

1998

## 82nd Annual Meeting, 1998. Program

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## Secretary's Report

**PROGRAM**  
**Arkansas Academy of Science**  
**82nd Annual Meeting**  
**April 3-4, 1998**  
**University of Arkansas for Medical Sciences**

**SCHEDULE OF EVENTS**

Friday, April 3, 1998

11:00 a.m. - 4:00 p.m.	Registration	EDII Bldg. G level	1:00 p.m. - 4:00 p.m.	Poster Session	EDII Concourse
10:45 a.m. - 2:30 p.m.	Shuttle transport from Hilton Hotel to meeting		6:00 p.m. - 7:30 p.m.	Social Mixer	Museum of Discovery
8:30 a.m. - 10:30 a.m.	Executive Committee Meeting	EDIII Bldg., Room G222	7:15 p.m. - 8:30 p.m.	Buffet Dinner	River Market W. Pavilion
11:00 a.m. - 12:00 p.m.	First Business Meeting	EDIII Bldg., Room G230	6:00 p.m. - 9:00 p.m.	Admission to Museum of Discovery Shuttle from Hilton to River Market and back	
1:00 p.m. - 4:00 p.m.	Paper Sessions	EDII Bldg., G and B level 5	<u>Saturday, 4 April 1998</u>		
	Physics/Physical Science I	EDII Bldg., Room G137	8:00 a.m. - 10:00 am.	Registration	EDIII Bldg. Lobby
	Aquatic/Environmental Science Invertebrate Zoology	EDII Bldg., Room G106	8:00 a.m. - 11:45 am.	Paper Sessions	EDII Bldg., G and B level
	Biomedical Science	EDII Bldg., Room G110		Physics/Physical Science II	EDII Bldg., Room B107
	Chemistry I	EDII Bldg., Room B107		Zoology	EDII Bldg., Room G137
	Poster Session	EDII Concourse		Chemistry II	EDII Bldg., Room G106
2:15 p.m. - 3:45 p.m.	Refreshments	EDII Concourse		Microbiology	EDII Bldg., Room G110
4:15 p.m. - 4:30 p.m.	Welcome & Announcements	EDII Bldg., Room G141		Poster Session	EDII Concourse
4:30p.m. - 5:30p.m.	Keynote Speech Dr. Gregory Wilson, NASA "Space Science: NASA's Investment for America's Future"	EDII Bldg., Room G141	9:30 a.m. - 10:30 p.m.	Refreshments	EDII Concourse
5:00 p.m. - 6:00 p.m.	Shuttle from UAMS to Hilton Hotel		9:30 a.m. - 10:15 am.	UAMS campus tours	Start EDII, Room G112
			12:00 p.m. - 1:00 p.m.	Second Business Meeting Award Presentations	EDII Bldg., Room G137

**SECTION PROGRAMS**

\* Undergraduate    \*\*Graduate

**PAPER SESSIONS**

**Aquatic and Environmental Science/Invertebrate Zoology**  
 Location: EDII Bldg., Room G106

*Chairpersons:* Dr. John Bush, University of Arkansas at Little Rock  
 Dr. Joyce Hardin, Hendrix College

Time	Topic
1:00	Michael E. Cartwright, Stanely E. Trauth and J. D. Wilhide. Arkansas Game and Fish Commission, Calico Rock, AR 72519, and Department of Biological Sciences, Arkansas State University, State Univ., AR 72467. <b>WOOD FROG (<i>RANA</i></b>

**SYLVATICA ) USE OF WILDLIFE PONDS IN NORTH-CENTRAL ARKANSAS.**

1:15	Staria S. Vanderpool and E. Leon Richards, Department of Biological Sciences, Arkansas State University, State University, AR 72467. <b>A FLORISTIC INVENTORY OF THREE BOGS ON CROWLEY'S RIDGE IN NORTH-EAST ARKANSAS.</b>
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1:30	Chris L. Davidson <sup>1</sup> , John L. Harris <sup>2</sup> , and George L. Harp <sup>2</sup> , <sup>1</sup> University of Arkansas at Pine Bluff, Agriculture/Fisheries Center, 1200 N. University, Box 4912, Pine Bluff, AR 72611, <sup>2</sup> Arkansas State University, Department of Biological Sciences, State University, AR 72467. <b>DISTRIBUTION AND COMMUNITY STRUCTURE OF MUSSELS</b>
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## Arkansas Academy of Science

- (SUBORDER: UNIONACEA) INHABITATING OZARK AND DARDANELLE LAKES, ARKANSAS.
- 1:45 \*Theo Witsell and William Shepherd, Arkansas Natural Heritage Commission, Little Rock, AR 72201. **REDISCOVERY AFTER 162 YEARS OF *MARSILEA VESTITA* IN PULASKI COUNTY, ARKANSAS.**
- 2:00 J.L. Farris<sup>1</sup>, J.T. Knight<sup>2</sup>, C.D. Milam<sup>1</sup>, F. Buzen<sup>2</sup>, and J. F. Nix<sup>3</sup>, <sup>1</sup>Ecotoxicology Research Facility, Arkansas State University, Jonesboro, AR 72467, <sup>2</sup>Biology Department, Ouachita Baptist University, Arkadelphia, AR 71998, <sup>3</sup>The Ross Foundation, Arkadelphia, AR 71923. **IN STREAM MONITORING OF SEDIMENTS AND WATER IN THE LOWER OUCHITA RIVER FOR SITE IMPACT TO AQUATIC BIOTA.**
- 2:15 Break
- 2:45 \*\*Robin G. Roggio<sup>1</sup>, K. F. Steele<sup>2</sup>, P. F. Vendrell<sup>2</sup>, and M. A. Nelson<sup>2</sup>, <sup>1</sup>Department of Geology, University of Arkansas, 113 OH, Fayetteville, AR 72701, <sup>2</sup>Arkansas Water Resource Center, University of Arkansas, 113 OH, Fayetteville, AR 72701. **EFFECTS OF AGRICULTURAL PRACTICES ON WATER QUALITY AND NUTRIENT TRANSPORT IN TWO SMALL WATERSHEDS, NORTHWESTERN, ARKANSAS.**
- 3:00 \*\*Demetra Salisbury and Ralph K. Davis, Department of Geology, 118 Ozark Hall, University of Arkansas, Fayetteville, AR 72701. **A COMPARISON OF WATER SAMPLE COLLECTION METHODS.**
- 3:15 \*\*J.W. Bowers, L.M. Cooksey, Department of Biological Sciences, Arkansas State University, State University, AR 72467 and L. R. Hilburn, Black River Technical College, Pochontas, AR 72455. **MORPHOLOGICAL COMPARISON OF FIVE AMBYOMMA (ACARINA: IXODIDAE) SPECIES IN THE UNITED STATES.**
- 3:30 Shelly Pfitzner and David Jamieson, Department of Biological Sciences, Arkansas State University - Newport, Newport, AR 72112. **THE COLONIZATION OF AN OZARK CITY BY THE ASIAN TIGER MOSQUITO (*Aedes albopictus*).**
- 3:45 George L. Harp, Department of Biological Sciences, Arkansas State University, State University, AR 72467. **DRAGONFLIES (ODONATA) OF THE TROPICAL DRY FOREST: I. COSTA RICA.**
- 1:30 \*\*Chaojie Zhang and Philip R. Mayeux, Department of Pharmacology and Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR 72205. **ANGIOTENSIN II SIGNAL ACTIVATES THE NO-cGMP PATHWAY IN RAT PROXIMAL TUBULES.**
- 1:45 \*\*Dan C. Phan and Bruce W. Newton, Department of Anatomy, University of Arkansas for Medical Sciences, Little Rock, AR 72205. **THE DISTRIBUTION OF CHOLECYSTOKININ-8 AFFERENTS SURROUNDING LUMBOSACRAL AUTONOMIC NEURONS IS SEXUALLY DIMORPHIC AND ALTERED BY LACK OF ANDROGEN RECEPTORS.**
- 2:00 \*\*D. Bowman, J. N. Pasley, M.E. Soulsby, and P. Chowdhury, Department of Physiology and Biophysics, University of Arkansas for Medical Sciences, Little Rock, AR 72205. **ISOLATION AND CHARACTERIZATION OF A CYTOSOLIC NICOTINE BINDING PROTEIN IN ISOLATED PANCREATIC ACINI.**
- 2:15 Break
- 2:45 S. T. Miller, S. S. McCullough, P. Chowdhury, and G. T. Blevins, Jr. Department of Physiology and Biophysics, University of Arkansas for Medical Sciences, Little Rock, AR 72205. **ALTERED CCK RECEPTOR BINDING IS ASSOCIATED WITH THE DECREASED RESPONSIVENESS AND SENSITIVITY OF PANCREATIC ACINI FROM COPPER DEFICIENT RATS TO CCK8.**
- 3:00 \*Brad A. Clark and Steven W. Runge, Department of Biology, University of Central Arkansas, Conway, Arkansas 72035. **DIFFERENTIAL GENE EXPRESSION IN C3H-10T1/2 CELLS UNDERGOING APOPTOSIS DUE TO INTRACELLULAR ACIDIFICATION.**
- 3:15 \*Bruno van Swinderen<sup>1</sup>, Russell Roberson<sup>2</sup>, Randall Kopper<sup>2</sup> and Mike Crower<sup>1</sup>, <sup>1</sup>Department of Anesthesiology, Washington University School of Medicine, St. Louis, MO 63110, <sup>2</sup>Hendrix College, Conway, AR 72032. **G PROTEINS AND CALCIUM CHANNELS AFFECT HALOTHANE SENSITIVITY IN *CAENORHABDITIS ELEGANS*.**
- 3:30 \*Kim Watkins, Benjamin Hohoabu, and Dr. Richard Walker, Department of Chemistry and Physics, University of Arkansas at Pine Bluff, Pine Bluff, AR 71611. **EFFECT OF HYDROXYPROPYL- $\beta$ -CYCLODEXTRIN ON THE ANORECTIC ACTIVITY OF (-)-EPHEDRINE AND ITS PRODRUG IN RATS.**

## PAPER SESSIONS

## Biomedical Science

Location: EDII Bldg., Room G110

Chairperson: Dr. Tom Kelly, University of Arkansas for Medical Sciences  
Dr. Dennis Baeyens, University of Arkansas at Little Rock

- | Time | Topic  |
|------|--|
| 1:15 | ** <u>L. C. Maddox</u> , P.D. Walker, and P.R. Mayeux, Departments of Pharmacology and Toxicology, and Pathology, University of Arkansas for Medical Sciences, Little Rock, AR 72205. <b>THE ROLE OF INDUCIBLE NITRIC OXIDE SYNTHASE DURING RENAL ISCHEMIA-REPERFUSION INJURY.</b> |

## CHEMISTRY I

Location: EDII Bldg., Room B107

Chairpersons: Dr. Cesar Compadre, University of Arkansas for Medical Sciences  
Dr. Richard Walker, University of Arkansas at Pine Bluff

- | Time | Topic  |
|------|--|
| 1:15 | * <u>James L. Sheets</u> <sup>1</sup> , Sarah Whitfield <sup>1</sup> , Ali U. Shaikh <sup>2</sup> , J.P. Freeman <sup>3</sup> , and E.K. Fifer <sup>1</sup> , <sup>1</sup> University of Arkansas for Medical Sciences, Little Rock, AR 72205, <sup>2</sup> University of Arkansas at Little Rock, Little Rock, AR 72204, <sup>3</sup> National Center for Toxicological Research, Jefferson, AR 72079. <b>4-NITROBIPHENYLS: SYNTHESIS AND MUTAGENICITIES.</b> |

## Secretary's Report

- 1:30 \*M. Shane Greene, Rose McConnell, and Walter E. Goodwin, Division of Mathematics and Sciences, University of Arkansas at Monticello, Monticello, AR 71656. **WEAK ACIDS AND BASES COMMONLY USED IN NMR STUDIES: A pH COMPARISON IN WATER VERSUS DEUTERIUM OXIDE.**
- 1:45 \*Rebecca Jackson and Michael J. Panigot. Department of Chemistry, Arkansas State University, State University, AR 72467. **STEREOSELECTIVE SYNTHESIS OF  $\beta$ -DEUTERATED TRYPTOPHAN FROM ASYMMETRIC REDUCTION OF INDOLE-3-CARBOX(ALDEHYDE-D) FOR USE IN SOLUTION-PHASE PROTEIN STRUCTURE DETERMINATION.**
- 2:00 \*Kevin Lawrence and Michael J. Panigot. Department of Chemistry, Arkansas State University, State University, AR 72467. **EFFECTS OF AROMATIC RING SUBSTITUTION ON THE REARRANGEMENT OBSERVED IN THE ALKYLATION OF ACETOBROMOGLUCOSE WITH BENZYL GRIGNARD REAGENTS.**
- 2:15 Break
- 2:45 \*Benjamin Hohoabu, Kim Watkins, Dedrick Hayes, Dr. Ray Bakhtiar, and Dr. Richard Walker. Department of Chemistry and Physics, University of Arkansas at Pine Bluff, Pine Bluff, AR 71611. **EFFECT OF CYCLODEXTRINS ON PRO-DRUG STABILITY.**
- 3:00 \*Bobby L. Barker, Rose McConnell, Walter E. Goodwin, Division of Mathematics and Sciences, University of Arkansas at Monticello, Monticello, AR 71656. **MOLECULAR MODELING INVESTIGATION OF 3-SUBSTITUTED POLY-FURAN WITH AND WITHOUT CROSS-LINKING.**
- 3:15 \*Justin Scarbrough and Michael J. Panigot. Department of Chemistry, Arkansas State University, State University, AR 72467. **STEREOSELECTIVE SYNTHESIS OF  $\beta$ -DEUTERATED LEUCINE FROM ASYMMETRIC REDUCTION OF ISOBUTYR(ALDEHYDE-d) FOR USE IN SOLUTION-PHASE PROTEIN STRUCTURE DETERMINATION.**
- 1:45 \*R. Engelken, T. Jakobs, B. Johnson, C. Workman, M. Buck, A. Thapa, and C. Edrington, Optoelectronic Materials Research Laboratory, Arkansas State University, Jonesboro, AR 72467. (Mr. Jakobs is with InvoTek, Inc. of Alma, AR.) **PHOTOCONDUCTANCE AND OPTICAL ABSORPTION IN  $\text{In}_2\text{S}_3$  FILMS.**
- 2:00 Julie T. Nguven, W.J. Braithwaite, University of Arkansas, Little Rock AR 72204 and Edwin S. Braithwaite, Science and Mathematics, Cedarville College, Cedarville, Oh 45314. **MONTE CARLO: SAMPLING THE SPACE AND ALTERNATE FORMULATIONS.**
- 2:15 \*AJ Thapa, Dr. R. Engelken, M. Buck, C. Workman, C. Edrington, and T. Jakobs Department of Engineering, Arkansas State University, State University (Jonesboro), AR 72467. (Mr. Jakobs is with InvoTek, Inc. of Alma, AR.) **IMPROVEMENTS IN PHOTOCONDUCTIVITY IN LARGE AREA  $\text{Ag}_2\text{S}$  FILMS.**
- 2:30 Break
- 3:00 \*Trisha Crabill and Edmond W. Wilson, Jr., Department of Physical Science, Harding University, Searcy, AR 72149-0001. **CONSTRUCTION OF A NEAR INFRARED DIODE LASER SPECTROPHOTOMETER.**
- 3:15 \*Clayton Workman, Dr. Robert Engelken, C. Edrington, M. Buck, and A. Thapa, Department of Engineering, Arkansas State University, State University (Jonesboro) AR 72467. **IMPROVEMENT IN THE ELECTROPLATING OF  $\text{CuInS}_2$ .**
- 3:30 \*Shane M. Doss and Mostafa Hemmati. Physical Science Department, Arkansas Tech University, Russellville, AR 72801. **SPEED CUT-OFF POINT FOR ANTIFORCE WAVES.**
- 3:45 William C. Hall, Sue Ellen McCloskey and Wilfred J. Braithwaite, Department of Physics and Astronomy, University of Arkansas at Little Rock, Little Rock, AR 72204. **NEAR SINGULARITIES IN WEIGHTED MONTE CARLO CALCULATIONS.**

## PHYSICS/PHYSICAL SCIENCE I

Location: EDH Bldg., Room G137

Chairpersons: Dr. Robert Engelken, Arkansas State University  
Dr. W. J. Braithwaite, University of Arkansas at Little Rock

Time	Topic
1:00	* <u>Michael Gericke</u> , Philipos C. Loizou, and Donald C. Wold, Department of Physics and Astronomy, University of Arkansas at Little Rock, Little Rock, AR 72204. <b>LINEAR TRANSFORMATIONS FOR VOWEL CLASSIFICATION.</b>
1:15	* <u>Michael Buck</u> , Dr. Robert Engelken, C. Workman, A Thapa, and C. Edrington, Department of Engineering, Arkansas State University, State University (Jonesboro), AR 72467. <b>INDIUM-TELLURIUM COMPOUNDS ELECTROPLATED FROM MOLTEN SALT BATHS.</b>
1:30	* <u>Jedediah J. Young</u> , S.N. Yedave, and A.P. Malshe. Materials and Manufacturing Research Laboratory, Department of Mechanical Engineering, University of Arkansas, Fayetteville, AR 72701. <b>THE NEXT GENERATION OF INFLATABLES FOR SPACE APPLICATIONS.</b>

## PHYSICS/PHYSICAL SCIENCE I

Location: EDH Bldg., Room G137

Chairpersons: Dr. Robert Engelken, Arkansas State University  
Dr. W. J. Braithwaite, University of Arkansas at Little Rock

Time	Topic
8:30	* <u>Holly Sawyer</u> and Edmond W. Wilson Jr., Department of Physical Science, Harding University, Searcy, AR 72149-0001. <b>TROPOSPHERIC LIFETIME OF CYCLOPROPANE.</b>
8:45	* <u>Philip Williams</u> , Tony Bednar, Eric Barnett, and S.W. Reeve. Department of Chemistry, Arkansas State University, State University, AR 72467. <b>INTERFACING AN INFRARED DIODE LASER SPECTROMETER WITH LABVIEW.</b>
9:00	* <u>Kathy Herrin</u> and Edmond W. Wilson, Jr., Department of Physical Science, Harding University, Searcy, AR 72149-0001. <b>TROPOSPHERIC LIFETIME OF HYDROFLUOROCARBONS.</b>
9:15	<u>Cheryl L. Fossler</u> , Frank L. Setliff, and Ali U. Shaikh. Department of Chemistry, University of Arkansas at Little Rock, Little Rock, AR 72204. <b>ANALYSIS OF A MIXTURE OF DIHALONICOTINIC ACIDS BY GC AND GC-MS.</b>

## Arkansas Academy of Science

- 9:30 \*Wendy L. Johnson, Robert T. Swindell, and Ali U. Shaikh. Department of Chemistry, University of Arkansas at Little Rock, Little Rock, AR 72204. **SEPARATION AND QUANTIFICATION OF ISOMERIC DICHLORO BENZOIC ACIDS BY GC AND REVERSED PHASE HPLC.**
- 9:45 Dr. Frank L. Setliff and Leslie B. Coop. Department of Chemistry, University of Arkansas at Little Rock, Little Rock, AR 72204. **THE PREPARATION OF METHYL 5-CHLORO-6-FLUORONICOTINATE BY FLUORIDE-CHLORIDE EXCHANGE.**
- 10:00 Break
- 10:30 Paul M Nave<sup>1</sup>, Mark Draganjac<sup>1</sup>, Bryon Ward<sup>1</sup>, A. W. Cordes<sup>2</sup>, and Tosha M. Barclay<sup>2</sup>. <sup>1</sup>Department of Chemistry and Physics, Arkansas State University, State University, AR 72467, <sup>2</sup>Department of Chemistry and Biochemistry, University of Arkansas, Fayetteville, AR 72701. **LIGAND SUBSTITUTION OF CpRu(PPh<sub>3</sub>)<sub>2</sub><sup>+</sup> WITH TETRAHYDROTHIOPHENE. MOLECULAR STRUCTURE OF [CpRu(PPh<sub>3</sub>)(tht)<sub>2</sub>]OTf.**
- 10:45 Richard A. Vanderpool and Wayne T. Buckley USDA, ARS, Grand Forks, Human Nutrition Research Center, Grand Forks, ND 58203 and Agriculture, Canada, Brandon Research Station, Brandon, Manitoba Canada R7A 5Y3. **LIQUID-LIQUID EXTRACTION OF CADMIUM BY SODIUM DIETHYLDITHIO-CARBAMATE FROM BIOLOGICAL MATRICES FOR ISOTOPE DILUTION ICP-MS.**
- 11:00 M. A. Miah, Department of Chemistry & Physics, University of Arkansas at Pine Bluff, Pine Bluff, AR 71611. **MICROLEVEL CLIMATE CHANGE DUE TO CHANGE IN SURFACE FEATURES.**
- 11:15 Thomas L. Foti and George Bunkenhofer, Arkansas Natural Heritage Commission, Little Rock, AR 71920. **SECTION AND SUBSECTIONS OF THE INTERIOR HIGHLANDS OF ARKANSAS AND OKLAHOMA.**
- 11:30 Paul D. Mixon, Department of Engineering, Arkansas State University, State University, AR 72467. **SITING HIGH VOLTAGE ELECTRICAL FACILITIES IN ARKANSAS: ENVIRONMENTAL, LEGAL, AND REGULATORY CONSIDERATIONS.**
- MICROBIOLOGY**  
Location: EDII Bldg., Room G110
- Chairpersons: Dr. Marie Chow, University of Arkansas for Medical Sciences  
Dr. Scott Kirkconnell, Arkansas Tech University
- | Time  | Topic  |
|-------|--|
| 8:45  | *Any M. Hardwick and F. W. Speigel, Department of Biological Sciences, University of Arkansas, Fayetteville, AR 72701. <b>THE AMOEBA BIOTA OF PINEY DITCH SWAMP, MONROE COUNTY, ARKANSAS.</b>  |
| 9:00  | *Nichele M. Anderson and Shelton Fitzpatrick, Department of Biology, University of Arkansas at Pine Bluff, AR 71601. <b>MICROORGANISMS IN COMMON PLACES.</b>   |
| 9:15  | *Lori Sale, Tiffany Schirmer, Richard Wirges, Eric Anderson, and Dr. Scott Kirkconnell Arkansas Tech University, Russellville, AR 72801. <b>COLIFORM EVALUATION AND SOURCE DETERMINATION FOR THE RIVER VALLEY WATERWAYS.</b>   |
| 9:30  | *Kristy Jones and Dr. Juneann Murphy. Department of Biology, John Brown University, Siloam Springs, AR 72761, and Department of Microbiology and Immunology, University of Oklahoma Health Sciences Center, Oklahoma City Oklahoma, 26901. <b>IN VITRO GROWTH CHARACTERISTICS OF TWO CRYPTOCOCCUS NEOFORMANS ISOLATES.</b>   |
| 9:45  | *Jeremy Alan Warford <sup>2</sup> , Dr. Paul Hermonat <sup>1</sup> , and Dr. Joyce Hardin <sup>2</sup> . <sup>1</sup> University of Arkansas for Medical Sciences, Little Rock, AR 72205, <sup>2</sup> Hendrix College, Department of Biology, Conway, AR 72032. <b>THE UTILITY OF ADENO-ASSOCIATED VIRUS AS A TRANSDUCTION VECTOR.</b>  |
| 10:00 | Break  |
| 10:30 | **Allen Dye <sup>1</sup> , James Daly <sup>2</sup> , James Pasley <sup>3</sup> , Carl Long <sup>4</sup> , and David Stuckey <sup>5</sup> , University of Arkansas for Medical Sciences Department of <sup>1</sup> Pharmacology and Toxicology, <sup>2</sup> Microbiology and Immunology, <sup>3</sup> Physiology and Biophysics, <sup>4</sup> Arkansas State Department of Health, and <sup>5</sup> Arkansas Children's Hospital, Little Rock, AR 72205. <b>GIARDIASIS IN ARKANSAS: AGE DISTRIBUTION AND THE GIARDIA SEASON.</b> |
| 10:45 | Robin Jordan, Rhonda Williams, Nanette Gusick, and Wayne L. Gray. Department of Microbiology and Immunology, University of Arkansas for Medical Sciences, Little Rock, AR 72205. <b>PATHOGENESIS OF CHANNEL CATFISH HERPESVIRUS.</b>   |
| 11:00 | Rhonda J. Williams, Kenneth F. Soike, and Wayne L. Gray, Department of Microbiology and Immunology, University of Arkansas for Medical Sciences, Little Rock, AR 72205. <b>RAPID DIAGNOSIS OF SIMIAN VARICELLA USING THE POLYMERASE CHAIN REACTION.</b>  |
- PHYSICS/PHYSICAL SCIENCE II**  
Location: EDII Bldg., Room B107
- Chairpersons: Dr. Roger Hawk, University of Arkansas at Little Rock  
Dr Edwin Braithwaite, Cedarville College, Cedarville, OH
- | Time | Topic   |
|------|---|
| 8:00 | Viet V. Dinh, Physics & Astronomy, University of Arkansas, Little Rock, AR 72204 and Edwin S. Braithwaite, Science and Mathematics, Cedarville College, Cedarville, OH 45314. <b>MONTE CARLO VS ANALYTICAL OR CLOSED FORM (PROBLEM) SOLUTIONS.</b>  |
| 8:15 | Sayed Saiful Afsar Al-Mahmood, H. A. Naseem, and W. D. Brown, Department of Engineering, University of Arkansas, Fayetteville, AR 72701. <b>EFFECT OF SUBSTRATE TEMPERATURE/FILM THICKNESS ON ELECTRICAL/OPTICAL PROPERTIES OF CDS FILM AND IMPROVEMENT OF FILM QUALITY BY HEAT/CDCL<sub>2</sub> TREATMENT.</b> |
| 8:30 | W. J. Braithwaite, Physics and Astronomy, University of Arkansas, Little Rock, AR 72204 and E.S. Braithwaite, Science and Mathematics, Cedarville College, Cedarville, OH 045314. <b>CONTINUOUS MONITORING OF STAR'S MAIN TIME PROJECTION CHAMBER.</b>  |
| 8:45 | M. A. Miah, Department of Chemistry & Physics, University of Arkansas at Pine Bluff, Pine Bluff, AR 71611; K. Nagata, Faculty of Engineering, Tamagawa University, Machida, Tokyo, Japan; T. Kohno, Instructor of Physical & Chemical   |

## Secretary's Report

Research, Wako, Saitama, Japan; H. Murakami and A. Nakamoto, Department of Physics, Rikkyo University, Nishi-Ikebukuro, Tokyo, Japan; J. Kikuchi and T. Doke, Science & Engineering Research Lab, Waseda University, Shinjuku, Tokyo, Japan; and N. Hasebe, Faculty of General Education, Ehime University, Matsuyama, Ehime, Japan. **ANALYSIS OF OLD SATELLITE DATA: EXOS-C'S OBSERVATION OF OFF-EQUATORIAL GLOBAL ZONES OF ENERGETIC PARTICLE PRECIPITATION.**

- 9:00 \*Candace Lindsey, Anthony Bednar, Philip Williams, Eric Barnett, and S.W. Reeve, Department of Chemistry, Arkansas State University, State University, AR 72467. **INFRARED LASER SPECTROSCOPY OF JET COOLED MANGANESE PENTACARBONYL HALIDES.**
- 9:15 \*Anthony Bednar, Candace Lindsey, Philip Williams, Eric Barnett, and S.W. Reeve. Department of Chemistry, Arkansas State University, State University, AR 72467. **INFRARED LASER SPECTROSCOPY OF JET COOLED MOLECULES.**
- 9:30 Break
- 10:00 \*\*Timothy W. Wofford and Dr. Roger M. Hawk, Department of Applied Science, University of Arkansas at Little Rock, Little Rock, AR 72204. **A STUDY OF RUTHENIUM OXIDE COATING FOR USE IN THIN FILM CAPACITORS.**
- 10:15 \*\*Dr. Al Adams, Dr. Keith Hudson, Richard Homard, Applied Science, University of Arkansas at Little Rock, Little Rock AR 72204. **LOW POWER DIODE LASERS FOR RAMAN SPECTROSCOPY.**
- 10:30 \*\*E. A. Khalifa, M. S. Haque, H. A. Naseem, and W. D. Brown, Department of Electrical Engineering, University of Arkansas, Fayetteville, AR 72701. **CHARACTERIZATION OF POLYSILICON FABRICATED BY LOW TEMPERATURE METAL INDUCED CRYSTALLIZATION OF AMORPHOUS SILICON.**
- 10:45 H.A. El-Jammal, M. S. Haque, H. A. Naseem, and W. D. Brown, Department of Electrical Engineering, University of Arkansas, Fayetteville, AR 72701. **PN JUNCTION DEVICES FABRICATED USING LOW TEMPERATURE METAL INDUCED CRYSTALLIZATION OF AMORPHOUS SILICON.**
- 11:00 E. S. Braithwaite, Science and Mathematics, Cedarville College, Cedarville, OH 45314, Christine A. Byrd and W.J. Braithwaite, University of Arkansas, Little Rock, AR 72204. **EFFECTS ON ISOTROPIC DATA OF FINITE SAMPLING & SYSTEMATIC ERRORS.**
- 11:15 Sue Ellen McCloskey, William C. Hall and Wilfred J. Braithwaite, Department of Physics and Astronomy, University of Arkansas at Little Rock, Little Rock, AR 72204. **APPLYING BINOMIAL STATISTICS TO WEIGHTED MONTE CARLO PROBLEMS.**
- 11:30 Mark Anthony Conti, Charles R. Bowlus, Department of History and W.J. Braithwaite, Department of Physics and Astronomy, University of Arkansas, Little Rock, AR 72204. **EVIDENCE FOR MASS PRODUCTION OF SWORDS IN THE TENTH CENTURY.**

## ZOOLOGY

Location: EDII Bldg., Room G137

Chairpersons: Dr. Stan Trauth, Arkansas State University  
Dr. Gary Heidt, University of Arkansas at Little Rock

- | Time  | Topic  |
|-------|--|
| 8:15  | ** <u>Shawn M. Cochran</u> , Vernon Hoffman, V.R. McDaniel, and J.D. Wilhide. Department of Biology, Arkansas State University, State University, AR 72467. <b>PRELIMINARY SURVEY OF BAT SPECIES ABUNDANCE AND DIVERSITY IN A SOUTHERN BOTTOMLAND HARDWOOD SWAMP.</b>  |
| 8:30  | Daniel R. England and <u>David A. Saugey</u> , Department of Biology, Southern Arkansas University, Magnolia, AR 71753, and United States Forest Service, Ouachita National Forest, Jessieville, AR 71949. <b>RADIOTELEMETRY STUDY OF <i>CORYNORHINUS RAFINESQUII</i> IN SOUTHERN ARKANSAS.</b>  |
| 8:45  | <u>Douglas A. James</u> , Department of Biological Sciences, University of Arkansas, Fayetteville, AR 72701. <b>QUANTIFICATION OF THE INCREASE IN NUMBER OF AVIAN SPECIES WITH CORRESPONDING INCREASE IN HABITAT COMPLEXITY.</b>   |
| 9:00  | ** <u>Brady Baker</u> , V. R. McDaniel, J.D. Wilhide, and Betty G. Crump <sup>1</sup> , Arkansas State University, Department of Biology, AR72467, <sup>1</sup> Ouachita National Forest, Caddo Ranger District, AR71943. <b>USE OF ARTIFICIAL ROOST STRUCTURES BY BATS IN THE OUACHITA NATIONAL FOREST.</b>   |
| 9:15  | <u>James E. Kellum</u> , Arkansas Forest Resources Center, School of Forest Resources, U of Arkansas at Monticello, Monticello, AR 71656, Edmond J. Bacon, Division of Mathematics and Science, U of Arkansas at Monticello, Monticello, AR 71656, Brian R. Lockhart, Arkansas Forest Resources Center, School of Forest Resources, University of Arkansas at Monticello, Monticello, AR 71656. <b>HERPETOFAUNAL COMPOSITION FOLLOWING COMPLETE AND PARTIAL HARVESTING IN A BOTTOMLAND HARDWOOD ECOSYSTEM.</b> |
| 9:30  | <u>Stanley E. Trauth</u> and J.D. Wilhide. Department of Biological Sciences, Arkansas State University, State University, AR 72467. <b>MOVEMENTS OF ALLIGATOR SNAPPING TURTLES (<i>MACROCLEMYS TEMMINCKII</i>) IN A NORTHEASTERN ARKANSAS STREAM USING RADIO TELEMETRY.</b>   |
| 9:45  | Break  |
| 10:15 | <u>Butch E. Hamlett</u> , Andy G. Streaker, and Stanley E. Trauth, Department of Biological Sciences, Arkansas State University, State University, AR 72467. <b>CAUDAL COURTSHIP GLANDS IN THE CAVE SALAMANDER, <i>EURYCEA LUCIFUGA</i> (CAUDATA: PLETHODONTIDAE).</b>   |
| 10:30 | * <u>Chad W. Hargrave</u> and James E. Johnson, U.S. Geological Survey, Biological Resources Division, Arkansas Cooperative Fish and Wildlife Research Unit, University of Arkansas, Fayetteville, AR 72701. <b>CURRENT STATUS OF ARKANSAS DARTER (<i>ETHEOSTOMA CRAGINI</i>) AND LEAST DARTER (<i>ETHEOSTOMA MICROPERCA</i>) IN ARKANSAS.</b>   |
| 10:45 | Donald Phillips and <u>Thomas Nelson</u> , Zoology Department, Eastern Illinois University, Charleston, IL 61920. <b>PHYSICAL CONDITION AND REPRODUCTIVE SUCCESS OF DEER ON FORT CHAFFEE.</b>  |

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- 11:00 J. D. Wilhide, Brady Baker, V. Rick McDaniel, and Michael J. Harvey<sup>1</sup> Arkansas State University, Department of Biology, State University, AR 72467. Tennessee Technological University, Department of Biology, Cookeville, TN 38505. **BATS OF THE OZARK NATIONAL FOREST: BUFFALO AND SYLAMORE RANGER DISTRICTS.**
- 11:15 David A. Saugey, Robin L. Vaughn, Betty G. Crump and Gary A. Heidt. United States Forest Services, Ouachita National Forest, Hot Springs, AR 71902, Department of Biology, University of Arkansas at Little Rock, Little Rock AR 72204 (GAH). **NOTES ON THE NATURAL HISTORY OF *LASIURUS BOREALIS* CHIROPTERA: VESPERTILIONIDAE) IN ARKANSAS.**
- 11:30 J. D. Wilhide and Brady Baker, Arkansas State University, Department of Biology, State University, AR 72467. **ARKANSAS RANGE EXTENSION OF THE SEMI-NOLE BAT (*LASIURUS SEMINOLUS*).**

## POSTER SESSION

Location: EDII Bldg., Room G Concourse

### Topic

#Sarah Blossom, Kathleen M. Gilbert. Department of Microbiology and Immunology. University of Arkansas for Medical Sciences, 4301 West Markham St., Little Rock, AR, 72205. **CD40 LIGAND-EXPRESSING B CELLS FROM BXS<sub>B</sub> MICE PROMOTE ANTIBODY PRODUCTION.**

#Charlotte A. Dayer, Dean Wright, Christopher Moore, and Galen R. Wenger, University of Arkansas for Medical Sciences, Department of Pharmacology and Toxicology, Little Rock, Arkansas 72205-7199. **EFFECTS OF SCHEDULES OF REINFORCEMENT AND DRUGS OF ABUSE ON SHORT-TERM MEMORY PERFORMANCE.**

#J.K. Divine, R.J. Hine, R. Hakkak, L. Dumenci; University of Arkansas for Medical Science, Department of Dietetics and Nutrition, Slot 627, Little Rock, AR 7220. **DIETARY METHIONINE AND ITS RELATIONSHIP TO PLASMA HOMOCYSTEINE LEVELS IN CHILDREN AND ADOLESCENTS.**

#Whitney A. Hayes, Jon R. Pierce, Jerry A. Farris, Anne A. Grippo, Dept. Biological Sciences, Arkansas State University, State University, AR 72467. **VITELLOGENIN PURIFICATION FROM THE SLIDER TURTLES *Trachemys scripta***

#Jonathan L. Norman, Brian Bakke, David W. Paul, Department of Chemistry and Biochemistry, Chemistry Building, University of Arkansas, Fayetteville, AR 72701. **COMPUTER INTERFACING A WENKING POTENTIOSTAT FOR EQCM APPLICATIONS.**

#Andrew Strecker, Anne A. Grippo, Dept. Biological Sciences, Arkansas State University, State University, AR 72467; Michael E. Baker, University of California, San Diego. **DISPLACEMENT OF STEROID HORMONES FROM SEX HORMONE BINDING GLOBULIN BY PHYTOESTROGENS.**