

Section Web Site: www.saearizona.org - Sign up for your newsletter on our website.

HIGHLIGHTS...

- | | | |
|----------------------------------|---------------------------|---------------------------|
| - Future of Engineering | - Recap of April Meeting | - ASME Steak Fry |
| - Coffee Talk - SAE Car Projects | - Recap of Mine Tour | - A World in Motion |
| - Message from the Chair | - SAE Congress in Detroit | - Map to Meeting Location |

Envisioning the Future of Engineering

by Dean Thomas W. Peterson, Dean Deirdre Meldrum
and Dean Barry L. Lutz

The members of the Arizona/Nevada Section of SAE are excited to have Engineering Deans of the three major Arizona universities participate in the Future of Engineering forum. Deans will discuss the connection between universities and industry, address challenges of globalization, talk about projected shortage of US-based engineers, and comment on existing/future Arizona and national policies geared toward sustaining and supporting engineering profession.



Courtesy of www.off-shoretechnology.com

Barry L. Lutz
DEAN OF NORTHERN ARIZONA UNIVERSITY

Dean Barry L. Lutz will represent Northern Arizona University. He received his Ph.D. in Princeton University, 1968 (astrophysical sciences specialty: atomic and molecular physics) and B.S. degree from Lebanon Valley College, 1965 (physics). Dr. Lutz has served on numerous academic committees and participated in various NASA and NSF review panels. He is also active in research related to space exploration and planetary astronomy.

Thomas W. Peterson
DEAN OF UNIVERSITY OF ARIZONA

Dean Thomas W. Peterson will represent University of Arizona. Dr. Peterson received his B.S. degree in Chemical Engineering from Tufts University, in 1972, M.S. in Chemical Engineering from the University of Arizona in 1973, and Ph.D. in Chemical Engineering in 1977 from the California Institute of Technology. He has served on the faculty of The University of Arizona since 1977, and as Dean since 1998.

Deirdre Meldrum-Dean & Paul Johnson-Executive Dean
ARIZONA STATE UNIVERSITY

Arizona State University will be represented either by Dean Deirdre Meldrum, who is an electrical engineering professor and also has a degree in civil engineering or Executive Dean Paul Johnson who is an environmental engineering professor. Deans Meldrum and Johnson remain active in teaching and research in their respective fields.

Coffee Talk - SAE Car Projects

The coffee talk will be from students, from the major Arizona universities, about their SAE car projects.

Message from the Chair

Our April meeting was a great success with forty members and guests attending our meeting. For our coffee talk, we were privileged to have students from the Sierra Vista Junior High and Christ Lutheran School presenting their A World in Motion (AWIM) projects. Not only did the students do a great job of doing PowerPoint presentations, but at our intermission, they were able to demonstrate their glider and vehicle project. A special thanks to Don Robins for organizing this presentation. In attendance also were the teachers and principals from each school. AWIM is a great opportunity for meaningful volunteer service in exposing young people to engineering. As we have heard from each of our speakers this year, there is a coming shortage of engineers.

For our main speaker, we had Lloyd Shull from

DATE	TIME	LOCATION	COST With Dinner	Presentation Only
May 15	Social	- 6:00 pm	Members - \$22	\$10
	Dinner	- 6:30 pm	Guests - \$27	\$10
	Presentation	- 7:30 pm	Students - \$10	no charge
RSVP by 10:00am Tuesday May 13.			Call Sam Bethune: 602.364.7456	

Empire machinery. Empire is the distributor for Caterpillar products for the Southwest. What was surprising is the amount of engineering and rebuilding that they provide. Lloyd has been with the company for over thirty years and currently provides training to their many technicians. There are many advances in this equipment both for emissions and auto piloting of the huge trucks used to haul ore from the open pit mines. Thank you to Steve Trimble for arranging this speaker. Steve recently suffered the loss of his eldest son-Wes. Please keep Steve and his family in your thoughts and prayers.

On Saturday April 19, we had a tour of the Freeport mining operation near Green Valley south of Tucson. We had 15 members and guest attend this event. What was very good was the number of members from the Tucson area that were able to attend this event. It has been suggested that we organize at least one event in the Tucson area to provide a means of involving this portion of our membership. I would look forward to your comments on this. Derek Logan, arranged this event and obtained the refreshments for the attendees. At our April meeting, we also elected our new officers for next year starting in June. Josh Rudin will be the new Chair, Mike Kremer -Vice Chair, Steve Atkins-Secretary and Larry Wilson for treasurer.

For our May 15th meeting, we have the Deans from U of A, ASU and NAU who will be having a panel discussion on the "Future of Engineering." This is a rare opportunity to hear from the leaders of our major Engineering Universities. Thank you to Mike Kremer for arranging this. In addition, for our coffee talk, we will have students from each University showing their SAE project cars with a short presentation from each school.

--Bill Gest, Section Chair

Recap of April Meeting

by Josh Rudin

Coffee Talk-Don Robins, AWIM

Mr. Robins introduced student representatives from both Christ Lutheran and Sierra Vista Junior High who discussed their findings with the AWIM projects.

Sierra Vista brought its models and tracks of varying slope to show their progress. Christian Lutheran demonstrated their glider.

Empire / Caterpillar-Lloyd Shull

Mr. Shull did a good job of describing his experience with Empire / Caterpillar. He has been working at the facility for 38 years and has a good background of the business as follows.

Empire / Caterpillar started in 1950 in the Pacific Northwest. In Eastern Washington, there is an area known as the Inland Empire, which is where the origins of the name come from. In 1959, Empire / Caterpillar came to Arizona. Today Empire / Caterpillar sits on a 50 acre property in Mesa,

which includes rail access for transport.

Its territory covers Arizona, Southeast California and Northern Mexico. There are 18 locations, 7 mine sites and 2 planned facilities in this territory.

Typical machinery at these facilities includes hydraulic excavators, backhoe loaders, motor graders, mining trucks, tractors and pavers. This equipment has GPS installed in it for diagnostic, engine performance and troubleshooting applications.

Other services include hydraulic reconditioning up to a 28" diameter piston, machining, welding, field lubrication service, and a fluid analysis team to detect potential problems before they materialize. Empire / Caterpillar maintains an extensive parts inventory and also is involved in auxiliary power applications for data systems & telecommunications; transport and regional training programs.

Recap of Sierrita Mine Tour

by Derek Logan

It is hard to understand just how big an operation an open-pit mine is until you see it up close. The tour on Sat the 19th provided us the opportunity to see the Sierrita Mine in action.



Vehicles in the facility drive on the left side of the road. This allows the drivers to more accurately gauge their position on the road. We saw huge Caterpillar and Komatsu mine trucks lugging tons of granite up from the pit to the processing area. The excavator could fill these trucks with 3 bucket loads in 1.1 to 1.5 minutes. The trucks use up to 40 gallons of diesel fuel per hour.

Extensive planning and preparation goes into the mines operation. The pit is monitored from a control booth and provides a birds-eye view for the dispatcher. The view, however, is less informa-



tive than the real-time data provided to monitor vehicle movements within the property. A variety of options are available on the 4 computer screen setup, such as vehicle specific data such (speed, weight, location) to processing data (type/amount of material, electricity usage, etc.). The operation also consumes roughly the same amount of electricity as

the City of Tucson.

After viewing the 1.5 mile wide open pit mine, we traveled through the processing center in our school bus - courtesy of Sierrita Mine. It was like being in a Universal Studios movie set! In the processing center we saw huge cylinders tumbling the ore into smaller and smaller pieces until it was ready for fine processing and separation. It was an incredible site.

SAE Congress in Detroit

by Dave Vasquez

I was fortunate to have the opportunity to attend the SAE World Congress, awards ceremony and Sections Board meeting in Detroit/Troy Michigan this year. I was joined by Bob Riley, his wife Gala and Derek Logan.



L to R: President of SAE, Thomas W. Ryan III and Dave Vasquez

The SAE World Congress was hosted at the Cobo Center in downtown Detroit (think Phoenix Civic Plaza or the Tucson Convention Center for those who live in Arizona) and provided attendees with a host of activities including the technical presentations, company exhibits and an SAE store. It was great to see the varied selection of automobile projects, such as the new Infiniti EX35, hybrids from other countries and hybrid/solar concepts like the Toyota A-BAT. I had the opportunity to meet engineers from around the world working on fun and challenging engineering projects. Another highlight was the walking Toyota partner robot that played Disney tunes on the trumpet for the crowd. I was only able to spend a few hours at the event, but I wish it could have been longer.

After a few hours at the SAE Congress, we went to the SAE Awards Ceremony. There were approximately 150 award recipients – and I saw at least three names from the Arizona, including myself (Distinguished Younger Member Award), Jeff Brown (award for a paper he wrote) and Bob Riley (Distinguished Section Member Award). It was a well thought out event and I was honored to be one of the Arizona representatives. Congratulations to the recipients!

The last SAE event I was able to attend was the SAE Sections Board in Troy Michigan. Here's a quick refresher from the SAE.org website on the board's purpose: "The Sections Board provides guidance to SAE's network of sections in meeting the technical needs of their members and serves the SAE Board of Directors in an advisory capacity on policy matters relating to section and student activities." The board consists of



L to R: President of SAE, Thomas W. Ryan III and Robert Riley

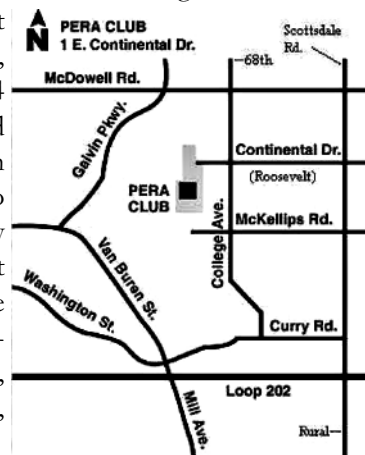
16 voting members from sections across the US, Canada and Mexico.

How do their activities affect our section? They help provide guidance to the SAE staff, update policies/procedures and provide feedback/input on how to make the administrative section work easier. As a recent past chair, it was great to hear them tackling some of the issues we face as a section. I have no doubt their activities will continually make things easier and more productive for all sections in the near future.

ASME Steak Fry - May 8th @ 5pm

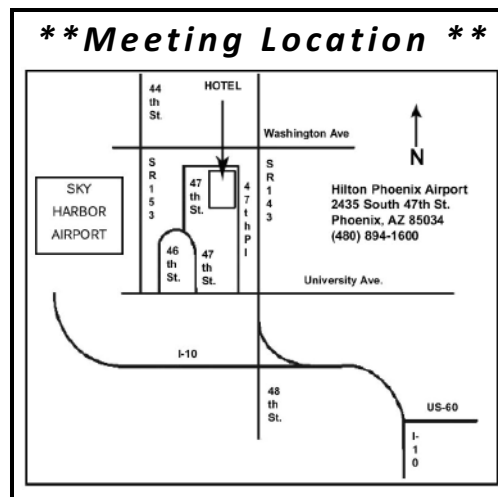
It is time for the annual ASME Steak Fry! Everyone is invited to spend an evening with your friends and family from ASME. This menu will be Filet Mignon, cooked to order by the ASME board. It includes baked potato, salad, cookies, and refreshments. 4 drink tickets will be provided with your meal, after which the cash bar will be happy to take care of each and every one of you. Tickets are not worth cash, but may be redeemed as follows: 2 tickets for canned beer or wine, 1 ticket for canned soda, juice or water.

RESERVATIONS: bsonka@cox.net. COST: \$20/person



A World in Motion - Arizona

AWIM brings math and science principles to life through highly interactive learning experiences that incorporate the laws of physics, motion, flight, and electronics. The curriculum joins teachers, students, and engineers in exploring physical science. The program is designed for students in grades 4 - 10. For more information, go to www.awim.org or call Don Robins @ 248.807.3604.



THE UNIVERSITY OF ARIZONA ANNOUNCES:

The 34th Annual Reliability Testing Institute provides coverage of how to implement and manage the Design-for-Reliability process through testing, to implement an integrated Reliability & Maintainability Engineering management strategy, learn a practical approach to attain the high Reliability goals demanded nowadays, to improve our worldwide competitive posture by creating more Reliable products through thorough testing, to determine the useful life of our products, and more. Dr. Dimitri B. Kececioğlu and 10 speakers from 10 sponsoring industries will take part in expertly covering the subject matter of this Institute. For more information, please see the contact information below.

The 46th Reliability Engineering and Management Institute provides all engineers, particularly Reliability Managers and Engineers, Product Assurance Managers and Engineers in government and Industry, with a working knowledge of Reliability Engineering Theory and Practice, Mechanical Reliability Prediction, Reliability Testing and Demonstration, and more. Dr. Dimitri B. Kececioğlu and 10 speakers from 15 sponsoring industries will take part in expertly covering the subject matter of this Institute. For more information, please see the contact information below.

THE 34th ANNUAL APPLIED RELIABILITY TESTING INSTITUTE
May 5-8, 2008

THE 46th ANNUAL RELIABILITY ENGINEERING
AND MANAGEMENT INSTITUTE
use contact information below to receive date information

Clarion Hotel, Tucson Airport
6801 S. Tucson Blvd.
Tucson, Arizona 85706
520-746-3932 or 800-526-0550

Registration Fee: \$1500 Proceedings Cost: \$50

For Details and Technical Information, please write to:
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You can also Call: 520-621-6120, Fax: 520-621-8191,
Or Email: dimitri@u.arizona.edu
Please see his website at: <http://www.u.arizona.edu/~dimitri>



ESG Engineering (WWW.ESGENG.COM) is a full service mechanical engineering consulting company located in Tempe, Arizona. We provide Industrial Design, CAD Design and

Engineering Analysis including linear and non-linear Stress, Dynamics, Fluids, Thermal and Tolerance. We also sell the Z Corp rapid prototyping machines and scanners; SensAble design software and the full line of Altair HyperWorks analysis software. How can we help you? Contact Bill Gest at 602-618-1304.

ESG Engineering is growing, contact Mike Kremer at MKremer@esgeng.com for career opportunities.

ARIZONA-NEVADA SECTION:
Meeting Schedule

May 15	- Future of Engineering:	Deans from ASU, NAU, and U of A
Jun, Jul & Aug	- Summer hiatus:	Board plans next year's program
Sept	- To be announced	

Bill Gest Section Chair bgest@esgeng.com	Joshua Rudin Vice Chair 602-369-6487	Mike Kremer Secretary MKremer@esgeng.com	Larry Wilson Treasurer wilson.lawrence@orbital.com	Robert Riley Newsletter Editor 623-872-8010
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