¹Health and Natural Sciences, South Arkansas Community College, El Dorado, AR; ²Department of Biology, Henderson State University, Arkadelphia, AR; ³9717 Wild Mountain Drive, Sherwood, AR; ⁴Division of Science and Mathematics, Eastern Oklahoma State College, Idabel, OK.

9:30

REAPPEARANCE OF THE EASTERN COLLARED LIZARD (*CROTAPHYTUS COLLARIS*) ALONG SHORELINES OF BULL SHOALS LAKE IN NORTHERN ARKANSAS

Justin L. Rheubert¹ and Stanley E. Trauth². ¹Saint Louis University and ²Arkansas State University.

9:45

NEW RECORDS OF THE SMALL-FOOTED BAT (*MYOTIS LEIBII*) IN ARKANSAS

D. B. Sasse¹, M. J. Harvey², J. J. Jackson³, P. R. Moore⁴, T. S. Risch⁴, and D. A. Saugey⁵.

¹Arkansas Game and Fish Commission, ²Tennessee Technological University, ³Jackson Environmental, ⁴Arkansas State University, ⁵Nightwing Consulting.

POSTER PRESENTATION

(Presenter is underlined)

BIOLOGY POSTERS

LS27 FUNCTION OF A "DUAL GENE" IN GROWTH AND TUMORS

Shana Chancellor¹, Hope Dunlap¹, Robert Rose¹, Helen Beneš² and Mary Stewart¹.

¹Mathematical and Natural Sciences, University of Arkansas at Monticello, Monticello AR. ²Neurobiology & Developmental Sciences, UAMS, Little Rock AR.

LS31 STATUS OF AN EXOTIC SALAMANDER, *DESMOGNATHUS MONTICOLA* (CAUDATA: PLETHODONTIDAE), AND DISCOVERY OF AN INTRODUCED POPULATION OF *COTTUS IMMACULATUS* (PERCIFORMES: COTTIDAE) IN ARKANSAS

M. B. Connior^{1*}, C. T. McAllister², and H. W. Robison³.

¹Health and Natural Sciences, South Arkansas Community College, El Dorado, AR; ²Science and Mathematics Division, Eastern Oklahoma State College, Idabel, OK; 9717 Wild Mountain Drive, Sherwood, AR.

LS34 LOSS OF PENICILLIN BINDING PROTEINS ACTIVATES THE RCS PHOSPHORELAY IN *ESCHERICHIA COLI*

Kerry Evans and Kevin D. Young. University of Arkansas for Medical Sciences.

LS28 TIPULA GROWTH RESPONSE TO VARIATION IN LEAF C:P

Jasmine Gilbert^{*}, Chris Fuller, Sally Entreklin, and Michelle A. Evans-White. University of Central Arkansas Biology Department.

LS54 IDENTIFICATION AND MORPHOLOGICAL CHARACTERIZATION OF ELEVEN MYCOBACTERIOPHAGES FROM ARKANSAS

Lindsay Johnson, Josh Rubin, Ruth Plymale and Nathan Reyna.

Ouachita Baptist University.

LS32 SCARAB BEETLES (COLEOPTERA: SCARABAEIDAE) ASSOCIATED WITH THE DUNG OF NATIVE ARKANSAS MAMMALS

J. B. Kelley¹, J. L. Hunt¹, and M. B. Connior².

¹University of Arkansas at Monticello, Monticello, AR; ²South Arkansas Community College, El Dorado, AR.

LS62 THE EVOLUTION OF EGG MIMICRY IN PASSIFLORA

Nichole Long-Aragon and Shawn E. Krosnick. Dept. of Biology, Southern Arkansas University.

LS40 CHARACTERIZATION OF GYM SURFACE MICROORGANISMS

Marcus Loudermilk, Jade Crumley and Ben Rowley.

University of Central Arkansas.

LS30 BLACK-SPOT DISEASE (DIGenea: STRIGEOIDEA: DIPLOSTOMIDAE) IN SELECT ARKANSAS FISHES

C. T. McAllister¹, R. Tumilson², H. W. Robison³, and S. E. Trauth⁴.

¹Eastern Oklahoma State College, Idabel, OK; ²Henderson State University, Arkadelphia, AR; ³9717 Wild Mountain Drive, Sherwood, AR; and ⁴Arkansas State University, State University, AR.

LS29 ECTOPARASITES OF SCIURID RODENTS IN ARKANSAS, INCLUDING NEW STATE RECORDS FOR *NEOHAEMATOPINUS* SPP. (PHTHIRAPTERA: ANOPLURA: POLYPLACIDAE)

C. T. McAllister¹, M. B. Connior², and L. A. Durden³.

¹Science and Mathematics Division, Eastern Oklahoma State College, Idabel, OK; ²Health and Natural Sciences, South Arkansas Community

Arkansas Academy of Science

College, El Dorado, AR; and ³Department of Biology, Georgia Southern University, Statesboro, GA.

LS55 GENOMIC ANALYSIS OF A MYCOBACTERIOPHAGE IDENTIFIED IN ARKANSAS

Trevor Meece, Ruth Plymale, and Nathan Reyna. Ouachita Baptist University.

LS36 THE ACUTE EFFECTS OF EXERCISE ON COGNITIVE FUNCTION IN OLDER ADULTS

Rachel Pennington, Scott Kirkconnell, and Shellie Hanna. Arkansas Tech University.

LS63 EXPLORING THE MITOCHONDRIAL CONTROL REGION: TRACING GENEALOGICAL HISTORY OF MATERNAL LINEAGE

Gregory Tyler Rives. Southern Arkansas University.

LS44 PHYSIOLOGICAL EFFECTS OF NICKEL CHLORIDE HEXAHYDRATE ON HETEROTROPHIC AQUATIC MICROBES

Desiree Shaw, Sally Entrekin, and Adam Musto. Department of Biology, University of Central Arkansas.

LS60 MORPHOMETRIC ANALYSIS OF DINOSAUR TRACKS FROM SOUTHWEST ARKANSAS

Ryan Shell¹ and Stephen K. Boss².

¹Department of Geosciences, University of Arkansas ²Environmental Dynamics Program, University of Arkansas.

LS26 RELATIONSHIP BETWEEN LAND-USE, WATER QUALITY, AND MACROINVERTEBRATE DENSITIES IN SPRING-FED STREAMS OF THE OZARK NATIONAL FOREST

Ayla Smartt, Shrijeeta Ganguly, Michelle Evans-White, and Brian Haggard. University of Arkansas, Fayetteville.

LS33 USING ANTS TO ASSESS ONGOING "PRE-EUROPEAN" RESTORATION TREATMENTS FOR LOBLOLLY PINE AT WARREN PRAIRIE NATURAL AREA IN SE ARKANSAS

Lynne Thompson and Dave General. School of Forest Resources, University of Arkansas-Monticello.

PHYSICS POSTERS

PS19 SCALING RELATIONS OF SPITZER/IRAC 3.6 μm OF SMBHS, BULGE DYNAMICAL MASS AND SPIRAL ARM PITCH ANGLES OF SPIRAL GALAXIES

Ismaeel Al-Baidhany¹, Marc Seigar¹, Ben Davis², Daniel Kennefick², Julia Kennefick² and Claud Lacy².

¹University of Arkansas at Little Rock, ²University of Arkansas at Fayetteville.

PS20 Cu₂O/SWNTs/n-Si HETEROJUNCTIONS FOR ENHANCED LIGHT HARVESTING

Muatez Z. Mohammed, Alaa Al-Hilo, Johnathan Armstrong, Tar-pin Chen, and Jingbiao Cui. University of Arkansas at Little Rock.

PS22 ELECTROCHEMICAL APPLICATIONS OF NONMETAL DOPED MESOPOROUS CARBON

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PS35 POND WATER QUALITY AT SOUTHERN ARKANSAS UNIVERSITY

Lauren Russell. Southern Arkansas University.

PS16 CALIBRATION OF THE LBNL HIGH-PRESSURE XENON TIME PROJECTION CHAMBER WITH X-RAYS FOLLOWING PHOTOELECTRIC INTERACTIONS

Barbara Rutter. Southern Arkansas University.

AD4 SPIRAL ARM PITCH ANGLE DOES NOT TIGHTLY CORRELATE WITH THE MAXIMUM ROTATIONAL VELOCITY (V_{max})

Ismaeel Al-Baidhany¹, Marc S. Seigar¹, Benjamin Davis², Daniel Kennefick², Julia Kennefick², and Claud H.S. Lacy².

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AD5 UNTITLED as of program development

Kahli Remy and Abdel Bachri. Southern Arkansas University.

CHEMISTRY POSTERS

PS23 SOLID STATE DYE SENSITIVE SOLAR CELLS ON ZnO NW AS BASIS

Samir AbdulAlmohsin. Department of Physics, University of Arkansas, Little Rock.

PS21 ODORLESS POLYMERS FROM NICOTINIC ACID

Tayvia Brownmiller, and Martin Campbell, Ph.D., Henderson State University.

PS17 MOLECULAR STRUCTURE OF



Jerry Clark¹, Srikanth Muthyala¹, Mark Draganjac¹ Michael Stone¹ and Nikolay Gerasimchuk².

¹Arkansas State University, ²Missouri State University.

PS18 DSC ANALYSIS OF THE REACTION OF CU WITH SELECT METAL HALIDES

Kyle Fournier, Donovan Tony, David Kwangkook Jeong, Mark Draganjac. Arkansas State University.

PS24 FERMI RESONANCE EFFECTS IN FOURIER TRANSFORM INFRARED (FT-IR) SPECTROSCOPY FOR CARBONYL COMPOUNDS

Brandon Merriweather, Terry Anderson, and Insu Frank Hahn.

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PS15 SYNTHESIS AND CHARACTERIZATION OF POLYPYRROLE-METAL COMPLEXES AS ELECTROCATALYST FOR OXYGEN REDUCTION REACTION

Nandan K. Peddi, Udaya B. Nasini, Anindya Ghosh, and Ali U. Shaikh. University of Arkansas at Little Rock.

MATH POSTERS

PS27 TRAINING CELLULAR AUTOMATA USING A SIMPLE CONQUER AND PREVAIL SCHEME

Anabel de la Cruz, Jared Gavin and Juan D. Serna. University of Arkansas at Monticello.

PS33 DYNAMICS OF A SYSTEM OF N-COUPLED TWO-DIMENSIONAL CHAOTIC MAPS UNDER DIFFERENT COUPLING SCHEMES

Christopher Gillison, Victoria Ryburn and Juan D. Serna. University of Arkansas at Monticello.

PS34 COBWEBS OF 2-DIMENSIONAL MAPS USING PROJECTION MATRICES

Victoria Ryburn, Christopher Gillison and Juan D. Serna. University of Arkansas at Monticello.