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Map of Southeastern OSU ................................................................. Inside Back Cover
100th ANNUAL TECHNICAL MEETING
OKLAHOMA ACADEMY OF SCIENCE
SOUTHEASTERN OKLAHOMA STATE UNIVERSITY

PROGRAM SUMMARY

Thursday, 10 November 2011

6:30 p.m. Executive Council Dinner and Meeting Hallie-McKinney
Sidewalk Café

Friday, 11 November 2011

7:30 a.m. Registration for Technical Meeting Gen Classroom Bldg
- 10:00 a.m. Lobby

8:30 a.m. Concurrent Scientific Paper Sessions
- 11:00 a.m.

Section A Biological Sciences – Botany ....................... GCB 120
Section A Biological Sciences – Zoology ....................... GCB 118
Section B Geology ................................................. S 102
Section C Physical Sciences ..................................... S 102
Section D Social Sciences ........................................ BS 213
Section E Science Education .................................... BS 201
Section F Geography ............................................. GCB 103
Section G Fish and Wildlife Conservation ..................... GCB 118
Section H Microbiology ......................................... BS 203
Section I Engineering Sciences ................................ S 117
Section J Biochemistry and Biophysics ........................ BS 204
Section K Microscopy .............................................. BS 207
Section L Mathematics, Computer Science, and Statistics .... BS 205
Section M Environmental Sciences and Planning .............. BS 209
Section N Biomedical Sciences ................................. BS 215
Posters ............................................................ GCB Lobby

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, NOJIC
1919  No meeting  1965  J. E. Webster, OUS
1920  M. M. Wickham, Norman  1966  C. R. Williams, PU
1921  A. F. Reiter, PU  1967  C. D. Riggis, OU
1922  J. B. Thoburn, Okla. City  1968  E. A. Reynolds, SWSC
1923  R. O. Whittenton, OAMC  1969  L. V. Scott, OU/HSC
1924  S. Weidman, OU  1970  C. C. Carpenter, OU
1925  (fall) H. L. Dodge, OU  1971  P. Buck, TU
1926  J. H. Could, OAMC  1972  W. A. Carter, ECSI
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, Okla. City  1976  G. W. Todd, OSU
1931  A. O. Weese, OU  1977  D. E. Kizer, Noble Found
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, SWOSU
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, OU/HSC
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. Willm, OSU
1941  R. W. Jones, OAMC  1987  M. K. Patterson,
1942  H. I. Featherly, OAMC  1988  Noble Found
1943  O. F. Evans, OU  1989  M. P. Carpenter, OU
1944  V. G. Heller, OAMC  1991  K. E. Conway, OSU
1945  J. R. Nielsen, OU  1993  J. K. McPherson, OSU
1946  O. C. Dermer, OAMC  1993  J. R. Estes, OU
1947  J. T. Self, OU  1994  J. D. Tyler, CU
1948  L. S. McLeod, TU  1996  C. Taylor, SEOUS
1949  J. C. Shirley, PU  1998  R. J. Tyrl, OSU
1951  H. W. Larsh, OU  2004  C. Clifford, NSU
1952  V. B. Monnett, OAMC  2006  S. Young, SNU
1953  S. P. Massie, LU  2008  S. Barber, OCU
1954  A. N. Murray, TU  2010  U. Melcher, OSU
1955  R. E. Olson, OU

GCB—General Classroom Building
BS—Biological Sciences Building
S—Science Building

2  27
Duane Smith
Luncheon Speaker

Duane A Smith is the former Executive Director of the Oklahoma Water Resources Board (OWRB). During his 32 years at the OWRB he implemented various water management programs including comprehensive water planning, groundwater and surface water appropriations, water quality standards, and financing of municipalities water and wastewater infrastructure. After retiring from the OWRB, Mr Smith travelled Afghanistan working on water, power and transportation infrastructure. Mr. Smith is now a private water consultant.

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  Gen Classroom Bldg
All OAS members are encouraged to attend.  Room 103
Visitors are welcome.

12:00 p.m.  Academy Luncheon & Plenary Address  Hallie-McKinney
Admission by ticket only.  Magnolia Room

Mr. Duane Smith  Director, retired
Oklahoma Water Resources Board

Water: A Mixture of Science and Politics

1:30 p.m.  Molecular Virology Symposium  Gen Classroom Bldg
Room 120
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: East and west of Chuckwa St. and lots along 7th St.

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

2011 and 2012 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 the most recent issue of the POAS, Volume 90, 2010, and the review of the Editorial Board. Abstract publication fee is $35. POAS editor is Kurtis Koll, kurtisk@cameron.edu.

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

Official Meeting Hotels:

*Best Western Markita Inn*
2401 W. Main St., Durant OK 74701, 580-924-7676

*Hampton Inn and Suites*
3199 Shamrock Lane, Durant OK 74701, 580-924-0300
[http://hamptoninn.hilton.com](http://hamptoninn.hilton.com)

**Molecular Virology Symposium**

General Classroom Bldg., room 120

**Moderator: Ulrich Melcher**
Oklahoma State University

1:30  **Fitness and Self-Awareness: Two Unconventional Approaches to Dealing with HIV-1.** John T. West, S. Abigail Smith, Huda Mussa, William Hildebrand, Jon Weidanze. OU Health Science Center, Texas Tech University-Abilene.

1:50  **Grass-Infesting Viruses of the Family Tombusviridae.** Kay Scheets. Oklahoma State University.

2:10  **Dissecting the Mechanisms of Respiratory Syncytial Virus Assembly.** Tom Oomens. OSU Center for Veterinary Science.


2:50  Break

3:00  **Molecular Basis of Influenza Virus Evolution.** Gillian Air. OU Health Science Center.


4:00  **Estimating the Age of RNA Viruses.** Ulrich Melcher, Anthony Stobbe. Oklahoma State University.
SECTION N: BIOMEDICAL SCIENCES
Biological Sciences Bldg., room 215

Moderator: Eric Phelps
Oklahoma Christian University

9:00  *GLUT4 Overexpression Prevents Insulin Resistance in Mice Fed a High-Fat Diet. Caleb D. King, B. Griesel, B. J. Atkinson, A. L. Olson, Oklahoma Christian University, OU Health Sciences Center.

9:15  *Developing a Method of Continuous Application of Retinoic Acid in the Chick Sclera. Cody A. Bryant, L. R. Hollaway, W. Lam, J. Powell, J. A. Summers Rada. Oklahoma Christian University, OU Health Sciences Center.

9:30  Break

9:45  Mapping Genomic Libraries of Drill Monkey Cytomegalovirus DNA to Assemble the Genome. Earl L. Blewett, B. J. Reddig. OSU Center for Health Sciences.

11:00  Section N Business Meeting

Poster


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.

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 Tim Patton, Associate Professor of Biological Sciences at Southeastern Oklahoma State University, who coordinated all aspects of the meeting, including room arrangements, multimedia, and the luncheon.

Doug McMillan, SOSU Vice President of Academic Outreach and Project Development, generously provided financial support for the meeting.

Upcoming Meetings:

2012  Oklahoma Junior Academy of Science Meeting, March 8-10
East Central University
2012  Spring Field Meeting, April 20-22 (tentative), Sequoyah State Park
2012  Fall Field Meeting, TBA
2012  Annual Technical Meeting, Nov. 2 (tentative), University of Central Oklahoma

*Undergraduate Competition
**SECTION A: BIOLOGICAL SCIENCES - BOTANY**

General Classroom Bldg., room 120

**Moderator: Brooke Stabler**  
University of Central Oklahoma

<table>
<thead>
<tr>
<th>Time</th>
<th>Presentation Title</th>
<th>Speaker/Institution</th>
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<tbody>
<tr>
<td>9:00</td>
<td>Forest Diversity in Five Forested Areas along Lake Texoma, Oklahoma, and Texas. Erica A. Corbett, Penny Blanton, Kirsten Talbot. Southeastern Oklahoma State University.</td>
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<tr>
<td>9:30</td>
<td>Break</td>
<td></td>
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<tr>
<td>10:00</td>
<td>Homologs of Genes Underlying Trichome Production Identified in the <em>Asclepias syriaca</em> Genome. Shakuntala Fathepure, Mark Fishbein. Oklahoma State University.</td>
<td></td>
</tr>
<tr>
<td>10:30</td>
<td>A Peek at the Milkweed Genome (Asclepias, Apocynaceae). Mark Fishbein, Shannon Straub, Richard Cronn, Aaron Liston. Oklahoma State University, Oregon State University.</td>
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</tbody>
</table>

*Undergraduate Competition

**SECTION M: ENVIRONMENTAL SCIENCES AND PLANNING**

Biological Sciences Bldg., room 209

**Moderator: Daniel M. McInnes**  
East Central University

<table>
<thead>
<tr>
<th>Time</th>
<th>Presentation Title</th>
<th>Speaker/Institution</th>
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</thead>
<tbody>
<tr>
<td>8:45</td>
<td><em>Contrasting Current Women Leaders in Landscape Architecture: Mia Leher vs. Martha Schwartz.</em> Kayla McKinley. Oklahoma State University.</td>
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<tr>
<td>9:00</td>
<td><em>Andropogon Associates: Creators of Sustainable Landscape Architecture.</em> Lance Shaw. Oklahoma State University.</td>
<td></td>
</tr>
<tr>
<td>9:15</td>
<td><em>Contrasting Development of Urban Landscape Design in St. Louis and Boston.</em> Mickella Sjoquist. Oklahoma State University.</td>
<td></td>
</tr>
<tr>
<td>9:30</td>
<td>Break</td>
<td></td>
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11:00 Section M Business Meeting

**Poster**

*Characteristics of a Small Stream During Severe Drought Conditions.* A. Williams, M. Avard. Southeastern Oklahoma State University.

*Undergraduate Competition
SECTION L: MATHEMATICS, COMPUTER SCIENCE, AND STATISTICS
Biological Sciences Bldg., room 205

Moderator: Clay Carley
East Central University

10:00  Games On! Game Engines Aren't Just for Games. Clay B. Carley III. East Central University.


10:30  QR Codes. Bill Walker. East Central University.

10:45  Is This What Modern Mathematics Looks Like ??? Anita Walker. East Central University

11:00  Section L Business Meeting

SECTION A: BIOLOGICAL SCIENCES - BOTANY
(cont.)


11:00  Section Business Meeting - GCB 120 (combined with Zoology)

Poster


*Undergraduate Competition
SECTION A: BIOLOGICAL SCIENCES - ZOOLOGY
General Classroom Bldg., room 118

Moderator: Mia Revels
Northeastern State University

9:00  A New Geographic Distribution Record for the Horsehair Worm, Paragordius varius (Nematomorpha: Gordiida) from Oklahoma. Chris T. McAllister, Matthew G. Bolek, Ben Hanelt. Eastern Oklahoma State College, Oklahoma State University, University of New Mexico.


9:30  Break


11:00  Section A Business Meeting
(combined with Botany)

SECTION K: MICROSCOPY
Biological Science Bldg., room 207

Section Chair: Scott Russell
University of Oklahoma

11:00  Section K Business Meeting

Poster


*Undergraduate Competition
SECTION J: BIOCHEMISTRY AND BIOPHYSICS
Biological Sciences Bldg., room 204

Section Chair: Rob Burnap
Oklahoma State University


10:00  *Examining the Role of RRP42 in Mitotic Checkpoint Function*. Alyssa Casteel, D. Crawford. Oklahoma Christian University, OU Health Science Center.

9:15  *Distribution and Occurrence of Karst Features in the Arbuckle-Mountains of South Central Oklahoma*. Kevin Blackwood. East Central University.


11:00  Section J Business Meeting


10:45  *The Effectiveness of Luminol in the Detection of Degraded Hemoglobin Samples*. Peter Zakes. Oral Roberts University.

SECTION B: GEOLOGY
Science Bldg., room 102

Moderator: Jeff Dorell
Southwestern Oklahoma State University

11:00  Section B Business Meeting

Posters


A Genome-Wide Screen for Host Factors Interacting with TMV Replicase. Xiaohua Yang, Bethany Bishop, Min Zhu, Richard S. Nelson. S. R. Noble Foundation.

*Undergraduate Competition

*Undergraduate Competition
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Presenter/Institution</th>
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<tbody>
<tr>
<td>10:00</td>
<td><strong>Identifying Problems with Replicating Acoustic and Optical Attenuation Coefficient Experiments.</strong></td>
<td>K.A. Williams. East Central University</td>
</tr>
<tr>
<td>10:15</td>
<td><strong>Thermodynamics of a Single Particle System.</strong></td>
<td>W. J. Wilson. University of Central Oklahoma</td>
</tr>
<tr>
<td>11:00</td>
<td><strong>Section C Business Meeting</strong></td>
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<tr>
<td></td>
<td><strong>Section I Business Meeting</strong></td>
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</tbody>
</table>

*Undergraduate Competition

**Graduate Competition
SECTION I: ENGINEERING SCIENCES
Science Bldg., room 117

Moderator: Morshed Khandaker
University of Central Oklahoma


8:45  *Liquid Crystal Based Shear Stress Sensor. A. Spivey, E. Lemley, A. Abu-Abed. University of Central Oklahoma.

9:00  **Experimental Measurements of Bone and Cement Interface Properties. Y. Li, M. Khandaker. University of Central Oklahoma.


9:30  Break


*Undergraduate Competition
**Graduate Competition

SECTION D: SOCIAL SCIENCES
Biological Sciences Bldg, room 213

Moderator: Robert Mather
University of Central Oklahoma


9:15  **Chicken Soup for the (Online Dater’s) Soul? Differences between Couples Meeting Online and Offline. P.B. Mayfield, Alicia Limke. University of Central Oklahoma.

9:30  Break

9:45  **Effects of Art on Perceived Stress Level in Community Mental Health Employees. Shelly G. Oliver, Alicia Limke, Phillip R. Budd. Southern Nazarene University, University of Central Oklahoma.


11:00  Section D Business Meeting

Posters listed on following page.

*Undergraduate Competition
**Graduate Competition
Posters


Physiological Reactivity to Different Types of Humor. Micah Highfill, Caleb Lack. University of Central Oklahoma.


SECTION H: MICROBIOLOGY
Biological Sciences Bldg., Room 203

Moderator: Diane Dixon
Southeastern Oklahoma State University

9:00 *Inhibition of Fungal Hyphal Growth by NSAIDs and Elicited Stress Proteins. Skylar Farrill, Claire Chandler, Carina Clemente, Charlie Biles. East Central University.


9:30 Break


10:00 **Detection of Plant Pathogens using Massively Parallel Sequencing. Anthony Stobbe, Ulrich Melcher, William Schneider. Oklahoma State University, USDA ARS.


11:00 Section H Business Meeting

Poster


*Undergraduate Competition
**Graduate Competition
SECTION G: FISH AND WILDLIFE CONSERVATION  
General Classroom Bldg., room 118

Moderator: Richard Butler  
McLoud High School


11:00  Section G Business Meeting

SECTION E: SCIENCE EDUCATION  
Biological Sciences Bldg., room 201

Moderator: Liz Bergey  
University of Oklahoma

9:00  Transpiration by Trees and Energy Savings for Consumers: A Botany Lab Project. Stanley Rice. Southeastern Oklahoma State University.


9:30  Break


11:00  Section E Business Meeting

*Undergraduate Competition
SECTION F: GEOGRAPHY
General Classroom Bldg., room 103

Moderator: Dr. Brad Watkins
University of Central Oklahoma

8:30  Barns of Northwest Oklahoma. Brad A. Bays. Oklahoma State University.
9:15  That’s Right We’re Not from Texas: The Search for an Oklahoma Identity. Robert Newcomer. East Central University.
9:30  Break
9:45  Poster Presentations
11:00 Section F Business Meeting
2:00  Poster Presentations (cont.)

Posters
*Streamlining Inventory of Right of Way for Electric Lines. Toby Thompson. East Central University.
*Conflation of the Transportation Database within the Chickasaw Nation. Christopher Cox. East Central University.
*Establishing a Control Point Network using GPS. Carl Williams. East Central University.
*Redistricting the Board Seats of McAlester Public Schools. Michael Barnes. East Central University.
*Transferring AutoCad Utility Files to ArcMap. Brittney Burton. East Central University.
*Improving a Street Database for E911 Applications. Brian Hutchison. East Central University.
*Applying Geo-Techniques to the Natural Gas Industry. Doug West. East Central University.

*Undergraduate Competition