



THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS®

Central Oklahoma Section Newsletter
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The Section is located at: Oklahoma Engineering Center, 220 Northeast 28th 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.

******* ANNUAL ETHICS MEETING *******

PROGRAM: “Ethics and the Revised Board Statutes”

SPEAKERS: Mr. George Gibson, Chairman, Oklahoma State Board of Professional Engineers and Land Surveyors.

DATE: Thursday, March 24, 2016 **LOCATION: The Williams Co. 525 Central Park Drive (I44 & Lincoln Boulevard), Okla. City, OK Room 1003**



Engineers take seriously their responsibility — not just for the quality of the jobs they work on — but for the safety and well-being of the public at large. We are privileged to have Mr. George Gibson, P.E. as speaker for this ethics meeting. As given on page 3 of this newsletter, the ASME Code of Ethics of Engineers Fundamental Canon 3 states: “Engineers shall continue their professional development throughout their careers, and should provide opportunities for the professional and ethical development of engineers under their supervision.”

Besides providing an ethics refresher, this meeting will focus on the newly revised Board Statutes that are being considered by the Oklahoma Legislature. To be discussed are the proposed changes and their effect on practicing engineers. Also to be discussed is the variety of issues surrounding rules of licensure, professional practice, and continuing education requirements. **Attendees will receive 2-PDH credit hours.**

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| <p>Time: 5:30 - 6:00PM: Meet & Register at the Williams Co. 6:30 – 7:30PM: Ethics Session 1 7:40 – 8:40PM: Ethics Session 2</p> | <p>6:00 – 6:30PM: Introductions & Pizza Meal 7:30 – 7:40PM: Short Break. 8:40PM: Adjourn.</p> |
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Cost: \$5.00 for Society Members / NO CHARGE for university Engineering students (We encourage Sr. members to donate to our Student Meal Fund to defray student expenses). Please place your reservation with Albert Janco (Ph: 405-848-1991 (leave message); e-mail: JANCOA@asme.org) by 6:00PM on Tuesday, March 22. PLEASE furnish the name of each person attending and their affiliation (ASME, AIAA, SWE, etc). If a student, please indicate school/university. If a P.E. please indicate if a PDH certificate is desired.

| 2015-2016 COS Executive Committee Officers | Directors | Ex-Officio Directors |
|--|--|---|
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ADDITIONAL MARCH MEETING INFORMATION

Mr. George T. Gibson, P.E., currently serves as Chair of the Oklahoma State Board of Registration for Professional Engineers and Land Surveyors. He retired in April 1990 as Assistant to the President for Southwestern Bell Telephone Company in Oklahoma. While there he was responsible for planning and implementing the Company's nearly \$200 million per year construction program throughout the state. This included administration, planning, engineering and maintenance of the system, with approximately 2,000 employees under his supervision.

Mr. Gibson holds a BA in Mathematics with a minor in Physics, from the University of Tulsa (TU), and was elected to the TU Hall of Fame in 1991. He is also a graduate of the OETP, Master's level degree program from Bell Laboratories, and has taught graduate courses at the University of Oklahoma's School of Industrial Engineering. In his long service with the Oklahoma State Board of Registration for Professional Engineers & Land Surveyors, Mr. Gibson has been involved in several investigations of engineering firms for a variety of professional violations.

At right is a map showing the Williams Co. location. Conference room 1003 is in the south building (first floor), which is the first building as you enter the parking lot from Central Park Dr. Attendees are to enter through the double doors on the east side, facing Lincoln. If you have any questions, please call Nathan Weber at 405-595-7415.



Engineering Fair and Engineer's Week Wrap-Up

Rubber Band Powered Vehicle Contest Highlights

The annual Oklahoma Engineering Fair was held Tuesday, February 23, 2016, at the Oklahoma Science Museum in Oklahoma City. Students attended from Oklahoma schools across the state. Several competitions were available in which students could participate including the **Bruce Stout Rubber Band Powered Vehicle Contest** sponsored by our ASME Central Oklahoma Section. Those helping with and judging the competition were Albert Janco, Robert Rucker, & Ed Reynolds. Other volunteers assisting were Francis-Tuttle Pre-Engineering Academy (PEA) students Mike Tindill (Edmond North) & Aaron Corona (Putnam City North).

Fifty-three (53) students ran their vehicles in this contest. Winning entries receiving awards from OEF (Oklahoma Engineering Foundation) were:

- * **1st Place:** Andre Miller & Bailee Brown, Corn Bible Academy, Corn, OK.- 43ft, 4in
- * **2nd Place:** Brendan Miller & Bradyn Brown, Corn Bible Academy, Corn, OK.- 42ft, 3in
- * **3rd Place:** Spencer Boese & Alli Russell, Corn Bible Academy, Corn, OK.- 32ft, 9in

Special thanks to our volunteers & student participants. Congratulations to all our student competitors!

Joint Engineering Societies Banquet

The annual Joint Engineering Societies Banquet was held Thursday, February 25 at the Oklahoma Christian University Gaylord Student Center in Edmond, OK. 217 persons registered and purchased tickets although not all were in attendance.

The speaker was Colonel Charles M. Gaona, U.S. Air Force Deputy Deputy Director of the Deputy Director of Engineering and Technical Management for the Air Force Sustainment Center (AFSC) TAFB 's presentation highlighted Director of Engineering and Technical Management at Tinker Air Force Base (TAFB). Col. Gaona spoke not only of TAFB-ASSC's mission but of the many technical jobs available at TAFB. He also spoke directly to attending students, encouraging them to identify their career interest and strive always for excellence. It was a timely message for all.

ASME Code of Ethics (see <http://files.asme.org/STLLC/13093.pdf>)**CODE OF ETHICS OF ENGINEERS**

The Fundamental Principles: Engineers uphold and advance the integrity, honor and dignity of the engineering profession by:

- I. using their knowledge and skill for the enhancement of human welfare;
- II. being honest and impartial, and serving with fidelity their clients (including their employers) and the public; and
- III. striving to increase the competence and prestige of the engineering profession.

The Fundamental Canons:

1. Engineers shall hold paramount the safety, health and welfare of the public in the performance of their professional duties.
2. Engineers shall perform services only in the areas of their competence; they shall build their professional reputation on the merit of their services and shall not compete unfairly with others.
3. Engineers shall continue their professional development throughout their careers and shall provide opportunities for the professional and ethical development of those engineers under their supervision.
4. Engineers shall act in professional matters for each employer or client as faithful agents or trustees, and shall avoid conflicts of interest or the appearance of conflicts of interest.
5. Engineers shall respect the proprietary information and intellectual property rights of others, including charitable organizations and professional societies in the engineering field.
6. Engineers shall associate only with reputable persons or organizations.
7. Engineers shall issue public statements only in an objective and truthful manner and shall avoid any conduct which brings discredit upon the profession.
8. Engineers shall consider environmental impact and sustainable development in the performance of their professional duties.
9. Engineers shall not seek ethical sanction against another engineer unless there is good reason to do so under the relevant codes, policies and procedures governing that engineer's ethical conduct.

What Do You Think? NSPE's 2016 Milton F. Lunch Ethics Contest Scenario**FACTS:**

Engineer A is retained by Client X to oversee the design of an industrial processing facility, including manufactured elements of the facility. Engineer A prepares the drawings, plans, and specifications for the industrial processing facility and in doing so, incorporates manufactured equipment into the facility. As part of Engineer A's preparation of the drawings, plans, and specifications, Engineer A includes copies of the drawings, plans, and specifications provided by the manufacturer of the manufactured equipment with Engineer A's drawings, plans, and specifications. Engineer A gives full attribution to the manufacturer. Also included within Engineer A's contract with Client X is the provision whereby Engineer A represents that he has reviewed the manufacturer's drawings, plans, and specifications and in his professional opinion believes the equipment will perform as represented, but that Engineer A is not responsible for the performance of the manufactured equipment.

QUESTIONS:

1. Was it ethical for Engineer A to include copies of the drawings, plans, and specifications provided by the manufacturer of the manufactured equipment with Engineer A's drawings, plans and specifications, giving full attribution to the manufacturer?
2. Was it ethical for Engineer A to include within Engineer A's contract with Client X a provision whereby Engineer A represents that he has reviewed the manufacturer's drawings, plans, and specifications and in his professional opinion believes the equipment will perform as represented, but that Engineer A is not responsible for the performance of the manufactured equipment?

NOTICE: Central Oklahoma Section Awards Nomination Deadline Approaching

The ASME Central Oklahoma Section Executive Committee has established seven (7) awards to recognize the section and student members who are making outstanding contributions to their Section or the Mechanical Engineering profession. Award recipients will be recognized at our April 28th Central Oklahoma Section Honors & Awards 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 & an Outstanding Student Award will be awarded at Oklahoma State University/MET.

For application and/or additional information contact Ed Reynolds, 6507 N.W. 96th Street, Oklahoma City, Ok. 73162, Phone: (405) 721-6753, E-mail: edwin_c_reynolds@yahoo.com **(Nomination deadline is March 24, 2016)**

ENGINEERING SCHOLARSHIPS AVAILABLE AT NATIONAL AND SECTION LEVELS

Many ASME Student Members are unaware that they may be eligible to apply for a variety of scholarships offered at the National Level and by our own Central Oklahoma Section. Each has its own set of qualifications and grant amounts. Given the high cost of tuition, fees, and books all engineering students face, even the smallest grants can help out. **Our Section will offer up to four (4) \$500 grants to local ASME Student Members who qualify** and will not exclude any applicant from applying for others available at the national level. ASME Student Members are also encouraged to discover and apply for other scholarships available on-line at the national level. **The following links will guide you to our application and the national site containing information about other scholarship applications:**

ASME Central Oklahoma Section Scholarship Information:

(https://community.asme.org/central_oklahoma_section/w/wiki/12430.engineering-scholarship-information.aspx)

ASME National Level Engineering Scholarship Site:

(<https://www.asme.org/career-education/scholarships-and-grants/scholarship-and-loans>)

For more information or if questions arise please contact Frank Parker at e-mail: parkerfj@asme.org.

2016 AIAA-ASME SYMPOSIUM UPCOMING APRIL 16 at the UNIVERSITY of OKLAHOMA

The University of Oklahoma (OU) School of Aerospace and Mechanical Engineering (AME) will host the 2016 AIAA-ASME Symposium. **All are welcome to submit presentation abstracts and to attend!** **The symposium will be held on April 16, 2016 from 8:00 – 2:00PM** within the **Devon Energy Hall on the OU campus.**

The following page presents the Symposium Call for Abstracts. **One-page abstracts are due on April 4, 2016.** Industry professionals, undergraduate engineering students, and graduate engineering students are encouraged to present! Also, please circulate this information to others who might be interested.

Please do not hesitate to contact me msaha@ou.edu if you have questions. We look forward to seeing you at the 2016 AIAA-ASME Symposium on April 16, 2016! **Mrinal Saha, Associate Professor, OU-AME, Symposium Chair.**

CALL FOR PRESENTATION ABSTRACTS

36th Oklahoma AIAA/ASME Symposium

Saturday, April 16, 2016

Devon Energy Hall

University of Oklahoma, Norman



The World's Forum for Aerospace Leadership

Oklahoma Section



**Central Oklahoma Section
Mid-Continent Section**

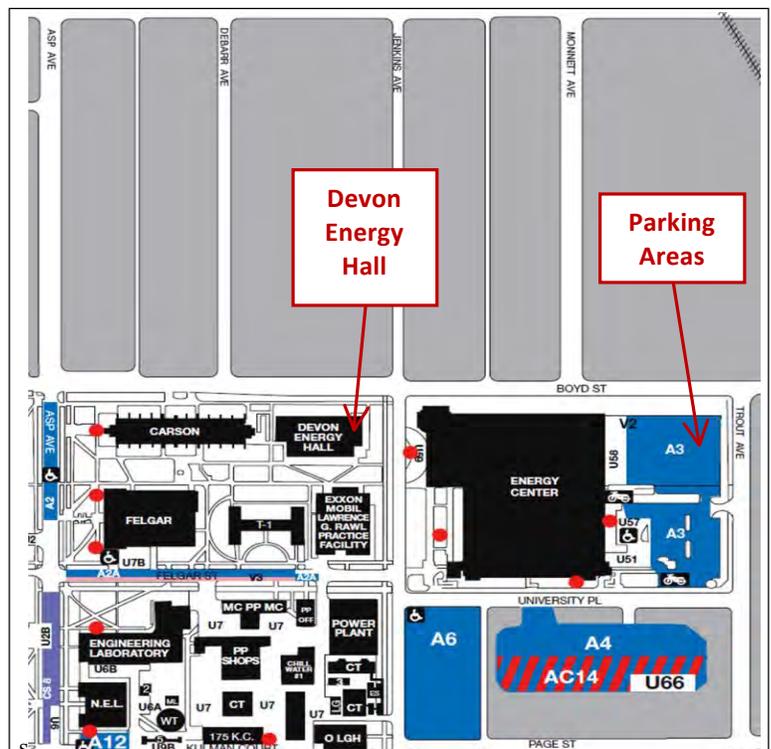
SEE NEXT PAGE FOR INSTRUCTIONS FOR ABSTRACT FORMAT AND SUBMITTAL

ABSTRACT DEADLINE: Monday, April 4, 2016

MAP AND PARKING INFO:

Devon Energy Hall is located at the corner of Boyd Street and Jenkins Avenue on the OU campus north edge. It is just east of the Sarkey Energy Center.

Parking is to be available in the parking lots east of the Sarkey Center.



CENTERED TITLE OF ABSTRACT IN 12 POINT

F. Author, P.E.,** S. Author, and T. Author, P.E.**
Department, Group, or Division
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Some City, Oklahoma 7ZZZZ
(405) 111-1010
emailname@hostaddress.com

ABSTRACT

The 36th annual Oklahoma AIAA/ASME Symposium will be held at the University of Oklahoma, Norman campus at the Devon Energy Hall on Saturday, April 16, 2016. The purpose of the symposium is to encourage communication among the engineers of Oklahoma's universities and industries. You are invited to participate by helping organize a session, chairing a session, presenting a paper, and/or attending presentations to listen and discuss the papers with the authors. The symposium provides a great opportunity for students to attend and present papers. The registration fee is only \$10 for students and \$15 for other professionals. The symposium will have parallel morning technical sessions and will end after a luncheon with an invited speaker. Registration will open at 8:00AM and the program will begin at 9:00AM.

A one page abstract must be submitted by **April 4, 2016** to be included in the meeting program and the Symposium proceedings. Presentations will be 15-minutes (12-minute presentation and 3-minutes for questions and transition). This is a sample format of the text for an abstract. The abstract should be submitted in 12 point, single-spaced Times New Roman font with right and left justified margins. The lines are to be 6-inches long with 1.25-inch right and left margins and 1-inch top and bottom margins. The abstract can be no longer than one page. The title is centered 12 point, all caps, single-spaced bold Times New Roman. Acknowledgments may be indicated in a footnote. Leave two lines between the title and the authors. The names, address, phone and e-mail address are centered 12 point single-spaced Times New Roman. Please indicate membership in AIAA and/or ASME with a footnote. Professional titles are not required. Leave two lines between the author information and the centered, all caps, "ABSTRACT." Please leave one line between "ABSTRACT" and the text.

* This work has been supported by Generous, Inc.

** Member, AIAA and/or ASME

Submittal Information:

E-Mail abstract as an attachment to Dr. Mrinal C. Saha (msaha@ou.edu) with "AIAA/ASME ABSTRACT" in the subject line. Please use an author name in the abstract file name, such as "Smith-Abstract.doc."

A Better Approach to Teaching STEM (courtesy: <https://www.asme.org/career-education/articles/career-and-education/better-approach-to-teaching-stem>) (abridged for length)

(by Mark Crawford) **To stay competitive as a nation, the U.S. needs more STEM (science, technology, engineering, and math) professionals** who can be the next generation of scientists that creates new, innovative technologies and solves world problems. It is hard to be an international leader, however, when U.S. K-12 students have poor STEM performance and a decreasing interest in STEM careers.



As reported by the Pew Research Center, testing of 15-year-olds in dozens of countries placed the U.S. 35th out of 64 countries in math and 27th in science. In addition, fewer students are entering STEM fields, especially engineering. According to the National Science Foundation, although about one-third of all undergraduate degrees are in STEM, only five percent of them are in engineering.

"It is well known that the country's ability to succeed in the global economy is lagging and that we are losing our unrivaled edge in mathematics, science, and innovation to competitor nations," Sharon Robinson, president and chief executive for the American Association of Colleges for Teacher Education, told the U.S. Senate's STEM Education Caucus in June 2015.

Part of this poor performance results from the lack of a standard approach to recruiting, preparing, and retaining STEM teachers, which has resulted in a shortage of highly qualified instructors in these fields, which, in turn, threatens the nation's ability to compete in an innovative global economy.

Teaching STEM: Many universities have already initiated programs for training teachers to teach STEM courses, including engineering. For example, the University of Notre Dame's Center for STEM Education provides programs for both teachers and students. The center collaborates with researchers and practitioners to help students innovate, engage, and excel in STEM. Programs include STEM summer boot camps for science and engineering that emphasize hands-on investigation and collaborative problem-solving.

"We are one of the few STEM centers that purposefully engages in both research and practice," says Gina Navoa Svarovsky, a chemical engineer and assistant professor of practice at the Center for STEM Education. "Our work includes conducting innovative research and contributing to the field broadly, as well as translating research to practice for K-12 educators by providing high-quality professional development."

To date, the center has provided professional development for about 100 educators and engaged about 200 students in STEM summer camps. "Many of the educators we've worked with have implemented new science and engineering activities within their classrooms," she adds.



The Department of Civil and Environmental Engineering at Colorado State University is using a \$593,000 grant from the National Science Foundation to provide teacher training for its engineering students. "Engineering students are well-trained in how to get young people to connect the STEM dots and understand the connections between the natural world and the designed world," says CSU engineering education professor Michael De Miranda. "Engineering students want to solve problems and make a difference in the world. Going into middle schools and high schools and preparing kids for the world we live in is another way for engineering students can help make the world a better place."

Private-Sector Engagement: Engineers don't have to be university faculty to teach STEM. Private-sector engineering firms and professional engineers can also get involved. Companies can fund programs, send teams of engineers to do volunteering efforts, and host career days/events. Other ways professional engineers can engage include:

- Volunteer at local schools that have a STEM curriculum.
- Volunteer with local after-school programs (for example, Odyssey of the Mind).
- Connect with local museums, science centers, and libraries about opportunities to engage the public about STEM.
- Check out local makerspaces/maker programs.

Messaging is important when teaching STEM to K-12. "There are lots of stereotypes out there that need to be corrected," says Svarovsky. "Engineering is collaborative, meaningful, and can make direct and positive impact on people's lives. These themes need to be introduced to young people early, and reinforced throughout their early educational years."

When working with young kids on engineering projects, adds Svarovsky, it's important to remember that they are "not mini-adults." Most of them will not be able to fully integrate STEM concepts and practices the same way professional engineers do.

"But, even the youngest kids can start to develop engineering ways of thinking, such as generating multiple solution ideas, iterating on designs, testing to failure and using that feedback for the next iteration, working to meet a design goal, and considering constraints, tradeoffs, and optimization," she says. "They won't be able to use the fancy terms that professionals use, but I've seen very young kids—even preschool age—begin to engage in these types of practices and ideas when working on engineering activities with adults."

Chair's Corner

To those who were able to welcome all the student "Engineer for a Day" students and meet with fellow engineering colleagues at last month's annual Joint Engineering Banquet – I trust you enjoyed this very timely and entertaining presentation.

Hoping that you will join us this month for our annual continuing education Engineering Ethics & Case Studies meeting good for 2 PDHs. All ASME-Central Oklahoma Section members, SWE Section member, AIAA Section members, students, and guests are welcome to join us. This meeting is especially important to PEs who are required to attend these types of refresher courses.

Thanks, Tom Betzen, Chairperson, ASME Central Oklahoma Section

Future ASME-Central Oklahoma Section Events

| Date | Location | Program Topic and Speaker |
|---------------------------|---|---|
| Thursday Mar. 24, 2016 | The Williams Co. 525 Central Park Drive, OKC | Annual Ethics Meeting with Mr. George Gibson, P.E. "Ethics and the Revised Board Statutes" |
| Thursday Apr. 28, 2016 | The Boeing Co. 6001 South Air Depot Blvd, Oklahoma City, OK | Annual Honors & Awards Meeting with the Oklahoma AIAA and SWE Sections For security screening reasons, please place reservations with Ms. Upeksha Addagatla at uaddagatla@asme.org by Wed., April 13 at 6:00PM. NOTE: Please include the following information with your RSVP U.S Citizen and Permanent Resident Alien: Full Name, Organization Represented, Nationality (Permanent Resident Alien status use "U.S. PRA"), Position Rank or Title Non-U.S. Visitors: Full Name, Organization Represented, Nationality, Date of Birth, Place of Birth, Passport Number, Position Rank or Title. For additional questions contact Albert Janco (ASME) at Ph: 405-848-1991 (leave message); e-mail: JANCOA@asme.org |
| Thursday May 26, 2016 | TBD | TOUR TBD |