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# AIChE® The Pipeline

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Volume 18 Issue 6

*A. Shaikh, M. Kettner, Co-Editors*

September 2011

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NEWSLETTER OF THE EAST TENNESSEE SECTION OF AIChE

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Local section website

<http://www.tnengineering.net/AICHE/>

Local section mailing address

PO Box 7448 Kingsport, TN 37664-7448

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## Upcoming September Program

**“Chemical Engineering Megatrends – Future Challenges and Opportunities”**

Jeffrey J. Sirola

Purdue University and Carnegie Mellon University

**Thursday September 29<sup>th</sup>, 2011 11:30AM to 1PM**  
**B-150 Multimedia Room**

### Abstract

This presentation will discuss three important recent issues including global warming mitigation and raw material displacements, which are or are about to affect the chemical processing industries. The primary focus of global warming mitigation efforts has involved carbon management strategies. Strategies that Eastman recently evaluated included fuel switching to less carbon-intense fossil fuels, fuel switching to sustainably grown biomass, and unconventional non-fossil energy sources including wind, solar photovoltaic, solar thermal, and nuclear, along with greater use of electrically-driven processing technologies. Conclusions from these studies will be discussed as well as the primary recommendation for short term action. Secondly, a curious aspect related to the design, optimization, and control of sustainability-related objectives in the processing industries including energy consumption minimization, environmental impact minimization, safety performance and the like will be discussed, as well as a possible new sensing, modeling, and control paradigm under the rubric of “smart manufacturing” directly related to maximizing these sustainability metrics during operation. Finally, the impact of recently developed shale gas availability on the raw material picture for the US chemical industry, on the relative fuel economics for both the chemical industry and the electric power industry, and even on carbon mitigation strategies (and the future of gasification) will be discussed. The future indeed will be full of interesting challenges and exciting opportunities.

## About Our Speaker



Jeff Sirola retired in 2011 as a Technology Fellow at Eastman Chemical Company in Kingsport Tennessee, where he had been for more than 39 years. He received a BS in chemical engineering from the University of Utah in 1967, and a PhD in chemical engineering from the University of Wisconsin-Madison in 1970. His areas of interest include chemical process synthesis, computer-aided conceptual process engineering, design theory and methodology, chemical process development and technology assessment, resource conservation and recovery, sustainable development and growth, carbon management, and chemical engineering education.

Sirola is Secretary and a member of the Executive Committee of ABET. He is also a trustee and past president of CACHE (Computer Aids for Chemical Engineering Education), and a member of the American Chemical Society, the Association for the Advancement of Artificial Intelligence, and the American Society for Engineering Education. He has served on numerous National Research Council, National Science Foundation, and Department of Energy panels, and on the advisory boards of several journals and chemical engineering departments.

Sirola is a member of the National Academy of Engineering and was the 2005 President of the American Institute of Chemical Engineers.

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## Letter from the Chair

*Patrice Riesenberg*

We are getting ready to start our 2011-2012 Programming year! I want to send a big Thank You to the Programming Committee: John Aycock, John Franjione, Matthew Hedlund, Craig Hoyme, Laci Kemp, Noah McMillan, Steve Miller, Ashfaq Shaikh, Jaclyn Shuman, and Nate Tilton. See the rest of the Pipeline for more information on the upcoming programs.

Also, it's about that time of year for East TN AIChE Officer nominations. If you would like to be nominated for Treasurer, Secretary, Vice Chair, or Director, please send a note to or call Patrice Riesenberg at [patrice@eastman.com](mailto:patrice@eastman.com) or 229-8980. It's a great way to meet new people, learn about AIChE, and help out in our organization. No previous experience required.

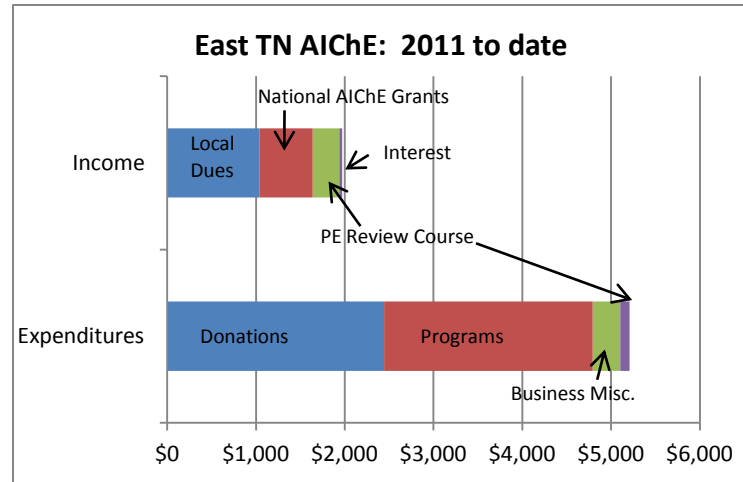
As always, visit our website for more information about the chapter, and to download past programs.  
<http://www.tnengineering.net/AICHE/>

## Treasurer’s Report

*Braxton Sluder*

**2011 East TN AIChE**

<b>Expenditures</b>		
Donations (educational and community)	2,350	47%
Programs (food, speaker honorariums, tour bus)	2,253	45%
Business Misc. (newsletter printing and mailing; PO Box, TN incorporation fee)	309	6%
PE Review Course	104	2%
	5,017	
<b>Income</b>		
Local Dues	1,040	53%
National AIChE Grants (Kinect, Project Benjamin)	600	30%
PE Review Course	300	15%
Interest	31	2%
	1,971	



We began the year with \$27,610.14 in our accounts. Currently, we have \$24,565.65 on hand. This places us down \$3,044.49 for 2011, but the Multi-Disciplinary Process Development Short Course is expected to net a few thousand dollars. Program expenses will double by year’s end due to the programming schedule. We are financially blessed, but future income streams may change into the future. Offering short courses is our major fundraising tool, but online training may alter this going forward. As you can see, local member dues do not cover even half of our program expenses (pizza☺).

As a local AIChE member, you can be proud of your support of programs and events supporting engineering and technical education. This year, we have contributed or sponsored \$1,500 to the East Tennessee Engineering Association Council (ETEAC) scholarship fund, \$250 to the ASME Egg Drop, \$200 to the NE TN Science Bowl, \$150 to Engineers’ Week, and \$250 to National Chemistry Week Celebration for 4<sup>th</sup> Graders.

If you have enjoyed our great programming, plant tours, social events, pizza, or appreciate our community support, please consider continuing as or becoming a local member for the nominal fee of only \$10. You can become a local member by selecting East TN as your local section while paying national dues, or by submitting payment at any program meeting.

## 2011-2012 Program Series: Challenges and Future Trends in Chemical Engineering

*Steve Miller*

As highlighted in daily newspaper headlines, the world is grappling with significant social, political, and economic shifts and stresses. The U.S. chemical industry, competing in a global arena, is working through related challenges, necessitating those in the chemical engineering profession to identify and be prepared to participate in future trends in our industry.

With the current global challenges in mind, the East Tennessee Section Program Committee has put together a series of programs with the theme “*Challenges and Future Trends in Chemical Engineering.*” Over the next nine months, a number of topics will be explored by a collection of thoughtful and engaging speakers.

Date confirmation, location, and more information about each program will be communicated through subsequent emails and newsletters, but the plan for the fall is summarized below:

Date*	Topic	Speakers
Sep-29	Chemical Engineering Megatrends - Future Challenges and Opportunities	Jeff Sirola
Oct-11	Product Life Cycle Assessment: A Tool for Quantifying Environmental Sustainability	Jason Pierce & Perry Murdaugh, Eastman Chemical Co.
Nov-17	Industrial Nuclear Reactors	Dan Ingersoll, Oak Ridge National Lab
Dec-01	“Integrated Water Management” (Challenges We Face in Coming Decades)	John Barber, Eastman Chemical Company

\*Please note that these dates are tentative; subsequent newsletters and meeting notices will be used to confirm.

In the spring we will have presentations on the following topics:

- Chemical plant startup
- Scale-up/piloting visions for the future
- Future trends in process control
- Acquisitions: Looking forward, what will drive acquisition decisions?

Of course, no programming series would be complete without a focus on safety, and we have a very interesting safety presentation scheduled for the spring.

In addition, we have planned a “Friday on Tuesday” happy hour/social outing, and then a plant tour with dinner to follow. Both events should be fun, so mark your calendar.

**Tuesday, Oct. 11<sup>th</sup> (5:00pm-7:00pm) – “Friday on Tuesday.”** We will have a social gathering/ happy hour in the event space upstairs at Stir Fry Café in downtown Kingsport. There will be a cash bar, **and appetizers will be provided.**

**Thursday, Oct. 27<sup>th</sup> (5:00pm) – Strongwell Tour.** We will be touring Strongwell, a reinforced polymer composite structural products manufacturer in Bristol. We will meet at a restaurant for dinner afterward.

We hope you will be able to participate throughout the year; it should be fun and informative.

-- Submitted by your 2011-2012 Program Committee:

*John Aycock*

*John Franjione*

*Matthew Hedlund*

*Craig Hoyme*

*Laci Kemp*

*Noah McMillan*

*Steve Miller*

*Ashfaq Shaikh*

*Jaclyn Shuman*

*Nate Tilton*

## Project Benjamin

*Rebecca Glaspie*

Project Benjamin is back and better than ever! The East Tennessee Section wants to help you become a national AIChE member. As a board, we have decided to make membership one of our goals for 2012. To help you become a member, the board will assist you in paying your national dues in 2012. Project Benjamin was a program that targeted non-members that were new to the area – now it is being expanded to anyone who is not a member who would like to join the national organization. All you have to do is email Rebecca Glaspie at [rglaspie@eastman.com](mailto:rglaspie@eastman.com) and ask to be considered. Priority will be given to those who regularly attend program meetings.

Benefits of being a national member:

- You can vote for local section and national leadership (non members cannot vote)
- National AIChE provides PDH eligible webinars for members – Some free of charge (you also get a few credits to use toward webinars that cost)
- National membership greatly reduces your cost to attend AIChE conferences
- Chemical Engineering Progress magazine is included with your dues.

## Short Course Offering

*Mark Shelton*

I am pleased to announce that the East Tennessee Section of AIChE will sponsor the following short course this fall:

Course:	Multi-Disciplinary Process Development
Dates:	November 1-2
Location:	B-150C, Multimedia Room
Schedule:	8:00 am – 5:00 pm
Cost:	~\$1,000 / participant
Class Size:	35 (I am currently reserving 10 of these slots for Non-Eastman participants)

Eastman employees can click on the following link to enroll via TEDS Everyone.

[Multi-Disciplinary Process Development](#)

Directions after opening link:

- Click on the Learning Title (*Multi-Disciplinary Process Development*)
- From the Left Hand Menu: Click on "Enroll or View available dates for this learning" **\*\*Do not click on "Add this learning to my To Do List"**
- Click on the enrollment icon to the left of the Enrollment Code.
- Click **OK**.
- Your name will be added to the TEDS class roster.

Non-Eastman AIChE members can enroll in this course by contacting me, preferably by email ([shelton@eastman.com](mailto:shelton@eastman.com)). Any unused slots will be released for use by non-AIChE members. Since slots may be at a premium, please enroll as early as possible. I've already signed up.

Course details are as follows:

### ***Multi-Disciplinary Process Development (CH757)***

2 Days, 1.5 CEUs, 15 PDHs

In this course, we will present a unique industrially proven approach to process development, which encompasses decision making across various layers including the business layer, chemistry layer, reaction/reactor layer, separations layer, heat recovery layer and utility systems layer.

You Will Learn

- Process development from the time a process chemistry is invented in the lab to the development of a commercial scale process
- Critical issues at each level on the development workflow
- The available technologies for solving problems and key information required

Who Should Attend:

Chemists, engineers and technology managers involved in the chemistry, design, development, scale-up, or production of new and existing chemical processes

Instructors: Lionel O'Young and Vaibhar Kelkar

**Lionel O'Young** is president and co-founder of ClearWaterBay Technology, the Process Development Company. He has over 15 years of experience in process synthesis and development, with special emphasis on conceptual process design. Before founding CWB Tech, O'Young worked with Mitsubishi Chemical Corp., Union Carbide Corp., and Linhoff March, in a variety of engineering and management positions. He has several process patents to his credit, and is the recipient of AIChE's Computing Practice Award (2007). O'Young holds a PhD in Chemical Engineering from the University of Manchester (formerly UMIST), Manchester, UK.

**Vaibhav Kelkar** is a principal engineer at ClearWaterBay Technology. He has several years of process development experience, with special emphasis on reactor synthesis and development. Kelkar holds a PhD in Chemical Engineering from the University of Massachusetts Amherst, Amherst, MA, USA.

## What's New at National AIChE

*Steve Miller*



The **2011 AIChE Annual Meeting** will be in Minneapolis, MN; Oct. 16-21, 2011. Check it out! [www.aiche.org/Conferences/AnnualMeeting/index.aspx](http://www.aiche.org/Conferences/AnnualMeeting/index.aspx).

**No time for a trip to Minnesota?** There are archived and live webinars on ChemE On Demand: [apps.aiche.org/chemeondemand/home.aspx](http://apps.aiche.org/chemeondemand/home.aspx)

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## Continuing Education – Professional Development Hours Available



Eastman Employees Only: Are you a professional engineer seeking to meet state continuing education requirements for professional development hours (PDH's)? If so, please visit this website for a list of potentially eligible courses and more information: [Continuing Education for Professionals](#)

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## Calendar of upcoming events



Several great programs are planned for the upcoming programming year. Topics include:

- Chemical Engineering Megatrends – Future Challenges and Opportunities – September 29, 2011
- Product Life Cycle Assessment: A Tool for Quantifying Environmental Sustainability – October 11, 2011(tentative)
- Industrial Nuclear Reactors – November 17, 2011 (tentative)

## Keep Up With the Local Section Online

Up-to-date information about the East Tennessee Section of the American Institute of Chemical Engineers can be found [on our website \(www.tnengineering.net/AICHE\)](http://www.tnengineering.net/AICHE). The website includes the Local Section Bylaws, List of Officers from 1945 to present, and an archive of Pipeline Newsletters - to mention only a few aspects of the information covered. Photos from past events can be found, along with contact information for the Local Board. Review the site occasionally and keep up with the local section!

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### 2011 Local Section Officers, Directors, & Support Staff

<b>Chair:</b>	Patrice Riesenber	229-8980
<b>Chair-Elect and Program Committee Chair:</b>	Stephen Miller	224-7350
<b>Secretary:</b>	Rebecca Glaspie	229-6144
<b>Treasurer:</b>	Braxton Sluder	578-6225
<b>Directors:</b>	Mark Harrison	229-6952
	Jennifer Mize	224-7018
	Lauren Moyer	229-2208
<b>Local Section Webmaster:</b>	Tim Nolen	229-8287
<b>Short-Course Coordinator:</b>	Mark Shelton	229-4753
<b>Professional Development Coordinator:</b>	Joe Parker	229-3850
<b>AIChE Pipeline Newsletter Co-Editors:</b>	Ashfaq Shaikh/Mark Kettner	229-8840
<b>ETEAC Representative:</b>	Joey Watson	229-6486

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### 2011 Local Company Contacts

<b>Eastman Chemical Company</b>	Patrice Riesenber, P.E. 423-229-8980, <a href="mailto:patrice@eastman.com">patrice@eastman.com</a>
<b>BAE Systems, Ordnance Systems Inc.</b>	Braxton Sluder, Process Chemical Engineer Acids Manufacturing 423-578-6225, <a href="mailto:braxton.sluder@baesystems.com">braxton.sluder@baesystems.com</a>
<b>Nuclear Fuel Services Inc., a subsidiary of The Babcock &amp; Wilcox Company</b>	Tracy Coates <a href="mailto:tjcoates@nuclearfuelservices.com">tjcoates@nuclearfuelservices.com</a>
<b>Domtar</b>	Rhonda Smith, Process Control Engineer 423-392-2797, <a href="mailto:Rhonda.Smith@domtar.com">Rhonda.Smith@domtar.com</a>

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