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PROGRAM
Arkansas Academy of Science
87th Annual Meeting
April 4-5, 2003
Fayetteville, Arkansas

SCHEDULE OF EVENTS

Friday, April 4, 2003
9:00 a.m. - 3:00 p.m.  Registration  Bell Engineering
8:30 a.m. - 10:30 a.m.  Executive Committee Meeting  Upchurch Conf. Room, 3162 Bell Engineering
11:00 a.m. - 12:00 p.m.  First Business Meeting  Giffels Auditorium, Old Main
12:30 p.m. - 1:00 p.m.  AAS Science Ed. Committee
4:00 p.m.  Oral Presentations  Bell 4008
4:30 p.m. - 5:30 p.m.  Keynote Address: Dr. Fred Limp  BELL Auditorium
6:00 p.m. - 7:00 p.m.  Reception / Social Mixer  UARK Bowl
7:00 p.m. - 8:00 p.m.  Banquet  UARK Bowl
11:30 a.m. - 12:30 p.m.  Second Business Meeting  BELL Auditorium

Saturday, April 5, 2003
9:00 a.m. - 10:30 a.m.  Oral Presentations  BELL 4008
10:45 a.m.  Poster Presentations  BELL 4008
10:45 a.m.  Respondents  Student Lounge
1:30 p.m. - 4:00 p.m.  Biology I  SCEN 403
1:30 p.m. - 4:15 p.m.  Biology II  SCEN 406
1:30 p.m. - 4:30 p.m.  Arkansas Flora I  SCEN 407
1:30 p.m. - 4:30 p.m.  Geosciences, Science Education  SCEN 408
1:30 p.m. - 4:30 p.m.  Engineering I  BELL 268
1:30 p.m. - 2:30 p.m.  Chemistry I  BELL 269
1:30 p.m. - 3:00 p.m.  Physics  BELL 288
1:30 p.m. - 4:30 p.m.  Computer Science, Mathematics  BELL 288
2:15 p.m.  Poster Presentations  Student Lounge
2:45 p.m.  Respondents  Student Lounge
3:15 p.m.  Respondents  Student Lounge
4:00 p.m.  AAS Science Ed. Committee

SECTION PROGRAMS
* Undergraduate  **Graduate

ORAL PRESENTATIONS
Friday, April 4, 2003
Biology I: Plant Communities and Biology, and Fundamental Biology
Location: SCEN Room 403

Time  Topic
1:30  Lauren P. Blair and Matthew D. Moran, Department of Biology, Hendrix College, 1600 Washington Ave., Conway, AR 72032. PRIMARY FOREST IN ARKANSAS POST OAK SAVANNAS
1:45  Paul F. Doruska*, Robert C. Weih* Jr., Matthew D. Lane* and Don C. Bragg+, *University of Arkansas School of Forest Resources; Arkansas Forest Resources Center, PO Box 3468, Monticello, AR 71656, ‡USDA Forest Service Southern Research Station, P.O. Box 3516 UAM, Monticello, AR 71656. QUANTIFYING FOREST GROUND FLORA BIOMASS USING PROXIMAL SENSING
2:00  Travis E. Posey, Paul F. Doruska, and David W. Patterson, University of Arkansas School of Forest Resources; Arkansas Forest Resources Center, PO Box 3468, Monticello, AR 71656. INDIVIDUAL-TREE GREEN WEIGHT EQUATIONS FOR LOBLOLLY PINE SAWTIMBER IN THE COASTAL PLAIN OF ARKANSAS
2:15  C. Joan Patterson and Douglas A. James, Department of Biological Sciences, University of Arkansas, Fayetteville, AR 72701. SPEED AND ACCURACY OF METHODS FOR OBTAINING FOREST STAND MEASUREMENTS
2:30  Sarah M. Starnes and Matthew D. Moran, Biology Department, Hendrix College, 1600 Washington Ave., Conway, AR 72032. RESPONSE OF INDIVIDUAL PLANTS TO FIRE IN A RELICT GRASSLAND
2:45  K.M. Greer1, P.M. White, Jr.1, D.C. Wolf1, G.J. Thomas2, and S.E. Ziegler3, Univ. of Arkansas, 1Dept. of Crop, Soil, & Env. Sci., 2Dept. of Chem. Engr., and 3Dept. of Biol. Sci. Fayetteville, AR 72701. EVALUATION OF FIELD SCALE PHYTOREMEDIATION OF CRUDE OIL-CONTAMINATED SOIL
3:15  Eric T. Stafne1, Allen L. Szalanski2, and John R. Clark1, 1Department of Horticulture, University of Arkansas, Fayetteville, AR 72701, 2Department of Entomology, University of Arkansas, Fayetteville, AR 72701. NUCLEAR
RIBOSOMAL ITS REGION SEQUENCES FOR DIFFERENTIATION OF RUBUS GENOTYPES

3:30 Terry Hostetler, Timothy O’Brien, Max Baker, and James Daly. Departments of Microbiology and Immunology, Obstetrics and Gynecology, and Radiology; University of Arkansas for Medical Sciences, Little Rock AR 72205. THE USE OF IRRADIATED AND FORMALIN-FIXED TRICHOMONAS VAGINALIS TO EXAMINE PROTECTIVE IMMUNE RESPONSES IN THE MOUSE MODEL.

3:15 William C. Holimon. Arkansas Natural Heritage Commission, 1500 Tower Building, 323 Center Street, Little Rock, AR 72201, and Douglas A. James, Department of Biological Sciences, University of Arkansas, Fayetteville, AR 72701. NESTING WILLOW FLYCATCHERS DISCOVERED AT HARRISON, ARKANSAS.

3:45 William C. Holimon. Arkansas Natural Heritage Commission, 1500 Tower Building, 323 Center Street, Little Rock, AR 72201, Warren G. Montague, Poteau Ranger District-Ouachita National Forest, USDA Forest Service, P.O. Box 2255, Waldron, AR 72958. RECIPROCAL TRANSLOCATION REESTABLISHES BREEDING STATUS OF MISSISSIPPI ALLUVIAL PLAIN POPULATION OF RED-COCKADED WOODPECKER IN ARKANSAS.

Friday, April 4, 2003

Arkansas Flora I

Location: SCEN Room 407

3:00 Sandy A. Williams. University of Arkansas for Medical Sciences, Dept. of Biology, 4301 W. Markham, Little Rock, AR 72205; 7 U.S. Forest Service, P.O. Box 389, Hot Springs, AR 71903 and 8 U.S. Forest Service, P.O. Box 189, Jassville, AR 72149. REPORTED ANIMAL RABIES IN ARKANSAS: 1991-2000.

3:45 Tyler Blacklock, Gary A. Heidt, and David A. Saugey. 1 Dept. of Biology, University of Arkansas at Little Rock, Little Rock, AR 72204 and 2 U.S.F.S., Jassville, AR 71949. SEASONAL ACTIVITY AND EXHIBIT USE BY THE CAPYBARA (HYDROCHOERUS HYDROCHAERIS) AT THE LITTLE ROCK ZOO.

Friday, April 4, 2003

Arkansas Flora I

Location: SCEN Room 407

Time
Topic
Location
1:45
Zachary D. Ramsey and Chris T. McAllister, Department of Biology, Texas A&M University-Texarkana, Texarkana, TX 75775. BATS OF THE ARR-LA-TEX, WITH A NOTEWORTHY RECORD OF THE SEMINOLE BAT, LASIURUS SEMINOLUS (CHIROPTERA: VESPERTILIONIDAE), FROM EXTREME SOUTHWESTERN ARKANSAS.

1:45
Johnnie J. Gentry, University of Arkansas Herbarium, University of Arkansas, Biomass Research Center 141, Fayetteville, AR 72701, James H. Peck, Department of Biology, University of Arkansas at Little Rock, 2801 S. University Ave., Little Rock, AR 72204 and Sarah Numm, University of Arkansas Herbarium, University of Arkansas, Biomass Research Center 141, Fayetteville, AR 72701. WAFS, WEEDS AND INVASIVES: A PRELIMINARY REVIEW OF ARKANSAS' NON-NATIVE VASCULAR FLORA.

2:15
W. Drew Reed, Tammy Jones, J.D. Wilhide, Roger Buchanen, Betty Crump, Blake Sasse, and David A. Saugey. 1 Department of Biological Sciences, Arkansas State University, P.O. Box 591, State University, AR 72467; 2 U.S. Forest Service, P.O. Box 1270, Hot Springs, AR 71902; 3 Arkansas Game and Fish Commission, #2 Natural Resources Drive, Little Rock, AR 72205; 4 U.S. Forest Service, P.O. Box 189, Jassville, AR 72149. BRIDGE AND MINE USE BY SOUTHEASTERN MYOTIS (MYOTIS USTRORIPARIUS) IN SOUTHWEST ARKANSAS.

2:45
William C. Holimon, Arkansas Natural Heritage Commission, 1500 Tower Building, 323 Center Street, Little Rock, AR 72201, and Douglas A. James, Department of Biological Sciences, University of Arkansas, Fayetteville, AR 72701. NESTING WILLOW FLYCATCHERS DISCOVERED AT HARRISON, ARKANSAS.
HAMPTON, Ontario, Canada, L8N 3H8; C. Theo Wetzel, Arkansas Natural Heritage Commission, 1500 Tower Building, 323 Center St., Little Rock, AR 72201, USA. A NEW SPECIES OF SABATIA (GENTIANACEAE) FROM CENTRAL ARKANSAS

3:15
Theo Witez, Arkansas Natural Heritage Commission, 1500 Tower Building, 323 Center St., Little Rock, AR 72201. ADDITIONS AND NOTEWORTHY COLLECTIONS FOR THE FLORA OF ARKANSAS

3:30
Edith L. Hardcastle, University of Arkansas, Fayetteville, Department of Biological Sciences, Fayetteville, Arkansas 72701. CONSERVATION GENETICS OF DELPHINIUM NEWTONIANUM (RANUNCULACEAE)

3:45
Travis Marsico, University of Arkansas Herbarium (UARK), Biomass Research Center 141, Fayetteville, AR 72701, (479) 575-4372, tmarsic@uark.edu. ON THE RARE ENDEMIC HYDROPHYLLUM BROWNEI KRAL & BATES [BROWNIE'S WATERLEAF] NEW POPULATION INFORMATION AND A RECOMMENDATION FOR CHANGE IN STATUS

4:00
David X. Williams, Dept. of Biological Sciences, University of Arkansas, Fayetteville, AR, 72701. MOLECULAR SYSTEMATICS OF QUERCUS ACERIFOLIA: IS MAPLE-LEAF OAK REALLY A SPECIES?

4:15
Brent Baker, University of Central Arkansas, Conway, AR 72035. A PRELIMINARY SURVEY OF THE VASCULAR FLORA OF YELL COUNTY, ARKANSAS

Friday, April 4, 2003
Geosciences, Science Education
Location: SCEN Room 408

Time
Topic
1:30
David Jamieson, Arkansas State University-Newport, Department of Biological Sciences, 7648 Victory Boulevard, Newport, Arkansas 72112. TEACHING DARWIN'S THEORY OF EVOLUTION AT THE TWO-YEAR COLLEGE (Part II)

1:45
Natalie Casey, University of Arkansas, Department of Anthropology, Fayetteville, Arkansas, 72701. SEXUAL DIVERSITY AND UNIVERSITY CULTURE

2:00
Thalia M. Madewell and Mary C. Savin, Department of Crop, Soil, and Environmental Sciences, University of Arkansas, Fayetteville, Arkansas 72701. ALUMNI AND EMPLOYER PERCEPTION OF THE CSES CURRICULA: SURVEY RESULTS

2:15
Blaine W. Schubert, Environmental Dynamics Program, 113 Ozark Hall, University of Arkansas, Fayetteville, AR, 72701. FIRST RECORD OF JAGUAR (Panthera onca) FROM ARKANSAS

2:30
Gregory Vogel, Environmental Dynamics Program, 113 Ozark Hall, University of Arkansas, Fayetteville, AR, 72701; gvogel@uark.edu. RATES OF BIOMANTLE FORMATION AND ARTIFACT DEPTH DISTRIBUTIONS IN THE OZARK UPLANDS

2:45
Melinda Bodary, University of Arkansas at Pine Bluff, Department of Aquaculture and Fisheries, 1200 N. University Drive, P.O. Box 4912, Pine Bluff, Arkansas, 71611. WATERR QUALITY AND

Time
Topic
3:15
A.D. Christian, N. Bickford, J. Bouladin, L. Kanieski, C. McBride, A. Sako and J. L. Farris. 1 Department of Environmental Sciences, Arkansas State University. P.O. Box 847, State University, Arkansas, 72467. 2 Department of Biological Sciences, Arkansas State University. P.O. Box 599, State University, Arkansas 72467. WATER QUALITY OF THE BIG CREEK WATERSHED, CRAWFORD COUNTY, ARKANSAS: NUTRIENTS, HABITAT, AND MACRO-INVERTEBRATES

3:30
Eileen G. Ernenwein, Environmental Dynamics Program, 113 Ozark Hall, University of Arkansas, Fayetteville, AR 72701; eernenwe@uark.edu. HIGH-TECH ARCHAEOLOGY: MULTI-DIMENSIONAL REMOTE SENSING AT ARMY CITY, KANSAS: FUSING GROUND, AIR, AND SATELLITE DATA

3:45
Angela M. Polly and Stephen K. Boss, Department of Geosciences, 113 Ozark Hall, University of Arkansas, Fayetteville, AR 72701. ACOUSTIC MAPPING OF SEDIMENT AND AQUATIC VEGETATION IN LAKES: AN EXAMPLE FROM NORTHWEST ARKANSAS

4:00
Dorothy G. Neely and Stephen K. Boss, Environmental Dynamics Program, 113 Ozark Hall, University of Arkansas, Fayetteville, AR 72701; dneely@uark.edu. ACOUSTIC IMAGING OF SUBMERGED TOPOGRAPHY AND MASS WASTING FEATURES IN BEAVER LAKE, NORTHWEST ARKANSAS

4:15
Abbas S. Eyuboglu and Haydar J. Al-Shukri, University of Arkansas at Little Rock, 2801 South University Avenue, Little Rock, AR 72204. DETECTION OF WATER LEAKS BY USING GROUND PENETRATING RADAR

Friday, April 4, 2003
Engineering I
Location: BELL Room 268

Time
Topic
1:30
Gustavo Rehder, Dr. Robert Engelken, Randy Stidham, Richard Tanner, Brandon Passmore, and Anil Baral, Optoelectronic Materials Research Laboratory, College of Engineering, Arkansas State University, P.O. Box 1740, State University, Arkansas-Jonesboro, AR 72467. INVESTIGATION OF PHOTOCONDUCTIVITY OF INDIUM (III) SULFIDE FILMS ONTO LOW DIFFUSION, COPPER-FREE PHOTOCELL CONTACTS

1:45
Brandon Passmore, Dr. Robert Engelken, Gustavo Rehder, Randy Stidham, Richard Tanner, and Anil Baral, Optoelectronic Materials Research Laboratory, Arkansas State University - Jonesboro, P.O. Box 1740, State University, AR 72467. (870) 972-2088 bdengens@astate.edu. LIQUID AND SOLID PHASE SYNTHESIS OF THE PYRRHOTITE PHASE OF IRON SULFIDE FOR SEMICONDUCTOR AND FERROMAGNETIC APPLICATIONS

2:00
Richard Tanner, Dr. Robert Engelken, Brandon Passmore, Gustavo Rehder, and Randy Stidham; Arkansas State University, College of Engineering, P.O. Box 1740, State University, AR 72467. ELECTROLESS DEPOSITION OF

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NICKEL CONTACT PATTERNS ON PRINTED CIRCUIT BOARDS FOR USE IN PHOTOCONDUCTIVE CELLS

2:15
Anil Baral, Dr. Robert Engellen, Richard Tanner, Randy Stidham, Gustavo Rehder, and Brandon Passmore, Environmental Sciences Program/College of Engineering, Arkansas State University, P.O. Box 1740, State University (Jonesboro), AR 72467. OPTIMIZATION OF AMINO ACID-BASED TRIVALENT CHROMIUM ELECTRODEPOSITION

2:30
Vikram Bedekar, Deepak G. Bhat, Stephen A. Batzer; Department of Mechanical Engineering, University of Arkansas. EPMA STUDIES OF NEW CERAMIC MATERIAL FOR MACHINING TITANIUM ALLOYS

2:45
Kalyana Chittineni, Frank Paolino and Deepak G Bhat, Department of Mechanical Engineering, University of Arkansas, Fayetteville, AR 72701. INITIAL STUDY OF MECHANICAL ALLOYING FOR THE SYNTHESIS OF AI-Cu AGE HARDENABLE ALLOYS BY POWDER METALLURGY

3:15
A. M. Sharjah, b, c, H. A. Naseem b and S. P. Singh c, * Visiting Professor, Physics Department, Jordan University of Science and Technology, Irbid-Jordan, b, c 59217 Bell Engineering Center, University of Arkansas, Fayetteville, Arkansas 72701, USA, c Department of Physics, University of Arkansas, Fayetteville, Arkansas 72701, USA. CRYSTALLIZATION OF a-Si FILMS IN CONTACT WITH ALUMINUM METAL BY CW LASER

3:30
Marwan Barghouti, Husam Abu-safe, and Hameed Naseem, Department of Electrical Engineering, Bell Engineering, University of Arkansas, Fayetteville, AR 72701. EFFECT OF SILICON DIOXIDE INTERFACE ON ALUMINUM INDUCED CRYSTALLIZATION OF HYDRogenated AMORPHous SILICON

3:45
Mohammad Saad Abbas, H. A. Naseem, H. Abu Safe, W. D. Brown, Arkansas Photovoltaic Research Center, Department of Electrical Engineering, University of Arkansas, Fayetteville, AR, 72701. ANALYSIS AND MODELING OF ALUMINUM FTN HANCED LATERAL CRYSTALLIZATION OF HYDRogenated AMORPHous SILICON

4:00
Husam Abu-Safe, Marouf Hossain, Hameed Naseem, and William Brown, Electrical Engineering Department, University of Arkansas, Fayetteville, AR 72701, and Abdullah Al-Dhafiri, Department of Physics, King Saud University, Riyadh, Saudia Arabia. CHLORINE DOPED CdS THIN FILMS FROM CdCl2 MIXED CdS POWDER

4:15
Sunny N. Wallace, Danielle Julie Carrier, Edgar C. Clausen, Biological and Agricultural Engineering, University of Arkansas, 203 ENGR Hall, Fayetteville, AR 72701, Chemical Engineering, University of Arkansas, 3202 Bell Engineering Center, Fayetteville, AR 72701. LOW TEMPERATURE SOLVENT EXTRACTION OF MILK THISTLE (Silybum Marianum L) AND FLAVANOLIGNAN STABILITY

Friday, April 13, 2001
Chemistry I
Location: BELL Room 269

Time Topic
1:30 A. Meier, P.H. Benoit, A. Kracher, and D.W.G. Sears.

1:45 Amy Ellison, Bill Durham and Frank Millett, Department of Chemistry and Biochemistry, University of Arkansas, Fayetteville, AR 72701. SIMULATIONS OF THE FORMATION OF ASTEROIDS IN THE EARLY SOLAR SYSTEM

2:15 K.S. Trauth, W.A. Burns, and S.W. Reev, Department of Chemistry, Arkansas State University, PO Box 419, State University, AR 72467. PRELIMINARY IR STUDY OF THE REACTION OF CpRu(CO)3+ WITH ORGANIC THIOLS

2:30 Franklin D. Hardcastle, Amanda Suttles, Kenneth Trantham, and John P. Graham, Department of Physical Sciences, Arkansas Tech University, Russellville, AR 72801. RAMAN SPECTROSCOPY OF CHROMIUM CONVERSION COATINGS

Friday, April 4, 2003
Physics
Location: BELL Room 288

Time Topic
1:30 Scott Austin, University of Central Arkansas, Department of Physics and Astronomy, 201 Donaghey St, Conway, AR 72035. UCA FIBER-FED CCD SPECTROGRAPH FOR ASTRONOMICAL RESEARCH

1:45 Bao-An Li, Department of Chemistry and Physics, Arkansas State University, State University, Arkansas 72467 0419. PROBING NUCLEAR SYMMETRY ENERGY WITH HIGH ENERGY RADIOACTIVE BEAMS

2:00 Dr. Wilson J. Gonzalez-Espada and Dr. Jeff Robertson, Department of Physical Science, School of Physical and Life Science, Arkansas Tech University, 1701 North Boulder Avenue, Russellville, AR 72801. THE DOPPLER EFFECT FOR A CONSTANTLY ACCELERATING SOUND SOURCE RECEDING FROM A STATIONARY OBSERVER: DETERMINING THE ACCELERATION OF GRAVITY BASED ON ACOUSTIC DATA

2:15 Scott Arthur Ryan and Mostafa Hemmati, Department of Physical Sciences, Arkansas Tech University, Russellville, Arkansas 72801. ANTIFORCE WAVE PROFILE FOR QUASI-NEUTRAL REGION

2:30 A. M. Sharjah, a, b, H. A. Naseem b and S. P. Singh c, * Visiting Professor, Physics Department, Jordan University of Science and Technology, Irbid-Jordan, b, c 59217 Bell Engineering Center, University of Arkansas, Fayetteville, Arkansas 72701, USA, c Department of Physics, University of Arkansas, Fayetteville, Arkansas 72701, USA. CRYSTALLIZATION OF a-Si FILMS IN CONTACT WITH ALUMINUM METAL BY CW LASER

Bin Zhang, Bao-An Li, Donald Johnson, Department of...
Records of the Eastern Chipmunk (Tamias striatus) in Arkansas

Muri K. Davidson, Harish K. Shandilya, Kouji Hirota, Kunihiro Ohta, and Wayne P. Wahl, Department of Biochemistry and Molecular Biology, University of Arkansas for Medical Sciences, Little Rock, AR 72205, USA; 2Department of Genetics, Research Unit Laboratory, RIKEN Institute, Wako, Saitama 351-0198, Japan. ATFi"PCRI+M62 COMPLEX DIRECTLY LINKS STRESS-ACTIVATED MAPK AND PKA PATHWAYS VIA CHROMATIN REMODELING OF CG52+

Poster Presentations

Friday, April 4, 2003
Location: BELL 4008 Student Lounge

Time | Topic
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1:30 | Blythe Bowman. Jason Fechter, Julie Carter, John Frank, Barbara Clancy, University of Central Arkansas, Department of Biology, 150 Lewis Science Center, Conway, Arkansas 72035. **SURVIVING SUBPLATE CELLS IN SWISS WEBSTER MICE**
Charles R. McDowell, Malcolm I. McCallum, Stanley E. Trauth, Benjamin A. Wheeler, and Richard L. Shelton, 1Department of Biological Sciences, Arkansas State University, P.O. Box 399, State University, AR 72467, 2Environmental Sciences Ph.D. Program, Arkansas State University, P.O. Box 847, State University, AR 72467, 3Mammoth Spring National Fish Hatchery, P.O. Box 160, Mammoth Spring, AR 72554. **LENGTH-MASS ASSOCIATIONS OF HATCHLING ALLIGATOR SNAPPING TURTLES AT VARIOUS STAGES OF METABOLIC BONE DISEASE, WITH NOTES ON BEHAVIORAL OBSERVATIONS**
Sandra J. Kirkhoff, Marie Greene, and Gary A. Heidt, Little Rock Zoo, Little Rock, AR 72205 and Dept. of Biology, University of Arkansas at Little Rock, Little Rock, AR 72204. **SEASONAL ACTIVITY AND EXHIBIT USE BY THE CAPYBARA (HYDROCHEROUS HYDROCHAEUS) AT THE LITTLE ROCK ZOO**
D. Blake Sasse, Arkansas Game and Fish Commission, # 2 Natural Resources Drive, Little Rock, AR 72205. **NEW RECORDS OF THE EASTERN CHIPMUNK (TAMIAS STRIATUS) IN ARKANSAS**

Oral Presentations

Saturday, April 5, 2003
Biology III: Aquatic Communities and Biology
Location: SCEN Room 403

Time | Topic
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8:00 | Thomas M. Buchanan, Department of Biology, University of Arkansas – Fort Smith, Fort Smith, AR 72903, Drew Wilson and L.G. Claytonbrooke, Arkansas Game and Fish Commission, 2 Natural Resources Drive, Little Rock, AR 72205, and William G. Layher, Layer Biolgoics RTEC, Inc., 7233 Camden Cutoff Road, Pine Bluff, AR 71603. **FISHES OF THE RED RIVER IN ARKANSAS**

3:30 | Katrina Corley and Miah Adel, University of Arkansas at Pine Bluff, Pine Bluff, AR 71601; Miah Adel, Department of Chemistry & Physics, University of Arkansas at Pine Bluff, Pine Bluff, AR 71601. **FALLOUT DISTANCES AND CONCENTRATIONS OF FLUE GASES FROM THE INTERNATIONAL PAPER MILL**
Lynda Dilworth, Department of Mathematical Sciences, UAPB, Pine Bluff, AR 71601; Miah Adel, Department of Chemistry & Physics, UAPB, Pine Bluff, AR 71601. **GAUSSIAN PLUME DISTRIBUTION OF THE NONHAZARDOUS MATERIAL INCINERATION AT THE PINE BLUFF ARSENAL**
8:30 Carrie Cavenaugh and Ronald Johnson, Arkansas State University, Department of Biological Sciences, State University, AR 72467. GENETIC RELATIONSHIPS OF THE ROCK BASSES (AMBLOPLITES) AS DETERMINED BY MITOCHONDRIAL DNA ANALYSIS

8:45 Dr. Wilson J. Gonzalez-Espada and Dr. Jeff Robertson, Department of Physical Science, School of Physical and Life Science, Arkansas Tech University, 1701 North Boulder Avenue, Russellville, AR 72801. THE DOPPLER EFFECT FOR A CONSTANTLY ACCELERATING SOUND SOURCE RECEIVING FROM A STATIONARY OBSERVER: DETERMINING THE ACCELERATION OF GRAVITY BASED ON ACOUSTIC DATA

9:00 Robin L. Stingley, Billy R. Griffin, and Reid Landes, Dept. of Microbiology and Immunology, and Division of Biometry, Univ. of Arkansas for Medical Sciences, Little Rock, AR, 72205, and Stuttgart National Aquaculture Research Center, Stuttgart, AR 72160. EXPERIMENTAL CHANNEL CATFISH VIRUS INFECTION IMMIMS NATURAL INFECTION OF CHANNEL CATFISH

9:15 Chris L. Davidson and Dave Gosse, 2, 1200 Hazelwood Drive, Sheridan, Arkansas 72150. THE NATURE CONSERVANCY, Arkansas Field Office, 601 N. University, Little Rock, Arkansas 72205. STATUS AND DISTRIBUTION OF FRESHWATER MUSSELS (BIVALVIA: UNIONACEA) INHABITING THE SALINE RIVER/HOLLIE CREEK BOTTOMS AREA, SALINE COUNTY, ARKANSAS.

9:45 Elizabeth Pope and James Engman, Biology Department, Henderson State University, Box 7520, Arkadelphia, AR, 71999. FRESHWATER SPONGE SPECIES OCCURRENCE ON EGERIA DENSIS IN DEGRAY LAKE, ARKANSAS

10:00 Teri Tusson and James Engman, Biology Department, Henderson State University, Box 7520, Arkadelphia, AR, 71999. SEASONAL VARIATION IN FRESHWATER SPONGE ABUNDANCE ON AQUATIC VEGETATION IN DEGRAY LAKE, ARKANSAS

10:15 Jane Dunn, Department of Biology, Henderson State University, Box 7680 HSU, Arkadelphia, AR 71909-0001. GYRATRIX HERMAPHRODITUS: A STATE RECORD FOR ARKANSAS

10:30 Adam Rivers and James Engman, Biology Department, Henderson State University, Box 7520, Arkadelphia, AR, 71999. ANALYSIS OF DIADEMA ANTILLARUM PHILIPPI (ECHINODERMA: ECHINOIDEA) ABUNDANCE AND MACROALGAL COVER IN ST. ANN'S BAY, JAMAICA

Biology IV: Amphibian and Invertebrate Communities and Biology

Location: SCEN Room 406

Time
8:00 Topic
Malcolm J. McCallum, Robert G. Neal, Stanley E. Trauth, and Vernon Hoffman, 1, Environmental Sciences Ph.D. Program, Arkansas State University, P.O. Box 847, State University, AR 72467. AMPHIBIANS AND REPTILES AT THE ARKANSAS POST NATIONAL MEMORIAL

8:15 AMPHIBIANS AND REPTILES AT THE ARKANSAS POST NATIONAL MEMORIAL
Robyn Konvalinka and Stanley E. Trauth, Department of Biological Sciences, Arkansas State University, P.O. Box 599, State University, AR 72467-0599. EGG DISCRIMINATION IN THE WESTERN SLIMY SALAMANDER, PLETHODON ALBAGULA
Michelle N. Mary, Department of Biological Sciences, Arkansas State University, P.O. Box 599, State University, AR 72467, USA. DR. STANLEY E. TRAITH, DEPARTMENT OF BIOLOGICAL SCIENCES, ARKANSAS STATE UNIVERSITY, P.O. BOX 599, STATE UNIVERSITY, AR 72467, USA. HISTOLOGY AND HISTOCHEMISTRY OF CAUDAL COURTSHIP GLANDS IN PLETHODON ALBAGULA, P. O. UACHITAE, AND DESMOGNATHUS BREMLEYORUM

8:45 Robyn Konvalinka and Stanley E. Trauth, Department of Biological Sciences, Arkansas State University, P.O. Box 599, State University, AR 72467-0599. IMPORTANT RECORDS OF THE BIRD-VOICED TREEFROG (HYLA AVIPPCS) IN THE HEADWATERS OF THE OUCHITA RIVER DRAINAGE OF SOUTHWESTERN ARKANSAS

9:00 Malcolm J. McCallum, 1, Malcolm L. McCallum, 2, and Stanley E. Trauth 1, Environmental Sciences Ph.D. Program, Arkansas State University, P.O. Box 847, State University, AR 72467, 2Department of Biological Sciences, Arkansas State University, P.O. Box 599, State University, AR 72467. A THREE-YEAR STUDY ON WOOD FROG DEATHS IN THE SYLAMORE

9:15 Robert G. Neal, 1, Malcolm L. McCallum, 2, and Tracey Kloeze, 1, Department of Biological Sciences, Arkansas State University, P.O. Box 599, State University, AR 72467, 2Environmental Sciences Ph.D. Program, Arkansas State University, P.O. Box 847, State University, AR 72467. CALLING SITE CHARACTERIZATION OF THE ILLINOIS CHORUS FROG (PSEUDACRIS STRECKERI ILLINOENSIS)

9:45 Malcolm J. McCallum, Environmental Sciences Ph.D. Program, Arkansas State University, P.O. Box 847, State University, AR 72467, Arkansas State University, P.O. Box 599, State University, AR 72467. CAN THE ILLINOIS CHORUS FROG SURVIVE IN ARKANSAS?

10:00 Benjamin A. Wheeler, 1, Malcolm L. McCallum, 2, and Stanley E. Trauth, 1, Environmental Sciences Ph.D. Program, Arkansas State University, P.O. Box 847, State University, AR 72467, 2Department of Biological Sciences, Arkansas State University, P.O. Box 599, State University, AR 72467. FALL BREEDING OF RANA SPENOCEPHALA IN NORTHEAST ARKANSAS

10:15 G. O. Graening, The Nature Conservancy, 1037 North Main Avenue, Suite 7, Fayetteville AR 72701; Michael Slag, Dept. of Biological Sciences, University of Arkansas, 601 Science-Engineering, Fayetteville AR 72701; Kare Tinkle, Sylamore Ranger District, U.S. Forest Service, P.O. Box 1279, Mountain View AR 72560. SUBTERRANEAN FAUNA OF ARKANSAS, PART 1: SUBTERRANEAN BIODIVERSITY OF THE SYLAMORE RANGER DISTRICT, OZARK NATIONAL FOREST, ARKANSAS

10:30 G. O. Graening, The Nature Conservancy, 1037 North Main A. Wheeler 1, Benjamin A. Wheeler 2, Jennifer Bouldin, 1, Kenneth Gillespie, 2, and David Feldman, 2, Environmental Sciences Ph.D. Program, Arkansas State University, P.O. Box 847, State University, AR 72467, 2Department of Biological Sciences, Arkansas State University, P.O. Box 599, State University, AR 72467. STANLEY E. TRAITH, DEPARTMENT OF BIOLOGICAL SCIENCES, ARKANSAS STATE UNIVERSITY, P.O. BOX 599, STATE UNIVERSITY, AR 72467. FALL BREEDING OF RANA SPENOCEPHALA IN NORTHEAST ARKANSAS

10:15 G. O. Graening. The Nature Conservancy, 1037 North Main Avenue, Suite 7, Fayetteville AR 72701; Michael Slag, Dept. of Biological Sciences, University of Arkansas, 601 Science-Engineering, Fayetteville AR 72701; Kare Tinkle, Sylamore Ranger District, U.S. Forest Service, P.O. Box 1279, Mountain View AR 72560. SUBTERRANEAN FAUNA OF ARKANSAS, PART 1: SUBTERRANEAN BIODIVERSITY OF THE SYLAMORE RANGER DISTRICT, OZARK NATIONAL FOREST, ARKANSAS

10:30 G. O. Graening. The Nature Conservancy, 1037 North Main
Biodiversity of Arkansas, Part 2: Status Update of the Fousshee Cavesnail (Amnicola cora)


Prevention of Timoral-Induced Neurotoxicity by Glutathione (GSH) and Cysteine, but Not Methionine

Arkansas Flora II

Staria S. Vanderpool, Department of Biological Sciences, Arkansas State University, P. O. Box 599, State University, Arkansas 72467-0599. Plants New to the State of Arkansas

Arkansas Tech University, Russellville, AR 72801. Phylogeography of the Striped Scorpion, Centruroides Vittatus

Secretary's Report

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<th>Time</th>
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<th>Authors</th>
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<tr>
<td>8:15</td>
<td>Pradeepa Ranganjani¹, Gary A. Heidt² and Ali U. Shaikh³, Department of Chemistry, University of Arkansas, Little Rock, Little Rock, AR 72204. DETERMINATION OF BILE ACIDS IN A MIXTURE BY GAS CHROMATOGRAPHY-MASS SPECTROMETRY</td>
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<td>8:30</td>
<td>Matt Flynn and Ali U. Shaikh, Department of Chemistry, University of Arkansas, Little Rock, Little Rock, AR 72204. AN EVALUATION OF IN-SITU GENERATION OF HYDROGEN SULFIDE IN A FISH POND USING A SULFIDE ION-SELECTIVE ELECTRODE</td>
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<td>8:45</td>
<td>Amanda Bell, Marilyn Davis, Mari Scharlau, and Lois Geren. Department of Chemistry and Biochemistry, University of Arkansas, Fayetteville, AR, 72701. DESIGN OF A PHOTOACTIVE RUTHENIUM-CYTOCHROME B5 DERIVATIVE TO STUDY ELECTRON TRANSFER TO CYTOCHROME C</td>
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<td>9:00</td>
<td>Jun Gao and Grover Paul Miller, Department of Biochemistry and Molecular Biology, University of Arkansas for Medical Sciences, Little Rock, AR 72205. PROTEIN CHIMERAS AS A TOOL TO ELUCIDATE THE ROLE OF CYTOCHROME P450 REDUCTASE STRUCTURE IN THE P450-REDUCTASE COMPLEX</td>
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<td>9:15</td>
<td>Erin M. Scherer, Haiyun Sun and Roger E. Koeppel, II. Department of Chemistry and Biochemistry, University of Arkansas, Fayetteville, AR 72701. GRAMICIDIN CHANNELS WITH TRYPTOPHAN (TRP) SUBSTITUTED BY 7-aza-TRP OR 1-methyl-7-aza-TRP</td>
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<td>9:45</td>
<td>Mari K. Davidson, Wallace D. Sharif and Wayne P. Wahls, Department of Biochemistry and Molecular Biology, University of Arkansas for Medical Sciences, 4301 W. Markham Street (slot 516), Little Rock, AR 72203-7189. RECOMBINE RECI2 (SP011) ACTIVATES A MEIOSIS 1 NONDISJUNCTION / DISTRIBUTIVE SEGREGATION CHECKPOINT</td>
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<td>10:00</td>
<td>Yang Ou and Wayne L. Gray, Department of Microbiology and Immunology, University of Arkansas for Medical Sciences, Little Rock, AR 72205. SIMILAR PROPERTIES OF GENE 29 PROMOTER IN VARICELLA-ZOSTER VIRUS AND SIMIAN VARICELLA VIRUS</td>
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<td>10:15</td>
<td>Lothar Schafer, Department of Chemistry and Biochemistry, University of Arkansas, Fayetteville, AR 72701. THE IMPORTANCE OF THE QUANTUM PROPERTIES OF BIOMOLECULES FOR A COMPREHENSIVE VIEW OF EVOLUTION: QUANTUM SELECTION DRIVES EVOLUTION IN TANDEM WITH NATURAL SELECTION</td>
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<td>10:30</td>
<td>Stephen C. Grace, Department of Biology, University of Arkansas at Little Rock, Little Rock, Arkansas 72204. METAL CATALYZED HYDROXYL RADICAL FORMATION AND DNA STRAND SCISSION BY HYDROXYCINNAMIC ACIDS</td>
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<td>8:15</td>
<td>D. Robinson; R. Schupbach and J. Balda; University of Arkansas, College of Engineering, 3217 Bell Engineering Center, Fayetteville AR, 72701. MODELING OF AN ULTRACAPACITORS BANK</td>
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<td>8:30</td>
<td>Roberto M. Schupbach and Juan C. Balda; University of Arkansas, College of Engineering, 3217 Bell Engineering Center, Fayetteville AR, 72701. A VERSATILE LABORATORY TEST BENCH FOR DEVELOPING POWERTRAINS FOR ELECTRIC VEHICLES</td>
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<td>8:45</td>
<td>Jie Zhu and Wookwon Lee, Department of Electrical Engineering, University of Arkansas, 3217 Bell Engineering Center, Fayetteville, AR 72701. Email: [zhu, wookwon]@uark.edu. CHANNEL ESTIMATION FOR OFDM SYSTEMS</td>
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<td>9:00</td>
<td>Mohammad A. Khan, Wookwon Lee, Department of Electrical Engineering, University of Arkansas, 3217 Bell Engineering Center, Fayetteville, AR 72701, USA. Email: makk07, <a href="mailto:wookwon@uark.edu">wookwon@uark.edu</a>. CSMA/CA WITH SHORTEST CONTENTION WINDOW FOR MIXED TRAFFIC IN IEEE802.11 W LANS</td>
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<td>9:15</td>
<td>Mohammad T. Hossain, Junior, Pine Bluff High School, Pine Bluff, AR 71601; Miah M. Adel, Department of Chemistry &amp; Physics, University of Arkansas at Pine Bluff, Pine Bluff, AR 71601. ASSESSMENT OF ENVIRONMENTAL IMPACT FROM THE WAL-MART SUPERCENTER CONSTRUCTION BY THE STATE HIGHWAY 15 AND THE INTERSTATE HIGHWAY 530 N</td>
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<td>9:45</td>
<td>Paul C. Millet and R. Paneer Selvam, Computational Mechanics Laboratory, Bell 4190, University of Arkansas, Fayetteville, AR 72701, Phone: (479)-575-2229; Fax: (479)-575-2168, E-mail: <a href="mailto:rpm@engr.uark.edu">rpm@engr.uark.edu</a>, <a href="mailto:psmillet@engr.uark.edu">psmillet@engr.uark.edu</a>. COMPUTER MODELING OF THE TORNADO-STRUCTURE INTERACTION: INVESTIGATION OF STRUCTURAL LOADING ON CUBIC BUILDING</td>
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<td>10:00</td>
<td>Yangki Jung and R. Pannear Selvam, High Density Electronics Center, Bell 4190, University of Arkansas, Fayetteville, AR, 72701, Phone: 479-575-2229; Fax: 479-575-7168, E-mail: <a href="mailto:yjung@engr.uark.edu">yjung@engr.uark.edu</a>. NUMERICAL ANALYSIS OF MICRO-JET ARRAY COOLING DEVICE WITH VARIOUS CONFIGURATIONS</td>
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<td>10:15</td>
<td>Nathan B. Edgar and Paul S. Sherman, Asst. Prof. of Mech. Engr., Assoc. Prof. of Mech. Engr., College of Engineering, Arkansas State University, P.O. Box 1740, State University, AR 72467. HIGH-ORDER COMPACT DIFFERENCE OPERATORS FOR COMPUTATIONAL ACOUSTICS</td>
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<td>10:30</td>
<td>Paul S. Sherman and Nathan B. Edgar, Assoc. Prof. of Mech. Engr., Asst. Prof. of Mech. Engr., Arkansas State University, College of Engineering, P.O Box 1740, State University, AR 72467. INTERPOLATION TECHNIQUES FOR OVERSIZED GRIDS</td>
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**Engineering II**

**Location:** BELL Room 268

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<tr>
<td>8:00</td>
<td>J. Duck; R. Schupbach and J. Balda; University of Arkansas, College of Engineering, 3217 Bell Engineering Center, Fayetteville AR, 72701. A REGENERATIVE HIGH-POWER ELECTRONIC LOAD FOR BATTERIES AND ULTRACAPACITORS TESTING USING THE TMS320C240</td>
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[http://scholarworks.uark.edu/jaas/vol57/iss1/4](http://scholarworks.uark.edu/jaas/vol57/iss1/4)
SECRETARY'S REPORT

John P. Graham and Glen Henke, Department of Physical Science, Arkansas Tech University, Russellville, AR 72801.

AN APPROXIMATE MOLECULAR ORBITAL DESCRIPTION OF A NOVEL CHELATING CARBENE COMPLEX

Kate Ledbetter, John P. Graham, and Franklin D. Hardcastle, Department of Physical Sciences, Arkansas Tech University, Russellville, AR 72801. SPECIATION OF CHROMATE IN CHROMIUM CONVERSION COATING SOLUTIONS

Jaime L. Hardcastle, Kate Ledbetter, and Franklin D. Hardcastle, Department of Physical Sciences, Arkansas Tech University, Russellville, AR 72801. ELECTROCHEMICAL MEASUREMENTS OF CHROMIUM CONVERSION COATINGS ON ALUMINUM

Emily A. Clark and Ingrid Fritsch, Department of Chemistry and Biochemistry, University of Arkansas, Fayetteville, AR 72701. MAGNETOHYDRODYNAMIC STUDIES TOWARD THE DEVELOPMENT OF MICROFLUIDIC DEVICES

Eyitayo Fakunle, Fred Barlow and Ingrid Fritsch, Department of Chemistry and Biochemistry, Department of Electrical Engineering, University of Arkansas, Fayetteville, AR 72701. LOW TEMPERATURE CO-FIRED CERAMIC WITH SCREEN PRINTED ELECTRODES AS A PLATFORM FOR MICRO-TOTAL ANALYSIS SYSTEMS

Avinash Kashyap & Sharmila Maganlal, University of Arkansas, Dept. of Electrical Engineering, Fayetteville, Ar 72701. TESTING AND MODELING ELECTRICAL CHARACTERISTICS OF NOVEL SILICON CARBIDE (SIC) STATIC INDUCTION TRANSISTORS (SITS)

POSTER PRESENTATIONS

Saturday, April 5, 2003
Location: BELL 4008

Time Topic
8:00 Allan Holloway, University of Central Arkansas, Department of Physics and Astronomy, 201 Donahue St., Conway, AR, 72035. FABRICATION AND TESTING OF THE UCA FIBER-FED CCD SPECTROGRAPH

Jeff Robertson, Arkansas Tech University, 1701 N. Boulder, Russellville, AR 72801, Mark Pitts, Kent Honeycutt % Stella Kraft, Indiana University, Swain Hall West 319, Bloomington, IN 47405, Tut & Jeannie Campbell, ATU, 7021 Whispering Pine, Harrison, AR 72601. SYSTEMATICS OF SUPERHUMPS IN THE SU UMA DWARF NOVA V1159 ORIONIS