

“Solar Autoclaves for Rural Health Clinics in Developing Nations” Social Event

On Tuesday, May 5, 2009 the ASME Dayton section held a joint social event with the Wright State University student section entitled "Solar Autoclaves for Rural Health Clinics in Developing Nations." Maria Fullenkamp, Vice-Chair of the WSU student section spoke about solar autoclaves for sterilizing medical utensils in remote health clinics. This summer she will be traveling to rural Nicaragua for two months with ETHOS (Engineers for Technical Humanitarian Opportunities for Service-Learning) to test the autoclaves, which were designed by local students. The event was very successful. The audience of about 30 was very enthused about this unique engineering service program, and several students were interested in participating next year. A donation was made by ASME Dayton Section to Maria for her summer service engineering project.

ETHOS Program Addresses Need

Lack of instrument sterilization in rural areas and underdevelopment countries has sparked a new engineering solution to this problem, solar autoclaves. The solar autoclave is a device that is intended to sterilize surgical tools on-site. It utilizes solar box cookers which can attain temperatures hot enough to boil water. The solar autoclave itself is a pressure vessel made up of a large can and two end caps. The medical instruments lie inside the can with water. As the solar box cooker heats up the autoclave, the water inside the can turns to steam and builds pressure. Temperature and pressure are held constant for sterilization.

This engineering and service effort is currently being addressed by the University of Dayton (UD) Engineers for Technical Humanitarian Opportunities for Service-Learning (ETHOS) program. This project was developed by Lori Hanna, a December 2008 graduate from UD. Lori discovered the need when she visited Nicaragua with the UD ETHOS program in summer of 2006. She returned home and asked fellow mechanical engineer Daniel Hensel (a recent May 2009 graduate from UD) to join her. Together they entered the project into the University of Dayton Business Plan Competition, recruiting Lauren Dokes and Anna Young (both May 2008 UD graduates from the School of Business) and eventually earning first place in the competition.

Lori and Daniel also worked with a team of engineers in the UD Design Clinic to design and test the solar autoclave. Daniel, Lori and Anna took a prototype to Sabana Grande, Nicaragua – a small mountain village – for testing in the summer of 2008. Work has continued on the solar autoclave for design improvements. Daniel will be returning to Nicaragua during this summer of 2009 with the ETHOS program to initiate alpha testing.

More can be found at www.saluddelsol.org.

INSIDE THIS ISSUE

- 1-5 Local Section News
- 6 2009 Roe Lecture & Luncheon
- 7 ASME Launches New Nuclear Series
- 8 ASME Membership

Message from the Section Chair

On Saturday, April 18, I attended the ASME District B Section Leader/Student Section Advisor Conference in North Canton, Ohio. District B includes Ohio, Michigan, western Pennsylvania, West Virginia, and Ontario. There are 17 senior sections in District B (15 active) and 55 student sections (25 active), with a total of about 9000 regular members and 5000 student members in the district. Representatives of 10 of the senior sections attended the conference. Canada was well represented.

Topics covered included:

- Using the ASME online tools to run your section
- Relations between student and senior sections
- Merit-based funding
- Running an Early Career Forum
- Activities that have worked well for ASME sections

Member involvement is an important concern for all the District B sections: typically only a few percent of members attend a local event in a given year. Running a course for continuing education units (Ohio law mandates continuing education for Professional Engineers) seems to be a very productive service for members, as are career events targeted toward young engineers.

With the Dayton Engineering Sciences Symposium, science fair awards, local engineering awards, and sponsorship of local activities (TechFest, FIRST Lego League, and many others), the ASME Dayton Section can be counted as a valuable contributor to District B. We've recently increased our interaction with the local student sections with social events at both the University of Dayton and Wright State University. Our directions for future growth include plant tours and professional development events.

Ideas are welcome. Let us know how the local section can better serve you!

Jonathan Poggie
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Chair, ASME Dayton Section



Cedarville University ASME students Win Big!

Three Mechanical Engineering students participated in the ASME District B Regional Student Conference held at Wright State University March 27-29. Schools from Michigan, Pennsylvania, West Virginia, Ohio and the Canadian province of Ontario were represented at the conference. Mordecai Veldt, a senior a most recent past-chairman of the Cedarville ASME student section received the first-place award for his Web-page design called "Lights Without Borders" which described the Solar Lights developed by CU's Society of Engineers Aiding Missions for use in Liberia by local pastors.

Ryan Samuelsen, a senior and member of the world champion CU Solar Boating team, received the second-place award for his Old Guard Oral presentation describing his design team's development of a contra-rotating propeller drive for the solar boat. Rather than swapping out drive systems for the two major competition events at the Solar Splash competition, Ryan's team designed and manufactured a unique compact drivetrain which will spin two unique propellers in opposite directions using a single shaft to minimize drag.

Matt Hollis, a senior, received the first-place award for his Old Guard Oral presentation describing his senior design team's re-engineering of a fracture fixation device requested by missionary physicians in Kenya, Africa. The intramedullary nail currently in use will no longer be manufactured by its patent-holder. Matt's team worked through the complications of intellectual property rights and reverse-engineered the existing nail. The team contacted the nail's patent-holder and agreed to market their nail only in third-world countries. A business plan was developed for a not-for-profit enterprise which would be able to manufacture and distribute the nails. Matt's win entitles him to a fully-funded trip to the International Mechanical Engineering Congress to compete against winners from the other districts. This year's Congress will be held at the Disney Resort in Florida in November.

Congratulations go to these fine representatives of Cedarville University's mechanical engineering program!

2009 ASME Dayton Section Awards

ASME Dayton Section Science Fair Award

Montgomery County Science Day

Kay McArdle and Amy Hutchison, Carroll HS, 11th Grade, "Bending Angles! Measuring Knee Tension"
Jennifer Schimmels, Dayton Christian HS, 12th Grade, "Effects of Laser Ablation on Metal Samples"

Ohio West District Science Day

Ralph Bauer, Lehman Catholic School, 12th Grade, "Fuel Cells: A Catalytic Comparison"
William Hauber, St. Luke School, 8th Grade, "Biodiesel"

DESS Best Presentation Award

Energy & Aircraft Efficiency – Scott Snelling, Goodrich Aircraft Wheels & Brakes
Materials – Shaun Freed, University of Dayton
Fluids & heat transfer – Steve Mulqueen, University of Dayton
Engineering Education – Douglas Smith, University of Dayton
Design & Optimization – Brett Cooper, Air Force Institute of Technology
Undergraduate Projects – Joseph Mertz, Wright State University
Structures & Solid Mechanics – Randy Tobe, Wright State University
Sensors – Chris McGaha, Air Force Research Laboratory
Human Factors & Biomedical – Melissa Jones, Wright State University
Aerospace Vehicles & Flight Operations – William Karasz, Air Force Institute of Technology
Manufacturing – Joy Davis, Wright State University
Computer Sciences – Karl Schrader, Air Force Institute of Technology

Section Awards

Young Engineer Award: Heidi Wilkin, AFRL
Outstanding Contribution Award: Carl Tilmann, AFRL
Lifetime Achievement Award: Ramana Grandhi, WSU

Longevity Awards

Karl Schroeder - 50 years
Ramana Grandhi - 25 years
James Nees - 25 years

Old Guard Awards:

University of Dayton (4)	Cedarville University (3)
Daniel Hensel	Matthew Hollis
Bethany Huelskamp (x3)	Ryan Samuelson
	Mordecai Velot

Wright State University (1)
Caleb Barnes





Montgomery Science Day Winners



Ohio West District Science Day Winners



Section Award Winners



DESS Best Presentation Winners



2009 Roe Lecture & Luncheon at the ASME Annual Meeting, Palm Desert, Calif.



The 2nd annual Roe Lecture and Luncheon will take place at the ASME Annual Meeting this month in Desert Springs, Calif. This year's recipient is Bonnie J. Dunbar, Ph.D., NAE, current president and ceo of The Museum of Flight in Seattle, Wash. The "MOF" is the largest private air and space museum in the world, with an education program that provides for nearly 140,000 students per year and an aircraft restoration center.

Dr. Dunbar will deliver a lecture entitled *U.S. Leadership in Engineering: Investing in the Next Generation -- When and How*.

The Ralph Coats Roe Medal, established in 1972, recognizes an outstanding contribution toward a better public understanding and appreciation of the engineer's worth to contemporary society.

Ralph Coats Roe was a pioneer and innovator in the design and construction of highly efficient power plants and advanced desalting processes. He was an inspiration to his colleagues by his great achievements through self-education in highly sophisticated technologies.

Global Engineering Management Conference (GEMC) Provides Hands-on Experiential Learning Opportunities for Mid-career Engineers

The fast pace of technological change, globalization and the softening of the world economy have exerted many changes in the engineering profession. The new Global Engineering Management Conference, to be held Sept. 13-16, 2009, is aimed at mid-career engineers and will explore the challenges that the global work environment is exerting on the engineering profession. With a focus on knowledge from best-in-class organizations and an emphasis on hands-on experiential learning, the GEMC will provide both technical and economical value for those who participate. The four conference tracks are as follows:

- Managing New Technology
- Managing & Developing Engineers
- Supply Chain Management within the Global Market
- Managing Your Ecological Footprint in the Energy & Environmental Era

Programming will consist of technical sessions, continuing education unit (CEU) accreditation tutorials, structured networking events, and other innovative knowledge and professional exchange forums. GEMC will include an exclusive tour of the new Texas Instruments LEED manufacturing facility and a behind-the-scene tour of the new Dallas Cowboys Stadium

ASME's Online Tool for Volunteering

What if you could go to one web page to find all the volunteer opportunities available in ASME?

One of ASME's most important assets is its volunteers. They provide countless hours of service in varying roles: from local section, district and senior leadership. The many individuals that dedicate their time and effort to ASME as volunteers are eclipsed by the larger number of members that may like to volunteer, but are not sure how to get involved initially. The Volunteer Opportunity Bulletin Board (VOBB) was created to address this crucial issue.

The VOBB is an online tool that connects would-be volunteers and those with open volunteer positions. It is a one-stop shop for volunteers seeking positions and offering opportunities within ASME. ASME staff and volunteers are encouraged to post their open volunteer opportunities for local section, district and senior leadership positions using this online tool. After a position is posted on the VOBB, any ASME member that visits the asme.org site is welcome to review the positions and apply online. All applications are reviewed and passed on to the interested group. Although an applicant may not be selected for a particular position, their application could open the door to other volunteer opportunities.

To learn more about the VOBB and the volunteer positions available, go to <http://volunteer.asme.org/vobb/>.

ASME Launches Nuclear Seminar Series

This June, senior level executives from all areas of the nuclear power industry will convene in Atlanta, Ga. to share their expertise and to provide success factors for the nuclear renaissance during ASME's new Nuclear Technical Seminars program.

The new program, entitled, "Blueprint for the Nuclear Renaissance," which will take place from June 22-23 at the J.W. Marriott Buckhead, was developed as a forum for engineers to learn about design, construction, startup and operation for the next group of nuclear power plants from leading expert in the nuclear industry.

The five in-depth seminars will examine the industry's newest trends and will be led by more than 30 nuclear power professionals from organizations such as Areva, Bechtel, Exelon, Sandia National Lab and Westinghouse.

One of the seminars, Nuclear Power Plant Design, will provide an overview of the steps required to produce the design necessary to purchase, fabricate and construct a nuclear power plant. The program will also feature an opening plenary session, "Success Factors for the Nuclear Renaissance," which will offer an overview of the opportunities and challenges facing the next generation of U.S. nuclear power plants.

For more information on the ASME Nuclear Technical Seminars, visit www.asmeconferences.org/nuclear09 or contact Jennifer Delda, program manager, at 212 591 7108 or deldaj@asme.org.

ASME Y14.5 - 2009 Now Available

ASME has announced that its Geometric Dimensioning and Tolerancing (GD&T) standard, *ASME Y14.5 – 2009*, has been revised and is now available for purchase.

The *ASME Y14.5 – 2009* standard, an essential communications tool for top engineers worldwide, has undergone its first revision in more than 15 years. It includes important changes that better suit the needs of the 21st century engineer. Changes that address the concept of feature design, surface boundaries and axis methods of interpretation are included among others.

The revised standard is now available for purchase on ASME's online catalog. The site also offers discounts on related GD&T standards, personnel certification, handbooks and training courses to aid engineers in understanding the language of GD&T.

For more information on ASME Y14.5, visit: <http://go.asme.org/gdt>.



Member Savvy

The Value of ASME Membership



You should be networking more!

I hear the word “networking” being used a lot these days. I used to think of networking as being trapped in a roomful of self-promoting insurance salespeople and bankers, who passed out business cards like candy and gave 30 second “elevator speeches” about how their company could save you money.

Over the years, networking has helped me in many facets of my career. I no longer believe those negative stereotypes, and neither should you. I’d like to share a different view of networking with you...the networking opportunities offered by ASME.

Imagine a world of networking where you make meaningful connections with other engineers and technical professionals in a supportive environment. You share ideas, pass along career opportunities and benefit from one another’s expertise, working to achieve common goals. You can stop imagining now, and check it out for yourself at ASME!

Here are just some of the many ways you can network as a Member of ASME:

- ✓ **Section Networking:** Organized geographically, these groups offer local area networking opportunities at meetings and events throughout the year.
- ✓ **Technical Division Networking:** ASME Members are able to join up to five (5) technical divisions as part of their membership benefits. Specialized conferences, events and discussion groups provide you with access to professionals working in the same field.
- ✓ **Online Networking:** Participation in ASME's PeerLinkSM Communities of Practice forums, gives members access to the latest, up-to-the-minute discussions about a wide range of important topics. There are also ASME groups on popular social networking sites like LinkedIn & Facebook.
- ✓ **ASME Member Directory:** Find and contact other ASME members and mechanical engineering professionals using this members-only resource.
- ✓ **Volunteer with ASME:** Another great way to build your professional network, gain new experience and give back to the mechanical engineering profession "for the greater good". ASME has many ways that members can donate their time, knowledge and expertise.

In hard times, we can’t afford to retreat into a shell; we have to reach out more than ever to lift each other up. Please reach out and get involved in your Society, at <https://my.asme.org> and we will help you extend your circle of friends and associates, building valuable relationships that will enhance your personal growth and professional success!

As always, feel free to drop me a note at membership@asme.org and let me know what you think.