

2003

87th Annual Meeting, 2003. Program

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Secretary's Report

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

SCHEDULE OF EVENTS

<u>Friday, April 4, 2003</u>			4:30 p.m. - 5:30 p.m.	Keynote Address: Dr. Fred Limp <i>A Sense of Where You Are: The Growing Role of Geospatial Technologies in Arkansas</i>	BELL Auditorium
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	6:00 p.m. - 7:00 p.m.	Reception / Social Mixer	UARK Bowl
11:00 a.m. - 12:00 p.m.	First Business Meeting	Giffels Auditorium, Old Main	7:00 p.m. - 8:00 p.m.	Banquet	UARK Bowl
	Oral Presentations		<u>Saturday, April 5, 2003</u>		
1:30 p.m. - 4:00 p.m.	Biology I	SCEN 403	8:00 a.m. - 10:45 a.m.	Biology III	SCEN 403
1:30 p.m. - 4:15 p.m.	Biology II	SCEN 406	8:00 a.m. - 10:45 a.m.	Biology IV	SCEN 406
1:30 p.m. - 4:30 p.m.	Arkansas Flora I	SCEN 407	8:00 a.m. - 10:45 a.m.	Biology V	SCEN 407
1:30 p.m. - 4:30 p.m.	Geosciences, Science Education	SCEN 408	8:00 a.m. - 10:45 a.m.	Arkansas Flora II	SCEN 408
1:30 p.m. - 4:30 p.m.	Engineering I	BELL 268	8:00 a.m. - 10:30 a.m.	Chemistry II	BELL 269
1:30 p.m. - 2:30 p.m.	Chemistry I	BELL 269	8:00 a.m. - 10:45 a.m.	Engineering II	BELL 268
1:30 p.m. - 3:00 p.m.	Physics	BELL 288	8:00 a.m. - 10:30 a.m.	Engineering III	BELL 288
1:30 p.m. - 4:30 p.m.	Computer Science, Mathematics	BELL 288			
1:30 p.m. - 4:00 p.m.	Poster Presentations	BELL 4008 Student Lounge	8:00 a.m. - 11:00 a.m.	Poster Presentations	BELL 4008 Student Lounge
4:00 p.m.	AAS Science Ed. Committee		11:30 a.m. - 12:30 p.m.	Second Business Meeting	BELL Auditorium

SECTION PROGRAMS

* Undergraduate **Graduate

ORAL PRESENTATIONS

Friday, April 4, 2003

Biology I: Plant Communities and Biology, and Fundamental Biology
 Location: SCEN Room 403

<u>Time</u>	<u>Topic</u>	
1:30	<u>Lauren P. Blair</u> and Matthew D. Moran. Department of Biology, Hendrix College, 1600 Washington Ave., Conway, AR 72032. PRIMARY FOREST IN ARKANSAS POST OAK SAVANNAS	2:15
1:45	<u>Paul F. Doruska*</u> , 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	2:30
2:00	<u>Travis E. Posey</u> , Paul F. Doruska, and David W. Patterson, University of Arkansas School of Forest Resources; Arkansas Forest Resources Center, PO Box 3468, Monticello, AR	2:45
		3:15
		71656. INDIVIDUAL-TREE GREEN WEIGHT EQUATIONS FOR LOBLOLLY PINE SAWTIMBER IN THE COASTAL PLAIN OF ARKANSAS
		C. <u>Joan Patterson</u> and Douglas A. James, Department of Biological Sciences, University of Arkansas, Fayetteville, AR 72701. SPEED AND ACCURACY OF METHODS FOR OBTAINING FOREST STAND MEASUREMENTS
		Sarah M. <u>Starnes</u> and Matthew D. Moran, Biology Department, Hendrix College, 1600 Washington Ave., Conway, AR 72032. RESPONSE OF INDIVIDUAL PLANTS TO FIRE IN A RELICT GRASSLAND
		K.M. <u>Greer</u> ¹ , P.M. White, Jr. ¹ , D.C. Wolf ¹ , G.J. Thoma ² , and S.E. Ziegler ³ , Univ. of Arkansas, ¹ Dept. of Crop, Soil, & Env. Sci., ² Dept. of Chem. Engr., and ³ Dept. of Biol. Sci. Fayetteville, AR 72701. EVALUATION OF FIELD SCALE PHYTOREMEDIATION OF CRUDE OIL-CONTAMINATED SOIL
		Eric T. <u>Stafne</u> ¹ , Allen L. Szalanski ² , and John R. Clark ¹ , ¹ Department of Horticulture, University of Arkansas, Fayetteville, AR 72701, ² Department of Entomology, University of Arkansas, Fayetteville, AR 72701. NUCLEAR

Arkansas Academy of Science

RIBOSOMAL ITS REGION SEQUENCES FOR DIFFERENTIATION OF RUBUS GENOTYPES

3:30 Terry Hostetler,* Timothy O'Brien**, Max Baker⁺, and James Daly Sr*. 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**

3:45 Kristen M. Sterba¹, Samuel G. Mackintosh¹, Jon S. Blevins², Barry K. Hurlburt^{1,3}, and Mark S. Smeltzer², Departments of Biochemistry and Molecular Biology¹ and Microbiology and Immunology², University of Arkansas for Medical Sciences, Little Rock, AR 72205 and United States Department of Agriculture, Southern Regional Research Center, New Orleans, Louisiana, 70124. **CHARACTERIZATION OF SARA BINDING SITES IN STAPHYLOCOCCUS AUREUS**

Friday, April 4, 2003

Biology II: Mammalian and Avian Communities and Biology

Location: SCEN Room 406

Time **Topic**
1:30 Erin E. McCammon, Philip A. Tappe, and Robert E. Kissell, Jr., Arkansas Forest Resources Center and School Of Forest Resources, University Of Arkansas, Monticello, AR 71656. **A COMPARISON OF GROUND-BASED THERMAL-INFRARED IMAGING WITH SPOTLIGHT COUNTS OF WHITE-TAILED DEER**

1:45 Donald I. M. Enderle and Philip A. Tappe, Arkansas Forest Resources Center and School of Forest Resources, University of Arkansas-Monticello, AR 71656. **SITE-LEVEL HABITAT AND HIGHWAY FACTORS CONTRIBUTING TO DEER-VEHICLE COLLISIONS ON STATE AND FEDERAL HIGHWAYS IN ARKANSAS**

2:00 Michael C. Farrell and Philip A. Tappe, Arkansas Forest Resources Center and School of Forest Resources, University of Arkansas at Monticello, School of Forest Resources, Arkansas Forest Resources Center, Monticello, AR 71656. **A MULTIVARIATE ANALYSIS OF COUNTY-LEVEL FACTORS THAT CONTRIBUTE TO DEER-VEHICLE COLLISIONS IN ARKANSAS**

2:15 Zachary D. Ramsey and Chris T. McAllister, Department of Biology, Texas A&M University-Texarkana, Texarkana, TX 77505. **BATS OF THE ARK-LA-TEX, WITH A NOTEWORTHY RECORD OF THE SEMINOLE BAT, LASIURUS SEMINOLUS (CHIROPTERA: VESPERTILIONIDAE), FROM EXTREME SOUTHWESTERN ARKANSAS**

2:30 W. Drew Reed¹, Tammy Jones¹, J.D. Wilhide¹, Roger Buchanan¹, Betty Crump², Blake Sasse³, and David A. Saugey⁴. ¹Department of Biological Sciences, Arkansas State University, P.O. Box 599, 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, Jessieville, AR 71949. **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**

3:15 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**

3:30 Lori Spencer and Don Simons, Mount Magazine State Park, 16878 Highway 309 South, Paris, AR 72855. **STATUS OF WILDLIFE MANAGEMENT AT MOUNT MAGAZINE STATE PARK**

3:45 Ty D. Blacklock¹, Gary A. Heidt¹, and David A. Saugey², ¹Dept. of Biology, University of Arkansas at Little Rock, Little Rock, AR 72204 and ²USFS, Jessieville, AR 71949. **REPORTED ANIMAL RABIES IN ARKANSAS: 1991-2000**

4:00 Sandra J. Kirchhoff, 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 (HYDROCHOERUS HYDROCHAERIS) AT THE LITTLE ROCK ZOO**

Friday, April 4, 2003

Arkansas Flora I

Location: SCEN Room 407

Time **Topic**
1:30 Johnnie L. 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 Nunn, University of Arkansas Herbarium, University of Arkansas, Biomass Research Center 141, Fayetteville, AR 72701. **WAIFS, WEEDS AND INVASIVES: A PRELIMINARY REVIEW OF ARKANSAS' NON-NATIVE VASCULAR FLORA**

1:45 Gary Tucker. **HISTORY OF ARKANSAS BOTANY: ROLE OF UNIVERSITY OF ARKANSAS**

2:00 James H. Peck, Department of Biology, University of Arkansas at Little Rock, 2801 S. University Ave., Little Rock, AR 72204. **HOW TO STUDY THE ARKANSAS FLORA: A 22 YEAR STUDY OF PTERIDOPHYTES**

2:15 James H. Peck, Department of Biology, University of Arkansas at Little Rock, 2801 S. University Ave., Little Rock, AR 72204. **ARKANSAS VASCULAR FLORA: ADDITIONS, RE-INSTATEMENTS, EXCLUSIONS, and RE-EXCLUSIONS**

2:30 George P. Johnson, Herbarium (APCR), Arkansas Tech University, McEver Building Room 37A, 1701 North Boulder Avenue, Russellville, AR 72801-2222. **ARKANSAS' ORCHIDS: THE STATE OF THE STATE**

2:45 James S. Pringle, Royal Botanical Gardens, P.O. Box 399,

Secretary's Report

- Hamilton, Ontario, Canada, L8N 3H8; C. Theo Witsell, Arkansas Natural Heritage Commission, 1500 Tower Building, 323 Center St., Little Rock, AR 72201, USA. **A NEW SPECIES OF *SABATIA* (GENTIANIACEAE) FROM CENTRAL ARKANSAS**
- 3:15 Theo Witsell, 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 (BROWNE'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, bschube@uark.edu. **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. Mbodary@uaex.edu. **WATER QUALITY AND**
- MACROINVERTEBRATE COMMUNITY ASSESSMENT IN A CENTRAL ARKANSAS BAYOU ASSOCIATED WITH URBANIZATION AND AQUACULTURE EFFLUENT**
- 3:15 A.D. Christian¹, N. Bickford¹, J. Bouldin¹, L. Kanieski², A. McBride², A. Sako and J.L. Farris¹. ¹Department of Environmental Sciences, Arkansas State University, P.O. Box 847, State University Arkansas, 72467. ²Department of Biological Sciences, Arkansas State University, P.O. Box 599, State University, Arkansas 72467. **WINTER AND SPRING WATER QUALITY OF THE BIG CREEK WATERSHED, CRAIGHEAD COUNTY, ARKANSAS: NUTRIENTS, HABITAT, AND MACRO-INVERTEBRATES**
- 3:30 Eileen G. Ernenwein, Environmental Dynamics Program, 113 Ozark Hall, University of Arkansas, Fayetteville, AR 72701; eernenw@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; dgneely@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 (Jonesboro), AR 72467. **INVESTIGATION OF PHOTOCONDUCTIVITY OF INDIUM (III) SULFIDE FILMS ONTO LOW DIFFUSION, COPPER-FREE PHOTOCCELL 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**

Arkansas Academy of Science

	NICKEL CONTACT PATTERNS ON PRINTED CIRCUIT BOARDS FOR USE IN PHOTOCONDUCTIVE CELLS		Arkansas-Oklahoma Center for Space and Planetary Sciences. Dept. Chemistry and Biochemistry, University of Arkansas, Fayetteville, AR 72701. SIMULATIONS OF THE FORMATION OF ASTEROIDS IN THE EARLY SOLAR SYSTEM
2:15	<u>Anil Baral</u> , Dr. Robert Engelken, 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	1:45	<u>Amy Ellison</u> , Bill Durham and Frank Millett, Department of Chemistry and Biochemistry, University of Arkansas, Fayetteville, AR 72701. SYNTHESIS OF A TRINUCLEAR RUTHENIUM COMPLEX AS A PHOTOINITIATOR FOR ELECTRON TRANSFER IN METALLOPROTEINS
2:30	<u>Vikram Bedekar</u> , Deepak G. Bhat, Stephen A. Batzer; Department of Mechanical Engineering, University of Arkansas. EPMA STUDIES OF NEW CERAMIC MATERIAL FOR MACHINING TITANIUM ALLOYS	2:00	<u>Jan Annaratone</u> and M. Draganjac, Department of Chemistry and Physics, Arkansas State University, State University, AR 72467. PRELIMINARY IR STUDY OF THE REACTION OF CpRu(CO)₂⁺ WITH ORGANIC THIOLS
2:45	<u>Kalyana Chittineni</u> , 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 Al-Cu AGE HARDENABLE ALLOYS BY POWDER METALLURGY	2:15	K.S. Trauth, W.A. Burns, and S.W. Reeve, Department of Chemistry, Arkansas State University, PO Box 419, State University, AR, 72467. ROTATIONAL ANALYSIS OF SEVERAL VIBRATIONAL BANDS OF COBALT TRICARBONYL NITROSYL OBTAINED UNDER JET COOLED CONDITIONS
3:15	<u>A. M. Shariah</u> ^{a,b} , H. A. Naseem ^b and S. P. Singh ^c ; ^a Visiting Professor, Physics Department, Jordan University of Science and Technology, Irbid-Jordan, ^b 3217 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	2:30	<u>Franklin D. Hardcastle*</u> , Amanda Suttles, Kenneth Trantham, and John P. Graham, Department of Physical Sciences, Arkansas Tech University, Russellville, AR 72801. RAMAN SPECTROSCOPY OF CHROMIUM CONVERSION COATINGS
3:30	<u>Marwan Barghouti</u> , Husam Abu-safe, and Hameed Naseem, Department of Electrical Engineering, Bell Engineering, University of Arkansas 72701. EFFECT OF SILICON DIOXIDE INTERFACE ON ALUMINUM INDUCED CRYSTALLIZATION OF HYDROGENATED AMORPHOUS SILICON		Friday, April 4, 2003 Physics Location: BELL Room 288
3:45	<u>Mohammad Saad Abbasi</u> , 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 ENHANCED LATERAL CRYSTALLIZATION OF HYDROGENATED AMORPHOUS SILICON	Time	Topic
4:00	<u>Husam Abu-Safe</u> , 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, Saudi Arabia. CHLORINE DOPED CdS THIN FILMS FROM CdCl₂ MIXED CdS POWDER	1:30	<u>Scott Austin</u> , University of Central Arkansas, Department of Physics and Astronomy, 201 Donaghey St, Conway, AR 72035. UCA FIBER-FED CCD SPECTROGRAPH FOR ASTRONOMICAL RESEARCH
4:15	<u>Sunny N. Wallace</u> , 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	1:45	<u>Bao-An Li</u> , Department of Chemistry and Physics, Arkansas State University, State University, Arkansas 72467-0419. PROBING NUCLEAR SYMMETRY ENERGY WITH HIGH ENERGY RADIOACTIVE BEAMS
	Friday, April 13, 2001 Chemistry I Location: BELL Room 269	2:00	Dr. Wilson J. Gonzalez-Espada and <u>Dr. Jeff Robertson</u> , 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
Time	Topic	2:15	<u>Scott Arther Ryan</u> and Mostafa Hemmati, Department of Physical Sciences, Arkansas Tech University, Russellville, Arkansas 72801. ANTIFORCE WAVE PROFILE FOR QUASI-NEUTRAL REGION
1:30	<u>A. Meier</u> , P.H. Benoit, A. Kracher, and D.W.G. Sears.	2:30	<u>A. M. Shariah</u> ^{a,b} , H. A. Naseem ^b and S. P. Singh ^c , ^a Visiting Professor, Physics Department, Jordan University of Science and Technology, Irbid-Jordan, ^b 3217 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
		2:45	<u>Bin Zhang</u> , Bao-An Li, Donald Johnson, Department of

Secretary's Report

Chemistry and Physics, Arkansas State University, P.O. Box 419, State University, AR 72467-0419. **CHARMONIUM PRODUCTION FROM QUARK COALESCENCE IN A BJORKEN HYDRODYNAMICAL MODEL**

Friday, April 4, 2003

Computer Science, Mathematics

Location: BELL Room 288

- 3:30 Son Nguyen and Magda-El-Shenawee, Electrical Department, University of Arkansas, Fayetteville, Arkansas 72701. **A RAPID ALGORITHM FOR SEARCHING THE MINIMUM POINTS OF DISCRETE FUNCTIONS**
- 3:45 Steffany Belcher-Novosad and Debra Ingram, Department of Computer Science and Mathematics, Arkansas State University, P.O. Box 70, State University, AR 72467. **MINIMUM G ABERRATION DESIGNS FROM HADAMARD MATRICES OF ORDER 28**
- 4:00 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 FLOU GASES FROM THE INTERNATIONAL PAPER MILL**
- 4:15 Lyska 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 NANHAZARDOUS MATERIAL INCINERATION AT THE PINE BLUFF ARSENAL**

POSTER PRESENTATIONS

Friday, April 4, 2003

Location: BELL 4008 Student Lounge

- | Time | Topic |
|------|---|
| 1:30 | <u>Blythe Bowman</u> , 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 |
| | <u>Charles R. McDowell</u> ¹ , Malcolm L. McCallum ² (mmccallu@astate.edu), Stanley E. Trauth ¹ , Benjamin A. Wheeler ² , and Richard L. Shelton ³ ; ¹ Department of Biological Sciences, Arkansas State University, P.O. Box 599, State University, AR 72467, ² Environmental Sciences Ph.D. Program, Arkansas State University, P.O. Box 847, State University, AR 72467, ³ Mammoth 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 |
| | <u>Sandra J. Kirchhoff</u> , 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 (<i>HYDROCHOERUS HYDROCHAERIS</i>) AT THE LITTLE ROCK ZOO |
| 2:30 | <u>D. Blake Sasse</u> , Arkansas Game and Fish Commission, # 2 Natural Resources Drive, Little Rock, AR 72205. NEW |

RECORDS OF THE EASTERN CHIPMUNK (*TAMIAS STRIATUS*) IN ARKANSAS

Mari K. Davidson, Harish K. Shandilya¹, Kouji Hirota², Kunihiko Ohta², and Wayne P. Wahls¹; ¹Department of Biochemistry and Molecular Biology, University of Arkansas for Medical Sciences, Little Rock, AR 72205, USA; ²Genetic Dynamics Research Unit-Laboratory, RIKEN Institute, Wako, Saitama 351-0198, Japan. **ATF1•PCR1•M26 COMPLEX DIRECTLY LINKS STRESS-ACTIVATED MAPK AND PKA PATHWAYS VIA CHROMATIN REMODELING OF CGS2⁺**

Lewter, Jennifer A.¹, Tsunemi Yamashita², and Allen L. Szalanski¹; ¹Department of Entomology, University of Arkansas, Fayetteville, AR 72701, ²Department of Biology, Arkansas Tech University, Russellville, AR 72801. **DNA SEQUENCE ANALYSIS OF THE FRESHWATER MUSSEL *LAMPSILIS HYDIANA* (BIVALVIA: UNIONIDAE) IN SELECT OZARK AND OUACHITA MOUNTAIN STREAMS OF ARKANSAS**

3:30 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**

Kirk B. Babb, PhD Candidate, Applied Science Department, University of Arkansas at Little Rock, 2801 S. University, ETAS 575, Little Rock, AR 72204. **DETERMINING THE ROLE OF 7,12-DIMETHYLBENZ[A]ANTHRACENE IN BREAST CANCER**

Anindo Roy^{*}, PhD Candidate, and Kamran Iqbal^{**}, Assistant Professor, ^{*}Department of Applied Science, Univ. of Arkansas at Little Rock, 2801 S. Univ. Ave., Little Rock, AR 72204, ^{**}Department of Systems Engineering, Univ. of Arkansas at Little Rock, 2801 S. Univ. Ave., Little Rock, AR 72204. **PID STABILIZATION OF A POSITION-CONTROLLED ROBOT MANIPULATOR ACTING INDEPENDENTLY OR IN COLLABORATION WITH HUMAN ARM**

ORAL PRESENTATIONS

Saturday, April 5, 2003

Biology III: Aquatic Communities and Biology

Location: SCEN Room 403

- | Time | Topic |
|------|---|
| 8:00 | <u>Thomas M. Buchanan</u> , Department of Biology, University of Arkansas - Fort Smith, Fort Smith, AR 72913, Drew Wilson and L.G. Claybrook, Arkansas Game and Fish Commission, 2 Natural Resources Drive, Little Rock, AR 72205, and William G. Layher, Layer BioLogics RTEC, Inc., 7233 Camden Cutoff Road, Pine Bluff, AR 71603. FISHES OF THE RED RIVER IN ARKANSAS |
| 8:15 | <u>Thomas M. Buchanan</u> , Department of Biology, University of Arkansas - Fort Smith, Fort Smith, AR 72913, and Michael M. Stevenson, Department of Biological Sciences, University of New Orleans, New Orleans, LA 70148. DISTRIBUTION OF THE BIGSCALE LOGPERCH, <i>PERCINA MACROLEPIDA</i> (PERCIDAE), IN THE ARKANSAS RIVER BASIN |

Arkansas Academy of Science

- 8:30 Carrie Cavanaugh 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 RECEDING FROM A STATIONARY OBSERVER: DETERMINING THE ACCELERATION OF GRAVITY BASED ON ACOUSTIC DATA**
- 9:00 Robin L. Stingley¹, Billy R. Griffin², Reid Landes³, and Wayne L. Gray¹. Dept. of Microbiology and Immunology¹, and Division of Biometry³, Univ. of Arkansas for Medical Sciences, Little Rock, AR, 72205, and Stuttgart National Aquaculture Research Center², Stuttgart, AR 72160. **EXPERIMENTAL CHANNEL CATFISH VIRUS INFECTION MIMICS NATURAL INFECTION OF CHANNEL CATFISH**
- 9:15 Chris L. Davidson¹ and Dave Gosse², ¹200 Hazelwood Drive, Sheridan, Arkansas 72150, ²The Nature Conservancy, Arkansas Field Office, 601 N. University, Little Rock, Arkansas 72205. **STATUS AND DISTRIBUTION OF FRESHWATER MUSSELS (BIVALVIA: UNIONACEA) INHABITING THE SALINE RIVER/HOLLY 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 DENSA* IN DEGRAY LAKE, ARKANSAS**
- 10:00 Teri Tuxson 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 71999-0001. **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 (ECHINODERMATA: ECHINOIDEA) ABUNDANCE AND MACROALGAL COVER IN ST. ANN'S BAY, JAMAICA**
- Biology IV: Amphibian and Invertebrate Communities and Biology**
Location: SCEN Room 406
- Time Topic
- 8:00 Malcolm L. McCallum¹, Robert G. Neal², Stanley E. Trauth², and Vernon Hoffman³, ¹Environmental 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, ³Department of Biological Sciences, University of Arkansas Community College at Batesville, P.O. Box 3350, Batesville, AR 72503. **AN INVENTORY OF AMPHIBIANS AND REPTILES AT THE ARKANSAS POST NATIONAL MEMORIAL**
- 8:15 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***
- 8:30 Michelle N. Mary, Department of Biological Sciences, Arkansas State University, P.O. Box 599, State University, AR 72467, USA, Dr. Stanley E. Trauth, 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. OUACHITAE*, AND *DESMOGNATHUS BRIMLEYORUM***
- 8:45 Tobin Fulmer and Renn Tumblison, Department of Biology, Henderson State University, Arkadelphia, AR 71999. **IMPORTANT RECORDS OF THE BIRD-VOICED TREEFROG (*HYLA AVIVOCA*) IN THE HEADWATERS OF THE OUACHITA RIVER DRAINAGE OF SOUTHWESTERN ARKANSAS**
- 9:00 Malcolm L. McCallum¹ (mmccallu@astate.edu), Tracey Klotz², Stanley E. Trauth², William Stephens¹, Jennifer Bouldin¹, Benjamin A. Wheeler¹, Kenneth Gillespie², and David Feldman², ¹Environmental 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. Neal¹, Malcolm L. McCallum², Stanley E. Trauth¹, Charles R. McDowell¹, and Tracey L. Klotz¹, ¹Department 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 L. McCallum, Environmental Sciences Ph.D. Program, Arkansas State University, P.O. Box 847, State University, AR 72467, Stanley E. Trauth, Department of Biological Sciences, Arkansas State University, P.O. Box 599, State University, AR 72467. **CAN THE ILLINOIS CHORUS FROG SURVIVE IN ARKANSAS?**
- 10:00 Benjamin A. Wheeler¹, Malcolm L. McCallum¹, Stanley E. Trauth², Michelle N. Mary², and Charles R. McDowell², ¹Environmental 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 SPHENOCEPHALA* IN NORTHEAST ARKANSAS**
- 10:15 G. O. Graening, The Nature Conservancy, 1037 North Main Avenue, Suite 7, Fayetteville AR 72701; Michael Slay, 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

Secretary's Report

Avenue, Suite 7, Fayetteville AR 72701. **SUBTERRANEAN BIODIVERSITY OF ARKANSAS, PART 2: STATUS UPDATE OF THE FOUSHEE CAVESNAIL (AMNICOLA CORA)**

Biology V: Arthropod Communities and Biology

Location: SCEN Room 407

Time	Topic
8:00	<u>Michael D. Warriner</u> and C. Theo Witsell, Arkansas Natural Heritage Commission, 1500 Tower Building, 323 Center Street, Little Rock, AR 72201. BUTTERFLIES (LEPIDOPTERA) OF CONSERVATION CONCERN IN ARKANSAS: DISTRIBUTION AND LARVAL HOST PREFERENCES
8:15	<u>Kara A. Davis</u> , and Janet Lanza. Biology Department, University of Arkansas at Little Rock, Little Rock, Arkansas 72204. EFFECTS OF NECTAR ON ENERGY CONTENT OF MONARCH BUTTERFLIES
8:30	<u>Marjorie Stephen</u> ¹ , Mylinda L. Terry, and Janet Lanza. Biology Department, University of Arkansas at Little Rock, Little Rock, Arkansas 72204. ¹ Current address: Arkansas Baptist Middle School, 8400 Ranch Road, Little Rock, Arkansas 72223. NECTAR-BORNE AMINO ACIDS INCREASE REPRODUCTION BY MONARCH BUTTERFLIES
8:45	<u>George L. Harp</u> and Phoebe A. Harp. Dept. of Biological Sciences, Arkansas State University, State University, AR 72467. DRAGONFLIES (ODONATA) OF THE OUACHITA NATIONAL FOREST
9:00	<u>James A. Engman</u> , Biology Department, Henderson State University, Box 7520, Arkadelphia, AR, 71999. NESTING ACTIVITY OF <i>OSMIA LIGNARIA</i> (HYMENOPTERA: MEGACHILIDAE) PROVIDES AN EXPLANATION FOR APPARENT SABOTAGE OF AIRCRAFT FUEL
9:15	<u>Blake K. Stevenson</u> and Matthew D. Moran, Biology Department, Hendrix College, 1600 Washington Ave., Conway, AR 72032. FIRE EFFECTS ON AN ARTHROPOD COMMUNITY IN A RELICT GRASSLAND
9:45	<u>Chris T. McAllister</u> , Rowland M. Shelley, and James T. McAllister, III, Department of Biology, Texas A&M University-Texarkana, Texarkana, TX 75505; Research Laboratory, North Carolina State Museum of Natural Sciences, Raleigh, NC 27607; and W. T. White High School, 1244 Forest Lane, Dallas, TX. 75228. GEOGRAPHIC DISTRIBUTION RECORDS FOR SCOLOPENDROMORPH CENTIPEDES (ARTHROPODA: CHILOPODA) FROM ARKANSAS, OKLAHOMA, AND TEXAS
10:00	<u>Chris T. McAllister</u> , Rowland M. Shelley, and James T. McAllister, III, Department of Biology, Texas A&M University-Texarkana, Texarkana, TX 75505; Research Laboratory, North Carolina State Museum of Natural Sciences, Raleigh, NC 27607; and W. T. White High School, 1244 Forest Lane, Dallas, TX. 75228. ADDITIONAL MILLIPED RECORDS (ARTHROPODA: DIPLOPODA) FOR ARKANSAS AND OKLAHOMA
10:15	<u>Tsunemi Yamashita</u> , Department of Biological Sciences,

Arkansas Tech University, Russellville, AR 72801. **PHYLOGEOGRAPHY OF THE STRIPED SCORPION, *CENTRUROIDES VITTATUS***

10:30	<u>S. Jill James</u> , Marta Pogribna, Stepan Melnyk, William Slikker III, <u>Elizabeth New</u> , and Stefanie Jernigan. National Center for Toxicological Research, Jefferson AR, 72079. PREVENTION OF TIMEROSAL-INDUCED NEUROTOXICITY BY GLUTATHIONE (GSH) AND CYSTEINE, BUT NOT METHIONINE
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Arkansas Flora II

Location: SCEN Room 408

Time	Topic
9:00	<u>Staria S. Vanderpool</u> , Department of Biological Sciences, Arkansas State University, P. O. Box 599, State University, Arkansas 72467-0599. PLANTS NEW TO THE STATE OF ARKANSAS
9:15	<u>Staria S. Vanderpool</u> , J. D. Wilhide, Lynn E. Alterman, Steven C. Fowler, Jeremy L. Jackson, Tammy R. Jones, William D. Reed, James R. Samples, Lann M. Wilf, Adam S. Chappell, Ronald E. Cossey, Marcelle L. Daggett, James W. Gore, Michael A. Reed, Mary C. Scott, and Joshua H. Seagraves. Department of Biological Sciences, Arkansas State University, P. O. Box 599, State University, Arkansas 72467-0599. AN INVENTORY OF WOODY TAXA AND SPRING FOREST EPHEMERALS IN THE PROPOSED LAKE BONO SITE, CRAIGHEAD COUNTY
9:45	<u>Michelle Parker</u> and Brett E. Serviss. Department of Biology, Henderson State University, Arkadelphia, AR 71999-0001. OCCURRENCE AND STATUS OF <i>HYDRILLA VERTICILLATA</i> (L. F.) ROYLE (HYDROCHARITACEAE) IN ARKANSAS
10:00	<u>Thomas D. Slaughter</u> , Jason Wilis, and Brett E. Serviss. Department of Biology, Henderson State University, Arkadelphia, AR 71999-0001. IDENTIFICATION AND ECOLOGY OF NATURALIZED SPECIES OF <i>NARCISSUS</i> (LILIACEAE) IN ARKANSAS
10:15	<u>Joe B. Pagan, Jr.</u> , Natural Resources Conservation Service, 700 W. Capitol, Little Rock AR 72201; Thomas L. Foti, Arkansas Natural Heritage Commission, 323 Center St., Little Rock AR 72201. A COMPREHENSIVE FLORISTIC INVENTORY AND DISTRIBUTION MODEL OF UNIQUE WETLAND COMMUNITIES ON TERRACES ALONG THE OUACHITA RIVER IN SOUTHERN ARKANSAS
10:30	<u>Thomas L. Foti</u> , Arkansas Natural Heritage Commission, 323 Center St., Little Rock AR 72201; Joe B. Pagan, Natural Resources Conservation Service, 700 W. Capitol, Little Rock AR 72201. RELATIONSHIPS OF BOTTOMLAND HARDWOOD FOREST COMMUNITIES TO FLOODING ALONG THE WHITE RIVER NEAR CLARENDON, ARKANSAS

Chemistry II

Location: BELL Room 269

Time	Topic
8:00	<u>Amit Shah</u> , Brian C. Berry, Tito Viswanathan and Ali U. Shaikh; Department of Chemistry, University of Arkansas at Little Rock, Little Rock, AR 72204. STABILIZATION OF POLYVINYL CHLORIDE BY SOME CONDUCTING POLYMERS

Arkansas Academy of Science

- 8:15 Pradeepa Rangarajan¹, Gary A. Heidt² and Ali U. Shaikh³,
^{1,3}Department of Chemistry, ²Department of Biology,
University of Arkansas at Little Rock, Little Rock, AR 72204.
**DETERMINATION OF BILE ACIDS IN A MIXTURE
BY GAS CHROMATOGRAPHY-MASS
SPECTROMETRY**
- 8:30 Matt Flynt and Ali U. Shaikh, Department of Chemistry,
University of Arkansas at 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**
- 8:45 Amanda Bell, Marilyn Davis, Marti 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**
- 9:00 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**
- 9:15 Erin M Scherer, Haiyan 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-TRP
OR 1-METHYL-7-AZA-TRP**
- 9:45 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 72205-7199.
**RECOMBINASE REC12 (SPO11) ACTIVATES A
MEIOSIS I NONDISJUNCTION / DISTRIBUTIVE
SEGREGATION CHECKPOINT**
- 10:00 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**
- 10:15 Lothar Schäfer, 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**
- 10:30 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**
- Engineering II**
Location: BELL Room 268
- 8:00 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**
- Engineering III**
Location: BELL Room 288
- 8:00 F. Magableh, Ceramic Electronic Packaging Laboratory
(CEPAL), University of Arkansas, Fayetteville, AR 72701,
Phone: 501-575-2374 Fax: 501-575-7967, e-mail:
fmagabl@uark.edu. **EFFECT OF DESIGN
PARAMETERS ON SLOW WAVE RESONATORS**
- 8:15 Eran J. Jones, University of Arkansas, Microelectronics-
- 8:15 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**
- 8:30 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**
- 8:45 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**
- 9:00 Mohammad A Khan, Wookwon Lee, Department of
Electrical Engineering, University of Arkansas, 3217 Bell
Engineering Center, Fayetteville, AR 72701, USA, Email:
mak07, wookwon}@uark.edu. **CSMA/CA WITH
SHORTEND CONTENTION WINDOW FOR MIXED
TRAFFIC IN IEEE802.11 W LANS**
- 9:15 Muhammad T. Hossain, Junior, Pine Bluff High School, Pine
Bluff, AR 71601; Miah M. Adel, Department of Chemistry &
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**
- 9:45 Paul C. Millett and R. Paneer Selvam, Computational
Mechanics Laboratory, Bell 4190, University of Arkansas,
Fayetteville, AR 72701, Phone: (479)-575-2229; Fax: (479)-
575-7168, E-mail: rps@enr.uark.edu, pmillet@enr.uark.edu.
**COMPUTER MODELING OF THE TORNADO-
STRUCTURE INTERACTION: INVESTIGATION OF
STRUCTURAL LOADING ON CUBIC BUILDING**
- 10:00 Yangki Jung and R. Panneer Selvam, High Density
Electronics Center, Bell 4190, University of Arkansas,
Fayetteville, AR, 72701, Phone: 479-575-2229; Fax: 479-575-
7168, E-mail: yjung@enr.uark.edu. **NUMERICAL
ANALYSIS OF MICRO-JET ARRAY COOLING
DEVICE WITH VARIOUS CONFIGURATIONS**
- 10:15 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**
- 10:30 Paul S. Sherman and Nathan B. Edgar, Assoc. Prof. of Mech.
Engr., Asst. Prof. of Mech. Engr., Arkansas State University,
College of Engineering, PO Box 1740, State University, AR
72467. **INTERPOLATION TECHNIQUES FOR
OVERSET GRIDS**

Secretary's Report

- Photonics, Physics Building, Room 226, Fayetteville, AR 72701. **GEOMETRY AND LAYERING EFFECTS ON THE OPERATING CHARACTERISTICS OF SPIRAL INDUCTORS**
- 8:30 Son Nguyen and Magda-El-Shenawee, Electrical Engineering Department, University of Arkansas, Fayetteville, Arkansas 72701. **A RAPID ALGORITHM FOR SEARCHING THE MINIMUM POINTS OF DISCRETE FUNCTIONS**
- 8:45 Vasanth Sarathy, Milos Jankovic and Magda El-Shenawee, Department of Electrical Engineering, University of Arkansas, Fayetteville, AR 72701. **FULL WAVE ANALYSIS OF MICROSTRIP TRANSMISSION LINES USING METHOD OF LINES**
- 9:00 Ty R. McNutt, Alan Mantooth, University of Arkansas, BEC 3217, Fayetteville, AR 72701. **SILICON CARBIDE POWER DEVICE MODELS AND PARAMETER EXTRACTION ROUTINES FOR CIRCUIT SIMULATION**
- 9:15 Kevin M. Speer, Ty R. McNutt, Alex B. Lostetter, H. Alan Mantooth, University of Arkansas, Department of Electrical Engineering, 3217 Bell Engineering Center, Fayetteville, AR 72701. **A NOVEL HIGH FREQUENCY SILICON CARBIDE (SIC) STATIC INDUCTION TRANSISTOR (SIT) BASED TEST-BED FOR THE ACQUISITION OF SIC POWER DEVICE REVERSE RECOVERY CHARACTERISTICS**
- 9:45 Avinash Kashyap and 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)**
- 10:00 Xiaoling Huang, Yongfeng Feng, Wei Zheng, Jianhua Mao, H. Alan Mantooth, University of Arkansas, 3217 Bell Engineering Center, Fayetteville, Arkansas 72701, USA. **MODELING OF NONLINEAR DYNAMICAL BEHAVIOR IN ANALOG CIRCUITS**
- 10:15 Maruf Hossain, Ty McNutt, H. Alan Mantooth, Edgar Cilio, Department of Electrical Engineering, University of Arkansas, 3217 Bell Engineering Center, Fayetteville, AR-72701. **PARAMETER EXTRACTION SOFTWARE FOR COMPACT DIODE MODEL**
- 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**
- 9:00 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. **MONITORING THE LEACHING OF CHROMIUM CONVERSION COATINGS INTO THE ENVIRONMENT BY ION CHROMATOGRAPHY**
- Briley Charette, Kenneth Trantham, and Franklin D. Hardcastle, Department of Physical Sciences, Arkansas Tech University, Russellville, AR 72801. **ELECTROCHEMICAL MEASUREMENTS OF CHROMIUM CONVERSION COATINGS ON ALUMINUM**
- 10:00 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

- | <u>Time</u> | <u>Topic</u> |
|-------------|--|
| 8:00 | <u>Allan Holloway</u> , University of Central Arkansas, Department of Physics and Astronomy, 201 Donaghey St., Conway, AR, 72035. FABRICATION AND TESTING OF THE UCA FIBER-FED CCD SPECTROGRAPH |
| | <u>Jeff Robertson</u> , Arkansas Tech University, 1701 N. Boulder, Russellville, AR 72801, Mark Pitts, Kent Honeycutt % Stella Kafka, 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 |