

the arizona-nevada academy of sciences



# eNews & Program

an affiliate of AAAS and NAAS

Spring 2009

## At-a-glance 53rd Annual Meeting Schedule

Friday, April 3	Board of Governors meeting 6:00 to 8:00 PM
Saturday, April 4 – <u>Harvill Building, U of AZ</u>	
7:00 to 8:30 AM	Registration: Courtyard
8:00 to 10:00 AM	Papers: Harvill Building
10:00 to 10:30 AM	Coffee Break & Posters Courtyard
10:30 to 11:30 AM	Papers: Harvill Building
11:30 to 1:30 PM	Luncheon, Awards & Business Mtg, Park SU
1:45 to 2:45 PM	Papers: Harvill Building
2:45 to 3:15 PM	Coffee Break
3:15 to 4:30 PM	Papers: Harvill Building



Photo courtesy of Thomas Menke © 2009

## Special Luncheon Speaker: Hui Chen

### “China’s South to North Water Diversion Project”

Compared to the United States, China has a smaller water supply and about five times as many people. Furthermore, there is a severe imbalance in the distribution of water within the country; about four-fifths of the water supply is in the south and much of the population is in the north. Between population growth, rapid economic development, and poor water management policies, the North China Plain is rapidly depleting and polluting its groundwater supplies. Hui Chen will discuss the South-to-North Water Diversion Project that is planned to divert water from the Yangtze River to supply the parched north (including the city of Beijing). This is the largest endeavor of this kind ever undertaken. The water diversion project has been under discussion in China since the 1950s, but it did not receive the official go-ahead until 2002. Completion is not expected until 2050.

A couple of interesting articles on the project and its many roots and implications can be found at

[http://www.nytimes.com/2007/09/28/world/asia/28water.html?\\_r=1&oref=slogin\(2007\)](http://www.nytimes.com/2007/09/28/world/asia/28water.html?_r=1&oref=slogin(2007))

<http://news.bbc.co.uk/2/hi/asia-pacific/7864390.stm> (2009)

Ms. Chen is a doctoral student in hydrology at the University of Arizona.



## Where’s the Annual Meeting?

Go to: <http://iiewww.ccit.arizona.edu//uamap/staticLarge/76.html> for interactive campus map or [http://iiewww.ccit.arizona.edu/uamap/campus-map\\_Jan-04.pdf](http://iiewww.ccit.arizona.edu/uamap/campus-map_Jan-04.pdf) for a printable map. You may also Mapquest yourself to: 1103 East 2<sup>nd</sup> Street, Tucson. Limited parking is available on Second Street and behind Harvill Hall. Best parking: Second Street Garage, Main Gate Garage, Park Avenue Garage.

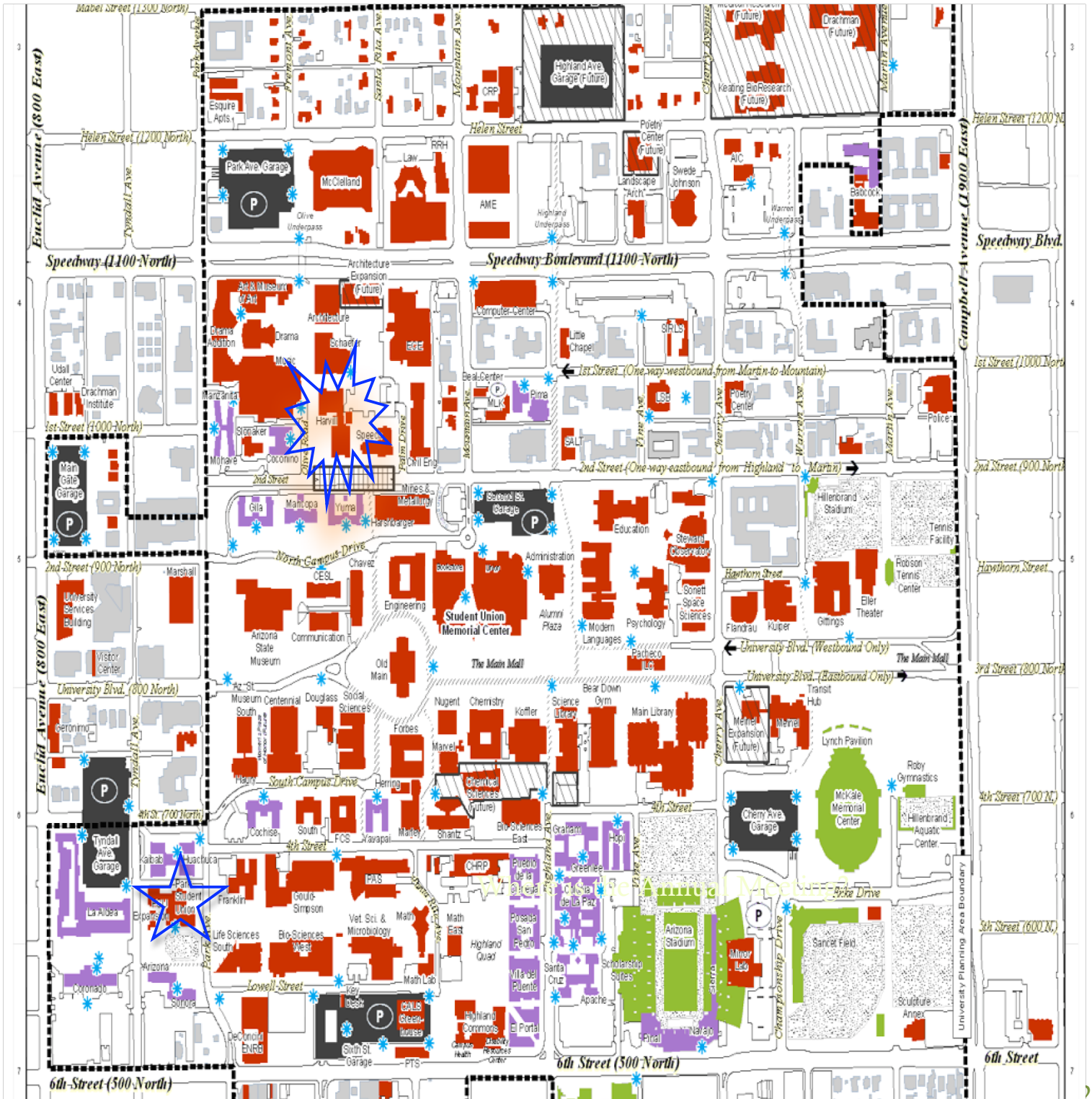
# University of Arizona Campus Map



= Harvill Building,  
Registration and Meeting



= Park Student Union, Luncheon



# 2009 ANAS Annual Meeting

## Presentations

Saturday April 4, 2009

University of Arizona, Harvill Building

*BIOLOGY / CHEMISTRY / MATHEMATICS*

Chairperson: Robert Bowker – Harvill Room 313

- 8:00-8:20** MOLECULAR CLONING OF CORTICOTROPIN-RELEASING FACTOR RECEPTOR SUBTYPES FROM THE WESTERN SPADEFOOT TOAD, *SPEA HAMMONDII*. Gagandeep Cheema and Graham C Boorse (Arizona State University, West Campus, Phoenix, AZ)
- 8:20-8:40** MOLECULAR CLONING AND CHARACTERIZATION OF CRF-LIKE PEPTIDES, RECEPTORS AND BINDING PROTEIN IN THE LIZARD, *ANOLIS CAROLINENSIS*. Kevin L Svancara and Graham C Boorse (Arizona State University, West Campus, Phoenix, AZ)
- 8:40-9:00** EVALUATION OF ECOLOGICAL RECOVERY FROM FOREST FIRES USING ARTHROPOD COMMUNITY ANALYSIS. Ryan Paulk, Jacob Higgins, Robert Delph, Neil Cobb (Northern Arizona University, Flagstaff, AZ)
- 9:00-9:20** MICRO-INVERTEBRATE COMMUNITY DYNAMICS ON ALGAE IN THE MID-INTERTIDAL ZONE ALONG THE NORTHERN GULF OF CALIFORNIA. Robert Delph, Stephen Shuster, Cody Brothers, Ryan Paulk, Gwynne Pollard (Northern Arizona University, Flagstaff, AZ)
- 9:20-9:40** POTENTIAL COMPETITION AMONG ANT SPECIES IN OLD GROWTH PINYON-JUNIPER WOODLAND, MESA VERDE NATIONAL PARK. Jacob Higgins and Neil Cobb (Northern Arizona University, Flagstaff, AZ)
- 9:40-10:00** AN INTERIOR POINT ALGORITHM FOR LINEAR PROGRAMMING USING WEIGHTED ANALYTIC CENTERS. Shafiu Jibrin (Northern Arizona University, Flagstaff, AZ) and Julianne Anderson (University of North Carolina, Chapel Hill, NC)

*10:00-10:30 AM: COFFEE BREAK & POSTER SESSION*

- 10:30-10:50** COMPARISON OF CAVE ARTHROPOD COMMUNITIES IN CAVES WITH

## Program and presentation details

**DIFFERING SUN EXPOSURES.** Luke Hanna (Department of Biological Sciences, Northern Arizona University, Flagstaff, AZ) and J. Judson Wynne (Merriam-Powell Center for Environmental Research, Department of Biological Sciences, Northern Arizona University, Flagstaff, AZ)

**10:50-11:10 A GEOMETRIC INTERPRETATION AND EXPLICIT FORM FOR HIGHER-ORDER HANKEL OPERATORS.** Benjamin Pittman-Polletta (University of Arizona, Tucson, AZ)

**11:10-11:30 SPECTROPHOTOMETRIC NITROGEN DIOXIDE ANALYSIS IN SMOKING AND NON-SMOKING LAS VEGAS AREAS.** Prakriti Gaba (The Meadows School, Las Vegas)

## GEOGRAPHY SESSION

**Co-Chairpersons: Anthony Brazel and Soe Myint – Harvill Room 115**

**8:30 – 8:45 KEY FACTORS INFLUENCING STORM-WATER QUALITY IN THE CITY OF PHOENIX.** Min Jo Kang (Arizona State University, Tempe, AZ)

**8:45 – 9:00 UNDOCUMENTED WASTE DISPOSAL SITES REVEALED BY DIGITAL ANALYSIS OF HISTORICAL AERIAL PHOTOGRAPHY.** Robert A. Pope (Waterstone Environmental, Inc., Anaheim, CA)

**9:00 – 9:15 TEN YEARS OF EU REGIONAL POLICY EVALUATION: WHAT HAVE WE LEARNT?** Sandy Dall’erba (University of Arizona; Tucson, AZ), Maria Abreu (University of Cambridge, Cambridge, UK) and Henri L.F. de Groot (Vrije Universiteit, Amsterdam, The Netherlands)

**9:15 – 9:30 TEMPERATURE TRENDS IN THE SOUTHWESTERN UNITED STATES – 1950-2000: ARE CITIES WARMING FASTER?** Anthony Brazel and Hannah Mensing (Arizona State University, Tempe, AZ)

**9:30 – 9:45 MODELING HEAT-HEATH VULNERABILITY USING REMOTELY SENSED DATA: A CASE STUDY OF CHANDLER, ARIZONA.** Wen-Ching Chuang and Soe Myint (Arizona State University, Tempe, AZ)

### 10:00-10:30 AM: COFFEE BREAK & POSTER SESSION

**10:30 -10:45 QUANTITATIVE ANALYSIS OF LANDSCAPE FRAGMENTATION IN METROPOLITAN PHOENIX, USA, FROM 1992 TO 2001** Sainan Zhang, Soe W. Myint, Abigail M. York, Christopher G. Boone (Arizona State University, Tempe, AZ)

**10:45 – 11:00 MODELING PERENNIAL AND ANNUAL VEGETATION IN THE MOJAVE DESERT USING MODIS-EVI DATA.** Cynthia S.A. Wallace, Kathryn A. Thomas, and Robert H. Webb (USGS, Tucson, AZ)

**11:00 – 11:15 DEVELOPING AND EMPIRICALLY TESTING A GREEN INDEX OF URBAN OPEN SPACES IN TEMPE.** Won Kyung Kim (Arizona State University, Tempe, AZ)

**11:15 – 11:30 OBJECT-BASED URBAN MAPPING.** Soe W. Myint (Arizona State University, Tempe, AZ)

## Program and presentation details

### *GEOLOGY SESSION*

**Chairperson: Robert McCord – Harvill Room 240**

- 8:30- 8:45**      **CHONDRICHTHYANS FROM THE PERMIAN (LEONARDIAN) KAIBAB FORMATION OF COCONINO COUNTY, NORTHERN ARIZONA.** John-Paul Hodnett, David K. Elliott and Tom Olsen (Northern Arizona University, Flagstaff ,AZ)
- 8:48-9:03**      **THE FIRST RECORD OF A CAT (MAMMALIA, CARNIVORA, FELIDAE) FROM THE CLARENDONIAN (LATE MIOCENE) OF THE WALNUT GROVE FAUNA, MILK CREEK FORMATION, YAVAPAI COUNTY, ARIZONA.** John-Paul Hodnett (Northern Arizona University, Flagstaff, Arizona) and Richard S. White (International Wildlife Museum, Tucson, AZ)
- 9:08- 9:23**      **A REAPPRAISAL OF THE IDENTITY, STRATIGRAPHIC POSITION AND AGE OF LATEST BARSTOVIAN (?) MAMMALS FROM THE GRAYWATER WASH LOCALITY, APACHE COUNTY, ARIZONA.** Richard S. White, Jr. (International Wildlife Museum, Tucson, AZ) and David D. Gillette (Museum of Northern Arizona, Flagstaff, AZ)
- 9:26 -9:41**      **SURFACE FEATURES ON GASTROLITHS FROM A SHORT-NECK PLESIOSAUR FROM THE TROPIC SHALE (UPPER CRETACEOUS-EARLY TURONIAN) OF SOUTHERN UTAH.** David D. Gillette (Museum of Northern Arizona, Flagstaff, AZ) and Rebecca L. Schmeisser (University of Nebraska, NB)
- 9:44 – 9:59**      **WHO IS *KINOSTERNON ARIZONENSE*?** Robert McCord (Arizona Museum of Natural History, Mesa, AZ)

### *HYDROLOGY SESSION I*

**Chairperson: Robert Lefevre – Harvill Room 102**

- 8:00 – 8:15**      **A BRIEF SUMMARY OF A REPORT BY THE NATIONAL RESEARCH COUNCIL ON THE HYDROLOGIC IMPACTS OF FOREST MANAGEMENT.** Peter F. Ffolliott (University of Arizona, Tucson, AZ)
- 8:15-8:30**      **A REVIEW AND ANALYSIS OF THE LITERATURE: THREATS TO RIPARIAN ECOSYSTEMS OF THE WESTERN UNITED STATES.** K. Koestner<sup>1</sup>, B. Poff<sup>2</sup>, D.G. Neary<sup>1</sup>, V. Henderson<sup>1</sup> (<sup>1</sup> US Forest Service, Rocky Mountain Research Station, Flagstaff, AZ <sup>2</sup> National Park Service, Mojave National Preserve, Barstow, CA)
- 8:30-8:45**      **WATER REPELLENT SOILS FOLLOWING BURNING TREATMENTS AND A WILDFIRE ON THE CASCABEL WATERSHEDS IN THE OAK SAVANNAS OF THE MALPAI BORDERLANDS REGION.** Cody L. Stropki, Aaron T. Kauffman, and Peter F. Ffolliott (University of Arizona, Tucson, AZ) and Gerald J. Gottfried (Rocky Mountain Research Station, Phoenix, AZ)
- 8:45-9:00**      **SNOWPACK DYNAMICS IN A PONDEROSA PINE FOREST OPENING.** Gerald J. Gottfried (Rocky Mountain Research Station, Phoenix, AZ) and Peter F. Ffolliott (University of Arizona, Tucson, AZ)

## Program and presentation details

- 9:00-9:15**      **IMPACTS OF TREE HARVESTING IN RIPARIAN ZONES ON STREAM SEDIMENTATION AND TURBIDITY: SCIENTIFIC EXPERIENCE RELATIVE TO AUSTRALIA.** K. Koestner<sup>1</sup>, D. Neary<sup>1,2</sup>, P. Smethurst<sup>2</sup>, and K. Petrone<sup>2</sup> (<sup>1</sup> US Forest Service, Rocky Mountain Research Station, Flagstaff, AZ <sup>2</sup>CSIRO Sustainable Ecosystems, Hobart, Tasmania, Australia)
- 9:15-9:30**      **IMPACTS OF CLIMATE INSTABILITY ON FLOOD MANAGEMENT DECISIONS ON THE RIO DE FLAG OF FLAGSTAFF, ARIZONA.** Jamie Quisenberry (Northern Arizona University, Flagstaff, AZ)
- 9:30-9:45**      **THE EFFECTS OF CLIMATE CHANGE ON WATER RESOURCES IN THE MOJAVE NATIONAL PRESERVE.** Boris Poff and Debra Hughson (Mojave National Preserve, Barstow, CA)
- 9:45-10:00**    **WEIR REMOVAL AND RIPARIAN RESTORATION TO IMPROVE PARTS OF THE ISSEL RIVER IN NORTHWESTERN GERMANY.** Silke Buschmann (Northern Arizona University, Flagstaff, AZ)
- 10:00-10:30 AM: COFFEE BREAK & POSTER SESSION*
- 10:30-10:45**    **RESTORATION OF OAK CREEK WATERSHED: A HEURISTIC APPROACH.** Rex Bergamini (Northern Arizona University, Flagstaff, AZ)
- 10:45-11:00**    **THE CASE FOR A SUCCESSFUL RESTORATION OF THE COMANCHE CREEK IN NORTHERN NEW MEXICO.** Melanie Lawrence (Northern Arizona University, Flagstaff, AZ)
- 11:00-11:15**    **ADDRESSING CHALLENGES TO ECOSYSTEM MANAGEMENT IMPLEMENTATION FOR WATERSHED RESTORATION.** Sabrina Kleinman (Northern Arizona University, Flagstaff, AZ)
- 11:15-11:30**    **ROLE OF DENDROCLIMATOLOGY IN WATER SUSTAINABILITY IN SEMI-ARID REGIONS.** Ramzi Touchan and David M. Meko (University of Arizona, Tucson, AZ)

## *HYDROLOGY SESSION II*

**Chairperson: Gerald Gottfried - Harvill Room 102**

- 1:45-2:00**      **VARIETY OF ANTECEDENT RUNOFF CONDITIONS FOR RAINFALL-RUNOFF WITH THE CURVE NUMBER METHOD.** Matthew R. Grabau (GeoSystems Analysis Inc., Tucson, AZ), Richard H. Hawkins, Donald C. Slack (University of Arizona, Tucson, AZ) and Kevin E. VerWeire (HDR Inc., Pearl River, NY)
- 2:00-2:15**      **DEVELOPMENT OF A RAINFALL-RUNOFF MODEL FOR BLACK CREEK WATERSHED, NAVAJO NATION.** Aregai Teclé, Angie Garcia, Paul Heinrich and Diana Anderson (Northern Arizona University, Flagstaff, AZ), Gregg Garfin (University of Arizona, Tucson, AZ), John Leeper, and Jolene Tallsalt-Robertson (Navajo Nation, Department of Water Resources)
- 2:15 – 2:30**    **AVERAGE ANNUAL WATER YIELD USING PRECIPITATION AND TEMPERATURE: GRUNSKY'S MODEL RECONSIDERED.** Richard H. Hawkins (University of Arizona, Tucson, AZ) and Francisco L. Santos (University of Évora, Évora, Portugal)

## Program and presentation details

**2:30 – 2:45** **RHEM MODEL APPLICATION FOR SOIL EROSION ASSESSMENT.** Mariano Hernandez, Mark Nearing, Jeffry Stone, Haiyan Wei and Phil Heilman (USDA-ARS, Southwest Watershed Research Center, Tucson, AZ), Ken Spaeth (USDA, NRCS, Central National Technology Support Center, Fort Worth, TX)

*2:45 – 3:15: AFTERNOON COFFEE BREAK*

**3:15 – 3:30** **CREATING RESILIENCE IN WATERSHED STAKEHOLDER GROUPS THROUGH SOCIAL NETWORK ANALYSIS.** Adam C. Springer and J.E. de Steiguer (University of Arizona, Tucson, AZ)

**3:30 – 3:45** **A GEOGRAPHICALLY-REFERENCED MULTIPLE-RESOURCE DATA MANAGEMENT SYSTEM FOR THE OAK SAVANNAS OF THE MALPAI BORDERLANDS REGION.** Hui Chen, Cody L. Stropki, and Peter F. Ffolliott (University of Arizona, Tucson, AZ) and Gerald J. Gottfried (Rocky Mountain Research Station, Phoenix, AZ)

**3:45 – 4:00** **EFFECTS OF GAMBEL OAK ON WATER HOLDING CAPACITY AND CARBON STORAGE WITHIN THE LITTER OF A PONDEROSA PINE-OAK FOREST.** Robert E. Lefevre (USDA Forest Service, Coronado National Forest, Tucson, AZ)

## *PSYCHOLOGY SESSION*

**Chairperson: Mende Davis – Harvill Room 316**

**8:20-8:40** **SELF-EFFICACY: THE STATE OF THE SCIENCE IN 2009.** Amy H. T. Davis (University of Arizona, Tucson, AZ)

**8:40-9:00** **A BRIEF HISTORY OF FOLK ART IN AMERICA: THE CONTESTED FATE OF A NEW GENRE.** Holly Roggentine (University of Arizona, Tucson, AZ)

**9:00-9:20** **GPS TECHNOLOGY AND HUMAN PSYCHOLOGICAL RESEARCH: A METHODOLOGICAL PROPOSAL.** Pedro S.A. Wolf & W. Jake Jacobs (University of Arizona, Tucson, AZ)

**9:20-10:00** **BAYESIAN MIXTURE MODELING FOR CLINICAL AND POLICY DECISIONS.** J. Michael Menke (University of Arizona, Tucson, AZ)

*10:00-10:30 AM: COFFEE BREAK & POSTER SESSION*

**10:40-11:00** **PREDICTIVE MODELING IN MUSCULAR DYSTROPHY: IDENTIFYING THE NEED FOR CARE.** Melinda F. Davis, Jennifer Andrews, Shawnell Damon, Rebeca Arias, Timothy Miller, F. John Meaney and the Palliative Care Group MD STARnet.(University of Arizona, Tucson, AZ)

**11:00-11:20** **A SOCIAL RELATIONS MODEL FOR THE COLONIAL BEHAVIOR OF THE ZEBRA FINCH.** Aurelio José Figueredo (University of Arizona, Tucson, AZ)

## Program and presentation details

### *POSTER SESSION - COURTYARD - 10:00-10:30 AM*

**Chairperson: Erik Gergus**

**WATER CONTAMINATION: MICROANALYSIS DETERMINATIONS AND SOLAR REMEDIATION OF VOLATILE ORGANIC COMPONENTS.**

Jeffrey J. Rosentreter, (Idaho State University, Pocatello, ID)

**DIHYDROTESTOSTERONE ALTERS ENDOTOXIN AND CYTOKINE INDUCED INCREASES IN CYCLOOXYGENASE-2 BUT HAS NO EFFECT ON PROSTAGLANDIN E<sub>2</sub> LEVELS IN HUMAN CORONARY ARTERY SMOOTH MUSCLE CELLS.**

Kristen L Osterlund<sup>1,2</sup>, Anthony Gutierrez<sup>1</sup>, Robert J Handa<sup>1,2</sup>, Rayna J Gonzales<sup>1</sup>(<sup>1</sup>University of Arizona College of Medicine - Phoenix, AZ, <sup>2</sup>Colorado State University, Fort Collins, CO)

**EFFECTS OF DEPENDENCY AND EXAM ITEM FORMAT ON EXAM PERFORMANCE.**

Steven C. Funk, K. Laurie Dickson (Northern Arizona University, Flagstaff, AZ)

**RESTORATION (OR NOT) AT MOJAVE SPRINGS.**

Annie Kearns and Boris Poff, (Mojave National Preserve, Barstow, CA)

**DISCOVERY OF NOVEL CARDIAC VITAMIN D RECEPTOR INTERACTING PROTEINS (VIPs): THE ROLE OF VITAMIN D AS A MEDIATOR OF HEART HEALTH.**

Zach J. Hernandez, Tim A. Widener, Pamela A. Marshall and Peter W. Jurutka (Arizona State University, Phoenix, AZ)

**REGULATION OF THE ANTI-AGING GENE KLOTHO BY 1,25(OH)<sub>2</sub>D .**

Christine Lowmiller, Peter W. Jurutka (Arizona State University, Phoenix, AZ), G. Kerr Whitfield and Mark R. Haussler (University of Arizona, Phoenix, AZ)

**BIOLOGICAL EVALUATION OF NOVEL BEXAROTENE ANALOGS FOR THE TREATMENT OF CUTANEOUS T-CELL LYMPHOMA.**

Julie K. Furnick, Carl E. Wagner, Pamela A. Marshall and Peter W. Jurutka (Arizona State University, Phoenix, AZ)

**TELOMERASE REGULATES REPEAT ADDITION PROCESSIVITY THROUGH BINDING AND RELEASING RNA/DNA HETERODUPLEX.**

Mingyi Xie<sup>1</sup>, Joshua D. Podlevsky<sup>1</sup>, Xiaodong Qi<sup>1</sup>, Christopher J. Bley<sup>1</sup> and Julian J-L Chen<sup>1,2</sup> (<sup>1</sup>Department of Chemistry & Biochemistry, <sup>2</sup>School of Life Sciences, Arizona State University, Tempe, AZ)





Please pass our news on to all interested parties, including your students!

If you have any news or kudos, announcements or opinions, please forward to Michael Menke, ANAS newsletter editor: [menke@u.arizona.edu](mailto:menke@u.arizona.edu)



*Hope to see you on Saturday!!!*

Arizona-Nevada Academy of Science  
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