February and March Events

Feb 4 – Visit from Parent Section Members
Feb 5 – Soup social
Feb 12 – Parent Section tour of Schlafly Brewery
Feb 18 – Impromptu Design
Feb 21 – VIP Tour of Anheuser-Busch
Feb 25 – Tech Electives Forum
Mar 3 – Guest Speaker from Rock Mechanics and Explosives
Mar 9 – Parent Section tour of South Side Machine Works
Mar 11-13 – Regional Student Conference

February 4 – Visit from Parent Section Members (ME 104, 6:30 pm)
Four members of the St. Louis Section of ASME are coming to discuss the realities of being an engineer. This is a great opportunity to ask questions about the expectations of your first job, network with professionals in your field, and learn about different opportunities available to mechanical engineers. Bring your questions and concerns, and take this opportunity to meet representatives of some practicing engineers. You’ll be glad you did!

February 5 – Soup Social
Come Warm up with ASME! ASME will be serving hot soup between 12:00 and 1:00 at the main entrance into the Mechanical Engineering building. Please feel free to grab a free cup of soup and pick up our semester events schedule and membership information. We look forward to seeing you there!

February 11 – Tour of Schlafly Brewery
The St. Louis Section of ASME has organized a tour of Schlafly Brewery on February 11. Schlafly opened the first brewpub in St. Louis since Prohibition, and recently opened Schlafly Bottleworks in Maplewood. James Ottolini, Chief Engineer for the Bottleworks, will conduct the tour of the facility and answer questions before and after the tour.

We will leave Rolla around 4:00. The tour will begin at 6:00, with dinner available at the on-site “beer lover’s” restaurant afterward. The tour is free, but is limited to 50 people and reservations are required. Contact Alan Pilch (acpgcb@umr.edu) by February 6 to sign up.

February 18 – Impromptu Design (ME 104, 5:30 pm)
It’s that time again! What better way to celebrate the middle of February than to participate in the impromptu design competition? What’s impromptu design? Glad you asked! Each team of 3-4 people will receive some building materials – straws, rubber bands and plastic cups are typical. Then we’ll ask you to build something tall or strong or seaworthy or just plain weird. The team with the best design, as determined by our unbiased judges, will win a prize. Bring some friends so you can show off your fantastic design skills. We’ll supply the materials, you supply the ingenuity!

February 21 – VIP Tour of Anheuser-Busch
We finally arranged the tour you’ve all been waiting for. The VIP tour starts at 11:00 am sharp, and lasts about an hour (we will need to leave Rolla around 9:00 to make it on time). We will visit the Clydesdale Stables, Beechwood Aging Cellars, Brewhouse, and Bevo Packaging Plant. Afterward, complimentary samples of Anheuser-Busch products will be available to anyone over 21, and soft drinks and snacks for everyone else. Contact Alan Pilch (acpgcb@umr.edu) for more information or to sign up. The tour is limited to 20 people, so sign up today! If there is enough interest, we will try to schedule another tour later in the semester.
February 25 – Technical Electives Forum (ME 104, 12:00)
If you’re entering your junior or senior year, you’re probably wondering what technical electives you should take. Complicating this decision is the fact that very few are offered more than once per year. This forum was organized to give you the information you need to decide what electives are right for you. We have invited several professors from the department to tell you why you should take their classes, and when they will be offered next. The presentations will be brief so you will have time to ask questions. We also invite anyone who has already taken a tech elective to stop by and tell us why it was great (or terrible). Below is a list of the electives planned for the Fall Semester.

**Aerospace**
AE 353: Aeroelasticity
AE 361: Flight Dynamics - Stability and Control
AE 371: V / STOL Aerodynamics
AE 380: Spacecraft Design I

**Fluid Mechanics**
ME 339: Computational Fluid Mechanics

**Manufacturing**
ME 253: Manufacturing
ME 308: Rapid Product Design and Optimization
ME 353: Computer Numerical Control of Manufacturing Processes
ME 355: Automation in Manufacturing
ME 357: Integrated Product and Process Design
ME 363: Principles and Practice of Computer Aided Design

**Thermal Science**
ME 325: Intermediate Heat Transfer
ME 327: Combustion Processes
ME 333: Internal Combustion Engines
ME 367: Heat Pump and Refrigeration Systems

**Solid Mechanics**
ME 312: Finite Element Approximation I – An Introduction
ME 338: Fatigue Analysis

**Mechanics and Systems Design**
ME 302: Synthesis of Mechanisms
ME 307: Vibrations I
ME 381: Mechanical and Aerospace Control Systems

March 3 – Guest Speaker Paul Worsey (ME 104, 5:30)
Stop by to hear Professor Paul Worsey talk about the Rock Mechanics and Explosive Research Center.

Rock Mechanics and Explosives Research Center provides research services not only in the fields of rock structure, integrity, and fracture but in dynamics of explosive interaction with various geophysical strata. Additional research (and possibly the major focus of research) is in the applications of high pressure water to solve problems in fields as varied as nuclear waste removal and storage to processed food perforation.

Currently the center is working on several programs, including Project ELADIN (Elimination Land Mines by Aqueous Detection Identification and Neutralization), Automated De-militarization, and START (Strategic Arms Reduction Treaty).

March 9 – Tour of South Side Machine Works
The St. Louis Section of ASME has organized a tour of South Side Machine Works on March 9. South Side Machine Works has 100 years of experience in manufacturing large gears, rerimming of gears, metallizing surfaces of all alloys, stress relieving, and repairing fractured castings, and caster segment housings. More details will be available in the March newsletter.

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**News and Programs**

**Regional Student Conference**
The Regional Student Conference is almost here! What does that mean to you? RSC brings together mechanical engineering students from across our region to learn, compete, and above all have fun! Not only is this a great opportunity to meet students from other schools, there will be a tour of the Strategic Air and Space Museum and numerous opportunities to get career information (including a career fair). There are also several competitions with cash prizes. The Old Guard Oral Presentation Competition
challenges students to deliver an oral presentation on a subject relating to engineering. First through fifth prizes are awarded, with the top prize being $300 plus a (paid) trip to ASME Congress in Anaheim, CA, to compete for the International title. First prize at the International Competition is $2000. Our own Misty Mills competed last year, and won second place in the region. There’s still room for another presenter from UMR this year, and we have people willing to give you some pointers.

If oral presentations aren’t for you, you can enter the Old Guard Poster Presentation Competition. In this competition, you prepare a poster with some technical content. The poster should be easy to understand without explanation, since you will not be allowed to explain it! First prize for this competition is $200, and we have room for two presenters.

Construction is already underway for the Student Design Competition. This year’s contest is called “Mine Madness”. Students in teams of up to four members must design and build a vehicle which will collect simulated mines from a playing field and deposit them in a holding area. The mines vary in size and weight and there are obstacles to negotiate, but we have every confidence in our team!

If you want to attend RSC, enter one of these competitions, or just want more information, contact Alan Pilch (acpgcb@umr.edu) ASAP! Registration is underway, and we don’t want you to miss this opportunity.

Even if you don’t want to compete, this year’s Regional Student Conference promises to be a lot of fun. Come along to watch the competitions, and you may just decide that they don’t look so hard after all. Then you can start preparing for next year’s RSC, and come away with loads of prize money!

**ASME Scholarships**

Now is the time to start applying for next semester’s scholarships! ASME offers several undergraduate scholarships, and you can apply for most of them with one online form. The scholarships offered include:

- **Roe Scholarship** (1 @ $10,000)
- **ASME-ASME Auxiliary FIRST Clarke Scholarships** (7 @ $5,000)
- **Green Scholarships** (2 @ $5,000)
- **Duncan Scholarships** (2 @ $3,500)
- **Cooper Scholarships** (2 @ $2,500)
- **Adams Scholarship** (1 @ $2,000)
- **Beichley Scholarship** (1 @ $2,000)
- **Kugle Scholarship** (1 @ $2,000)
- **Miller Scholarships** (2 @ $1,500)
- **ASME Foundation Scholarships** (15 @ $1,500)
- **Gracik Scholarships** (18 @ $1,500)
- **Heim Scholarship** (1 @ $1,500)
- **Sammataro PVP Division Scholarship** (1 @ $1,000)

Graduate scholarships and loans are also available. You must join ASME to be considered for a scholarship or loan, but you can fill out both applications at the same time. The application deadline is **March 15**, so don’t delay!

For more information, go to web.umr.edu/~asme and click on the “Apply Now” link, or go directly to http://www.asme.org/education/enged/aid/scholar.htm

**T-Shirts**

ASME T-shirts are coming! Designs are in, and final selection is underway. We hope to have them available this month, so keep an eye on the listserv.

**ASME Looking for Mentors and Tutors**

ASME is looking for volunteers to serve as mentors and tutors to Rolla Public School students. There are many opportunities to work with students at the Elementary, Middle, and High Schools. Do you remember having problems with Math, Science, English, or Social Studies when you were at that age? Many of these students simply have trouble concentrating and getting their work done, and could use a good mentor like you. This is a great opportunity to give something of yourself to the community,
help some kids gain confidence and succeed in their classes, and be a positive role model to local students. Some of these students may be future engineers, and this is a good opportunity to reach out introduce them to the profession.

The Rolla Middle School has times set up for tutoring sessions with students in 5th, 6th, and 7th grade. These sessions are one hour long, on Tuesday, Wednesday, and Thursday afternoons from 3:15 - 4:15 pm. You may volunteer as little as once a month, once a week, or as much as three times a week. If these times do not fit your schedule or you would prefer to work with students from the Elementary or High School, we can arrange that as well.

Please contact Craig Day, Planning and Scheduling Committee Chair (kcd79c@mizzou.edu), to volunteer now!

Past Events

The X Prize
On November 13, several of our members attended a presentation at Boeing. Greg Maryniak, Executive Director of the X Prize Foundation, gave an informative and entertaining presentation about the X Prize and some of the teams competing for it. The X Prize is a $10 million cash prize to promote the private development of a reusable spacecraft. The James S. McDonnell Prolog Room was also open. This room has some great displays, including a full-scale Harpoon missile, and full-scale Mercury and Gemini space capsules. All involved had a great time, and learned about some of the difficulties involved in private space flight. We hope you’ll join us for the next presentation.

Guest Speaker Evelyn Baker
On November 19, Evelyn Baker of Coldwell Banker Real Estate gave a presentation on the process of buying a house. She brought a lot of information, including how large your down payment should be, should you buy a new or previously owned home, is it better to buy in an urban or rural area, and how much is homeowner’s insurance. Buying a house can be a complicated process, and we were glad to have Evelyn give us this introduction.

Guest Speaker Dr. Hank Pernicka
On December 3, Dr. Hank Pernicka and some of his students gave a presentation on the Missouri - Rolla Satellite Program, MR SAT. MR SAT is a satellite design project conducted in cooperation with NASA Goddard Space Flight Center. UMR students and faculty are responsible for the design, construction, and testing of the satellite pair. The satellites will be launched into orbit to study the dynamics of spacecraft formations. This project has many innovations, and promises to be an excellent learning experience for the students involved.

Phone-a-thon
A special thanks to all the ASME members who helped out with the ME Department Phone-a-Thon November 4-25. Your contribution helped not only the ME Department, but also ASME and UMR as a whole. ASME couldn’t continue without dedicated members like you!

2003-2004 UMR Student Section Officers

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Grants Available, First-Come, First-Serve

The Board on Diversity and Outreach's Partners in Mechanical Engineering (Partners) Program provides grants to ASME Sections for innovative projects and activities that support collaboration with local sections or chapters of organizations that support women and underrepresented minority groups in engineering.

Grants are awarded on a first-come, first-served basis and range from $500 to $1,000, depending on the size and scope of the activity.

Applications for Partners grants may be submitted throughout the year. For additional information, go to http://www.asme.org/communities/diversities/bdo/partners.html.

Young Engineer Award: Call for Nominations

Do you know an ASME member that has made great strides in the engineering profession, community and the work of the Society? If so, nominate him/her for the Young Engineers Award*.

The ASME member must also have continuous membership since becoming an ASME student member and earned a baccalaureate degree in Mechanical Engineering between the years March 1, 1998 - March 1, 2000.

A $5000 CASH Grand Prize will be awarded, plus a prepaid life ASME membership. All nominations must be received no later than March 1, 2004.

To learn more about the selection criteria and how to nominate, visit www.asme.org/cma/og/youngengineer.html.

*The Young Engineers Award is sponsored by the Old Guard Committee.

ASME Plays Key Role in Technical Conference at 2004 National Manufacturing Week

Once again, ASME has played a key role in organizing the technical conference at National Manufacturing Week (NMW) to be held from Feb. 23-26, 2004 at the McCormick Place Complex in Chicago, IL. NMW is the pre-eminent trade event for mechanical design, manufacturing and plant engineers in the U. S., attracting roughly 29,000 visitors to Chicago each year.

In addition to the technical conference, NMW consists of a 500,000 square foot exposition consisting of five main trade shows – National Design Engineering; National Industrial Automation; National Industrial Enterprise IT; National Plant and Facilities Engineering; and Cleantech Cleaning Technology. Each of these five pillar events is arranged into product sectors highlighted by showcases and pavilions featuring more than 1,500 exhibitors. The show is run by Reed Exhibitions, a division of Reed Elsevier, Inc.

The 2004 program includes General Sessions, Free Sessions, Half-day Workshops and over 180 individual sessions covering six tracks...Plant Engineering & Facilities Management, Design Engineering, Industrial Automation, Enterprise IT, Technology Transfer, Cleaning Technology and Executive Management.

ASME continues to take a leading role in organizing this technical conference at NMW because the benefits to the Society’s industry members are clear:

- Gain valuable technical knowledge to help you design and manufacture products quicker, cheaper and better
- Hear case studies and discussions from industry leaders on how they improved their processes and time to market
- Network with your peers

For more information about the ASME Technical Conference at National Manufacturing Week 2004, visit the web at http://www.asme.org/events and click on “National Manufacturing Week” or call toll free 800-840-0678. We invite you to take part in this exciting event. Get your colleagues to attend and take advantage of a special group registration offer. Register before Jan. 24 and save!
## Student Activity Calendar

**February**
- Feb. 1 Student Section Advisor Award – Nomination deadline
- Feb. 1 NDE Student Paper Competition – abstract due
- Feb. 15 Arthur L. Williston Award Contest – (Civic Service Paper) manuscript due
- Feb. 16-22 National Engineers Week

**March**
- March 1 Charles T. Main nomination deadline
- March 15 Deadline for 2004-05 ASME Scholarship application
- March 15 ASME Auxiliary Scholarship – application deadline
- March 25 Fluids Engineering Division – Young Engineer Paper Contest – abstract due

**April**
- April 15 Summer/Fall Student Loans – Application Deadline
- April 16-17 Fundamentals of Engineering Exam

## National Engineers Week 2004

National Engineers Week, which will be observed from Feb. 22-28, will recognize the globalization of the profession of engineering by highlighting two programs: *New Faces of Engineering* and *Connecting the World to Engineering*.

ASME members seeking information packets will find them streamlined, with a folded poster and classroom activities printed on the reverse side and a one-page timeline/participation survey. These can be obtained by contacting Eweek headquarters at (703) 684-2852

Members wishing to obtain an Engineer/Volunteer kit may do so by http://eweek.org/site/Engineers/kit.shtml

In 2005, ASME will serve as the lead society for National Engineers Week.

## ASME Sponsors EPA’s ‘P3’ Award

ASME is sponsoring the ‘P3’ Award, a student design competition that will provide grants to teams of college students to research, develop, and design sustainable solutions to environmental challenges.

ASME is one of the Environmental Protection Agency’s 27 partner organizations from industry, non-profit and governmental agencies to sponsor the P3 Award.

Eligible teams initially compete for $10,000 grants. The winners will use the money to research their projects during the academic year. In 2005, the recipients will be invited to Washington, D.C. to compete for the ‘P3’ award, which will provide further funding for more design development and implementation.

Applications can be found at http://es.epa.gov/ncer/rfa/

## ASME’S MEMBER INITIATIVE SYSTEM

**ON THE WEB**

ASME’S Member Initiative System encourages any member or operating unit of ASME to propose improvements to Society policy or procedure or to make any suggestions which would improve the operation or activities of the Society.

To date, there have been 13 proposals submitted, on topics such as “ASME and Iraq Reconstruction” and “Committee on the International System of Units.” To view the initiatives, as well as ASME’s responses, visit the Member Initiative System web page at http://www.asme.org/cma/mis.cfm.
2004 ARTHUR L. WILLISTON AWARD CONTEST

THE WILLISTON AWARD IS PRESENTED ANNUALLY BY ASME TO THE STUDENT ENGINEER OR RECENT GRADUATE WHO AUTHORS THE BEST ACCEPTABLE PAPER IN THE AREA OF CIVIC SERVICE

TOPIC AREA: The Future Role of Mechanical Engineers in Bioengineering

ASSIGNMENT: The rise in biological applications of engineering has been dramatic, with several of the major biomedical advances of the last decades having a distinctly mechanical engineering base. Indeed some undergraduate engineering programs now include a required course in biology as a first step toward preparing students for careers in which physics and chemistry are not the only basic sciences of importance to engineering applications. Some engineering colleges are forming new departments either in bioengineering, which focuses on the application of engineering principles to the study and control of biological processes, or in biomedical engineering, which applies these processes to improving health and human welfare. A recent study commissioned by ASME entitled “The Convergence of the Life Sciences and Engineering” provides a snapshot of the key forces changing and shaping engineering practice. There is clearly a growing role for mechanical engineers in this shift to engineering that is more biologically centered and the 2004 Williston Paper topic is meant to elicit your views on what this might be.


Is there anything else you would like to see in this newsletter? Contact Angela Berring (acbn7d@umr.edu) with comments or ideas.