



# The American Society of Mechanical Engineers

## Central Oklahoma Section Newsletter

Volume 3, Number 6, February 7, 2002

The Section is located at: Oklahoma Engineering Center, 201 Northeast 27<sup>th</sup> Street, Oklahoma City, OK 73105

The Central Oklahoma Section Newsletter is nominally published nine times per year to convey monthly meeting dates, meeting topics, section activities, and/or other ASME information to its membership.

\*\*\*\*\* **February Meeting Announcement** \*\*\*\*\*



### Engineers' Week Joint Engineering Societies' Banquet

**Speaker: Mr. Blake Wade, Oklahoma Centennial Commission,**

"May Your Dreams Come True" -- Preparation for Oklahoma's 2007 Centennial

**Date:** Tuesday, Feb. 19, 2002 **Place:** Oklahoma Christian University Gaylord Center, 2501 E. Memorial Rd, Edmond (see map within)

The Oklahoma Capitol Complex and Centennial Commemoration Commission was created through the Oklahoma Centennial Act of 1998 to prepare a master plan for commemorating Oklahoma's 100th year of Statehood. That plan includes the creation and implementation of the following projects and activities: 1.) Restoration of historic properties; 2.) State and local historic preservation programs and activities; 3.) State and local archaeological programs and activities; 4.) Publications, films, and other educational materials; 5.) Bibliographical and documentary projects; 6.) Conferences, lectures, seminars, and other programs; 7.) Museum, library, cultural center, park improvements, exhibits, centennial commemorative paintings and mobile exhibits; 8.) Public art that captures the diversity of the Oklahoma experience and spirit; 9.) Tourism attractions. Centennial Commission efforts seek to represent contributions of all peoples and cultures of Oklahoma history and to encourage and support participation by all interested ethnic groups in all geographic areas of our State.

### Joint Engineering Societies' Banquet Schedule and Ticket Information

**Time:** 6:00PM Social Hour; 7:00PM Banquet Dinner; 8:00PM Program and Awards

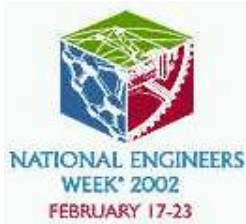
**Cost:** Tickets are \$18.00 each and are available at the Oklahoma Engineering Foundation office, 201 NE 27<sup>th</sup> St, Room 125, OKC; Phone 405-528-1435. Tickets will *not* be available at the door.

**TICKET RESERVATION DEADLINE IS FRIDAY, FEBRUARY 15**

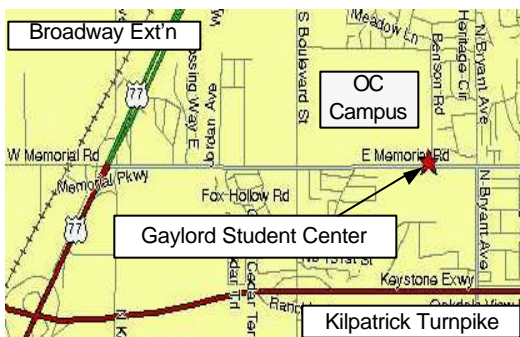
2001-2002 Central Oklahoma Section Executive Committee	<b>Officers</b>		<b>Directors</b>		<b>Ex-Officio Directors</b>		
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	<b>Morris Walker</b> U.S. Postal Service Tech. Support B (405) 573-2246 mwalker@email.usps.gov	<b>1<sup>st</sup> Vice-Chair</b> F (405) 573-2215	<b>Frank Parker, PE</b> Boeing B (405) 739-1813 frank.j.parker@boeing.com	<b>Prof'l Development</b>	<b>Sub Gollahalli, PhD, PE</b> B (405) 325-1742 gollahal@ou.edu	<b>OU</b>	
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	<b>Albert Janco, PE</b> Consulting Engineer B (405) 848-1991 JANCOA@ASME.ORG	<b>Vice-Chair, Programs, Vice-Chair, Membership</b> F (405) 843-624	<b>Jamal Siddiqui</b> Tinker AFB B (405) 739-7191 jamal.siddiqui@b2mx.tinker.af.mil	<b>Member Contact</b>	<b>Past Chair</b>		
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## Additional February Meeting and E-Week Information

Engineers' Week is just "around the corner," so, if your schedule permits, take this opportunity to get involved with one or more of these activities, and help promote our engineering profession and heritage:



- Your first Engineers' Week opportunity will be Tuesday evening, **February 19, 2002**, at the **Joint Engineering Societies' Banquet**. The banquet is held annually to honor members of all engineering organizations across the state, as well as providing secondary school students with another view of the engineering profession. Many of the students participate in "**Engineer for a Day**" industry activities followed by attendance at the banquet. Other students receive recognition for their efforts in **MATHCOUNTS** and **Future City** competitions. The banquet will be held at Oklahoma Christian University's Gaylord Student Center. **The speaker will be Mr. Blake Wade** with the **Oklahoma Centennial Commission** and his topic will be "Oklahoma Centennial 2007 - May Your dreams Come True".
- The next Engineers' Week opportunity will be the **annual OEF Engineering Fair**. It will start at 9:00AM and last until 3:00 PM in the Kirkpatrick Center (Omniplex) on **Wednesday, February 20, 2002**. The Engineering Fair is a very important means for reaching over 3000 secondary school students from over 100 Oklahoma schools. This is also an opportunity for our local ASME Section to get these young people interested in an engineering career. **Our Section will sponsor the Rubber-Band-Powered Vehicle contest**. Volunteers are welcomed to help -- **please contact Wendell Cavin** at (405)348-2269 for more detail on the contest and how you can help.



- Our Engineers' Week finale will be the 22<sup>nd</sup> **AIAA/ASME Oklahoma Symposium** that will be held at Oral Roberts University on **Saturday, February 23, 2002**. There will be speakers from TU, ORU, OC, OU, and OSU, as well as government and industry engineers from across the state. Each speaker will present a 10 to 12-minute overview of their work. The Symposium's purpose is to provide a means for technical interchange among the engineers and engineers-to-be in Oklahoma. A wide variety of topics will be covered across the spectrum of mechanical and aerospace, engineering. This year's Symposium will be well worth your attendance, especially so if you are participating or making a presentation. (see insert for details)

**About the Joint Engineering Societies' Banquet Speaker:** Prior to service with the Oklahoma Capitol Complex and Centennial Commemoration Commission, **Mr. J. Blake Wade** served as executive Director of the Oklahoma Historical Society. The Society's membership tripled in size during his tenure. Wade presided over an era of expansion and improvement that ranged from increased revenue and innovative programs to more accessible services and better accountability. He contributed greatly to the planning for the new Oklahoma History Center.

A Lawton native, Wade graduated from the University of Oklahoma with a BA in journalism. He served 20 years in the Army, starting as a second lieutenant and retiring as a major. In his role at the Centennial Commission, Wade sees his challenge as one of coordination and timing. "From my years at the Historical Society, I know that Oklahomans have a deep and abiding love for their heritage and I know the Centennial Celebration of 2007 will provide a window of opportunity for a greater awareness of our shared history."

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### Central Oklahoma Section Awards

The Executive Committee has established six (6) awards to recognize both Section and Student members who are making outstanding contributions to their Section or the profession of Mechanical Engineering. The recipients of these awards will be recognized at the April 25<sup>th</sup> Central Oklahoma Section meeting.

**Outstanding Engineer Award** – To be presented for outstanding professional and technical organization activities and achievements. Also considered will be community and civic activities along with awards received. The nominee must be a member of ASME.

**Minority and Women Engineer-of-the-Year Award** – To be presented for outstanding professional and technical activities by a minority or woman engineer. In addition, community and civic activities will be considered as well as awards received. The nominee must be a member of ASME.

**Outstanding Engineer-in-Management Award** – To be presented to the engineering manager deemed by the nominator to have done an outstanding job in furthering the goals of ASME and the engineering profession. The ability to select and develop engineers as well as to communicate with and motivate engineers will enter into the selection of awardee. The nominee must be a member of ASME.

**Outstanding ASME Student Member Awards** – Three awards will be made in recognition of academic achievement and outstanding service to an ASME student section. The Jerald D. Parker Award will be awarded at Oklahoma Christian University; The James H. Boggs Award will be awarded at Oklahoma State University; the Tom J. Love Award will be awarded at the University of Oklahoma.

For application and/or additional information contact: Ed Reynolds, 6507 N.W. 96<sup>th</sup> Street, Oklahoma City, OK 73162, Phone: (405) 721-6753, E-mail: [edwin\\_c\\_reynolds@yahoo.com](mailto:edwin_c_reynolds@yahoo.com) (Nomination deadline is March 22, 2002)

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American Institute of Aeronautics and Astronautics



The American Society of Mechanical Engineers

Oklahoma Section

Central Oklahoma Section  
Mid-Continent Section

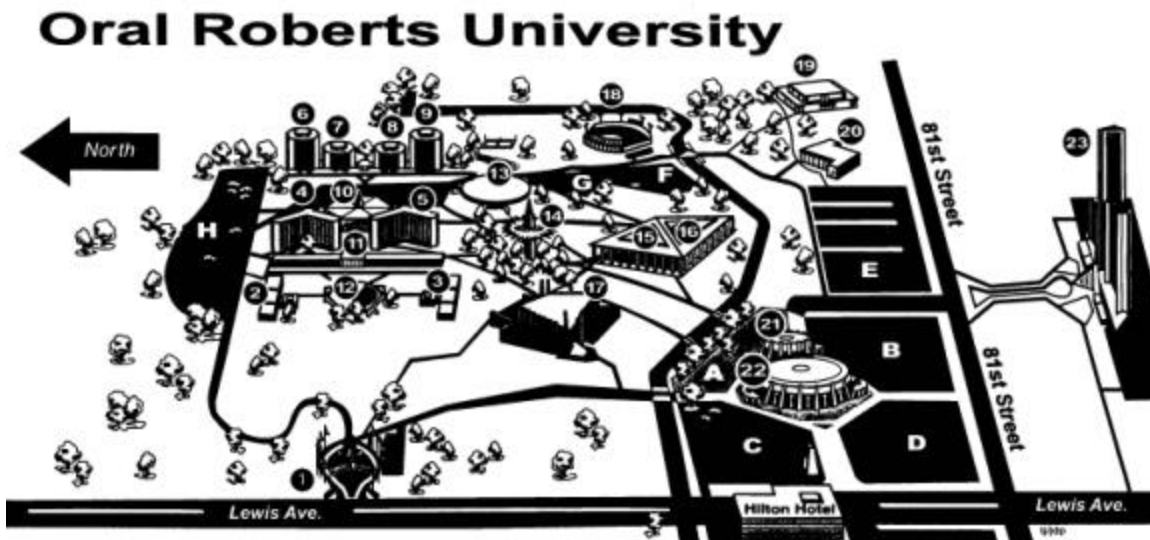
XXII Oklahoma AIAA/ASME Symposium

Saturday, February 23, 2002

Oral Roberts University, Tulsa

Time	Activity	Location
8:30 am	REGISTRATION, Graduate Center	4th Floor Pit Area
9:00 am	WELCOME, George Thyvelikath, Dean, School of Arts and Sciences, Oral Roberts University	Room: 4114
9:05 am	INTRODUCTION, Dr. Dominic Halsmer, Chair, Engineering & Physics Department, ORU	Room: 4114
9:10 am	PARALLEL TECHNICAL SESSIONS	
	Session 1-A Experimental Fluid Dynamics I	Room: 5A30
	Session 1-B Experimental Fluid Dynamics II	Room: 5A31
	Session 1-C Computational Fluid Dynamics	Room: 5116
	Session 1-D Solid Mechanics	Room: 4112
	Session 1-E Design and Controls	Room: 4114
10:30 am	BREAK WITH REFRESHMENTS	
10:50 am	PARALLEL TECHNICAL SESSIONS	
	Session 2-A Experimental Fluid Dynamics	Room: 5A30
	Session 2-B Computational Fluid Dynamics	Room: 5116
	Session 2-C Solid Mechanics	Room: 4112
	Session 2-D Design	Room: 4114
12:15 pm	LUNCHEON, Graduate Center	Regents Dining Room
1:00 pm	LUNCHEON ADDRESS, Martin Hollmann, Engineer, Aircraft Designs, Inc. (Monterey, CA) presenting "Aircraft Configuration Design"	Regents Dining Room
2:00 pm	CLOSE	

See Reverse for List of Presentations



Approaching Tulsa on I-44 from the south, Oral Roberts University is readily reached via the Lewis Street exit. Travel south approximately 3-miles. ORU is at the corner of Lewis Avenue and 81<sup>st</sup> Street. The Symposium will be held at the Graduate Center building, denoted '16' on the map above (east of the Mabee Center). It appears that parking lot 'E' may be used for parking.

## Session 1-A/1-B/2-A: Experimental Fluid Dynamics

- Experiments on Annular Liquid Jet Instabilities**, J. Carrera, R. N. Parthasarathy, and S. R. Gollahalli, University of Oklahoma, Norman.
- Fuel Release and Fire Problems**, D. G. Lilley, Oklahoma State University, Stillwater.
- Flow Distribution and Pressure Drop Measurements in a Human Tracheobronchial Airway Model**, K. Tan, R. N. Parthasarathy, and M.C. Altan, University of Oklahoma, Norman.
- Combustion Characteristics of a Lean Premixed Swirl-Stabilized Burner Utilizing Various Gaseous Fuels**, D. M. Wicksall, A. K. Agrawal, University of Oklahoma, Norman.
- An Experimental Study of Combustion in Inert Porous Media**, T. Marbach, and A. K. Agrawal, University of Oklahoma, Norman.
- Advanced Dynamometer Design to Fully Characterize the Propulsion System for a UAV**, J. Conner Jr., Oklahoma State University, Stillwater.
- Characteristics of Helium Jets Flowing Into Air Upon Removal of Gravitational Forcing**, P. A. Leptuch, and A. K. Agrawal, University of Oklahoma, Norman
- Mass Transfer Experiments for a Composite Automotive Fuel**, M. Sanchez, H. Chandra, and W. H. Sutton, University of Oklahoma, Norman.
- Measurements of Settling Velocities in a Vertical Pipe**, Q. Li, B. S. McLaury, and S. A. Shirazi, University of Tulsa, Tulsa.
- Film Boiling of Saturated Nitrogen in Horizontal Tubes of Double Pipe Heat Exchangers**, X. L. Chen, W. H. Sutton, and M. A. Sanchez, University of Oklahoma, Norman.
- A Method for Relating Acoustic Sand Monitor Output to Sand Rate and Particle Kinetic Energy**, M. Sampson, B. McLaury, and S. Shirazi, University of Tulsa, Tulsa.
- Mixing and Combustion Improvement Using Jet Injection Into Swirling Flowfields**, D. G. Lilley, Oklahoma State University, Stillwater.

## Session 1-C/2-B: Computational Fluid Dynamics

- Combined Heat and Mass Transfer From an Open Cavity Heated From Below in a Horizontal Channel**, N. M. Brown, and F. C. Lai, University of Oklahoma, Norman.
- System Identification for Aeroelastic Predictions**, C. O'Neill, Oklahoma State University, Stillwater.
- Simulation of Oil-Water Flow Distribution along Feed Spreader System in a Large Tank Separator**, L. Gomez, S. Wang, R. Mohan, O. Shoham, University of Tulsa, Tulsa.
- Flow and Temperature Fields in Rotating Cylinders with a Porous Sleeve**, J. C. Leong, and F. C. Lai, University of Oklahoma, Norman.
- Effects of Joule-Heating on EHD-Enhanced Natural Convection in an Enclosure**, M. Huang, and F. C. Lai, University of Oklahoma, Norman.
- A Criterion for the Development of Fires in Multi-Room Structures**, H.-J. Kim, and D. G. Lilley, Oklahoma State University, Stillwater.
- The Windproof Flare Pilot**, J. Hong, J. Smith, R. Schwartz, and R. Poe, John Zink Company, Tulsa.
- Supplementing a CFD-Based Erosion Model with a Stochastic Rebound Model**, X. Chen, B. MacLaury, and S. Shirazi, University of Tulsa, Tulsa.

## Session 1-D/2-C: Solid Mechanics

- Vibration Analysis of Closely-Coiled Helical Springs**, B. R. Pickle, and C. W. Bert, University of Oklahoma, Norman.
- Accelerated Lifetime Testing of Structural Polymers under Cyclic Loading**, G. H. Kim, and H. Lu, Oklahoma State University, Stillwater.
- A Novel Creep and Creep Rupture Fixture for Polymer Composite Applications**, V. Lombart, and J. M. Henshaw, University of Tulsa, D. Q. Houston, Ford Motor Company, Dearborn, E. M. Hagerman, General Motors, Warren.
- Matchcad Dynamic Suspension Modeling for the SAE Mini-Baja**, B. Bright, C. Chitwood, H. Crocker, I. Lockwood, M. Raschke, J. Riggs, B.L. Newberry, Oklahoma Christian University, Oklahoma City.
- MAUS IV Calibration for Detection of Hidden Corrosion**, J. P. Riggs, and P. H. Whaley, ARINC Incorporated, Oklahoma City.
- Measurement of Creep Compliance by Nanoindentation**, J. Ma, H. Lu, B. Wang, H. Viswanathan, Oklahoma State University, Stillwater.
- A Pressure Sensor Detecting Placental Maintenance**, T. Steadham, Oral Roberts University, Tulsa.

## Session 1-E: Design and Controls

- Studies of Time-Optimal Control and Minimum Residual Vibration Control**, L. Zhou, and E. A. Misawa, Oklahoma State University, Stillwater.
- Spud Sort 2002**, J. Cychosz, and E. Oriewo, Oral Roberts University, Tulsa.
- Development and Real-Time Control of the Disc Drive Actuator using Dspace System and MATLAB RTI**, B. F. Chee, and E. A. Misawa, Oklahoma State University, Stillwater.
- Brush Creek Boys Ranch North Spring**, J. Wentz, M. Cody, Oral Roberts University, Tulsa.

## Session 2-D: Design

- Brush Creek Boys Ranch South Water System**, D. Deuth, and M. Pulliam, Oral Roberts University, Tulsa.
- Aircraft Configuration Design**, M. Hollmann, Aircraft Designs, Inc., Monterey, CA.
- Web-Based Thermodynamics Tables Wizard**, C. C. Ngo, and F. C. Lai, University of Oklahoma, Norman.
- Baseball Frenzy**, S. Sievert, J. Rodriguez, Oral Roberts University, Tulsa.

## Chair's Corner

### Dear ASME-Central Oklahoma Section Members :

Our **January 24<sup>th</sup>** meeting was another success with **40 attendees** including 16 student members. Our speaker, **Gen (Ret) Jay Edwards**, made an informative and interesting presentation on the **Space Port** development at Burns Flat in Western Oklahoma. A special thanks to Curtis Vickery for the superb job he is doing as the newsletter editor as well as his efforts in contacting and follow-up with the student sections on our section meetings/activities. The fruits of his efforts are evident by the increased student member participation this year. Great Job!

The continued success of our ASME Central Oklahoma Section depends largely on the participation of our individual members. **Our Section needs volunteers** to serve on the Executive Committee as well as help with various programs. This Section has several committee slots that remain unfilled and there is always a need to expand our activities. A little of your time goes a long way to help yourself and others to take advantage of the many benefits ASME offers mechanical engineers right here in Oklahoma. **If you are interested in helping** our ASME section as well as a rewarding experience for yourself, then **please contact Doug Brown**, Phone: (580)531-5871 ; E-mail: [brownd919@asme.org](mailto:brownd919@asme.org) or one of our Executive Committee members today!

Included in this Newsletter is a brief overview of planned Engineers' Week activities. If possible, clear your calendar of other commitments during this week, February 17-23, 2002, so that you can participate in one or more of these activities. We look forward to your help and support!

**Ed Reynolds -- Chair**

### ***Student Members – Time to Prepare for this Years Regional Student Conference (RSC)!***

This year's RSC will be held March 21-23 at Texas A&M Kingsville University, Kingsville, Texas. ASME's Old Guard membership annually sponsors Poster and Oral Presentation competitions. To be eligible, contestants must be Student Members of ASME who satisfies the criteria established for the Old Guard Oral Presentation. A student member may enter only one of the two Old Guard Competitions: the Oral Competition or the Poster Competition. **ENTRY DEADLINE IS MARCH 3, 2002 FOR ALL RSC CONTESTS!**

**TECHNICAL POSTER COMPETITION:** The Poster Competition emphasizes the ability to deliver visual presentations. Subject matter should be related to some mechanical engineering related field. **Each student member submitting a poster will receive his/her first year's dues as an Associate Member.**

**CONTESTANTS:** There may be no more than two posters from any one Student Section, and each entry may have only one author.

**PRESENTATION:** Competitors must realize that presentations are an individual effort. However, ethical policies require credit to be given on the poster for any outside assistance that was received. The poster should be prepared so that it can be easily understood in the absence of the author. All poster materials must be flush with the board, not protruding more than 1/8 inch. No mechanical or electrical devices are allowed on the poster. All material must be accessible without having to lift or turn pages. There can be no materials placed in front of, above, below, or to the side of the poster. Judging criteria are based solely on the content of the poster. Check <http://www.asme.org/cma/og/techposter.html> for a more complete contest description.

**ORAL PRESENTATION COMPETITION:** The Oral Presentation Competition emphasizes the ability to present technical information to an audience. Topics should be related to a technical, economic, or environmental aspect of engineering or any other basic engineering theme, provided it pertains to some sphere in which an engineer is or should be involved. Furthermore, a competitor may utilize any available resource but must realize that the presentation is to be an individual effort. Assistance in the use of visual aids is advisable. Good practice and courtesy suggests credit be given during the presentation for any outside help related to the reported project



**CONTESTANTS:** Each presentation shall be made by one contestant only. Presentation duration is fifteen (15) minutes plus five (5) minutes for "questions and answers" immediately thereafter. Any time remaining or run-over of the fifteen minutes must be added to or subtracted from the five-minute discussion. Questions are limited to the Student Members at the Conference, except those Student Members from the competitor's own Student Section.

**JUDGING:** Presentations are judged in four categories: Content, Organization, Delivery and Effectiveness, and Discussion.

**Content:** To what extent is the subject of interest to a technical audience? Is credit given for material sources or contribution by others? How much knowledge of subject was exhibited? Is work independent and original? **Organization:** Is there any novel approach to the subject? Is sufficient background information provided to introduce the audience to the subject? Are the facts developed in logical and continuous sequence? Is there a definite conclusion and was it adequately based on the facts or data presented? **Delivery and Effectiveness:** Are words distinctly pronounced and was proper volume used to be heard by all? Is proper English used, and is the vocabulary sufficient? How effectively are visual aids used? **Discussion:** Is the presentation evoking spontaneous questions from the audience? Are the questions indicating the need for clarification of facts presented or are they merely of the type seeking additional information?

Cash awards are presented to winning presentations. Check <http://www.asme.org/cma/og/oralprescontest.html> for a more complete contest description.

## Future ASME-Central Oklahoma Section and Other Engineering Events

Date	Location	Program Topic and Speaker
February 17-23, 2002		The <b>Engineering Fair</b> will be held Wednesday, Feb. 20 at the Omniplex in OKC, 9:00AM to 3:30PM.  The <b>AIAA/ASME Symposium</b> will be Saturday, Feb. 23 at Oral Roberts University in Tulsa.
February 19, 2002 (Tuesday)	Oklahoma Christian Univ. Gaylord Student Center Edmond, OK	 All-Engineers Societies Banquet Speaker: Mr. Blake Wade, Oklahoma Centennial Commission: "Making Your Dreams Come True" Preparation for Oklahoma's 2007 Centennial
March 28, 2002 (Thursday)	OSU Campus, Advanced Technology Research Center Stillwater, OK	"The Oklahoma Application Engineer Program," Dr. Larry Hoberock, MAE, OSU
April 25, 2002 (Thursday)	Oklahoma Engineering Center 201 NE 27 <sup>th</sup> St, OKC	Ms. Marilyn Hughes, Oklahoma Ethics Commission
May 23, 2002 (Thursday)	York International Norman, OK	Plant Tour: York International

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