

2017

## Keynote Address and Meeting Program

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## **KEYNOTE ADDRESS**

**Arkansas streams will play a pivotal role in our freshwater future.**

**By Dr. Sally Entrekin  
Department of Biology, University of Central Arkansas**



Dr. Entrekin is an environmental scientist; she earned her BS in Biology at Georgia Southwestern University, and MS in Entomology from the University of Georgia, and a PhD in Biology from the University of Notre Dame. Dr. Entrekin has been a faculty member at UCA since 2008. The basic question addressed by Dr. Entrkin’s lab is: “How do natural and human disturbances interact to influence aquatic community composition and function.” Dr. Entrekin is widely published and has made many presentations at national and regional meetings. Recent work has included stream ecology in the area of the Fayetteville Shale. This work includes examining how rapid land use changes, such as natural gas extraction and urbanization, alter associated freshwater ecosystems, and how interactions among common and emerging watershed activities change stream structure and functions.

## SECTION PROGRAMS ORAL PRESENTATIONS

(Only the presenter's name was available at time of printing)

### ORAL SESSIONS: FRIDAY 1:00-5:30

#### **BIOLOGICAL SCIENCES - MEDICINE AND MICROBIOLOGY ROOM CCCS 207**

**Chair: A. Mukherjee**

**1:00**

#### **COLLAGEN INCREASES TUMORIGENICITY OF PAPILLARY THYROID CANCER CELLS HARBORING BRAFV600E MUTATIONS**

Anna Sharabura. Hendrix College

**1:15**

#### **FOCAL ADHESION KINASE DISPLAYS ALTERED REGULATION IN PAPILLARY THYROID CANCER**

Ben Zamzow. Hendrix College

**1:30**

#### **THE USE OF LIGATION INDEPENDENT CLONING TO GENERATE ESCHERICHIA COLI CAPABLE OF PRODUCING CENTRUROIDES VITTATUS SCORPION ÎŽ $\mu$ -TOXINS NA681 AND NA682 TO ALLOW FOR FURTHER ANALYSIS OF PHYSIOLOGICAL AND MEDICAL SIGNIFICANCE**

David Williams. Arkansas Tech University

**1:45**

#### **VALIDATION OF METHODS TO IMPROVE THE USE OF P19 CELLS AS A MODEL OF NEURONAL DIFFERENTIATION**

Wallace Williamson. Arkansas Tech University

**2:00**

#### **RELATIVE GENE EXPRESSION STUDY ON CENTRUROIDES VITTATUS INVESTIGATING SODIUM TOXIN GENE ACTIVITY**

Aimee Bowman. Arkansas Tech University

**2:15**

#### **USING ESCHERICHIA COLI TO GENERATE SCORPION ÎŽ $2$ -TOXINS, AS SEEN IN CENTRUROIDES VITTATUS, TO ALLOW FOR FURTHER STRUCTURAL AND PHYSIOLOGICAL ANALYSIS**

Jacob Pinkerton. Arkansas Tech University

**2:30**

#### **MITOCHONDRIA MORPHOLOGY AND ROTENONE**

Hunter Scharbor. University of Central Arkansas

**2:45**

#### **OBSERVING FSZ-B'S FUNCTION IN DICTYOSTELIUM DISCOIDEUM MITOCHONDRIAL DYNAMICS**

Pristine Pittman. University of Central Arkansas

#### **CHEMISTRY**

#### **ROOM CCCS 115**

**Chair: A. Harrington**

**1:00**

#### **FLUORESCENT INHIBITOR OF SYSTEM Xc- Alan Jackson. Arkansas Tech University**

**1:15**

#### **BOND LENGTH AND BOND VALENCE FOR TUNGSTEN - OXYGEN AND TUNGSTEN - SULFUR BONDS**

Ruth Lykins. Arkansas Tech University

**1:30**

#### **ATMOSPHERIC PHOTOCHEMISTRY STUDIES RELATED TO SATURN'S MOON TITAN**

Connor Purvis. Harding University

**1:45**

#### **ANALYSIS OF SURFACE WATERS IN SEARCY, ARKANSAS**

Jade Toth. Harding University

**2:00**

#### **BOND LENGTH AND BOND VALENCE RELATIONSHIP OF CHROMIUM OXIDES, CHROMIUM SULFIDES, MOLYBDENUM OXIDES, AND MOLYBDENUM SULFIDES**

Jordan Labrecque. Arkansas Tech University

**2:15**

#### **PHOTOCATALYTIC STERILIZATION OF AQUEOUS SOLUTIONS**

David Williams. Arkansas Tech University

**2:30**

#### **CARBON-CARBON, CARBON-OXYGEN, CARBON- NITROGEN, AND CARBON-HYDROGEN BOND VALENCE -LENGTH RELATIONSHIPS**

Franklin Hardcastle. Arkansas Tech University

**2:45**

#### **SEARCHING FOR PHARMACEUTICALS AND PERSONAL CARE PRODUCTS IN WASTEWATER IN SEARCY, ARKANSAS**

Natalie Whitlock. Harding University

#### **PHYSICS**

#### **ROOM CCCS 101**

**Chair: M. Hemmati**

**1:00**

#### **SUPPRESSION OF RADIATION-INDUCED CHROMOSOME DAMAGE BY GT3 AND THE ROLE OF MICROGRAVITY**

Calla Bassett. Southern Arkansas University

**Arkansas Academy of Science Meeting report**

**1:15**  
**A SIGN-CHANGING INTERACTION BETWEEN DARK ENERGY AND MATTER**

Jazmin Urioste. Arkansas Tech University

**1:30**  
**IONIZATION RATE FOR BREAKDOWN WAVES WITH A SIGNIFICANT CURRENT BEHIND THE WAVE FRONT**

Jesse Griffiths. Arkansas Tech University

**1:45**  
**OPTICAL AND DISPERSION PARAMETERS OF PMMA DOPED BY INDIUM SALT**

Sami Salman Chiad. Al-Mustansaryah University

**2:00**  
**DESIGN OF CENTRAL RECEIVER SOLAR THERMAL CONCENTRATOR**

Alaa H. Shneishil. Al-Mustansaryah University

**2:15**  
**A NEW RELATION BETWEEN SPIRAL ARM PITCH ANGLES (P) AND THE BULGE LUMINOSITY**

Ismaeel Al-Baidhany. Al-Mustansaryah University

**BIOLOGICAL SCIENCES AQUATICS**

**ROOM CCCS 105**

**Chair: A. Odendaal**

**1:00**  
**SPATIO-TEMPORAL DYNAMICS OF FISH ASSEMBLAGE STRUCTURE AFTER WATERSHED ALTERATION IN THE SALINE RIVER, ARKANSAS**

Aaron Burgad. University of Central Arkansas

**1:15**  
**ENVIRONMENTAL DNA VS. TRADITIONAL SAMPLING: A CASE STUDY USING THE FEDERALLY THREATENED LEOPARD DARTER, *PERCINA PANTHERINA***

Taylor Lee. Arkansas State University

**1:30**  
**GENETIC STRUCTURE AND DIVERSITY OF DISJUNCT POPULATIONS OF RAINBOW DARTERS (*ETHEOSTOMA CAERULEUM*) AND SOUTHERN REDBELLY DACE (*CHROSOMUS ERYTHROGASTER*) THROUGHOUT THE MISSISSIPPI CORRIDOR.**

Kyle Dineen. Arkansas State University

**1:45**  
**HISTORIC CHANGES IN FISH ASSEMBLAGE PATTERNS IN THE LITTLE MISSOURI RIVER, ARKANSAS**

Michelle Furr. University of Central Arkansas

**2:00**  
**SPATIOTEMPORAL POPULATION DYNAMICS OF THE CADDO MADTOM (*NOTURUS TAYLORI*)**

Brittany McCall. Arkansas State University

**2:15**  
**FISH-HABITAT ASSOCIATIONS IN THE KINGS RIVER, ARKANSAS**

Chelsey Sherwood. University of Central Arkansas

**2:30**  
**THE ANALYSIS OF COLIFORM BACTERIA IN LAKE COLUMBIA, AR.**

Kara O'Neal. Southern Arkansas University

**2:45**  
**COMPONENTS OF URBANIZATION AND URBAN PROXIMITY IDENTIFY THREATS TO STREAM WATER QUALITY**

Stephanie Stoughton. University of Central Arkansas

**BIOLOGICAL SCIENCES – GENERAL**

**ROOM CCCS 207**

**Chair: J. Kelly**

**3:30**  
**DISEASE INTRODUCTION BY ABORIGINAL HUMANS IN NORTH AMERICA AND THE PLEISTOCENE EXTINCTION**

Zachary Nickell. Hendrix College

**3:45**  
**THE USE OF COLOR AS A STATUS SIGNAL IN THE PRAIRIE LIZARD, *SCELOPORUS CONSOBRINUS***

Christopher Robinson. University of Central Arkansas

**4:00**  
**WHO CITES WHOM? COMMUNICATION INSIGHTS FROM A BIBLIOMETRIC ANALYSIS OF INVASION AND BIOLOGICAL CONTROL LITERATURE**

Ashley Schulz. Arkansas State University

**4:15**  
**ECOSYSTEM SERVICES OF THE BIG BEND REGION OF THE CHIHUAHUAN DESERT**

Helena Abad. Hendrix College

**4:30**  
**BIODIVERSITY IN BIOCUBES**

Amanda Brooks. Ouachita Baptist University

**4:45**  
**A FRACKING RACKET: DO BIRDS CHANGE THE WAY THEY SING WHEN EXPERIENCING CHRONIC NOISE FROM SHALE GAS EXTRACTION**

Claire Turkal. Harding University

**ENGINEERING & COMPUTER SCIENCE**

**ROOM CCCS 115**

**Chair: C. Frederickson**

**3:30**  
**GENERATIVE ANATOMY MODELLING LANGUAGE (GAML)**

Doga Demirel. University of Arkansas at Little Rock

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**3:45**  
**COMPUTING WIND FIELD CLOSE TO THE GROUND USING CFD IN A TORNADO CHAMBER.**  
Damaso Dominguez. University of Arkansas

**4:00**  
**SIMULATING FOODBORNE PATHOGENS IN POULTRY PRODUCTION AND PROCESSING TO DEFEND AGAINST INTENTIONAL CONTAMINATION**  
Silas Lankford. University of Arkansas

**4:15**  
**CALCULATION OF THE WIDTH AND PERIOD OF TORNADOS FROM GOOGLE EARTH DATA AND THERELATIONSHIP BETWEEN THE TORNADO'S PERIOD AND THE WIND SPEED**  
Mohammadhossein Kashefzadeh. University of Arkansas

**4:30**  
**NANOSTRUCTURES FOR INFRARED LINEAR POLARIZERS**  
Marzia Zaman. University of Arkansas

**4:45**  
**AN ACOUSTIC-BASED APPROACH FOR CONDITION MONITORING OF PIPES**  
Mitchell Collins. Arkansas Tech University

**BIOLOGICAL SCIENCES- INVERTEBRATES**  
**ROOM CCCS 105**  
**Chair: D. Barron**

**3:30**  
**A DESCRIPTION OF VARIATION IN FECUNDITY BETWEEN TWO POPULATIONS OF WOLF SPIDER *RABIDOSA RABIDA* IN SEARCY ARKANSAS USING BROOD SIZE MEASUREMENTS**  
Brandon Hogland. Harding University

**3:45**  
**SEASONAL CHANGES OF ARTHROPOD COMMUNITY STRUCTURE IN INACTIVE BISON WALLOWS**  
Sofia Varriano. Hendrix College

**4:00**  
**A FIRST LOOK INTO THE MICROBIOME OF *RABIDOSA RABIDA*, A WOLF SPIDER IN SEARCY, ARKANSAS**  
Patricia Rivera. Harding University

**4:15**  
**MIGRATION DYNAMICS OF OHIO SHRIMP, *MACROBRACHIUM OHIONE*, IN ARKANSAS**  
Geoffry Spooner. University of Central Arkansas

**4:30**  
**DISTRIBUTION, HABITAT, AND LIFE HISTORY ASPECTS OF THE SHRIMP CRAYFISH, *FAXONIUS LANCIFER* (HAGEN) (DECAPODA: CAMBARIDAE) IN ARKANSAS**  
Chris McAllister. Eastern Oklahoma State College-Idabel

**4:45**  
**CRAYFISH CHANGES TO THE ARKANSAS WILDLIFE ACTION PLAN**  
Brian Wagner. Arkansas Game and Fish Commission

**BIOLOGICAL SCIENCES- BOTANY**  
**ROOM CCCS 211**  
**Chair: A. Willyard**

**3:30**  
**TRANSCRIPTOME ANALYSIS FOR THREE *ERIGERON* (ASTERACEAE) GENOTYPES DIFFERING IN MODE OF REPRODUCTION**  
James Vire. University of Central Arkansas

**3:45**  
**MITOCHONDRIAL LINEAGES OF *PINUS* SUBSECTION PONDEROSAE TO RESOLVE THE RELATIONSHIP OF SPECIES NAMED IN THE UNITED STATES AND MEXICO**  
Mason Sifford. Hendrix College

**4:00**  
**DETERMINING THE VALIDITY OF THE SPECIES *PINUS WASHOENIS* IN THE WESTERN UNITED STATES**  
Samuel Lockhart. Hendrix College

**4:15**  
**DETERMINING RECENT HYBRIDIZATION OF PINYON PINES IN A ZONE OF SYMPATRY IN NORTHERN ARIZONA**  
Katie Dobbins. Hendrix College

**4:30**  
**SEED DISPERSAL OF *DIOSPYROS VIRGINIANA* IN THE PAST AND THE PRESENT: EVIDENCE FOR A GENERALIST EVOLUTIONARY STRATEGY**  
Taylor Stone. Hendrix College

**4:45**  
**SEED DISPERSAL IN OSAGE ORANGE (*MACLURA POMIFERA*) BY SQUIRRELS (*SCIURUS* SPP.)**  
Sophie Katz. Hendrix College

**GEOSCIENCE** **ROOM CCCS 101**  
**Chair: J. Allender**

**3:30**  
**LATE MISSISSIPPIAN (CHESTERIAN) SHALLOWING-UPWARD, EUSTATIC CYCLICITY REFLECTED BY TAPHONOMY OF PRESERVED AMMONOID CEPHALOPODS, NORTHERN ARKANSAS**  
Riley Dickson. University of Arkansas, Fayetteville

**3:45**  
**LITHOLOGIC CHARACTER, SEQUENCE AND DIAGENETIC HISTORY OF LOWER MISSISSIPPIAN TRIPOLITIC CHERT, NORTHERN ARKANSAS AND SOUTHERN MISSOURI**  
Sydney McKim. University of Arkansas, Fayetteville

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**4:00**  
**LOWER MISSISSIPPIAN, TRIPOLITIC CHERT FORMED FROM HYDROTHERMALLY EMLACED SILICA, AND ITS POSSIBLE RELATIONSHIP TO THE TRI-STATE LEAD-ZINC MINING DISTRICT**

Jonathan Chick. University of Arkansas, Fayetteville

**4:15**  
**ESTABLISHING A TRAIL VISITATION SURVEY METHOD FOR THE NATIONAL OUACHITA RECREATION TRAIL**

Emily Roberts. University of Central Arkansas

**4:30**  
**TECTONO-STRATIGRAPHIC AND SEQUENCE AND STRATIGRAPHIC SUCCESSIONS, OZARK SHELF, TRI-STATE REGION, SOUTHERN MIDCONTINENT.**

Elvis Bello. University of Arkansas, Fayetteville

**4:45**  
**SIGNIFICANCE OF THE MIDDLE MISSISSIPPIAN PALEOKARST SURFACE, WESTERN OZARK UPLIFT, ARKANSAS, KANSAS AND OKLAHOMA**

Walter Manger. University of Arkansas, Fayetteville

**ORAL SESSIONS: SATURDAY 8:00-10:15**

**BIOLOGICAL SCIENCES ROOM CCCS 105**  
**Chair: D. James**

**8:00**  
**COMPARISON OF BACTERIAL COMMUNITIES IN NATURAL AND DEVELOPED WATERSHEDS OF THE BUFFALO NATIONAL RIVER USING CULTIVATION AND 16S METAGENOMICS TECHNIQUES**

Michael Ukpog. North Arkansas College

**8:15**  
**PERSISTENCE OF DOWNSTREAM NEGATIVE IMPACT OF POINT SOURCE AND NON-POINT SOURCE STREAM POLLUTANTS**

Timothy Wakefield. John Brown University

**8:30**  
**HISTOLOGY OF RATHKE'S GLANDS IN THE RAZOR-BACKED MUSK TURTLE, *STERNOTHERUS CARINATUS* (CHELONIA: KINOSTERNIDAE), WITH COMMENTS ON LAMELLAR BODIES**

Stan Trauth. Arkansas State University

**8:45**  
**COCCIDIAN PARASITES (APICOMPLEXA: EIMERIIDAE) OF ARKANSAS HERPETOFAUNA: A SUMMARY WITH TWO NEW STATE RECORDS**

Chris McAllister. Eastern Oklahoma State College-Idabel

**9:00**  
**ECOLOGY OF BLANCHARD SPRINGS CAVERNS, OZARK NATIONAL FOREST, ARKANSAS, 42 YEARS LATER**

Selena Sasser. Southern Illinois University

**9:15**  
**VERTEBRATE NATURAL HISTORY NOTES FROM ARKANSAS, 2017**

Renn Tumblison. Henderson State University

**9:30**  
**BAT OCCUPANCY ESTIMATES AND SPECIES RICHNESS AT CACHE RIVER NATIONAL WILDLIFE REFUGE**

Virginie Rolland. Arkansas State University

**9:45**  
**RESULTS OF TRAPPING SMALL MAMMAL POPULATIONS IN A GRASSLAND AND FOREST AREA AT THE LAKE FAYETTEVILLE ENVIRONMENTAL CENTER.**

Douglas James. University of Arkansas

**10:00**  
**SULFUR OXIDATION GENOMICS IN THE AEROBIC PURPLE SULFUR BACTERIUM *HALOTHIOBACILLUS NEAPOLITANUS***

Newton Hillard. Arkansas Tech University

**ENGINEERING/CHEMISTRY ROOM CCCS 115**  
**Chair: M. Khan**

**8:00**  
**DEVELOPING A LOW COST 3D PRINTING LAB AND THE USE OF 3D PRINTING IN A FRESHMAN ENGINEERING LAB COURSE**

Mahbub Ahmed. Southern Arkansas University

**8:15**  
**RESTRAINED SHRINKAGE OF FLY ASH BASED GEOPOLYMER CONCRETE AND ANALYSIS OF LONG TERM SHRINKAGE PREDICTION MODELS**

Md Rashedul Islam. Southern Arkansas University

**8:30**  
**OPTICAL PROPERTIES OF IRRADIATED  $\text{SnO}_2$  THIN FILMS PREPARED BY CHEMICAL SPRAY PYROLYSIS**

Ali N. Mohammed. Al-Mustansaryah University

**8:45**  
**SWEETER SCORPIONATES INCORPORATE CARBOHYDRATES INTO FUNCTIONAL METAL CHELATES**

Patrick Desrochers. University of Central Arkansas

**9:00**  
**DESIGN AND SYNTHESIS OF NIR DONOR-ACCEPTOR FLUOROPHORES**

Rajib Choudhury. Arkansas Tech University

**BIOLOGICAL SCIENCES ROOM CCCS 101**  
**Chair: T. Yamashita**

**8:00**  
**GEOGRAPHIC DISTRIBUTION OF YELLOW GRUB IN SMALLMOUTH BASS POPULATIONS OF CROOKED**

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**CREEK AS DETERMINED BY METACERCARIAL CYST COUNTS IN THE GILL-MOUTH (OROBANCHIAL) SITES**

James Daly Sr. University of Arkansas for Medical Sciences (retired)

**8:15  
THE FISHES OF CHADRON CREEK, DAWES COUNTY, NEBRASKA**

Chris McAllister. Eastern Oklahoma State College-Idabel

**8:30  
ANATOMICAL DISTRIBUTION OF *CLINOSTOMUM* METACERCARIAE IN THE TISSUES OF POND-RAISED CHANNEL CATFISH**

James Daly Sr. University of Arkansas for Medical Sciences (retired)

**8:45  
PHYLOGEOGRAPHY AND VICARIANT SEPARATION OF TWO RIVER DARTERS, *PERCINA URANIDEA* AND *PERCINA VIGIL*, FROM THE NORTH AMERICAN INTERIOR HIGHLANDS**

Tsunemi Yamashita. Arkansas Tech University

**9:00  
LONG-TERM AQUATIC INVERTEBRATE MONITORING AT BUFFALO NATIONAL RIVER, ARKANSAS**

David Bowles. US National Park Services

**9:15  
DEVELOPMENT OF THE ARKANSAS CENTER FOR BIODIVERSITY COLLECTIONS (ACBC) AT ARKANSAS STATE UNIVERSITY**

Brook Fluker. Arkansas State University

**9:30  
LIRIOPE AND OPHIOPOGON: OVERVIEW OF TWO GENERA OF RUSCACEAE NATURALIZED IN THE ARKANSAS FLORA**

Megan Stone. Henderson State University

**9:45  
NEW AND NOTEWORTHY VASCULAR PLANT RECORDS FROM ARKANSAS**

Brook Olsen. Henderson State University

**10:00  
LEECH PARASITISM OF THE GULF COAST BOX TURTLE, *TERRAPENE CAROLINA MAJOR* (AGASSIZ, 1857) (TESTUDINES: EMYDIDAE)**

Dennis Richardson. Quinnipiac University

**POSTER PRESENTATIONS**

**BIOLOGICAL SCIENCES POSTER PRESENTATIONS**

1. **THE TOXICOLOGICAL EFFECTS OF DIETARY SUPPLEMENT ADDITIVES ON *DAPHNIA MAGNA*.**  
Antoinette Odendaal

2. **SUNBATHING IN THE NORTHERN ROADRUNNER: AN UNEXPLORED TRAIT FOR THEIR RANGE EXTENSION.**  
Kimberly Smith
3. **LITERATURE RECORD CHECKLIST OF TRUE BUGS (HEMIPTERA) FOR ARKANSAS WITH THE FIRST REPORT OF *PSEUDOPACHYBRACHIUS VINCTUS* (RHYPAROCHROMIDAE) (ALSO OKLAHOMA) AND AN ANALYSIS OF MIRIDAE SEX RATIO FROM LIGHT TRAPS.** Stephen Chordas III
4. **SURVEY OF RODENTS WITHIN ARKANSAS GAME AND FISH COMMISSION WILDLIFE MANAGEMENT AREAS.**  
Matthew Connior
5. **NEW RECORDS OF PARASITES (APICOMPLEXA, ACARI, ANOPLURA, NEMATODA) FROM RODENTS IN ARKANSAS.**  
Matthew Connior
6. **DISTRIBUTION OF THE EASTERN SPOTTED SKUNK, *SPILOGALE PUTORIUS*, IN THE EARLY TWENTIETH CENTURY.**  
D. Blake Sasse
7. **CENTRAL NESTS ARE MORE SUCCESSFUL AND PREFERRED FOR REUSE THAN PERIPHERAL NESTS IN CLIFF SWALLOW (*PETROCHELIDON PYRROHONOTA*) COLONIES.**  
Steward Huang
8. **THE FLEAS (ARTHROPODA: INSECTA: SIPHONAPTERA) OF ARKANSAS.**  
Matthew Connior
9. **AN ANNOTATED CHECKLIST OF THE CRAYFISHES (DECAPODA: CAMBARIDAE) OF ARKANSAS.**  
Chris McAllister
10. **UNDERSTANDING CONFRONTATIONAL BEHAVIOR OF THE RAINBOW LORIKEET (*TRICHOGLOSSUS HAEMATODUS*) AS A STRATEGY TO REDUCE ITS IMPACT AS AN INVASIVE SPECIES.**  
Victoria Veerhusen
11. **PHYSIOLOGICAL EFFECTS OF LEAD NITRATE ON FOUR ARKANSAS NATIVE PLANT SPECIES AND THE ROLE OF ARBUSCULAR MYCORRHIZAL FUNGI ON PLANT STRESS MITIGATION.**  
Nicholas Dial
12. **THE EFFECTS OF MICROGRAVITY ON VASCULAR TONE IN FEMALE MICE.**  
Sage Shaddox
13. **ANALYSIS OF THE OXIDATIVE ENZYMATIC PROPERTIES OF THE BOTTLENOSE DOLPHIN DIAPHRAGM AND SCALENUS MUSCLE.**  
McKenzie Stribling

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14. **A QUALITATIVE ANALYSIS OF MACROINVERTEBRATES IN THE UCA VERNAL PONDS.**  
DeShauna Tucker
15. **SWIMMING PREFERENCES OF GUINEA PIGS.**  
Olivia Sims
16. **THE EFFECT OF HABITAT FRAGMENTATION ON *SCELOPORUS CONSOBRINUS*-PRAIRE LIZARDS LOCATED IN CENTRAL ARKANSAS.**  
Mallory Heft
17. **A HABITAT SUITABILITY ANALYSIS OF THE RED WOLF ACROSS ITS HISTORIC RANGE.**  
Lauren Toivonen
18. **EFFECT OF STYROFOAM DIET ON THE GUT PROTISTS OF MEALWORMS (*TENEBRIO MOLITOR*).**  
Brooke Skinner
19. **LONGITUDINAL PATTERNS IN AN ARKANSAS RIVER VALLEY STREAM: TESTING THE RIVER CONTINUUM CONCEPT.**  
Angela Lenard
20. **UTILITY OF THE LOW COPY NUCLEAR GENE LEAFY FOR PHYLOGENETIC STUDIES IN THE SUNFLOWER FAMILY (ASTERACEAE), TRIBE ASTEREA.**  
Miguel Mercado
21. **RWANDAN SOCIETAL IMPROVEMENTS VIA THE USE OF ROCKET STOVES.**  
Kyle Davis
22. **ENZYME PRODUCTION AND HORMONE SIGNALING MEDIATE LONGEVITY RESPONSES TO DIETARY RESTRICTION IN *C. ELEGANS*.**  
Ashley Henderson
23. **ISOLATION OF ERYTHROCYTES FROM FRESHWATER TURTLES FOR USE IN TELOMERE LENGTH ANALYSIS.**  
EliasSmith
24. **INFLUENCE OF COMMON SALT CONCENTRATIONS ON DETRITIVORE RESPIRATION.**  
Billy Huggins
25. **BODY SHAPE VARIATION WITHIN AND AMONG LINEAGES OF THE RAINBOW DARTER, *ETHEOSTOMA CAERULEUM*.**  
Kandria Driskill
26. **EFFECTS OF BLACK-SPOT DISEASE ON THE BODY CONDITION OF BLEEDING SHINERS, *LUXILUS ZONATUS*.**  
Lindsey Martin
27. **BIOREMEDIATION OF PETROCHEMICALS FROM SOIL.**  
Mitchell Rowland
28. **WESTERN SPRUCE BUDWORM HERBIVORY INFLUENCES STREAM MACROINVERTEBRATE STRUCTURE AND BIOMASS.**  
Deion Everhart
29. **MACROINVERTEBRATE COMMUNITY RESPONSE TO A GRADIENT OF URBANIZATION IN THE WHITE OAK BAYOU WATERSHED.**  
Joshua Nilz
30. **PREY ITEMS IMPALED BY LOGGERHEAD SHRIKES IN NORTHWESTERN ARKANSAS.**  
Ross Shiery
31. **IMMUNOLOCALIZATION OF THE CADHERIN 18 PROTEIN IN FETAL KIDNEY CELLS.**  
Scotty McKay
32. **ANALYSIS OF BODY SHAPE VARIATION AMONG RESTRICTED AND WIDESPREAD POPULATIONS OF THE SOUTHERN REDBELLY DACE, *CHROSOMUS ERYTHROGASTER*.**  
Dustin Thomas
33. **RECRUITMENT AND SURVIVAL IN *LIGUSTRUM SINENSE*.**  
Mason Rostollan
34. **ANALYSIS OF A *DROSOPHILA MELANOGASTER* RIBOSOMAL PROTEIN GENE.**  
JohnMitchell
35. **EVALUATING THE EFFECTS OF BIRD FEEDERS ON SONGBIRD PLUMAGE COLORATION.**  
Stetson R. Collard
36. **SOIL CRUST ALGAL COMMUNITIES OF WARREN PRAIRIE NATURAL AREA.**  
Crystal Haynes
37. **A COMPARISON OF THE IMPACTS OF WIND ENERGY AND UNCONVENTIONAL GAS DEVELOPMENT ON LAND-USE AND ECOSYSTEM SERVICES: AN EXAMPLE FROM THE ANADARKO BASIN OF OKLAHOMA, USA.**  
Kendall Davis
38. **LAND-USE AND ECOSYSTEM SERVICES COSTS OF UNCONVENTIONAL OIL AND GAS IN THE U.S.**  
Nathan Taylor
39. **IMPACT OF BAKKEN/THREE FORKS UNCONVENTIONAL OIL AND GAS DEVELOPMENT ON IMPORTANT WILDLIFE LANDSCAPES IN NORTH DAKOTA.**  
Howden Carly
40. **OPTIMUM LIGHTING FOR OXYGEN PRODUCTION OF *ARTHROSPIRA PLATENSIS*.**  
Camryn Ruggeri
41. **CHARACTERIZING A PUTATIVE MYCO-BACTERIOPHAGE TOXIN-ANTITOXIN SYSTEM.**  
Alex Abbott



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42. **EXPRESSION OF OCT4 AND NANOG IN HUMAN FIBROBLASTS WITH SHORT TELOMERES.**  
Ethan Clement
43. **CHARACTERIZING THE PERSISTING CORTICAL SUBPLATE IN RATS ACROSS DEVELOPMENT, MATURATION, AND AGING.**  
Terri Teague
44. **GLUCOSE-MEDIATED NEUROPROTECTION AGAINST PROTEOTOXICITY IS ENERGY-DEPENDENT IN *CAENORHABDITIS ELEGANS*.**  
Landon Gatrell
45. **THE EFFECTS OF TRPC3 CHANNEL ACTIVATION ON VASCULAR TONE IN HEALTHY ARTERIES VERSUS DISEASED ARTERIES.**  
Alan Jackson.
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