



**The American Society of  
Mechanical Engineers**

**Central Oklahoma Section Newsletter**

Volume 4, Number 7, March 12, 2003

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.

\*\*\*\*\* **Announcement: March Section Meeting** \*\*\*\*\*

**Speaker: Mr. Daniel W. Berndt, P.E., C.E.M.**

**“Hydrogen Energy Storage – Concepts and Practical Applications”**

**Thursday, March 27**

**Okla. Engineering Center, 201 NE 27<sup>th</sup> St, OKC**

Mr. Daniel Berndt’s presentation covers the use of hydrogen, generated from water through the electrolysis process, to store energy. The components and systems required to achieve hydrogen storage will be covered. Energy sources applicable to hydrogen energy storage will also be discussed with particular emphasis on renewable energy sources. Economic analysis tools used in determining the cost benefit potential will also be addressed.

Following a brief introduction to water electrolysis, Mr. Berndt will outline the major system components required for a user-based hydrogen storage system. Covered are components required to (a) collect energy when inexpensively available, (b) to use that energy to break down water into its elements, (c) to store the elements, and (d) to recombine these elements providing energy when commercially available energy is expensive. Design alternatives will be considered for each of the major system components. Included is a special review of the characteristics of a thermal engine modeled specifically for this application.

Mr. Berndt will conclude by determining feasibility of hydrogen energy storage projects using a cost line theory based on pay back period. Viable hydrogen energy storage systems are argued to be key in the development of long touted hydrogen energy infrastructure. Mr. Berndt believes this presentation will supply unique concepts on hydrogen energy storage and could be a powerful tool in helping engineers and professionals that may struggle with hydrogen energy and the future of energy in general. **Make plans to join us for this important topic and presentation on March 27!**

**Schedule and Contact Information**

**Time:** 6:00-6:30PM: Registration & Social. 6:30-7:15PM: Catered Meal.  
7:15-7:30PM: Section Business & Introductions. 7:30PM: Program with Mr. Daniel Berndt.

**Cost:** \$10 for Sr. Members and Guests, \$5 for Student Members (students please bring your ASME membership card).

**PLEASE PLACE RESERVATIONS BY 12:00PM (noon) TUESDAY, March 25**

E-Mail Reservations:	Frank Parker	<a href="mailto:parkerfj@asme.org">parkerfj@asme.org</a>
OKC/Norman/Edmond/Metro Area:	OU-AME Office	(405) 325-6772
Stillwater/Enid/Ponca City/Perry:	OSU-MAE Office	(405) 744-5900
Lawton/Duncan/Chickasha:	Curtis Vickery	(580) 251-3573
Students:	Place reservations at your respective university’s ME/MET department office.	

**2002-2003 Central Oklahoma  
Section Executive Committee**

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B (405) 739-1813  
[parkerfj@asme.org](mailto:parkerfj@asme.org)

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B (580) 251-4057 • F (580) 251-4604  
[pmstarr@asme.org](mailto:pmstarr@asme.org)

**Jamal Siddiqui** ..... Secretary  
USAF Civilian Engineer  
B (405) 739-7191  
[jamal.siddiqui@fsbcd.org](mailto:jamal.siddiqui@fsbcd.org)

**Albert Janco, PE** .....Vice-Chair, Programs  
Vice-Chair, Membership  
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B (405) 848-1991 • F (405) 843-6244  
[JANCOA@ASME.ORG](mailto:JANCOA@ASME.ORG)

**Doug Brown** .....Vice-Chair, Prof. Dev.  
Goodyear Tire & Rubber Co.  
B (580) 531-5871  
[brownd919@asme.org](mailto:brownd919@asme.org)

**Curtis Vickery, PhD, PE** .....Newsletter Ed.  
B (580) 251-3573 • F (580)251-3519  
[Vickeryc1@asme.org](mailto:Vickeryc1@asme.org)

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B (580) 251-4166 • [john.heaton@halliburton.com](mailto:john.heaton@halliburton.com)

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B (405) 739-1813 • [frank.j.parker@boeing.com](mailto:frank.j.parker@boeing.com)

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B (405) 325-5011 • [baldwin@ou.edu](mailto:baldwin@ou.edu)

**Tracy Purser** ..... Minorities & Women  
B (405) 736-4806 • [turbodanes@aol.com](mailto:turbodanes@aol.com)

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B (405) 744-5901 • [chambersf@asme.org](mailto:chambersf@asme.org)

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B (405) 291-5586 • [wc064a@okmail.sbc.com](mailto:wc064a@okmail.sbc.com)

**Ken Craig** ..... Director  
B (405) 364-4212 • [kencraig@bergey.com](mailto:kencraig@bergey.com)

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**Bill Green, PE** .....Director  
B (405) 377-1164 • [greenwr@oge.com](mailto:greenwr@oge.com)

**Paul Ratke** ..... Director  
B (405) 844-2356 • [pratke@aurriand.com](mailto:pratke@aurriand.com)

**Ed Root** ..... Director  
H (405) 946-3254 • [eroot@worldnet.att.net](mailto:eroot@worldnet.att.net)

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B (405) 425-5402 • [david.cassel@oc.edu](mailto:david.cassel@oc.edu)

**Sub Gollahalli, PhD, PE** .....OU  
B (405) 325-1742 • [gollahal@ou.edu](mailto:gollahal@ou.edu)

**Larry L. Hoberock, PhD, PE** .. OSU-MAE  
(405) 744-5900 • [lhobero@ceat.okstate.edu](mailto:lhobero@ceat.okstate.edu)

**Jim Bose, PhD, PE** ..... OSU-MET  
(405) 744-9458 • [jbose@ceat.okstate.edu](mailto:jbose@ceat.okstate.edu)

**Past Chair**  
**Ed Reynolds, PE** ..... Honors & Awards,  
History & Heritage  
B (405) 721-6753  
[edwin\\_c\\_reynolds@yahoo.com](mailto:edwin_c_reynolds@yahoo.com)

**Faculty Advisors**  
**Wayne Whaley, PhD, PE** ..... OC  
B (405) 425-5424 • [wayne.whaley@oc.edu](mailto:wayne.whaley@oc.edu)

**David Baldwin, PhD, PE** .....OU  
B (405) 325-1090 • [baldwin@ou.edu](mailto:baldwin@ou.edu)

**Hongbing Lu, PhD** ..... OSU-MAE  
B (405) 744-5900 • [hongbin@okstate.edu](mailto:hongbin@okstate.edu)

**Rick Beier, PhD** ..... OSU-MET  
B(405) 744-9371 • [beier@okstate.edu](mailto:beier@okstate.edu)

## Additional March Meeting Information

Our speaker, **Mr. Daniel W. Berndt, P.E., C.E.M.**, has over twenty years experience in engineering and mechanical systems. He has performed engineering work on power, industrial, commercial, and institutional facilities. His current work is energy and HVAC related on large commercial facilities.

Daniel is a Licensed Professional Engineer in twenty-two states and the Association of Energy Engineers has qualified him as a Certified Energy Manager. He received a Bachelor degree in Mechanical Engineering from Auburn University. He currently resides in Fort Worth, TX and is a Senior Engineer with Carter::Burgess, Inc., a consulting firm in the areas of planning, engineering, architecture, and construction management.

Mr. Berndt has researched hydrogen energy for over twenty years and has written several papers on hydrogen. He has an article scheduled to be published in the March/April edition of *Refocus* magazine on the same subject matter as this presentation. Daniel is also working on a book entitled Oxygen Aspirated Hydrogen (HyOx) Engines; The Renewable Energy Hot Rods.

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### Central Oklahoma Section Awards – Submit a Nomination ASAP!

The executive committee has established six (6) awards to recognize the section and student members who are making outstanding contributions to their section or the profession of mechanical engineering. Recipients of these awards will be recognized at the April 24<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** – Four 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/MAE; the Tom J. Love Award will be awarded at the University of Oklahoma; and an Outstanding Student Award will be awarded at Oklahoma State University/MET.

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 21, 2003** –

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### Halliburton Energy Services Summer Internships Available



Summer Internships are limited and will be filled according to education career goals, based on courses completed for college Junior, Senior, and Graduate levels only. College transcripts are required when applying for an internship position. Applications and/or resumes will be reviewed by HR for required qualifications and forwarded to appropriate department managers for final review and selection. Contact Curtis M. Vickery, HES Sr. Engineer, for more information (see page 1 for contact information).

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### Oklahoma Sustainability Network Annual Conference -- March 21 in OKC



Our January Section meeting featured ASME Distinguished Lecturer Ian Arbon who presented “Renewable Energy and Sustainability” to introduce our membership to sustainability and its implications to our profession. This month’s program topic is also related to sustainability. The **Oklahoma Sustainability Network (OSN)** serves to connect those working towards sustainability in Oklahoma and to advance the public’s awareness of sustainable issues. OSN is a resource for promoting, gathering, distributing, and exchanging environmental information integral to the sustainable future of Oklahoma.

“Strategies for A Sustainable Oklahoma” is the topic for this years **OSN Annual Conference to be held March 21, 9:00AM-5:00PM at the OSU-OKC Campus**, 900 N. Portland, Oklahoma City. Both morning and afternoon sessions are available, focusing on four different areas of interest. Luncheon speaker will be Ms. Susan Savage, Oklahoma Secretary of state, who will discuss strategies for achieving a sustainable Oklahoma. The afternoon session includes a Wind Generation overview by Mr. Mike Bergey who will bring a demo wind generator unit. Mr. Bruce Johnston will exhibit Solar Cookers and other solar-powered items for home use. They are also working to have alternative fuel vehicles on display. **Up to 7-PDH units can be earned by attending this conference.** See <http://www.oksustainability.org> for more information.

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### Check Out Our Web Site ® <http://www.asme.org/sections/CentralOK/>

We’re interested in your opinions: What do you like? What do you not like? What should be included? Send comments to Phillip Starr, ASME-COS Treasurer, at [pmstarr@asme.org](mailto:pmstarr@asme.org).

**The American Society of Mechanical Engineers -- Central Oklahoma Section  
Ballot for 2003-2004 Executive Committee Officers & Directors**

<u>POSITION</u>	<u>NOMINATING COMM. NOMINEE</u>	<u>VOTE</u>	<u>YOUR WRITE-IN NOMINEE</u>	<u>YOUR VOTE</u>
<b>OFFICERS</b>				
Chairman	Doug Brown	_____	_____	_____
First Vice-Chairman	_____	_____	_____	_____
Treasurer	Phillip Starr, E.I.	_____	_____	_____
Secretary	_____	_____	_____	_____
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Vice-Chair, Membership	Albert Janco, P.E.	_____	_____	_____
Vice-Chair, Prof'l Dev't	Frank Parker, P.E.	_____	_____	_____
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	Frank Chambers, Ph.D., P.E.	_____	_____	_____
	John Heaton, P.E.	_____	_____	_____
	Ken Craig, P.E.	_____	_____	_____
	Paul Ratke, P.E.	_____	_____	_____
	Bill Green, P.E.	_____	_____	_____
	Will Sutton, Ph.D., P.E.	_____	_____	_____
	Curtis Vickery, Ph.D., P.E.	_____	_____	_____
	Charles Obosu	_____	_____	_____
	Ed Reynolds, P.E.	_____	_____	_____
	John Francis, Ph.D., P.E.	_____	_____	_____
	Ed Root	_____	_____	_____
	Tom Lear, E.I.	_____	_____	_____
	Tom Betzen, P.E.	_____	_____	_____
	Gary Bratcher, P.E.	_____	_____	_____
	Jamal Siddiqui	_____	_____	_____

**TO VOTE FOR COMPLETE NOMINATING COMMITTEE SLATE, CHECK HERE**

**EX-OFFICIO MEMBERS OF THE EXECUTIVE COMMITTEE (for information only)**

Past Chairman (02-03): Frank Parker, PE

**STUDENT SECTION FACULTY ADVISORS AND DEPARTMENT HEADS:**

**UNIVERSITY**  
 Oklahoma Christian University  
 Oklahoma State University-MAE  
 Oklahoma State University-MET  
 University of Oklahoma

**FACULTY ADVISOR**  
 Wayne Whaley, Ph.D., P.E.  
 Hongbing Lu, Ph.D.  
 Rick Beier, Ph.D.  
 David Baldwin, Ph.D. P.E.

**DEPARTMENT HEAD**  
 David Cassel, Ph.D.  
 Larry Hoberock, Ph.D., P.E.  
 James Bose, Ph.D., P.E.  
 Sub Gollahalli, Ph.D., P.E.

Below is the 2003-2004 Exec Committee Officer/Director election ballot that needs your careful consideration and action. A terrific slate of candidates has been identified to lead our Central OK Section for the next program year, but we still need nominees for the Offices of 1<sup>st</sup> Vice Chair & Secretary. We also need additional interested members to serve as Directors to fill and/or help with various committees. Serving on the Section Executive Committee is challenging and personally rewarding. If interested in a Director or Officer position, feel free to nominate yourself!! If you or any potential candidate have any questions regarding Exec Committee service, please contact Doug Brown at (580) 531-5871 (brown919@asme.org). Most importantly – **PLEASE VOTE !!** Mail your ballot to **Ed Reynolds** at 6507 NW 96<sup>th</sup> St., OKC 73162, or fax it to **Frank Parker** at 405-739-1999 or bring it to our March Section Meeting, by March 27<sup>th</sup>.

**It's Our Election Time !!**

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Place  
Stamp  
Here

Mr. Edwin C. Reynolds  
6507 NW 96<sup>th</sup> St.  
Oklahoma City, OK 73162

## Chair's Corner

### Dear ASME-Central Oklahoma Section Members:

Although no Section Meeting was held in February, the flood of activities related to **National Engineering Week** more than made up for its absence. We had a good turnout for the **Rubber Band Powered Vehicle contest**. The first place winner's vehicle rolled past the end of our track and didn't stop until it covered a distance of just over 96 feet. Few contestants' vehicles approached that distance, but many made up for it by the imagination and cleverness demonstrated by their designs. Besides learning the rudiments of design and physics, it's my hope the contestants had as much fun letting their rigs go down the track as I had watching them. **We would like to thank Wendell Cavin** for putting much time and effort in setting up and running the competition. We would also like to **thank the OSU students who helped with contestant registration**, and ASME members **Albert Janco, Ray Baker, and Ed Reynolds** for assisting with judging.

The **Joint Engineering Societies Banquet** was another banner event held during that E-Week. **Captain Gary Chavez** gave an interesting presentation on the F/A-22 Raptor Fighter plane, and highlighted much of the Air Force's strategy behind its design. Several awards and honorable mentions were presented during the dinner. **Tommy Lear** announced winners of the recent **MATHCOUNTS** competition. **Tommy Lear and Curtis Vickery** are two ASME members who contribute much of their time to K-12 programs like MATHCOUNTS. We appreciate their efforts in organizing these events for all the participating schools in their respective regions of Oklahoma.

The parade of engineering activities extended into March with the **23rd AIAA/ASME Symposium** held at the University of Oklahoma on March 8. The number and quality of presentations was very impressive. We would like to thank both **Professor Kumar Parthasarathy** and **Professor Ajay Agrawal** who did an excellent job organizing this event in such a short time. The luncheon afterward featured **Mr. Carl Michael Smith, Assistant Secretary of Energy for Fossil Energy**. Mr. Smith spoke about issues related to the security of our energy reserves and delivery infrastructure. He also touched on the recent administration's policy related to the hydrogen powered vehicle initiative.

Our next Section Meeting, scheduled for March 27, will also deal with hydrogen energy. **Mr. Daniel W. Berndt P.E.** of Carter & Burgess, Inc. will give a presentation on **Hydrogen Energy Storage**. This is a key challenge related to building a hydrogen power economy and we expect Mr. Berndt will expand on the technical issues related to it. **The presentation's technical content qualifies it for 1.0 PDH Continuing Education Credit for any attending Professional Engineer.**

Hope to see you all on Thursday, the 27<sup>th</sup> of March.

**Frank Parker – Chair**



## 2003 RSC and RAC , March 27-29 , Houston, TX

From Brian Dietz, Vice President of ASME Region X:

Make plans now to attend to attend the Region X **Regional Administrative Conference (RAC)**, **Regional Student Conference (RSC)**, and **Graduate Student Technical Conference (GSTC)** to be held from March 27 to 29, 2003. This year's events are being hosted the University of Houston in Houston, Texas.

It is very important that your Student Section, Section, Subsection, or Technical Chapter be represented at these important business meetings so that we can provide you with important training and can conduct the annual business of ASME.

In addition to training and business meetings, the annual student design contest promises to be action packed with contestants from colleges and universities from throughout our region. **This year's design contest consists of a mining machine.**

These meetings present an excellent opportunity to network with fellow engineers and students while enhancing our professional careers with lifelong learning through management training courses.

The Honors and Awards Banquet is the grand finale of the meetings with awards presented to member and student contest winners and honorees.

Besides providing great South Texas hospitality, the students at the University of Houston promise fun activities after we've completed our daily business. Don't miss out on this great event, send in your attendance form and reserve your hotel room.

### **Student Members Note: First Annual Young Engineers Forum, March 28, Houston, TX**

The Young Engineers Forum (YEF) is a program designed to enhance your ability to compete in an ever more demanding and changing global market place. Through networking opportunities and practical, real-world advice from established engineers and career planning specialists, you will learn how to prepare for a successful and rewarding career. This event is presented in conjunction with the 2003 Regional Administrative Conference.

Please join us for this unique opportunity to gather advice, tips and insights on getting the most out of your engineering career.

- Get practical, real-world advice about your career
- Learn how to prepare for future trends and a rapidly changing workplace
- Benefit from accounts of real-life experiences and success stories
- Learn how to identify and be aware of the resources available to you

## Future ASME-Central Oklahoma Section Events

Date	Location	Program Topic and Speaker
March 21, 2003 (Friday)	OSU-OKC Campus 900 N. Portland, OKC	Oklahoma Sustainability Network Annual Conference "Strategies for A Sustainable Oklahoma"
March 27, 2003 (Thursday)	Okla. Engineering Center 201 NE 27 <sup>th</sup> St., OKC	March Section Meeting Speaker: Mr. Daniel W. Berndt, P.E., C.E.M. Topic: "Hydrogen Energy Storage"
March 27-29, 2003 (Thurs. – Sat.)	University of Houston Houston, TX	Regional Student Conf. & Regional Administrative Conf. Annual Region X gathering of Sr. and Student Section delegates to spawn enthusiasm for ASME activities.
April 3, 2003 (Thursday)	Okla. Engineering Center 201 NE 27 <sup>th</sup> St., OKC	ASME Central Oklahoma Section Executive Committee Meeting
April 24, 2003 (Thursday)	Okla. Engineering Center 201 NE 27 <sup>th</sup> St., OKC	April Section Honors & Awards Meeting Speaker: Dr. William A. Sibley, President of OCAST. Topic: "E <sup>3</sup> : Engineers, Entrepreneurs, and Economic Development"

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**<http://www.asme.org/>**

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**<http://www.asmesro.org>**

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OKLAHOMA ENGINEERING CENTER  
201 NORTHEAST 27<sup>TH</sup>  
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