

101st ANNUAL TECHNICAL MEETING
OKLAHOMA ACADEMY OF SCIENCE
UNIVERSITY OF CENTRAL OKLAHOMA

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**101st ANNUAL TECHNICAL MEETING
OKLAHOMA ACADEMY OF SCIENCE
UNIVERSITY OF CENTRAL OKLAHOMA**

PROGRAM SUMMARY

Thursday, 8 November 2012

6:30 p.m. Executive Council Dinner and Meeting 301 Robert S. Kerr
Nigh University Center

Friday, 9 November 2012

7:30 a.m. Registration for Technical Meeting 3rd floor
- 10:00 a.m. Nigh University Center

8:15 a.m. Concurrent Scientific Paper Sessions 3rd floor
- 3:30 p.m. Nigh University Center

Section A	Biological Sciences – Botany	312
Section A	Biological Sciences – Zoology	300
Section B	Geology	320C
Section C	Physical Sciences	320B
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Section K	Microscopy	304
Section L	Mathematics, Computer Science, and Statistics	320B
Section M	Environmental Sciences and Planning	326
Section N	Biomedical Sciences	301

Posters (9-11 am)..... Ballrooms A/B, 3rd floor
Vendors..... 3rd floor

* denotes Undergraduate Competition
** denotes Graduate Competition

OKLAHOMA ACADEMY OF SCIENCE PRESIDENTS

1910	H. L. Lane, OU	1956	A. M. Stebler, OAMC
1911	D. W. Othern, Okla. City	1957	D. E. Howell, OAMC
1912	S. W. Reaves, OU	1958	G. J. Goodman, OU
1913	C. W. Shannon, OU	1959	E. Lucas, OU
1914	No meeting	1960	P. E. Smith, OUMS
1915	C. W. Shannon, OU	1961	E. M. Hodnett, OSU
1916	C. N. Gould, OU	1962	H. G. Barclay, TU
1917	L. C. Raiford, ISU	1963	G. A. Moore, OSU
1918	No meeting	1964	A. D. Buck, NOJC
1919	No meeting	1965	J. E. Webster, OSU
1920	M. M. Wickham, Norman	1966	C. R. Williams, PU
1921	A. F. Reiter, PU	1967	C. D. Riggs, OU
1922	J. B. Thoburn, Okla. City	1968	E. A. Reynolds, SWSC
1923	R. O. Whintont, OAMC	1969	L. V. Scott, OUHSC
1924	S. Weidman, OU	1970	C. C. Carpenter, OU
1925	(spring) C. E. Sanborn	1971	P. Buck, TU
1925	(fall) H. L. Dodge, OU	1972	W. A. Carter, ECSU
1926	J. H. Could, OAMC	1973	C. J. Mankin, OU
1927	C. N. Gould, OU	1974	N. N. Durham, OSU
1928	O. M. Smith, OAMC	1975	B. Shirley, TU
1929	A. Richards, OU	1976	G. W. Todd, OSU
1930	L. Long, Okla. City	1977	D. E. Kizer, Noble Found
1931	A. O. Weese, OU	1978	G. Odell, OSU
1932	H. Patterson, OAMC	1979	R. Couch, ORU
1933	J. E. Knowles, PU	1980	G. Wolgamott, SWOSU
1934	F. G. Brooks, OCU	1981	E. Rice, OU
1935	C. E. Decker, OU	1982	E. Grigsby, NSU
1936	H. J. Harper, OAMC	1983	J. Sokatch, OUHSC
1937	B. D. Barclay, TU	1984	M. Whitmore, OU
1938	C. M. Perry, OU	1985	J. Black, OBU
1939	H. D. Chase, TU	1986	J. Wilhm, OSU
1940	G. L. Cross, OU	1987	M. K. Patterson, Noble Found
1941	R. W. Jones, OAMC		
1942	H. I. Featherly, OAMC	1988	M. P. Carpenter, OU
1943	O. F. Evans, OU	1989	K. E. Conway, OSU
1944	V. G. Heller, OAMC	1991	J. K. McPherson, OSU
1945	J. R. Nielsen, OU	1993	J. R. Estes, OU
1946	O. C. Dermer, OAMC	1994	J. D. Tyler, CU
1947	J. T. Self, OU	1996	C. Taylor, SEOSU
1948	L. S. McLeod, TU	1998	R. J. Tyrl, OSU
1949	J. C. Shirley, PU	2000	D. Bass, UCO
1950	H. Taylor, OCW	2002	C. Clifford, NSU
1951	H. W. Larsh, OU	2004	S. Young, SNU
1952	V. B. Monnett, OAMC	2006	S. Barber, OCU
1953	S. P. Massie, LU	2008	U. Melcher, OSU
1954	A. N. Murray, TU	2010	K. R. Hobson, OU
1955	R. E. Olson, OU	2012	C. Clifford, NSU

PROGRAM SUMMARY

(Cont.)

11:00 a.m.	Section Meetings	Presentation Rooms
	Election of Section Vice-Chair. [Provide this information to Dr. David Bass at the check-in desk before leaving.]	
11:30 a.m.	Academy Business Meeting	300 Carl Albert Nigh University Center
	All OAS members are encouraged to attend. Visitors are welcome.	
12:00 p.m.	Academy Luncheon & Plenary Address	Ballrooms A/B 3rd floor Nigh University Center
	Admission by ticket only.	

Dr. Victor H. Hutchinson
George Lynn Cross Research Professor Emeritus
Department of Biology
University of Oklahoma

*Oklahomans for Excellence in Science Education:
History and Activities*

GENERAL INFORMATION

Name Badges: Name badges, provided upon registration, must be worn at all times by all individuals attending Academy section programs, business meetings, and luncheon. If your badge is not visible, you may be asked to leave by the persons in charge. Lost badges may be replaced at the registration desk upon verification of your registration documents. **All presenters must register and wear an official name badge.**

Parking: Visitors Parking Lot, east of Nigh University Center. Please tell the parking gate attendant that you are with the OAS. Your registration fee covers the parking. If you park in any other lots, you will be ticketed.

On-site Registration Fees:

Members - \$25.00
Non-members - \$30.00
Student members - \$15.00
Student non-members - \$20.00
Luncheon tickets (if available) - \$20.00

2012 and 2013 Dues are Payable: The OAS registration desk will accept dues payments.

Professional - \$30.00
Graduate/Undergraduate Student - \$20.00
Family - \$35.00
Library - \$40.00
Life - \$500.00

Guidelines for Abstract Publication: Abstracts may be published in the *Proceedings of the Oklahoma Academy of Science*, subject to the editorial policies as stated in the most recent issue of the *POAS*, Volume 91, 2011, and the review of the Editorial Board. Specific formatting instructions for abstracts may be found at <http://oas.uco.edu/Abstractpub.html>. Abstract publication fee is \$35. *POAS* editor is Dr. Mostafa S. Elshahed, mostafa@okstate.edu.

Executive Director: Inquiries concerning upcoming OAS activities and membership may be directed to Dr. David Bass, OAS Executive Director, Campus Box 90, University of Central Oklahoma, Edmond OK 73034, 405-974-5772, dbass@uco.edu.

Official Meeting Hotel:

Best Western Edmond Inn Suites
2700 East Second St., Edmond, OK 73034; 405-216-0300
<http://www.bestwestern.com>

Victor H. Hutchinson Luncheon Speaker

Dr. Victor H. Hutchinson holds the position of George Lynn Cross Research Professor Emeritus in the Department of Zoology at the University of Oklahoma. He received his Ph.D. in Zoology from Duke University, was a faculty member at the University of Rhode Island for 11 years, and served as Chair of Zoology at the University of Oklahoma from 1970-1980. He received a Guggenheim Fellowship for study in Colombia, has published approximately 150 scientific papers and book chapters, and served as major professor of 29 Ph.D. and 18 M.S. students. He has served as President of The American Society of Ichthyologists and Herpetologists, and of the Society for the Study of Amphibians and Reptiles. He is a Fellow of the American Association for the Advancement of Science, a co-founder of Oklahomans for Excellence in Science Education, and a recipient of the Constitutional Heritage Award from the Oklahoma Chapter of Americans United. He served during the Korean War and in the U.S. Army Reserve, Medical Service Corps, retiring as a Colonel in 1982.

SECTION N: BIOMEDICAL SCIENCES

(cont.)

- 2:00 ***Using Lentivirus to Create Transgenic *Gallus gallus* to Further Study the Effects of Retinoic Acid on Scleral Glycosaminoglycan Synthesis.** B. Cowan, C. Bryant, J. Summers. Oklahoma Christian University, University of Oklahoma Health Sciences Center.
- 2:15 ***Novel Role of Mcm10 in Leading Strand DNA Replication.** Brandy Fultz. Northeastern State University at Broken Arrow.
- 2:30 ***Profiling the Mechanism of Carcine Transport in Human Corneal Epithelial Cells.** Nathan Bernhardt, Anne Jacobi. Southwestern Oklahoma State University, University of Oklahoma Health Science Center.
- 2:45 ***Using Stress-Relaxed Model to Test Serum-Dependency of Fibroblast Contraction in Collagen Lattice.** J.X. Herwig, M. Vaughan. University of Central Oklahoma.
- 3:00 ***Effects of a Series of Ketone Compounds on Hepatic Carboxylesterase Activity in Mice.** Olivier Nsengiyumva. Oklahoma Christian University.

Poster

***Mcm10 and Mrc1 Interact to Coordinate DNA Replication and S-Phase Checkpoint Pathways.** Ian Schalo. Northeastern State University at Broken Arrow.

No Smoking: Please, no smoking in any of the buildings on the campus. Also, food and drink are not permitted in any meeting room. Thank you.

Refreshments: Food and drink will be available in the atrium of Howell Hall from 8 am to 3 pm.

Assistance or Information: Look for individuals with OAS badges or host ribbons. These are faculty and staff assigned to assist you.

SPECIAL NOTES

Dr. Bill Radke, University Provost & Vice-President of Academic Affairs, provided funds to allow OAS to hold its meeting in the Nigh University Center.

Dr. John Barthell, Dean of the College of Mathematics & Science, sponsored the Council dinner/meeting on Thursday evening and all technical meeting refreshments.

Dr. Clark Ovrebo, Professor in the Department of Biology, and Andrea McCoy and Donna Bass, both of the College of Mathematics & Science Dean's Office, worked together to make the local meeting arrangements.

Upcoming Meetings:

- 2013 Oklahoma Junior Academy of Science Meeting, March 7-9, East Central University
- 2013 Spring Field Meeting, April 19-21 (tentative), Lake Eufaula State Park
- 2013 Fall Field Meeting, tba
- 2013 Annual Technical Meeting, tba

SECTION A: BIOLOGICAL SCIENCES - BOTANY

**Nigh University Center
room 312**

**Moderator: Adam Ryburn
Oklahoma City University**

- 10:00 **Cytotypic Variation in *Phlox pilosa* ssp. *pilosa* (Polemoniaceae), Placed within the Broader Context of Polyploidy in the Genus.** Lindsey Worcester, Mark H. Mayfield, Carolyn J. Ferguson. Kansas State University, Oklahoma State University.
- 10:15 ***Multilocus Phylogenetics of the Sonoran Desert Milkweed Clade (*Asclepias*, Apocynaceae).** Ben Haack, C. Pfarr, L. Ziemian, L. Holland, S. Straub, R. Cronn, A. Liston, Mark Fishbein. Oklahoma State University.
- 10:30 ****Phacelia strictiflora* Seeds Require Smoke for Germination.** S. L. Ross, S. A. Rice. Southeastern Oklahoma State University.
- 10:45 **Earlier Spring Budburst over the Last Seven Years in Oklahoma Trees.** Stanley Rice. Southeastern Oklahoma State University
- 11:00 **Section A Business Meeting** 300 Carl Albert
(combined with Zoology)
- 1:30 **Identification and Evolution of Genes Involved in Trichome Development in Milkweeds (*Asclepias*).** Shakuntala Fathepure, Shannon Straub, Aaron Liston, Richard Cronn, Mark Fishbein. Oklahoma State University, Oregon State University, Pacific Northwest Research Station-USDA Forest Service.
- 1:45 **Turning Vines into Trees: Phylogenetic Assessment of Gonolobinae (Apocynaceae).** Angela Rein, Mark Fishbein. Oklahoma State University.
- 2:00 **A Chloroplast Phylogeny of Agavaceae Subfamily Chlorogaloideae: Implications for the Timing and Tempo of Evolution on Serpentine Soils.** Mark Fishbein, K. Halpin. Oklahoma State University.

SECTION N: BIOMEDICAL SCIENCES

**Nigh University Center
room 301 Robert S. Kerr**

**Moderator: Eric Phelps
Oklahoma Christian University**

- 9:45 **No-Cost Software for Student Analysis of Nucleic Acids and Proteins.** E.L. Blewett. Oklahoma State University Center for Health Sciences.
- 10:00 ***Does Haploinsufficiency of *Atp2cl* Promote Increased Apoptosis or Increased Apoptotic Load After UVB Irradiation?** Trey Polk. Southern Nazarene University, Oklahoma Medical Research Foundation.
- 10:15 ***A Sensitivity Assay for Identifying Melatonin Receptor Mutants in *Caenorhabditis elegans*.** K. Bhattarai, S. Fields. East Central University.
- 10:30 ***GLUT4 as a Therapeutic Target for Type 2 Diabetes Mellitus.** C.D. King, B. Griesel, B.J. Atkinson, A.L. Olson. Oklahoma Christian University, University of Oklahoma Health Sciences Center.
- 10:45 ***Gait and Work Performance Measures in a Male with Unilateral Transtibial Osteomyoplastic Amputation.** Wesley Maddus, C. Dionne. Redlands Community College, University of Oklahoma Health Sciences Center.
- 11:00 **Section N Business Meeting**
- 1:30 ***Nanoceria Inhibit Tumor Growth and Modulate Protein Expression in the Retinoblastoma Mouse Model.** A.M. Roerkasse, S.S. Simpson, K.E. Klump, J.F. McGinnis. Oklahoma Christian University, University of Oklahoma Health Sciences Center.
- 1:45 ****Mcm10 and Mrc1 Interaction is Important for Maintaining Genome Stability in *Saccharomyces cerevisiae*.** Chance Hendrix. Northeastern State University at Broken Arrow.

SECTION M: ENVIRONMENTAL SCIENCES AND PLANNING

**Nigh University Center
room 326 Heritage**

**Moderator: Charles Crittel
East Central University**

- 9:45 ***A Comparison of Total Phosphorus Levels in Lakes in Kalkaska County, Michigan and Relation to Trophic State Index.** O. Oyewole, D. Mahan, S. Carr. Oral Roberts University, AuSable Institute of Environmental Studies, Anderson University.
- 11:00 **Section M Business Meeting**

Posters

***Effect of Landfill Leachate on the Viability of Mammalian Cells Grown *in vitro*.** A. Brown, B. Daugherty, M. Sohn, S. Vang, D. Sloan. Tulsa Community College.

Preliminary Investigations of Actinomycetes as a Chlordane Remediation Agent. J. Bidlack, J. Green, F. Osburn, B. Webster, P. Olson. University of Central Oklahoma.

SECTION A: BIOLOGICAL SCIENCES - BOTANY

(cont.)

- 2:15 **Some Interesting Fungi from the Atlantic Forest of Brazil.** Clark L. Ovrebo, Felipe Wartchow, Marcelo A. Sulzbacher. University of Central Oklahoma, Universidade Federal da Paraíba, Brazil, Universidade Federal do Rio Grande do Norte, Brazil.
- 2:30 **Flora of Oklahoma Annual Meeting**

Posters

***Discrimination and Analysis of *matK* and *rbcLa* Genes in Angiosperms.** Carol Saylor Hefley, Edwina Thompson, See Vang, Diana Spencer. Tulsa Community College.

Comparison of Leaf Area Index (LAI) of Tomato Plants Grown under Conventional or Plasticulture Techniques. Alicia M. Fisher, Ashton S. Fisher, William Phillips, Laura Gruntmeir, William Baker, Casey Sharber, Micah Anderson. Redlands Community College, OSU Extension Service-El Reno, Oklahoma Department of Agriculture.

Influence of Aspect and Fire Frequency on Woody Edge Vegetation in Shortleaf Pine Forests. Tabitha Lowe, Craig R. Zimmermann. Rogers State University.

Using Phytolith Assemblages to Reconstruct the History of a Degraded Desert Grassland in Big Bend National Park. Craig R. Zimmermann, Larry Green, John C. Zak, Bryan Noblitt, Richard Hart. Rogers State University, Texas Tech University

SECTION A: BIOLOGICAL SCIENCES - ZOOLOGY

**Nigh University Center
300 Carl Albert**

**Moderator: Mia Revels
Northeastern State University**

- 8:15 ****Synaptic Connections are Regulated via SNARE Interacting Partners with VSM-1.** L.S. Seals, C. Hayden, C. Wright. Southwestern Oklahoma State University.
- 8:30 ***Snail Nutrition: Leaf Litter is Not Enough!** Rebekah J. Martin, Elizabeth A. Bergey. University of Oklahoma.
- 8:45 ***Comparative Strength and Structure of the Femora and Humeri of Oklahoma Turtles (Order Testudines).** J.M. Steudeman, K.D. Andrews, L. Estrada-Ojeda. East Central University.
- 9:00 ***Responses to Chemical Cues by Visually Signaling Collared Lizards.** Abigail A. McGee, Troy A. Baird, Anthony Lunsford. University of Central Oklahoma.
- 9:15 ***Activity Budget, Habitat Use and Diet of Squirrel Monkeys (*Saimiri oerstedii*) in Southern Costa Rica.** Taylor Galey, Laurie Kauffman. Oklahoma City University.
- 9:30 Break
- 9:45 ****Utilizing Growth Rates as an Indicator of Resource Competition Between *Anolis carolinensis* and *Anolis sagrei*.** C.E. Baker, M.B. Lovern. Oklahoma State University.
- 10:00 ****Physiological Interactions with Nest Defense and Parental Care: A Preliminary Examination.** M. Ambardar, J.L. Grindstaff. Oklahoma State University.
- 10:15 ****The Kids are Alright: The Fitness Payoff of Subordinate Social Tactics in Male Collared Lizards.** J.R. York, T.A. Baird, M.L. Haynie. University of Central Oklahoma.
- 10:30 ****Influence of Neural Vasopressin on Monogamy and Reproductive Tactics in Prairie Voles.** Kenneth J. Huang, Brittany L. Evans, Da-Jiang Zheng, Alexander G. Ophir. Oklahoma State University.

**SECTION L: MATHEMATICS, COMPUTER SCIENCE,
AND STATISTICS**

**Nigh University Center
room 320B**

**Moderator: Anita Walker
East Central University**

- 8:15 **1's and 0's, Trues and Falses.** Anita Walker. East Central University.
- 8:30 ***The Ancestry of a Language: Exporing Glottochronology.** Erin Fixico Mitchell, Anita Walker. East Central University.
- 8:45 ***The Mathematics and Application of Quarterback Ratings.** Joseph Pavlovich, Anita Walker. East Central University.
- 9:00 **Funny C.** Bill Walker. East Central University.
- 9:15 ***Random Number Generation.** Joshua Crittenden, Anita Walker. East Central University.
- 9:30 Break
- 9:45 ***A Survey of Quaternions.** Austin Wood, Anita Walker. East Central University.
- 10:00 **Data Laundering.** Clay Carley. East Central University.
- 11:00 **Section L Business Meeting**

SECTION K: MICROSCOPY

(cont.)

- 11:30 †**Temporal Alteration of Glutaminase in Rat Primary Sensory Neurons during Unilateral Adjuvant-Induced Arthritis.** Zijia Zhang, Ting Wang, Ruben Schechter, Kenneth E. Miller. Oklahoma State University Center for Health Sciences.
- 11:45 †**Identifying Products of Iron Sulfide Oxidation Under Simulated Natural Conditions Using SEM.** Ying Lan, Elizabeth C Butler. University of Oklahoma.
- 12:00 Academy Luncheon
- 2:30 OMS tour of Oklahoma Forensic Institute, University of Central Oklahoma (meet at OFI)
- Ugly Bug Contest—Howell Hall atrium

Poster

Expression of Vesicular Glutamate Transporter 2 in Dorsal Root Ganglion Neurons During the Chronic Phase Following Sciatic Nerve Transaction. Shaima Alothman, Kenneth E. Miller. Oklahoma State University Center for Health Sciences.

† OMS Timpano Competition

SECTION A: BIOLOGICAL SCIENCES - ZOOLOGY

(cont.)

- 10:45 **New State Records for Two Invertebrates (Nematomorpha, Arthropoda) in Oklahoma.** Chris T. McAllister, Stephen W. Chordas, Ben Hanelt. Eastern Oklahoma State College, Ohio State University, University of New Mexico.
- 11:00 **Section A Business Meeting** (with Botany)
- 1:30 **Scleral Ossicle Overlap Patterns in Testudines as Evidence of Evolutionary Divergence and Specialization.** A. Siweckyj. East Central University.
- 1:45 **Contrasting Spatial and Temporal Patterns in Migration and Wintering Ranges of Scissor-Tailed Flycatchers and Western Kingbirds.** M.S. Husak, D.V. Landoll, A. Jahn, H. LePage. Cameron University, University of Oklahoma, University of Florida, Universidad de Buenos Aires.
- 2:00 **Behavioral Interactions between Juvenile Five-Lined Skink Lizards of Different Sizes.** Mark A. Paulissen, Christine Morse. Northeastern State University.
- 2:15 **Limiting Factors to the Maximal Aerobic Performance of the Deer Mouse, *Peromyscus maniculatus*.** M.J. Van Sant, K.A. Hammond. Cameron University, University of California, Riverside.
- 2:30 **Tails from the Fish Tree of Life: Multi-Locus Phylogenetic Analysis of Actinopterygian Fishes.** Richard Broughton. University of Oklahoma.
- 2:45 **Dinosaurs of Cimarron County, Oklahoma.** Kent Smith, Richard Cifelli, Nicholas Czaplewski. Oklahoma State University Center for Health Sciences, Sam Noble Oklahoma Museum of Natural History, Norman.
- 3:00 **Behavior of Endangered Costa Rican Squirrel Monkeys in Human-Modified Landscape.** L. Kauffman. Oklahoma City University.

SECTION A: BIOLOGICAL SCIENCES - ZOOLOGY

(cont.)

Posters

***Leukemia Cells Stimulate Lipolysis in Adipocytes.** Zoey Michael Miranda, Xia Sheng, Steven D. Mittelman. Oral Roberts University, Children's Hospital Los Angeles, University of Southern California-Los Angeles.

***Potential UV-Communication in Kangaroo Rat (*Dipodomys ordii*).** B.K. McDonald, B. Geiger, J. Macedonia, R. Moro, K. Carter. Cameron University, Florida Southern College, University of Kansas.

***A Description of Naturally Occurring Wing Damage in *Myotis velifer* (Chiroptera: Vespertilionidae) in Oklahoma.** T. Downs, W. Caire. University of Central Oklahoma.

The Effect of Urbanization on the Secondary Sex Ratio of Red-Eared Sliders (*Trachemys scripta elegans*) in Northeast Oklahoma. Melinda Cheek, Craig R. Zimmermann. Rogers State University.

Distribution of the Mediterranean Gecko (*Hemidactylus turcicus*) in Southwestern Oklahoma. J.W. White, M.S. Husak. Cameron University.

Personality Trait Development and Relationships to Learning in Zebra Finches, *Taeniopygia guttata*. M.W. Waselik, J.L. Grindstaff. Oklahoma State University.

Maternal Immune Challenges Influence Juvenile Zebra Finch (*Taeniopygia guttata*) Antibody Response. M. Naylor, J.L. Grindstaff. Oklahoma State University.

Influence of Historic Coffee Cultivation on Terrestrial Snail Communities in the Luquillo Experimental Forest, Puerto Rico. Craig R. Zimmermann, Renee Morse-Heenan, Nadia Kyrylova. Rogers State University.

Preliminary Results on Community Structure, Population Demographics, and Biomarkers in Chiroptera from Tar Creek Superfund Site, Oklahoma, USA. Rachel E. Eguren, Karen McBee. Oklahoma State University.

SECTION K: MICROSCOPY

Nigh University Center
room 304

**Moderators: Scott Russell / Elison Blancaflor
University of Oklahoma / Noble Foundation**

- 8:30 †**Glutamatergic Neurons in Rat Intrinsic Cardiac Ganglia Retrogradely Labeled from Ventricles.** Ting Wang, Zijia Zhang, Kenneth E. Miller. Oklahoma State University Center for Health Sciences.
- 8:45 †**Primary Rocky Mountain Spotted Fever and Secondary Systemic Histoplasmosis Infection in an American Cross Fox Hound Puppy.** Sallie Ruskoski, Joseph Landers. Oklahoma State University Center for Health Sciences, Heritage Veterinary Hospital, Tulsa.
- 9:00 **Applications of Microscopy in Forensic Science.** Michael V. Martinez. Bexar County, Texas Crime Laboratory.
- 9:45 Break
- 10:00 **Early History of Microscopy.** Kerry Magruder. University of Oklahoma.
- 10:30 **Tales of Discovery: Boldly Going Where Only a Few Mustard Plants Have Gone Before.** Elison B. Blancaflor, J. Alan Sparks, Jin Nakashima, Yuhong Tang. Samuel Roberts Noble Foundation, Ardmore.
- 11:00 †**An Assessment of Measurements Generated by Scanning Electron Microscopy for Determining Microbial Contributions to Biocorrosion.** C. Nicole Johnson, Heather S. Drilling, Paul A. Lawson, Bradley S. Stevenson. University of Oklahoma.
- 11:15 †**Aspartate Aminotransferase is Elevated in Rat DRG Neurons Containing Calcitonin Gene-Related Peptide During Adjuvant-Induced Arthritis.** Brittany Bolt, Kenneth E. Miller. Oklahoma State University Center for Health Sciences.

† OMS Timpano Competition

SECTION J: BIOCHEMISTRY AND BIOPHYSICS

**Nigh University Center
room 301 Robert S. Kerr**

**Moderator: Wouter Hoff
Oklahoma State University**

- 8:30 ***The Characterization and Purification of the HFMI1 Protein.** N.L. Conley, R.J. Pezza. Oklahoma Christian University, Oklahoma Medical Research Foundation.
- 8:45 ***Electrophysiological Dynamics of *Xenopus laevis* Oocytes Expressing Wildtype and Mutant SOD1 Proteins in Variable Ca²⁺ Environments.** C. Jaiyeola, N.C. Correa, H. Reed. Oral Roberts University, University of Chicago.
- 9:00 ***Recombinant Expression of PgtA Glycosyltransferase in *E. Coli* and Design of a PgtA Overexpression Construct for *Dictyostelium*.** J.T. Powell. Oral Roberts University.
- 9:15 ***Molecular Components Controlling Synapses in Nematodes.** Ashley Rodriguez, Josiah Dittrich, Kody McKay, Melanie Graham, Andrea Holgado. Southwestern Oklahoma State University.
- 9:30 Break
- 11:00 **Section J Business Meeting**

Poster

***Viscoelastic Properties of Gluten Proteins from Hard Red Winter Wheat Evaluated by Compression-Recovery and Correlations with Functionality.** P. Chompoorat, Z. Hernandez, P. Rayas-Duarte. Oklahoma State University.

***Expression of Heat Shock Protein in *Daphnia Magna*.** M. Dickerson, C. Crittall, C. Biles. East Central University.

SECTION B: GEOLOGY

**Nigh University Center
room 320C**

**Moderator: Kurtis Koll
Cameron University**

- 8:15 **Analysis of Hypoxic Caves in the Arbuckle Mountains of South Central Oklahoma.** Stacy Gantt. East Central University, Arbuckle Karst Conservancy.
- 8:30 **Analysis of the Distribution of Karst Features in the Arbuckle Mountains of South Central Oklahoma.** Kevin Blackwood. East Central University, Arbuckle Karst Conservancy.
- 11:00 **Section B Business Meeting**

SECTION C: PHYSICAL SCIENCES

**Nigh University Center
room 320B**

**Moderator: David Martin
University of Central Oklahoma**

- 10:15 ***Effects of High Frequency Resonance in Wireless Power Transmission.** A. Matthews, B. Okine, C. Mitil, D. Marzolf, W. Wilson. University of Central Oklahoma.
- 10:30 ***Near Space Experimental Venture.** Pankaj Karna, Jerry Haubrick, Ahmed Alshbaan, Okome M'bika Blice Nuchka. University of Central Oklahoma.
- 10:45 **Entropy Generation in Laminar Flow.** Andrew W. Henderson. University of Central Oklahoma.
- 11:00 **Section C Business Meeting**
- 1:30 **The Quantum Funnel?** J.S. Meyer. St. Gregory's University.
- 1:45 **Entropy and the Thermodynamics of a Single Particle.** W. J. Wilson. University of Central Oklahoma.
- 2:00 **Energy Uptake of a Model Molecular System Exposed to an Intense Time-Varying Electric Field.** David L. Martin. University of Central Oklahoma.

SECTION I: ENGINEERING SCIENCES

(cont.)

- 11:00 **Section I Business Meeting**
- 1:30 **Particle Image Velocimetry in a Straight Tube.** Brock Ring. University of Central Oklahoma.
- 1:45 **Design and Implementation of a Particle Image Velocimetry System for Fluid Dynamics.** Andrew Henderson, Ane Joan Muvadgah, Sultan Almaglooth, Yunhao Lin. University of Central Oklahoma.
- 2:00 **Probing the Biomechanics of Flagella with Optical Tweezers.** Gang Xu. University of Central Oklahoma.
- 2:15 **A Contrast Enhancement Filter for Improving Stent Visibility in Interventional X-Ray Fluoroscopy: An Initial Study.** Yuhao Jiang. University of Central Oklahoma.
- 2:30 **Estimation of Monopolar and Bipolar Current Spreads in Cochlear Implants.** Mohamed Bingabr. University of Central Oklahoma.
- 2:45 **Design a Fuzzy Logic Control Model for a Wind Turbine Control System.** Yiyuan Jia, Alaeddin Abu-Abed. University of Central Oklahoma.

SECTION I: ENGINEERING SCIENCES
Nigh University Center
room 320C

Moderator: Morshed Khandaker
University of Central Oklahoma

- 8:45 ***Design of a Temperature Measurement and Acquisition Device to be Used in Conjunction with Laser Photothermal Therapy.** Lance Straughn. University of Central Oklahoma.
- 9:00 ***Virtual TIMS (Transmission Impairment Measurement Set).** Jonathan Adams, Jeff Fallon, Anh Ho, Baha Jassemnejad. University of Central Oklahoma.
- 9:15 ***Modular Optical Tweezers: Setup and Calibration.** E. Segher, N. Raichura, J. Abraham, B. Reed, G. Xu, B. Jassemnejad. University of Central Oklahoma.
- 9:30 Break
- 9:45 ***Design and Construction of Electrospinning Unit for the Fabrication of Polymeric Micro/Nano Fibers for Biomedical Applications.** S. Banstola, U. KC, A. Khadka. University of Central Oklahoma.
- 10:00 ***Dobochinski's Pendulum.** Andrew McFarlin, Chris Stewart, Jason Yeisley, Chris Conley, Weldon Wilson. University of Central Oklahoma.
- 10:15 ***Speaker Identification Using Cross Correlation and Voice Characteristics.** Trison Graham, Cedric Tinang, Aaron Langston, Tommy Le, Mohamed Bingabr. University of Central Oklahoma.
- 10:30 ***Design, Simulation, Fabrication, and Experimental Analysis of a Double Pipe Heat Exchanger.** M. Almomen, J.R. Pinpin, L.F. Romainum. University of Central Oklahoma.
- 10:45 ***Design and Construction of a Spine Simulator to Test Intervertebral Disk Polymers.** K. Azartash-Namin, Z. Azartash-Namin, K. Tran, A. Williams. M. Khandaker. University of Central Oklahoma.

SECTION C: PHYSICAL SCIENCES
(cont.)

Posters

***Microwave Synthesis of BiMEVOX Compounds.** Joshua M. Smith, Chandra K. Thapaliya, Dwight L. Myers. East Central University.

An *ab initio* Study of Heterocyclic PAHs. Daniel M. McInnes, Dwight L. Myers. East Central University.

Examining Acoustic Attenuation Coefficient in Salt Water Solution. Chiemi K. Standridge, Daniel Kiptoo. East Central University.

Analysis of Oklahoma Mushroom Fruiting-Body Odors Using GCMS and Solid Phase Microextraction. Kaci Rosales, Clark Ovrebo, John Bowen. University of Central Oklahoma.

Analysis of Triclosan in Sewage Treatment Plant Outflow Water and Its Affect on the Resistance of Native Bacteria. Kaci Rosales, Steven Everman, Robert Brennan, John Bowen, Al Alhabadily. University of Central Oklahoma.

SECTION D: SOCIAL SCIENCES

Nigh University Center
room 326 Heritage

Moderator: Alicia Limke
Southern Nazarene University

- 8:15 ****Feminine Archetype Internalization, Psychological Well-Being, and Reduction of Negative Mood.** Jennifer K. Pryse, Alicia Limke, Paul C. Jones. Southern Nazarene University.
- 8:30 ****Who's Your Daddy? Family Structure Differences in Attachment to God.** Maurice S. Murunga, Alicia Limke, Ron Wright. Southern Nazarene University.
- 11:00 **Section D Business Meeting**
- 1:30 ***You Can't Make Me Believe: Parents' Religious Fundamentalism and Children's Spiritual Well-Being and Defensive Theology.** Alisa Huskey, Alicia Limke. University of Central Oklahoma, Southern Nazarene University.
- 1:45 ***How Can We Help? Identifying Crucial Elements of Social Support Following Trauma Using Biomarkers.** Alisa Huskey, Scott P. Secor, Alicia Limke, Ronald W. Wright. University of Central Oklahoma, Southern Nazarene University.
- 2:00 ***I'll Confess to Belong: Personality Correlates of False Confessions.** Kathryn Schrantz, Alicia Limke. University of Central Oklahoma, Southern Nazarene University.
- 2:15 ***Sibling Attachment, Parental Attachment, and Perceived Differential Treatment.** Tiffany D. Russell, Alicia Limke. University of Central Oklahoma, Southern Nazarene University.

SECTION H: MICROBIOLOGY

(cont.)

Posters

High-Yield Enzyme Production for Sustainable and Controlled Forest Product Breakdown. Amanda Behar, Rolf Prade. Oklahoma State University.

***Light Cycles Play a Role in Regulating Sporulation in the Fungus *Chaetomium globosum*.** Shubhra Poudyal, Ankita Thapa, Charles Biles. East Central University.

SECTION H: MICROBIOLOGY

Nigh University Center
room 314 Henry Bellmon

Moderator: Mostafa Elshahed
Oklahoma State University

- 9:00 ***Investigation of the Mechanism of Prostaglandin Biosynthesis in *Candida albicans*.** V.C. Reynolds, G. Köhler, S. Assefa. Oral Roberts University, Oklahoma State University Center for Health Sciences.
- 9:15 ***Analysis of Signaling Mutants in *Dictyostelium discoideum*.** J.A. Miller. Oklahoma State University.
- 9:30 Break
- 9:45 ***The Effect of Calcium on Motility in *Pseudomonas aeruginosa*.** E.K. Best, M. Guragain, K. Hollingsworth, S.R. Lotlikar, A. Lowe, M.A. Patrauchan. Oklahoma State University.
- 10:00 ***Role of PKA Overexpression in Dictyostelium Chemotaxis and Development.** Rachel Rice, J. Hadwiger. Oklahoma State University.
- 10:15 ****Staphylococcus aureus* Biofilms and Chronic Wound Pathogenesis.** Amy Tankersley, Robert Brennan, Bart Frank. University of Central Oklahoma.
- 10:30 ****Role of RND Transport Systems in Calcium-Induced Antibiotic Resistance in *Pseudomonas aeruginosa*.** Sharmily S. Khanam. Oklahoma State University.
- 10:45 ***Zinc Chelators in the Prevention of Staphylococcus Biofilms.** M.J. Diatte, Andy Herr, Joel Gaikwad. Oral Roberts University, University of Cincinnati.
- 11:00 **Section H Business Meeting**

SECTION E: SCIENCE EDUCATION

Nigh University Center
room 326 Heritage

Moderator: Kathi McDowell
Northeastern State University

- 8:45 **Get Green for Blue: An Environmentally Based Summer Academy Program.** K. McDowell, M. Parrott, P. Christol. Northeastern State University at Broken Arrow.
- 9:00 **Resources for Making Student Teams and Having Fun While Learning.** Elizabeth A. Bergey. University of Oklahoma.
- 9:15 **Is This A Great Forest or What?** Bruce Smith. McLoud High School.
- 9:30 **Native Science: Using Sacred Stories to Teach Science.** Kurtis Koll. Comanche Nation College.
- 11:00 **Section E Business Meeting**

SECTION F: GEOGRAPHY
Nigh University Center
room 312

Moderator: Brad Watkins
University of Central Oklahoma

- 8:15 **Piecing Together the Economies of Scale in the Texas Panhandle.** M.Micozzi. East Central University.
- 8:30 **The Obscure Tourist Town of Boquillas, Coahuila, Mexico.** Gregory Plumb. East Central University.
- 8:45 **Transverse-Crib Barns Beyond the 98th Meridian: Upland Southern Ingenuity on the High Plains.** Brad Bays. Oklahoma State University.

Poster Presentations

- 9:00 ***Collecting Ground Control Points For Emergency Management.** Jake Williams. East Central University.
- 9:10 ***Where Are They: Improving Emergency Management Services for Chickasaw Homeowners.** Alexis Brendle. East Central University.
- 9:20 ***Integration of Spatial Data for the Facilities Management.** Sergio Jimenez-Garcia. East Central University.
- 9:30 ***Correction of Choctaw Tribal Facility Locations in a GIS Database.** Matthew Thompson. East Central University.
- 9:40 ***From Lease To Layer: A Geodatabase Approach.** Brent L. Stone. East Central University
- 9:50 ***Retrieval of Soil Samples for Environmental Mitigation of a Gypsum Plant.** Andrew Minnich. East Central University.
- 11:00 **Section F Business Meeting**

SECTION G: FISH AND WILDLIFE CONSERVATION
Nigh University Center
room 326 Heritage

Moderator: Richard Butler
McLoud High School

- 10:00 **Plant Nurseries as a Resource for Dispersing Non-Native Land Snails.** Elizabeth A. Bergey, C. Mike Mather, L. L. Figueroa. University of Oklahoma.
- 10:15 ***After the Burn: Summer Survival of Snails in an Experimentally Burned Habitat.** Eric J. Ray, Elizabeth A. Bergey. University of Oklahoma.
- 10:30 ****Assessment of Influence of Climate Change on Potential Habitat of *Syrnaticus reevesii*.** Xiao Feng, Liqiang Ji. Oklahoma State University.
- 10:45 ****Estimating Jaguar (*Panthera onca*) Abundance from a Camera Trap Survey in the Mountain Pine Ridge Forest, Belize.** Scott Eaton, J. Smith, R. Martinez, E. Terdal. Northeastern State University, Mountain Pine Ridge Forest Preserve, Belize.
- 11:00 **Section G Business Meeting**

Poster

Managing a Suburban Wildlife Habitat Area. Darryel L. Reigh, Raymond E. Willis. University of Science & Arts of Oklahoma, Midwestern State University.