



# THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS®

## Central Oklahoma Section Newsletter

Volume 11, Number 2, September 13, 2009

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.

**Program:** [Rapid Prototyping Demonstration](#)

**Date:** Thursday, Sept. 24, 2009

**Host:** **Dr. Bill Ryan**, OC Mech. Engr. Faculty Member

**Location:** Oklahoma Christian University  
Prince Engineering Center, 2501 E. Memorial Road, Edmond, OK

**Rapid Prototyping** (RP) is a group of techniques used to quickly fabricate a scale model of a part or assembly using three-dimensional computer aided design (CAD) data. The first RP technique, Stereolithography (STL), was developed by 3D Systems of Valencia, CA in 1986. Since then a number of different RP techniques have become available.

Rapid Prototyping is also referred to as solid free-form manufacturing, computer automated manufacturing, and layered manufacturing. RP has obvious use as a vehicle for model visualization. In addition, RP models can be used for testing, such as when an airfoil shape is put into a wind tunnel, or for tooling, such as silicone rubber molds and investment casts. RP parts may occasionally be used as final parts, but they typically lack strength and accuracy. When the RP material is suitable, highly convoluted shapes (including parts nested within parts) can be produced because of the nature of RP.

The basic methodology for all current rapid prototyping techniques may be summarized as follows:

1. A CAD model is developed, then converted to STL format. The resolution can be set to minimize stair-stepping.
2. The RP machine processes the STL file by creating sliced layers of the model.
3. The first layer of the physical model is created. The model is then lowered by the thickness of the next layer, and the process is repeated until the model is completed.
4. The model and any supports are removed. The model surface is then finished and cleaned.

**Be sure to join us on September 24 for this terrific program and demonstration!**

**Time:** 6:00 - 6:30 PM: Meet at the OC Prince Engr. Center in Edmond (see map page 2)

6:30 – 7:00PM: Pizza Meal

7:00 – 8:30PM: RP Presentation & Demonstration

**Cost:** **\$5 for Sr. Members and ASME Student Members.** Please place your reservation with Albert Janco (Ph: 405-848-1991 (leave message); e-mail: JANCOA@asme.org) **by Tuesday, Sept. 22 at NOON.**

### 2008-2009 COS Executive Committee

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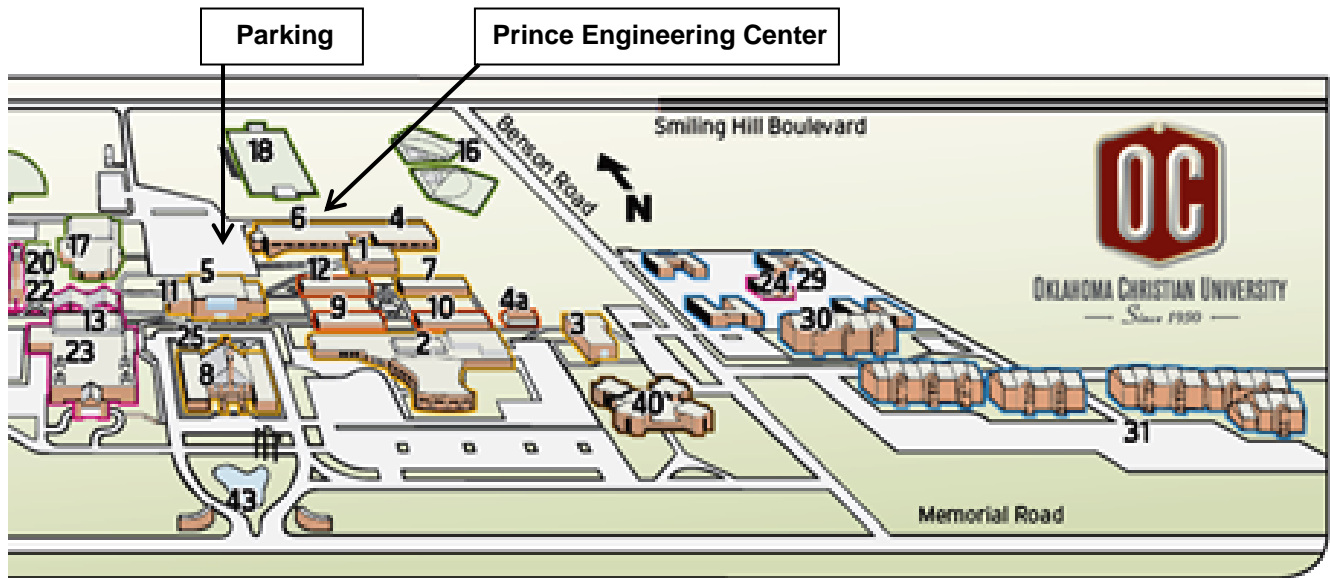
### ADDITIONAL SEPTEMBER MEETING INFORMATION



Our speaker and host will be Dr. Bill Ryan, pictured at left. Dr. Ryan, a member of the Oklahoma Christian University (OC) Mechanical Engineering faculty, also serves as co-Faculty Advisor of OC’s ASME Student Section. Dr. Ryan achieved a B.S. degree in Physics from California State College, an M.A. degree in Physics from Sam Houston State University, and a Ph.D. in Mechanical Engineering from the University of Texas.

Per Professor Ryan: "I enjoy watching students come to life within the Christian environment." He is a member of the Acoustical Society, the American Society for Mechanical Engineers, and he serves as sponsor for OC’s Society for Automotive Engineers student group.

Dr. Ryan is interested in noise and vibration analysis, church building acoustics, and energy analysis. He is the co-Chair for Francis-Tuttle Pre-Engineering program. Dr. Ryan enjoys amateur radio and farming with horses and cattle. He and his wife Wilma have two children: Catherine Bradley, and William Wade Ryan III. Dr. Ryan is an elder at Luther Church of Christ. He is also a Bible class teacher, he is on the Board of Directors for the Luther Community Center, and he also preaches as needed.



Oklahoma Christian University, Edmond, OK, is located at 2501 E. Memorial Road between Boulevard and Bryant Avenues. The Prince Engineering Center (PEC) is building “6” above. See <http://www.oc.edu> for more information.

## **REMINDER: It's Time to Renew Your ASME Membership!**

ASME Membership is even more important to your career in today's marketplace by providing you with the tools to build your skills, expand your influence, and gain a competitive advantage. Taking advantage of the value that ASME brings you makes it a smart investment. Renew today!

**BONUS:** Renew online at [asme.org](http://asme.org) and you will automatically receive up to 6 entries in a drawing for a 46-inch flat panel TV (a \$1,500.00 value!).

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### ***Biofuels Industry Hit By Recession, Improved Oil Prices***

Courtesy NSPE's *Daily Designs* Publication, August 27, 2009

The [Wall Street Journal](#) (8/27, A1, Davis, Gold) reports on its front page that biofuels, which were promoted as the key to reducing the country's reliance on foreign oil, have suffered during the recession and as oil prices fall, so much so that, according to the National Biodiesel Board, two-thirds of US biodiesel production capacity is unused. These factors, as well as the government's delayed announcement of new rules governing the blending of ethanol into the US fuel supply, have all threatened the viability of biodiesel and next-generation fuels derived from feedstocks, other than food, two of biofuel's main sectors, because many biofuel companies had based their business plans on the assumption that crude oil prices would remain high, and the government also made the businesses attractive. Ethanol, which has long been supported by government blending mandates and other subsidies, is also suffering financially.

### ***Wind Farms Blamed For Disrupting Storm Forecasting.***

Courtesy NSPE's *Daily Designs* Publication, August 27, 2009

The [AP](#) (8/27, Lammers) reports that wind farms are being blamed for disrupting weather forecasts, as "the massive spinning blades affixed to towers 200 feet high can appear on Doppler radar like a violent storm or even a tornado." The phenomenon "has affected several National Weather Service radar sites in different parts the country, even leading to a false tornado alert near Dodge City, Kansas, in the heart of Tornado Alley." And, "with enough wind turbines going up last year to power more than 6 million homes and a major push toward alternative energy, more false alerts seem inevitable."

**EDITOR'S NOTE:** What to make of this? Certainly folks in western Kansas heed tornado warnings because of the recent devastation suffered in Greensburg, KS. I have yet to hear of this in our area.

### ***Internet's 40th Birthday Celebrated***

Courtesy NSPE's *Daily Designs* Publication, September 3, 2009 (abridged)

[Discovery News](#) (9/3) reported, "Forty years ago, two computers at the University of California, Los Angeles, exchanged meaningless data in the first test of the Advanced Research Projects Agency Network (ARPANET), an experimental military network." The exchange "would plant the seed for what would become the most advanced communications network in all of human history: the Internet."

According to the [Yahoo! Tech](#) (9/3) blog, "within a year, the network would expand from a few west coast colleges to the eastern seaboard, and by the mid-'70s the network had gone international, with satellite links to Europe and dozens of computers connected to the new grid. And with email (1971) and file transfer (1973) features added to the system, it actually became useful for getting actual work and communications done." By 1983, "the ARPAnet shifted to a new architecture for data transmission, the one which is still in use today. By 1988, everything made another huge change, as commercial interests were allowed to piggyback on what had formerly been a government- and education-only network."

In the tech blog of the UK's [Telegraph](#), Ian Douglas described some of the most significant contributions in Internet development. Said Douglas: "Here we celebrate the ten cleverest youngish men who made it happen, and in so doing designed the mechanics behind the modern world."

## **Companies Look For "Fresh Outs" To Replenish Workforce**

Courtesy NSPE's *Daily Designs* Publication, August 28, 2009

Workforce Management (August 2009, Hansen) reports, "Employers can build efficiencies and cut costs with tools designed to access and engage graduates for specialized positions." Schlumberger Ltd., for instance, "the world's largest oilfield services company, hires only 'fresh outs' for its field operations." In North America, that means signing on 500 to 900 engineering candidates every year from a limited pool of 70,000 new graduates." The industry competition over "fresh outs-new graduates fresh out of college-is growing as more employers attempt to rebalance a rapidly aging workforce." And "the perennial shortage of engineering talent will only grow more acute as both government agencies and private companies boost new-graduate hiring." Currently, "Schlumberger recruits at 450 universities worldwide to maintain a workforce of 87,000 employees across 80 countries." The company "invests heavily in its new hires and wants employees who will remain with the company for life."

**EDITOR'S NOTE:** New engineering graduates will be in great shape if this trend continues. The up-side to industry is obvious: younger engineers are already familiar with many new technologies/techniques and cost less to boot. The down-side, of course, is that they require time and resources to train. Let's hope that all of us "senior" engineers are not prematurely put out to pasture!

## **API Report: Climate Bill Will Cut Refinery Output**

Courtesy NSPE's *Daily Designs* Publication, August 25, 2009

A Greenwire story appearing on the New York Times (8/25, Geman) website reports the American Petroleum Institute claims that "the major climate bill moving through Congress could reduce U.S. refining output and thereby increase reliance on imported refined products like gasoline." The API report says that the House version of the climate change bill would "lead to significant gains in non-US refinery capacity, investment and employment at the expense of the US refining sector," and would "impose major costs on refiners that would lead to sharply lower investment in coming decades. As a result, U.S. refining throughput...could fall as low as 12 million barrels per day in 2030, compared with 16.4 million without the bill." By 2030, the U.S. "could rely on imports to meet as much as 19.4 percent of its demand for refined fuels, compared with a forecasted 9.6 percent without the measures." API President Jack Gerard said in a statement, "Climate legislation should not come at the expense of U.S. economic and energy security."

According to API, Bloomberg News (8/24, Seeley) reported, "the legislation 'inequitably distributes free emission allowances' away from the refining industry," and "will discourage refiners from running plants at full capacity."



Below is the latest unemployment report from [http://www.ok.gov/oesc\\_web/documents/lminr08212009.pdf](http://www.ok.gov/oesc_web/documents/lminr08212009.pdf) dated August 21, 2009. Please be considerate of those looking for work and try to lend them a hand. We offer basic assistance to our members through "Situations Wanted" listings here in our newsletter.

## **Oklahoma's unemployment rate up slightly in July**

Oklahoma's **seasonally adjusted unemployment rate** rose to 6.5 percent in July 2009, an increase of 0.1 percentage points over the month. Compared to July 2008, the **seasonally adjusted unemployment rate** for Oklahoma increased by 2.6 percentage points. The national unemployment rate slid from 9.5 percent in June to 9.4 percent in July.

## **IEEE and OSU-OKC to hold Energy Conference**

OSU-OKC Technology Education Center in partnership with IEEE presents...

# CONFERENCE ON OKLAHOMA ENERGY

Saturday, September 19, 2009

9 a.m. – 4 p.m.

OSU-OKC Student Center, Conference Room 304

Lunch will be provided.

### FEATURED SPEAKERS:

Brad Williams, Deputy Secretary of Engineering  
State of Oklahoma

Hear what Brad Williams has to say about energy issues and opportunities in Oklahoma.

#### **ROGER FARRER, ENERGY SERVICES MANAGER AND PROJECT COORDINATOR**

Oklahoma Municipal Power Authority

Roger Farrer will discuss The Oklahoma Comfort Program – Promoting Geothermal Heat Pumps.

#### **MICHAEL MOORE, PRESIDENT**

C. H. Guernsey & Co.

Michael Moore will give us a look of current energy issues from the perspective of the consulting engineer.

#### **ADRIANNE COVINGTON GRAHAM, TECHNOLOGY EDUCATION CENTER DIRECTOR**

OSU-OKC TEC

Adrienne Covington Graham will introduce numerous continuing education opportunities offered by OSU-OKC's Technology Education Center (TEC) and begin an open discussion on how IEEE and TEC can mutually benefit one another.

Immediately following the workshop, TEC will provide a tour of facilities including the Public Safety Training Center and the Transmission and the Distribution Technology training center.

PDH's will be provided on request.

#### **HOW DO I REGISTER?**

Contact the OSU-OKC Technology Education Center at (405) 945-3373 or email [TEC@osuokc.edu](mailto:TEC@osuokc.edu).

#### **REGISTRATION DEADLINE:**

Tuesday, September 15

#### **REGISTRATION FEES:**

IEEE Student Member ----\$10

IEEE Member -----\$20

OSU-OKC Guest -----\$30



OSU-OKC, 900 N. Portland Ave., OKC, OK 73107 | [www.osuokc.edu/TEC](http://www.osuokc.edu/TEC) | 405.945.3373

## ***STUDENTS NOTE: ASME District E Student Leadership Seminar (SLS) October 9-10***

Our ASME District E (the International, Southwest, and Rocky Mountain District) will have its annual **Student Leadership Seminar** October 9-10, 2009 hosted by the ASME Student Section at the Metropolitan State College in **Denver, Colorado**. See complete description at <http://districts.asme.org/SLS/CO/>.

<b>Preliminary Agenda, Friday, October 9, 2009</b>	
Afternoon	Optional Activity (See below)
5:00-8:00 pm	Hotel and SLS Check in
7:00-8:00 pm	Welcome, Social (John Hawkins/Rick Couvillion)
8:00-10:00 pm	Introductions and Network Activity (Impromptu Design Contest - Tentaive)

<b>Saturday, October 10, 2009</b>	
8:00-8:30 am	Continental Breakfast, Late Check-in
8:30-8:45 am	Welcome (John Hawkins/Rick Couvillion)
8:45-9:30 am	Membership Benefits, Scholarships
9:30-10:30 am	Student Section Operations and Administration
10:30-10:45 am	Break and Hotel Check-out
10:45-11:15 am	Student Section Finances and Funding
11:15-11:35 am	Contests and Competitions
11:35-noon	ASME Resources and Using Them
noon-1:15 pm	Lunch
1:30-2:45 pm	Workshops
1:30-2:45 pm	SSA Breakout Session
2:45-3:00 pm	Break
3:00-3:30 pm	Workshop Reports
3:30-4:00 pm	Hosting a SPDC (Rick Couvillion)
4:00-4:15 pm	2010 SPDC - Oral Roberts U, Tulsa
4:15-4:25 pm	Wrap-up and Adjourn (John Hawkins/Rick Couvillion)
4:30-5:30 pm	Student District Operating Board Meeting

### ***Optional Activities, Friday, October 9***

- Tour of the Coors Brewery in Golden, CO
- Tour of the Denver Mint
- Tour of Elitch Gardens

***Funding is available but act quickly:*** <http://districts.asme.org/SLS/CO/>

includes links to funding and expense related documents and forms.

## Chair's Corner

**Dear ASME-Central Oklahoma Section Members:**

Hello everyone! I hope you all had a great Labor Day holiday and are prepared for the long autumn stretch. You know that summer is over when events and commitments increase like they have. Fall is Oklahoma is arguably the best time of year! The weather is usually great and events such as football, fall festivals, and the State Fair are plentiful. Make the most of this great season while it lasts!

Our August Section meeting, a tour of SouthWest NanoTechnologies, LLC in Norman, was outstanding! We enjoyed a good crowd with many new folks attending including visitors, students, and some very special guests such as OU Dean of Engineering Tom Landers and new OU AME Department Head Farrokh Mistree. It also helped in our effort to hold our Section meetings at or near our university campuses. Thanks to you all for attending!

Our economy seems to be in a bit of a holding pattern – large job cut-backs have been few compared to some states. So I hope you are all hanging in there! See page 4 for the latest unemployment report (up from 4.5% as chronicled on our January 2009 Newsletter). Oil and gas tends to drive jobs locally, and oil prices have tried to bounce back but natural gas prices continue to languish. We need a good cold winter to drive natural gas prices upward. We may get a cold winter considering the an unusually wet summer we've enjoyed.

Our September RAPID PROTOTYPING program and demonstration promises to be very good. Dr. Ryan, dedicated to educating and mentoring young engineering talent, has a great program prepared. OC in Edmond is an easy drive for most in our area so please plan to attend!

Thanks for your continued membership in and support of ASME. We look forward to seeing you all on Thursday, September 24!

**Curtis M. Vickery, Chair**

### Future ASME-Central Oklahoma Section Events

Date	Location	Program Topic and Speaker
Saturday Sept. 19, 2009	OSU-OKC NW10th & Portland, OKC	<b>Oklahoma Energy Conference</b> Dr. Bill Ryan, OC Mechanical Engineering Professor.
Thursday Sept. 24, 2009	Oklahoma Christian University, Edmond, OK	<b>Rapid Prototyping Program and Demonstration</b> Dr. Bill Ryan, OC Mechanical Engineering Professor.
Thursday Oct. 22, 2009	Oklahoma Engineering Center, OKC	TBA
Thursday Dec. 10, 2009	Oklahoma Engineering Center, OKC	TENTATIVE. Topic/Speaker TBA
Thursday Jan. 28, 2010	Oklahoma Engineering Center, OKC	Joint meeting with the Oklahoma AIAA Section Topic/Speaker TBA

**Please visit our Section website <http://sections.asme.org/CentralOK/>  
for event updates and other useful information!**