



## 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: Linda Puckett, [puckettlf@ornl.gov](mailto:puckettlf@ornl.gov), (865)574-6984 or  
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*Membership Benefits*

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## September 2008 Meeting

Date: Tuesday, September 16, 2008  
Cost: \$20.00  
Location: Calhoun's at Turkey Creek, Knoxville, TN – Private dining area  
Menu: Buffet

5:30 pm Executive Committee Meeting (All member welcome)  
6:00 pm Dinner  
7:00 pm Program - Dr. Timothy G. Rials, Professor and Director, Southeastern Sun Grant Center, *Update on the TN BioFuels Plant*

Abstract - There is now widespread support to reduce our nation's dependence on petroleum as a source of energy. Several technology platforms – wind, solar, hydrogen – will undoubtedly play an important role in providing alternative sources of power and energy. Biomass conversion, however, is the only viable approach to provide liquid fuels, chemicals, and materials. According to recent reports, 5 billion gallons of ethanol were produced in 2006, primarily from corn and mainly in the Midwest. While highlighting the economic competitiveness of the technology, it is clear that competing uses of corn for food and grain places constraints on the ultimate impact of this fuel source. Lignocellulosic biomass in the form of wood and perennial grasses represents the resource that is available to more dramatically impact petroleum reliance. Estimates are that a sustainable annual supply of more than 1 billion tons of this feedstock is available; however, advances in the science and technology of processing remain before the economics are attractive. This presentation will describe the biorefinery vision while highlighting some of the challenges that must be overcome for cellulosic ethanol to be competitive. An update of efforts to develop the biofuels industry in Tennessee will also be discussed.

Bio – Professor and Director: B.Sc. in Forestry and Forest Biology from Mississippi State University in 1980; M.Sc. and Ph.D. in Wood Science and Technology (polymer chemistry emphasis) from Virginia Polytechnic Institute and State University in 1983 and 1986 respectively; Became an Assistant Professor in the Forest Products Laboratory at University of California in 1986; Joined the USDA-Forest Service, Southern Research Station as a Research Physical Scientist in 1988; Promoted to Project Leader/Research Scientist in 1996; Joined the Department of Forestry, Wildlife and Fisheries at Tennessee Forest Products Center in 2001. His research interests include structure and properties of wood/polymer interfaces, raw material assessment and process monitoring using spectroscopy, and cure analysis of thermosetting polymers.

Please make your reservations by **September 15** by contacting

Linda Puckett, [puckettlf@ornl.gov](mailto:puckettlf@ornl.gov), (865)574-6984 or  
Susan Seymour, [Seymour@utk.edu](mailto:Seymour@utk.edu), (865)974-2421

***The Section will subsidize up to 15 students***

## Vols4STEM Organization

Vols4STEM (Volunteers for Science, Technology, Engineering, and Mathematics) is a new local organization, who's goal is to involve more of the local Science, Technology, Engineering and Mathematics (STEM) professionals in K-12 education. A distinguishing characteristic of Knoxville-Oak Ridge area is its high

concentration of STEM professionals.

Vols4STEM is a network, of people and internet-based communication tools, primarily intended to help encourage, equip, and facilitate this area's 10,000+ STEM professionals into becoming more involved as volunteers in STEM-related

educational outreach and enhancement activities to area youth. Vols4STEM is organizing a database of individuals who would be willing to help. To add your name to this database, please sign up at [www.vols4stem.org](http://www.vols4stem.org) and select the "Volunteer" tab.

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## Local ChemE Brews Award Winning Beer

A local chemical engineer, Chris Bible, has won a bronze medal in the second round of the prestigious American Homebrewer's Association (AHA) competition in Cincinnati, OH. The AHA is the world's largest beer competition including 1000's of homemade beers, ciders, and mead from home brewers from across the United States and around the world.

The National Homebrew Competition Director, Janis Gross, said in a press release, "For home brewers, taking a medal in the AHA National Homebrew Competition is the ultimate achievement. With more than 5,600 entries, the National Homebrew Competition is by far the toughest and most prestigious home brew competition. The medal winners can truly take pride in knowing that they brew the best beer in the world."

In an interview by Beth Watson Drinnen, for the *Knoxville News Sentinel* Chris Bible is quoted as saying: "The United States is in the middle of a brewing revival.... We're viewed by the world as the global leaders in all things craft beer." Chris goes on to say, "I've always loved science, and chemistry was my first love. I have always had a lifelong desire to know how things worked. That's why I was drawn into chemistry. Things eventually turn molecular when you ask enough questions," Bible said. "(Brewing) is chemistry in its finest. Basically everything a chemical engineer would do is in a brewery....Brewing can be as complex as you want it to be ..."

(Excerpt and quotes from *Knoxville News Sentinel*, Wednesday, September 3, 2008 article by Beth Watson Drinnen)



Chris Bible with his award-winning Foreign Extra Stout home brewed beer. (Source: *Knoxville News Sentinel*, Wednesday, September 3, 2008)

## Knoxville-Oak Ridge Section Member Appointed ORNL Corporate Fellow

Dr. Stuart Daw, a long time member of the Knoxville-Oak Ridge Section of the AIChE, has been named a Corporate Fellow of Oak Ridge National Laboratory (ORNL), the highest designation for scientists and engineers at ORNL. Stuart was recognized for his sustained outstanding achievements in the pioneering of the application of chaos theory and nonlinear dynamics to energy technologies, including gas-fluidized beds, internal combustion engines and pulsed combustion. His groundbreaking efforts in developing practical uses for

chaos theory in engineering applications have been widely recognized in industry. He is also recognized for his innovative work in the analysis and modeling of a broad range of engineering systems, including fossil-fuel combustion, hazardous waste treatment, transportation propulsion, emissions controls and nuclear fuel production.

Stuart joined ORNL in 1979 after working as a process development engineer for six years at DuPont. He earned a doctorate in chemical engineering from the University

of Tennessee in 1985, has been issued 12 patents with two more pending and is the author or coauthor of more than 170 technical publications.

(Source: *ORNL Reporter*, Number 102, August 2008)



## Tentative Activities Calendar

Date	Time	Topic	Speaker	Location
Sept 16	6:00 PM	Update on TN BioFuels Plant	Dr. Timothy Rials	Calhouns, Turkey Creek, Knoxville TN
Oct 16	6:00 PM	Carbon Microstructure Reactivity with Ambient Ozone and Their Characterization for Air Pollution Control	Dr. Sandeep Agnihotri	TBD
Nov 16-21		2008 AIChE Annual Meeting		Philadelphia, PA
Nov	6:00 PM	TBD	TBD	TBD
Dec	6:00 PM	Global Warming Issues	TBD	TBD
Jan	6:00 PM	Farragut High School Outreach Program	Kristen Baksa	TBD
Feb	6:00 PM	Fuel Cycle Status - Joint with ANS	TBD	TBD
Mar	6:00 PM	Biodiesel Production - Nu-Energie	TBD	TBD
Apr	6:00 PM	Student Awards	TBD	TBD
May	6:00 PM	Kimberly-Clark Plant Tour	TBD	TBD

## 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!



## Officers

<b>Chair:</b>	Michael Hollander	300-5645	<a href="mailto:enviroms@att.net">enviroms@att.net</a>
<b>Chair-Elect:</b>	TBD		
<b>Secretary:</b>	David DePaoli	574-6817	<a href="mailto:depaolidw@ornl.gov">depaolidw@ornl.gov</a>
<b>Treasurer:</b>	Paul Taylor	574-1965	<a href="mailto:taylorpa@ornl.gov">taylorpa@ornl.gov</a>
<b>Directors:</b>	Mark Swientoniewski	574-1150	<a href="mailto:swientoniemd@bechteljacobs.org">swientoniemd@bechteljacobs.org</a>
<b>Term ends 2008</b>	Steve McCoy	220-4730	<a href="mailto:steven.mccoy@ttnus.com">steven.mccoy@ttnus.com</a>
<b>Term ends 2008</b>	Ed Alperin	694-7335	<a href="mailto:Ed.alperin@shawgrp.com">Ed.alperin@shawgrp.com</a>
<b>Term ends 2009</b>	Stuart Daw	946-1341	<a href="mailto:dawcs@ornl.gov">dawcs@ornl.gov</a>
<b>Term ends 2009</b>	Tom Busmann	694-7517	<a href="mailto:tbusmann@focusenv.com">tbusmann@focusenv.com</a>
<b>Membership:</b>	Paul Taylor	574-1965	<a href="mailto:taylorpa@ornl.gov">taylorpa@ornl.gov</a>
<b>Newsletter:</b>	Linda Puckett	574-6984	<a href="mailto:puckettlf@ornl.gov">puckettlf@ornl.gov</a>
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<b>E-mail:</b>			<a href="mailto:aiche-chat@chem.engr.utk.edu">aiche-chat@chem.engr.utk.edu</a>
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*"People who are truly effective have the humility and reverence to recognize their own perceptual limitations and to appreciate the rich resources available through interaction with the hearts and minds of other human beings."*

**Stephen R. Covey**  
 Author of *The Seven Habits of Highly Effective People*, founder of Covey Leadership Center

## Knoxville - Oak Ridge Section

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We're on the Web!

See us at:

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

### About Our Organization...Membership Benefits

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(Source: <http://www.aiche.org/JoinNow/Benefits/index.aspx>)

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