

**98th ANNUAL TECHNICAL MEETING  
OKLAHOMA ACADEMY OF SCIENCE  
EAST CENTRAL UNIVERSITY**

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**98th ANNUAL TECHNICAL MEETING  
OKLAHOMA ACADEMY OF SCIENCE  
EAST CENTRAL UNIVERSITY**

**PROGRAM SUMMARY**

**Thursday, 5 November 2009**

6:30 p.m.	Executive Council Dinner and Meeting	Oklahoma Room Student Union
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**Friday, 6 November 2009**

7:30 a.m. - 10:00 a.m.	Registration for Technical Meeting	Main Entrance Physical & Environmental Science Bldg. (P&ES)
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8:30 a.m. - 11:00 a.m.	Concurrent Scientific Paper Sessions	P&ES Bldg
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Section A	Biological Sciences – Botany (I) .....	Room 166
Section A	Biological Sciences – Botany (II) .....	Room 156
Section A	Biological Sciences – Zoology .....	Room 106
Section B	Geology .....	(with Geography) Room 250
Section C	Physical Sciences .....	Room 228
Section D	Social Sciences .....	Room 252
Section E	Science Education .....	Room 218
Section F	Geography .....	Room 250
Section G	Fish and Wildlife Conservation .....	Room 206
Section H	Microbiology .....	Room 130
Section I	Engineering Sciences .....	Science Hall Room 211
Section J	Biochemistry and Biophysics .....	Room 240
Section K	Microscopy .....	Room 154
Section L	Mathematics, Computer Science, and Statistics .....	Room 120
Section M	Environmental Sciences and Planning .....	Science Hall Room 213
Section N	Biomedical Sciences .....	Room 262
	Posters .....	Room 123 & 125
	Ugly Bug Contest .....	Room 121



## GENERAL INFORMATION

**Name Badges:** Name badges, provided upon registration, must be worn at all times by all individuals attending Academy sectional 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:** Parking lots north and east of the Halley Brown Fine Arts Building (near the corner of 10th and Center streets) are to be used by OAS members at the meeting. Signs will be posted.

**On-site Registration Fees:** Members - \$20.00  
Non-members - \$25.00  
Student members - \$10.00  
Student non-members - \$15.00  
Luncheon tickets (if available) - \$20.00

**2009 and 2010 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 Paper Publication:** Papers may be published in the *Proceedings of the Oklahoma Academy of Science*, subject to the editorial policies as stated in *POAS*, Volume 82 and review of the Editorial Board. Abstract publication fee is \$35. *POAS* editor is Kurtis Koll, kurtisk@cameron.edu.

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

**Official Meeting Hotels:** The designated meeting hotels are the Holiday Inn Express Hotel and Suites [1201 Lonnie Abbot Blvd., 580-310-9200, [www.hiexpress.com](http://www.hiexpress.com)] and the Microtel Inn Hotel & Suites [1003 Lonnie Abbot Blvd., 580-436-9900, [www.microtelinn.com](http://www.microtelinn.com)].

**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 during registration and breaks in the student lounge (2nd floor, center) of the P&ES Building.

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

## SPECIAL NOTES

Special thanks are extended to the **site coordinator Dr. Bruce Weems**, Dean of the College of Health & Sciences at East Central University, who coordinated all aspects of the meeting, including room arrangements, projectors, luncheon, and symposium.

A special thanks is also extended to **ECU President John Hargrave** and **Provost Duane Anderson** for sponsoring the OAS Executive Council dinner meeting Thursday evening.

### **Upcoming Meetings:**

2010 Oklahoma Junior Academy of Science Meeting, East Central University, March 25-27

2010 Spring Field Meeting, Lake Wister State Park, April 9-11 (tentative)

2010 Annual Technical Meeting, Northeastern State University-Broken Arrow campus, Nov. 5

**SECTION A: BIOLOGICAL SCIENCES – BOTANY (I)**  
**P&ES Room 166**

**Moderator: Gloria Caddell**  
**University of Central Oklahoma**

- 8:30 **Historic Fire Regime of an Old-Growth Oak Forest in Oklahoma.** Ryan DeSantis, Stephen Hallgren, Oklahoma State University.
- 8:45 **Differences in Soil Nutrients and Soil Microbial Communities under *Quercus stellata* and *Juniperus virginiana*.** Ryan Williams, Oklahoma State University.
- 9:00 **Salinity Affects Germination in *Distichlis spicata* (L.) Greene and *Sporobolus airoides* (Torr.) Torr.** C. B. Bonner, Oklahoma State University.
- 9:15 ***Paysonia perforata* Population Structure: Implications for Conservation of a Federally Protected Species.** James W. Borrone, Andrew N. Doust, Oklahoma State University.
- 9:30 Break
- 9:45 **Testing Lamiales Phylogenies with *Penstemon* Embryological Data.** Rahmona Thompson, East Central University.
- 10:00 **A Phylogeny of Agavaceae Subfamily Chlorogaloideae with a Focus on Species Delimitation in *Hastingsia*: Insights from Chloroplast DNA.** Kate Halpin, Oklahoma State University.
- 10:15 **Are Milkweeds Going Bald? An Evaluation of Herbivore-Driven Decline in Trichome Density in *Asclepias* (Apocynaceae).** Mark Fishbein, Oklahoma State University.
- 10:30 **Depiction of Bombacoideae on Maya Ceramics in Mexico, Guatemala, and Belize.** C. Zidar, W. Elisens, Missouri Botanical Garden, University of Oklahoma.
- 10:45 **Flora of Oklahoma Project.** Flora Oklahoma Editorial Committee.
- 11:00 **Section A Business Meeting,** PE&S Room 106  
(combined with Zoology)

**SECTION A: BIOLOGICAL SCIENCES – BOTANY (II)**  
**P&ES Room 156**

**Moderator: Monica Macklin**  
**Northeastern State University**

- 8:30    **Branching and Biomass Accumulation in Foxtail Millet.** Andrew N. Doust, Margarita Mauro-Herrera, Oklahoma State University.
- 8:45    **The Effect of Hormesis in the Growth of *Pythium aphanidermatum* In Vitro.** Francisco Flores, Carla Garzon, Oklahoma State University.
- 9:00    **Phylloquinone Levels in Wild Harvested Plants.** Monica Macklin, Northeastern State University.

Posters

**Organic Watermelon Production Systems.** Charles L. Webber III, Angela R. Davis, James Shrefler, USDA, ARS, SCARL, Oklahoma State University.

**Supplemental Fertilizers for Organic Greenhouse Soil Media.** Charles L. Webber III, USDA, ARS, SCARL.

**\*Embryology of *Castilleja indivisa*.** Rene Savage, Rahmona Thompson, East Central University.

**\*Spatial Genetic Structure in *Dichanthelium oligosanthes*.** Molly J. Parkhurst, Andrew Doust, Jeffrey M. Byrnes, Margarita Mauro-Herrera, Janette A. Steets, Oklahoma State University.

\*Undergraduate Competition

**SECTION A: BIOLOGICAL SCIENCES – ZOOLOGY**  
**PE&S Room 106**

**Moderator: Mark A. Paulissen**  
**Northeastern State University**

- 8:45    **The Role of Odors in Spatial Learning by the Little Brown Skink, *Scincella lateralis*.** Mark Paulissen, Northeastern State University.
- 9:00    **\*\*Long Term Effects of Metal Exposure: A Genetic and Toxicological Assessment of *Hyallolea azteca* at the Tar Creek Superfund Site.** C.E. Stanley, Jr., N.L. Cooper, J.B. Lack, J.R. Bidwell, R.A. Van Den Bussche, Oklahoma State University.
- 9:15    **\*Extraction of Toxins from *Chlorophyllum molybdites* and *Amanita phalloides* in Comparison to Toxins Stored in *Terrapene carolina* and *Terrapene ornata*.** Walter Morris, Kenia Castillo, Kenneth D. Andrews, East Central University.
- 9:30    Break
- 9:45    **\*Comparative Histology of the Gastrointestinal Tract in the Box Turtles (*Terrapene carolina* and *Terrapene ornata*).** Morgan J. Brown, Elizabeth A. Brown, Kenneth D. Andrews, East Central University.
- 10:00    **\*Juvenile Stages of Parasites Found in the Red-eared Slider Turtle (*Trachemys scripta elegans*).** Erica Armstrong, Chelsea Downs, Kenneth D. Andrews, East Central University.
- 10:15    **\*Strength and Structure of the Femora of Oklahoma Turtles (Order Testudines).** Erin Miller, Ken Andrews, East Central University.
- 10:30    **\*Population Genetic Structure of Hibernating Cave Myotis, *Myotis velifer*, from Cave Localities in Northwestern Oklahoma.** Kimberly L. Koppari, Tiffany L. Cloud, William Caire, Ronald A. Van Den Bussche, Gregory M. Wilson, University of Central Oklahoma.
- 10:45    **\*DNA Extraction and Sequencing in the Turtle Genus *Terrapene*.** Stacey A. Halsey, Erin E. Miller, Kenneth D. Andrews, East Central University.
- 11:00    **Section A Business Meeting, PE&S Room 106**  
(combined with Botany)

\*Undergraduate Competition  
\*\*Graduate Competition

**SECTION A: BIOLOGICAL SCIENCES – ZOOLOGY**  
(cont.)

Posters

**\*Estimating the Volumes of the Ear Tubercles of the Mexican Free-Tailed Bat.** E.E. Parks, K.N. Allison, W. Caire, University of Central Oklahoma.

**\*The Number of Tubercles and Their Distribution on the Ears of Mexican Free-Tail Bats (*Tadarida brasiliensis*).** K.N. Allison, E.E. Parks, W. Caire, University of Central Oklahoma.

**\*Synthetic and Natural Feeding Attractants for Social Wasps (Hymenoptera:Vespidae) in Eastern Oklahoma.** S.R. Knier, Oral Roberts University.

**\*Comparative Phylogeography of Two Species of *Peromyscus* in Oklahoma and Adjacent States.** Tiffany Cloud, Kimberly Koppari, Michelle Haynie, Gregory Wilson, University of Central Oklahoma.

**A Comparison of Population Density, Diffusion Dispersal and Demographics of the Mediterranean Gecko (*Hemidactylus turcicus*) in Two Central Oklahoma Habitats.** L. Brooke Stabler, Whitney Johnson, Ken Locey, Paul Stone. University of Central Oklahoma.

\*Undergraduate Competition

**SECTION B: GEOLOGY**

**Section Chair: Kurtis Koll  
Cameron University**

11:00 **Section B Business Meeting**, PE&S Room 250  
(shared with Geography)

**SECTION C: PHYSICAL SCIENCES  
PE&S Room 228**

**Moderator: Karen Williams  
East Central University**

- 9:45 **Exploring Relationships Between Acoustic and Optical Attenuation Coefficients.**  
K. A. Williams, K. R. Thompson, East Central University.
- 10:00 **Asymmetries in Maxwell's Electrodynamics.** W.J. Wilson, University of Central  
Oklahoma.
- 10:15 **Flow Behavior of a Fluid Confined to a Rotating Cavity,** D.L. Martin, University  
of Central Oklahoma.
- 10:30 **An *ab initio* Computational Study of Volatile Cobalt Hydroxides,** D.L. Myers,  
A.R. Shepherd, East Central University.
- 11:00 **Section C Business Meeting**

Poster

**\*Techniques of Measuring Properties of Varying Concentrations of Salt Water Using  
Ultrasound.** K.R.Thompson and K.A. Williams, East Central University.

\*Undergraduate Competition

**SECTION D: SOCIAL SCIENCES  
PE&S Room 252**

**Moderator: Justina Powers  
Cameron University**

- 9:00 Introduction
- 9:05 **Pets and Their Companion People.** Justina Powers, Cameron University.
- 9:25 **Predicting Self-Reported Emotions and Behaviors with Interpersonal Expectancies.** Elizabeth G. Shoemake, Jamie L. Gill, James Rose, Sean McMillan, Robert D. Mather, University of Central Oklahoma.
- 9:45 **Creativity and Cooperation Among Virtual Team Members.** Mercedes Spencer, Mary Dzindolet, Brittney Wigley, Linda Pierce, Cameron University.
- 10:05 **Exploring Gender Stereotypes in Children’s Literature.** Justina Powers, Jacob A. Slagle, Andrea Nunnally, Cameron University.
- 10:25 **Definitions of Insanity Within the Judicial System.** John F. Geiger, Cameron University.
- 10:45 **Cameron University: Exploration of Retention in Psychology Undergraduates.** Joanni Sailor, Mary Dzindolet, John Geiger, Antonio Laverghetta, Cameron University.
- 11:00 **Section D Business Meeting**

Posters

**The Human-Animal Bond: Culture, Health, and the Biopsychosocial Model.** Elizabeth G. Shoemake, University of Central Oklahoma.

**The Effects of Feedback and Self-Confidence on Implicit Self-Esteem.** James Rose, University of Central Oklahoma.

**Sex Differences in College Students’ Elementary Arithmetic Ability.** Lawrence Weinstein, Antonio Laverghetta, Cameron University.

**Anti-Semitism and Anti-Israeli Sentiment in College Students.** Lawrence Weinstein, Carl Jackson, Cameron University.

**SECTION E: SCIENCE EDUCATION  
PE&S Room 218**

**Moderator: Doug Wood  
Southeastern Oklahoma State University**

- 8:45 **A Summer Science Program: Early Childhood through Elementary School.**  
K. J. Koll, C. Glover Johnson, Cameron University.
- 9:00 **In Class or After School? A Comparison of Strategies for Elementary School Outreach.** E. A. Bergey, A. T. Faris, E. R. Maupin, University of Oklahoma.
- 9:15 **Challenges of a Fish and Wildlife Science Program in the Millennial Era.**  
D. R. Wood, T. Patton, E. Corbett, Southeastern Oklahoma State University.
- 11:00 **Section E Business Meeting**

**SECTION F: GEOGRAPHY**  
**PE&S Room 250**

**Moderator: Brad Watkins**  
**University of Central Oklahoma**

8:30 Illustrated Posters (Oral Presentations of Posters)

**\*The Role of GIS on a Modern Military Base.** John Toombs, East Central University.

**\*Mapping the ECU Campus Utility System.** Jesse Jackson, East Central University.

**\*Soil Sampling Procedures in Tongass National Forest, Alaska.** David Brinkley, East Central University.

**\*Soil Analysis for the Detection of Precious Metals in Tongass National Forest, Alaska.** Sean Welch, East Central University.

9:00 **The Effect of Altitude and Climate on the Largest Freestanding Mountain in the World: Mount Kilimanjaro.** Mark Micozzi, East Central University.

9:15 **Institutional Lineages of Geography Faculty in the United States.** Amber Cannon, Gregory Plumb, East Central University.

9:30 **Oklahoma Spiritual Spaces, Sacred Places.** Robert Newcomer, East Central University.

9:45 **\*Establishing a Grid Network for Staking Mining Claims in Tongass National Forest, Alaska.** Randon Gregory, East Central University.

10:00 **\*The Transition from School to Career in Geotechniques.** Ben Matlock, East Central University.

10:15 **\*GPS and Cemetery Preservation.** Miley Wind, East Central University.

10:30 **\*Updating the Roads Network in the Chickasaw Nation.** Levi Foreman, East Central University.

10:45 **\*A Digital Technique for Creating a Map Book.** Bobby Ramsey, East Central University.

11:00 **Section F Business Meeting**

\*Undergraduate Competition

**SECTION G: FISH AND WILDLIFE CONSERVATION**  
**P&ES Room 206**

**Moderator: Carmen Greenwood**  
**Oklahoma State University**

- 8:30    **\*\*Tree Swallow (*Tachycineta bicolor*) Nest Box Use and Reproductive Success at Red Slough Wildlife Management Area, Oklahoma.** R. Anderson, D. Wood, Southeastern Oklahoma State University.
- 8:45    **\*\*Second Year Post-Flood Response by Prothonotary Warblers (*Protonotaria citrea*) at Tishomingo National Wildlife Refuge, Oklahoma.** C. Newman, D. Wood, Southeastern Oklahoma State University.
- 9:00    **The Use of Online Photo Sharing ("Flickr") to Facilitate Collaborative International Wildlife Research.** E. Terdal, C. Gabbard, A. Mai, J. Mesh, Northeastern State University, Tulsa Zoo, Elijio Panti National Park, Itzamna Society.
- 9:15    **\*\*Anogenital Distance in White-Footed Mice (*Peromyscus leucopus*) from Tar Creek Superfund Site.** K. A. Hays, Oklahoma State University.
- 9:30    Break
- 9:45    **\*Rapid Expansion of an Estuarine Mud Crab *Rhithropanopeus harrisi* Across Texas and Into Lake Texoma, Oklahoma.** Christina Newman, Tim Patton, Southeastern Oklahoma State University.
- 10:00    **\*Fish Community Responses to Toxic Golden Algae *Prymnesium parvum* Events in Lebanon Pool, Lake Texoma, Oklahoma.** Clayton Porter, Tim Patton, Southeastern Oklahoma State University.
- 10:15    **\*Golden Algae *Prymnesium parvum* Toxicity Events May Lead to Direct or Indirect Mortality of Turtles.** Joseph McAllister, Tim Patton, Southeastern Oklahoma State University.
- 10:30    **What Happens to Algae When the Water Level Changes in a Regulated River?** E. A. Bergey, P. Bunlue, S. Silalom, P. Chantaramongkol, D. Thapunya, University of Oklahoma, University of Chiang Mai.
- 11:00    **Section G Business Meeting**

\*Undergraduate Competition  
\*\*Graduate Competition

**SECTION H: MICROBIOLOGY**  
**P&ES Room 130**

**Moderator: Arden Aspedon**  
**Southwestern Oklahoma State University**

- 8:30     **\*Chemical Stimulated Stress Proteins of *Chaetomium globosum*, a Common Household Mold.** Jennifer Young, East Central University.
- 8:45     **\*The Prevalence of Community Acquired Methicillin Resistant *Staphylococcus aureus* (CA-MRSA) Among the Oral Roberts University Community.** Maame Sompaa Otabil, Joel Gaikwad, Oral Roberts University.
- 9:00     **Antibiotic Resistance-Conferred Nosocomial Nature of *Serratia marcescens* Due to Increased Use of Different Classes of Antibiotics Since 1920.** Derek Afflu, Joel Gaikwad, Oral Roberts University.
- 9:15     **A Novel Strategy for Halophilicity in the Photoautotrophic Proteobacterium *Halorhodospira halophila*.** Ratnakar Deole, Wouter Hoff, Oklahoma State University.
- 9:30     Break
- 9:45     **Unexplored Prokaryotic Bacterial Photobiology: Demonstrating Light Sensing in a Deep Sea Bacterium Using a Pharmacological Strategy.** Miwa Hara, M. A. van der Horst, T. Page Stalcup, S. Kaledhonkar, M. Kumauchi, A. Xie, K. J. Hellingwerf, W. Hoff, Oklahoma State University.
- 10:00    **\*\*Analysis of Plant Endophytic Bacterial Communities.** Tao Ding, Ulrich Melcher, Oklahoma State University.
- 10:15    **\*\*The Gα4 G Protein Subunit Interacts with the MAP Kinase ERK2 Using a D-Motif that Regulates Developmental Morphogenesis in *Dictyostelium*.** Hoai-Nghia Nguyen, Oklahoma State University.
- 11:00    **Section H Business Meeting**

\*Undergraduate Competition

\*\*Graduate Competition

**SECTION I: ENGINEERING SCIENCES**  
**Science Hall Room 211**

**Moderator: Mohaamed Bingabr**  
**University of Central Oklahoma**

- 10:00 **A Contrast Enhancement Filter for the Improved Stent Visibility in Interventional X-Ray Fluoroscopy.** Yuhao Jiang, University of Central Oklahoma.
- 10:15 **Experimental Verification of Fluid Energy Losses in Planar Milli-Scale Junctions.** D. Atkinson, W. Duffle, J. Haubrich, A. Henderson, C. Kiser, E. C. Lemley, University of Central Oklahoma.
- 10:30 **Experimental Fluids Research in Biomedical Engineering and Microfluidics.** G. Armstrong, A. Baker, L. Williams, E. C. Lemley, University of Central Oklahoma.
- 11:00 **Section I Business Meeting**

**SECTION J: BIOCHEMISTRY AND BIOPHYSICS**  
**P&ES Room 240**

**Moderator: Wouter D. Hoff**  
**Oklahoma State University**

- 8:30     **\*\*The  $\beta$ -Subunit of ATP Synthase Controls Cellular Uptake and Resecretion of apoA-I but Does Not Control apoA-I Induced Lipid Efflux.** Alisha D. Howard, Estela L. Arrese, Jose L. Soulages, Oklahoma State University.
- 8:45     **\*Signaling Pathways Regulating Myofibroblast De-Differentiation.** L. Patton, G. Risinger, J. Tomasek, Oklahoma Christian University, University of Oklahoma Health Sciences Center.
- 9:00     **\*Sortase A Inhibition by Ugi Products Measured Using Fluorescent Protein Assays.** D. Bulger, C. Neylon, J. Gaikwad, Oral Roberts University, Rutherford Appleton Laboratory, UK.
- 9:15     **Expression of *Cucumber mosaic virus* Capsid Protein Gene in *Escherichia coli*.** Nemat S. Bashir, Parviz Pirniakan, University of Tabriz, Oklahoma State University.
- 9:30     Break
- 9:45     **\*The Role of G2E3 in Mammalian Embryonic Development.** Y. Shin, Y. Wang, D. Crawford, Oklahoma Christian University, University of Oklahoma Health Sciences Center.
- 10:00    **Single Molecule Force Spectroscopy of Receptor Activation.** Wouter D. Hoff, Masato Kumauchi, Rene A. Nome, Norbert F. Scherer, Oklahoma State University, University of Chicago.
- 10:15    **\*Quantification of Ligand-Induced Corneal Cell Migration Following Acute Wounding.** S. Pratt, E. Phelps, B. Ceresa, Oklahoma Christian University, University of Oklahoma Health Sciences Center.
- 10:30    **Novel Viral Genomes from Plants of The Tallgrass Prairie Preserve.** Ulrich Melcher and the Oklahoma Plant Virus Biodiversity and Ecology Team, Oklahoma State University, University of Oklahoma, SR Noble Foundation.
- 11:00    **Section J Business Meeting**

\*Undergraduate Competition

\*\*Graduate Competition

**SECTION J: BIOCHEMISTRY AND BIOPHYSICS**  
**(cont.)**

Poster

**The Modulation of Cell Death and Extracellular Signalling Pathways by Carvacrol in HT 29 Cells.** Joel S. Gaikwad, Kathryn Klump, Mark Coggeshal, Kent Teague, Oral Roberts University, Oklahoma Medical Research Foundation, University of Oklahoma College of Medicine-Tulsa.

**SECTION K: MICROSCOPY**  
**P&ES Room 154**

**Moderator: Paige Johnson**  
**University of Tulsa**

- 8:30 **Registration and Welcome**
- 8:45 †**Analysis of SnO<sub>2</sub> Nanostructured Battery Electrode Materials by Electroanalytical Methods and Scanning Electron Microscopy.** Matthew Smith, Paige Johnson, Dale Teeters, The University of Tulsa.
- 9:00 †**Same-Spot TEM Study of Nanoparticles Treated Ex-Situ under Severe Conditions.** Veronica Irurzun, Daniel Resasco, The University of Oklahoma.
- 9:15 †\*\***Conjugated Polymer Nanoparticles for Fluorescent Labelling of Live Cells and Delivery of Biological Molecules into Plant Cells.** Asitha Silva, Joong Ho Moon, Jeanmarie Verchot-Lubicz, Oklahoma State University.
- 9:30 Break – Ugly Bug Judging [room 121]
- 9:45 *Keynote Address:* **High Pressure Freezing and 3-D Analysis of Mitotic Spindle Ultrastructure.** Dr. Kent McDonald, University of California, Berkeley.
- 10:45 Break – Ugly Bug Judging [room 121]
- 11:00 **Live Cell Microscopy of Arabidopsis Root Hairs Provides Novel Insights into Mechanisms of Tip Growth in Plants.** Elison B. Blancaflor, Samuel Roberts Noble Foundation.
- 11:15 **Ultrastructure of Blue-Green Iridescence in Leaves of the Malaysian Tropical Rainforest Understory Herb, *Mapania caudata* Kük (Cyperaceae).** Greg Strout, Scott D. Russell, David Lee, The University of Oklahoma.
- 11:30 **OMS Business Meeting**

†OMS Timpano Competition  
\*\*Graduate Competition

**SECTION L: MATHEMATICS, COMPUTER SCIENCE, AND STATISTICS  
P&ES Room 120**

**Moderator: Anita M. Walker  
East Central University**

- 10:00 **Screens and Genes: Do You See What I See?** Anita M. Walker, East Central University
- 10:15 **An Overview of Tools and Techniques for Photo Geotagging.** Will McWhorter, East Central University
- 10:30 **Software Project Management, Under the Rayleigh Curve.** Clay Carley, East Central University
- 10:45 **A Sweet Suite of Homebuilt Security Tools for Linux.** Bill K. Walker, East Central University
- 11:00 **Section L Business Meeting**

**SECTION M: ENVIRONMENTAL SCIENCES AND PLANNING  
Science Hall Room 213**

**Moderator: Cindy R. Cisar  
Northeastern State University**

- 9:00     **\*Efficacy of Slow Sand Filtration in the Removal of *Escherichia coli* from Natural Waters.** A. McCumber, C. Love, A. Mikell, Oklahoma Christian University.
- 9:15     **\*Development of Water Quality Testing Techniques for Use in Remote Areas.** C. Love, A. McCumber, A. Mikell, Oklahoma Christian University.
- 9:30     Break
- 9:45     **\*Ken Smith's Design for Orange County Great Park and Other Projects.** C. Francis, Oklahoma State University.
- 10:00    **\*Green Roof for California Academy of Sciences.** S. Eilers, Oklahoma State University.
- 10:15    **\*Sustainable Comprehensive Plan for Greensburg, KS.** J. Proffitt, Oklahoma State University.
- 10:30    **\*Blasen's Design for Lee Landscape, Calistoga, CA and Other Projects.** J.S. Miller, Oklahoma State University.
- 10:45    **Green Elements of Letchworth, England: First Garden City.** C. Leider, Oklahoma State University.
- 11:00    **Section M Business Meeting**

\*Undergraduate Competition

**SECTION N: BIOMEDICAL SCIENCES  
P&ES Room 262**

**Moderator: Melville Vaughan  
University of Central Oklahoma**

- 8:45 **Vimentin Expression in Activated and Transformed Keratinocytes.** Melville B. Vaughan, University of Central Oklahoma.
- 9:00 **\*\*Imaging and Treatment of In Vitro Breast Cancer Cells Using Phage Derived Protein Nanoconjugates.** Gopal Abbineni, Chuanbin Mao, University of Oklahoma.
- 9:15 **The Effects of Curcumin on Myofibroblast Cells,** Kiya Harrison, Melville B. Vaughan, University of Central Oklahoma.
- 9:30 Break
- 9:45 **\*Influence of TLR Agonists on Differentiation of Follicular T Helper and Regulatory T Cells.** Sean A. Olsen, A. Darise Farris, Redlands Community College, Oklahoma Medical Research Foundation.
- 10:00 **\*The Effects of Indirubin on Myofibroblast Differentiation.** Shaquita Banks, Melville B. Vaughan, University of Central Oklahoma.
- 10:15 **\*Prevalence and Incidence of Malocclusion Across a Cross-Cultural Sample.** C. Rodriguez, Oral Roberts University.
- 10:30 **\*The Effect of Silver Dihydrogen Citrate on Liver Microsomal Carboxylesterase Activity in Guinea Pigs.** Evangeline Rukundo, Oklahoma Christian University.
- 10:45 **\*B Cells Expressing a Systemic Lupus Erythematosus Risk Haplotype of TNFAIP3 Have an Altered Response to LPS, TNF- $\alpha$ , and CD40 Ligand Compared to Matched Controls.** Roselynn Simpson, J. King, M.B. Humphrey, East Central University, University of Oklahoma Health Sciences Center.
- 11:00 **Section N Business Meeting**

\*Undergraduate Competition  
\*\*Graduate Competition

**SECTION N: BIOMEDICAL SCIENCES**  
**(cont.)**

Posters

**\*Inhibition of Ras-Keratinocytes Using Geltrex™ Liquid Basement Membrane on Skin Equivalents and DED.** Kimberly Coughlan, Melville B. Vaughan, Redlands Community College, University of Central Oklahoma.

**Anatomical and Clinical Perspectives on an Unreported Variation of the Rare Tensor Fascia Suralis Muscle.** T.S. Ahrend, K.S. Smith, K.L. Jarolim, A. Weil, Oklahoma State University Center for Health Sciences.

\*Undergraduate Competition

**Richard A. Dixon**  
**Luncheon Speaker**

**Richard A. Dixon** was named 2008 Oklahoma Scientist of the Year for his pioneering work in plant metabolism and his leadership of the Plant Biology Division of the Samuel Roberts Noble Foundation of Ardmore, Oklahoma. Dr. Dixon and his research team have given scientists an excellent understanding of the complexity of phenylpropanoid compounds (flavonoids, isoflavonoids and lignin) and how plants make them. This basic research, using genomics, molecular biology, genetics and enzymology, leads to metabolic engineering which may improve the agronomic value of crops and produce compounds for industrial and medicinal uses. At the same time, Dr. Dixon, as Director of the Plant Biology Division and Senior Vice President of the Foundation, has led the Division and the Foundation's laboratories to international prominence. The Division has become the top choice as a place to work for young scientists. Dr. Dixon is one of Oklahoma's only two members of the National Academy of Sciences, elected in 2007. A native of England, he obtained his scientific education at the University of Oxford and came to the Noble Foundation in 1988 from a position at the University of London.

**Dr. Gordon E. Uno**  
**Workshop Speaker**

**Dr. Gordon E. Uno** joined the Department of Botany and Microbiology at the University of Oklahoma in 1979, was appointed a David Ross Boyd Professor of Botany in 1997, and is currently serving as the Department's chair. Dr. Uno has authored or co-authored several textbooks including: *Principles of Botany*; *Handbook for Developing Undergraduate Science Courses*; *Biological Science: An Ecological Approach* (a high school biology text for which he served as editor and contributing author); and *Introductory Botany Workbook*. Dr. Uno was a Program Officer in the Division of Undergraduate Education at the National Science Foundation in 1998-2000 and serves on the editorial boards of four science and science education journals. He was awarded Honorary Membership by the National Association of Biology Teachers in 2001 and was its President in 1995. He became a Fellow of the AAAS in 2000, and he has received one national, one state, and three University-level teaching awards. He has taught over 9,000 undergraduates and has led many faculty development workshops for university and secondary science instructors. He serves on the Board of Directors for the American Institute of Biological Sciences and the College Board committee that is revising the AP Biology program. Currently he is Principal Investigator for the NSF-funded "Introductory Biology Project," which focuses on the undergraduate freshman biology course, is co-PI on one other NSF project dealing with professional development of high school teachers, and has just published an article on botanical literacy in the *American Journal of Botany*.

## OKLAHOMA ACADEMY OF SCIENCE PRESIDENTS

1910	H. L. Lane, OU	1955	R. E. Olson, OU
1911	D. W. Othorn, Oklahoma City	1956	A. M. Stebler, OAMC
1912	S. W. Reaves, OU	1957	D. E. Howell, OAMC
1913	C. W. Shannon, OU	1958	G. J. Goodman, OU
1914	No meeting	1959	E. Lucas, OU
1915	C. W. Shannon, OU	1960	P. E. Smith, OUMS
1916	C. N. Gould, OU	1961	E. M. Hodnett, OSU
1917	L. C. Raiford, ISU	1962	H. G. Barclay, TU
1918	No meeting	1963	G. A. Moore, OSU
1919	No meeting	1964	A. D. Buck, NOJC
1920	M. M. Wickham, Norman	1965	J. E. Webster, OSU
1921	A. F. Reiter, PU	1966	C. R. Williams, PU
1922	J. B. Thoburn, Oklahoma City	1967	C. D. Riggs, OU
1923	R. O. Whitenton, OAMC	1968	E. A. Reynolds, SWSC
1924	S. Weidman, OU	1969	L. V. Scott, OUHSC
1925	(spring) C. E. Sanborn	1970	C. C. Carpenter, OU
1925	(fall) H. L. Dodge, OU	1971	P. Buck, TU
1926	J. H. Could, OAMC	1972	W. A. Carter, ECSU
1927	C. N. Gould, OU	1973	C. J. Mankin, OU
1928	O. M. Smith, OAMC	1974	N. N. Durham, OSU
1929	A. Richards, OU	1975	B. Shirley, TU
1930	L. Long, Ok. City	1976	G. W. Todd, OSU
1931	A. O. Weese, OU	1977	D. E. Kizer, Noble Foundation
1932	H. Patterson, OAMC	1978	G. Odell, OSU
1933	J. E. Knowles, PU	1979	R. Couch, ORU
1934	F. G. Brooks, OCU	1980	G. Wolgamott, SWSU
1935	C. E. Decker, OU	1981	E. Rice, OU
1936	H. J. Harper, OAMC	1982	E. Grigsby, NSU
1937	B. D. Barclay, TU	1983	J. Sokatch, OUHSC
1938	C. M. Perry, OU	1984	M. Whitmore, OU
1939	H. D. Chase, TU	1985	J. Black, OBU
1940	G. L. Cross, OU	1986	J. Wilhm, OSU
1941	R. W. Jones, OAMC	1987	M. K. Patterson, Noble Foundation
1942	H. I. Featherly, OAMC		
1943	O. F. Evans, OU	1988	M. P. Carpenter, OU
1944	V. G. Heller, OAMC	1989-1990	K. E. Conway, OSU
1945	J. R. Nielsen, OU	1991-1992	J. K. McPherson, OSU
1946	O. C. Dermer, OAMC	1993	J. R. Estes, OU
1947	J. T. Self, OU	1994-1995	J. D. Tyler, CU
1948	L. S. McLeod, TU	1996-1997	C. Taylor, SEOSU
1949	J. C. Shirley, PU	1998-1999	R. J. Tyrll, OSU
1950	H. Taylor, OCW	2000-2001	D. Bass, UCO
1951	H. W. Larsh, OU	2002-2003	C. Clifford, NSU
1952	V. B. Monnett, OAMC	2004-2005	S. Young, SNU
1953	S. P. Massie, LU	2006-2007	S. Barber, OCU
1954	A. N. Murray, TU	2008-2009	U. Melcher, OSU