



American Institute of Chemical Engineers Knoxville-Oak Ridge Section

For additional information see our Web site at: <http://www.ornl.gov/sci/aiche/>
Or contact: Paula George, georgepm@ornl.gov, (865)576-0603 or
Rita Gray, rgray22@utk.edu, (865)974-5356

Inside this issue

- February 2014 Meeting
- Review of December 2013 Meeting
- ASME Offers Discounted Joint Membership in AIChE
- Activities Calendar
- Sponsoring Opportunities
- Officers
- About Our Organization – New Members Only Benefits

February 2014 Meeting – Joint with ANS

Date: Tuesday, February 11, 2014
Cost: \$25
Location: Rothchild Catering and Conference Center, 8807 Kingston Pike, Knoxville TN

5:30 pm Executive Committee Meeting (All members welcome)
6:00 pm Social (cash bar provided)
6:30 pm Dinner buffet (Mixed spring green Italian style salad, Baked ziti with beef in marinara sauce topped with cheese, Chicken Parmesan, Rosemary and parsley mashed spuds, Steamed green beans with roasted red peppers, Freshly baked yeast rolls, Italian cream cake)
7:30 pm Program – W. David Pointer, Oak Ridge National Laboratory, *Advanced Modeling and Simulation for Nuclear Energy: The End of the Era of Experiments?*

Abstract – The U.S. Department of Energy's Nuclear Energy Advanced Modeling and Simulation (NEAMS) program develops advanced simulation tools to support the development of advanced reactors, fuels, and supporting fuel cycles. The NEAMS ToolKit is an integrated suite of multi-physics simulation tools that leverage high-performance computing to enable high-fidelity, high-resolution analysis of proposed advanced reactor and fuel designs.

The objectives of this development effort are

- To reduce margins resulting from predictive uncertainty by using mechanistic models and high-fidelity simulation methods to increase accuracy and bridge gaps in experimental data and operating experience;
- To enable designers to reduce design margins by providing tools that eliminate the need for geometric simplifications and material homogenization in simulations and limit dependence on engineering correlations that have a small range of applicability; and
- To introduce opportunities for a new level of global optimization of the reactor/fuel system, especially for new reactor or fuel concepts, through integrated (concurrent or hierarchal) predictions of reactor and fuel performance.

With such powerful predictive tools nearly in hand are new experiments even needed?

Bio – (see page 2)

**Please make your reservations no later than noon on
February 6, by contacting**

Paula George, georgepm@ornl.gov, (865)576-0603 or
Rita Gray, rgray22@utk.edu, (865)974-5356

**The Section will subsidize up to 15 students, including
graduate students**

February 2014 Meeting – Joint with ANS (continued)

Bio – W. David Pointer (PhD, NE, University of Tennessee, 2001) is an engineering research staff member of the Reactor and Nuclear Systems Division of Oak Ridge National Laboratory (ORNL), where he specializes in computational fluid dynamics (CFD) and heat transfer, experimental fluid dynamics and heat transfer, and nuclear reactor safety. He leads the development of the Reactor Product Line components of the U.S. Department of Energy's Nuclear Energy Advanced Modeling and Simulation (NEAMS) Toolkit for advanced reactor performance and safety analyses.

Dr. Pointer is a member of the American Nuclear Society (ANS), the American Society of Mechanical Engineers (ASME), and is a Past President of the North American Young Generation in Nuclear (NA-YGN).

Review of the December 2013 Meeting

Dr. Sharron Robinson gave a presentation on 'New US Shale Gas Opportunities' during the December 2013 meeting of the Knoxville-Oak Ridge Section of AIChE. Dr. Robinson provided insights from her experience from a number of workshops on the development of unconventional oil and natural gas supplies. Increases in the supply of natural gas have resulted in lower costs, with benefits to the US Economy and especially the petrochemical industry. Capital investment, and many direct, supply chain, and construction jobs are anticipated to grow as will the tax revenues from increased product sales. Environmental effects from increased production are under review. Increasing environmental regulations could result in additional operating requirements and increasing product cost.

In addition to the presentation by Dr. Robinson, Ms. Amanda Jones from the Chemical and Biomolecular Engineering Department at the University of Tennessee presented her award winning research poster, titled: Comparison of Membrane Performance for Vanadium Redox Flow Batteries.



Dr. Sharon Robinson before January 16 AIChE meeting.

(Article courtesy of Harold Hartman)



Student Poster Presentation at January 16 AIChE Meeting

ASME Offers Discounted Joint Membership in AIChE

It has been reported that if you are a member of the American Society of Mechanical Engineers (ASME), you may be entitled to a one-third discount on your AIChE membership. Please refer to the AMSE web site for details, at:

https://www.asme.org/about-asme/professional-membership/joint-membership-offers-for-asme-members?cm_re=International%20Dues- -Left%20Navigation- -Joint%20Membership%20Offers%20for%20ASME%20Members

One ASME member took advantage of this discount by using the AIChE Customer Service contact form (<http://www.aiche.org/contact/form>) and chose "Inquiry Type = Membership". In the "Description" field he stated that he was an ASME member and would like the joint membership discount. He eventually received a follow-up email from AIChE customer support for creating a membership at the discounted price of \$133 compared to the \$200 regular price.

Activities Calendar

Date	Time	Topic	Speaker	Location
Feb 11	6:00 PM	Advanced Modeling and Simulation for Nuclear Energy: The End of the Era of Experiments? - Joint meeting with ANS	David Pointer	Rothchild's, Knoxville TN
Mar 13	6:00 PM	ClimateMaster Trilogy 40 Q-Mode Geothermal Heat Pump – Joint meeting with ASM	Moonis Ally	Rothchild's, Knoxville TN
Apr 10	6:30 PM	UT Department of Chemical & Biomolecular Engineering 2014 Awards Banquet	Welcome by Dr. Khomami Student Presentations	Calhouns on the River – upstairs banquet room, Knoxville TN
Apr 17	6:00 PM	Dandelion Roots to Rubber Pilot Plant for Ohio State University	David Pitts – Process Engineering Associates	Rothchild's, Knoxville TN
May 15	6:00 PM	Gunpowder Production and Nitrate Extraction from Caves	Stuart Daw	McClung Museum

Sponsoring Opportunities

We continue to accept advertising in the newsletter in order to provide funds to support student participation in the meetings.

Rates per newsletter are:

\$80 full-page advertisement

\$45 half-page advertisement

\$25 quarter-page advertisement

The section will also continue to accept individual or corporate sponsors to provide student meals at section meetings. The sponsor

will be recognized at the meeting and in the Newsletter.

The cost to sponsor one meeting is **\$200**. It's a great way to encourage students to attend the local meetings and become future members in the Institute!



(LBNL, Robert Cheng viewing Low-Swirl Injector flame - Source: DOE Digital photo archive at: <http://www.flickr.com/photos/departmentofenergy/>)

Officers

Chair:	Bonnie LaPierre	241-6521	lapierrebl@y12.doe.gov
Chair-Elect:	Kyle Mack	(423)747-7947	kylematthewmack@gmail.com
Secretary:	David DePaoli	574-6817	depaolidw@ornl.gov
Treasurer:	Paul Taylor	574-1965	taylorpa@ornl.gov
Directors:	Jarrold Clark	259-6552	jarrod.clark@merrick.com
Term 2013-2014	Stuart Daw	946-1341	dawcs@ornl.gov
Term 2013-2014	Chris McBride	692-8662	cemcbride@focusenv.com
Term 2014-2015	Michael Aident	694-7333	Michael.Aident@CBIFederalServices.Com
Term 2014-2015	Sharon Robinson	574-6779	robinsonsm@ornl.gov
Membership:	Paul Taylor	574-1965	taylorpa@ornl.gov
Newsletter:	Paula George	576-0603	georgepm@ornl.gov
Editor/Webmaster:	Ben Lewis	574-4091	lewisbejr@ornl.gov
E-mail:			aiche-chat@chem.engr.utk.edu
Website			http://www.ornl.gov/aiche

"When one door closes, another opens; but we often look so long and so regretfully upon the closed door that we do not see the one which has opened for us."

Alexander Graham Bell
Scientist
1847-1922

Knoxville - Oak Ridge Section

P.O. Box 2008
Bldg. 4500N, Room B12
Oak Ridge, TN 37830-6243

Phone: 574-1965
Fax: 574-6872

E-Mail: [aiche-
chat@chem.engr.utk.edu](mailto:aiche-chat@chem.engr.utk.edu)



We're on the Web!

See us at:

<http://www.ornl.gov/sci/aiche/>

Editor: B. Lewis

About Our Organization – New Members Only Benefits

AIChE offers numerous benefits to its members and has recently announced several new member-only benefits in the form of services and discounts.

There benefits include access to legal protection services (ARAG), Lifeline Screening, travel discounts (Wyndham,

RedRoof Inn, and Cruises Only), office supplies (Office Depot), and shopping discounts (Azigo Online Shopping Mall). For a description of these and other member benefits, see the Discounted Member Product & Services page at :
<http://www.aiche.org/resources/member-services>.

(Article from AIChE website at:
<http://www.aiche.org/news/institute/12-11-2013/aiche-introduces-new-member-only-benefits>)

P.O. BOX 2008
BLDG. 4500N, ROOM B12
OAK RIDGE, TN 37830-6243

