

# ASEE Chemical Engineering Division Newsletter



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## A Message from the Chair:



**David J. Dixon**

South Dakota School of Mines  
and Technology

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#### Community Announcements

None this issue – **send  
any announcements to  
mecoop3@ncsu.edu!**

**“Winter lingered so long in the  
lap of Spring that it occasioned  
a great deal of talk.”**

— Bill Nye

Dear ChED Friends:

For many of us, Bill Nye's quote describes not only our spring time this year, but even our fall last year. As I write this it seems that spring, with its hint of new beginnings, has finally come to the upper plains. And while the new shoots of green grass mean a different kind of work at home, this time of year also signals the departure of our seniors for their “new” beginnings. A time where their degrees are finished and most will start into the professional careers for which they have been preparing for the past four or so years. It also gives us, as their advisors, mentors, and instructors, a chance to reflect on our roles in their education. While looking for a “Spring” quote, I ran across another Bill Nye quote, which I think many of us can agree with:

*“There's nothing I believe in more strongly than getting young people interested in science and engineering, for a better tomorrow, for all humankind.”*

For myself, this is what brings me back to the university day in and day out, year after year. It's the students. Watching them start as freshmen, eager to learn new things, then blossoming into young competent professional engineers, ready to make contributions to society.

As your semester or quarter begins to wrap up, don't forget to consider to



learn about new ways to teach, to renew friendships, to make new acquaintances, and to focus on this important part of our faculty profession, by planning to attend this year's ASEE Annual Meeting from June 15 – 18 2014, in Indianapolis, IN. Mike Elsass, this year's program chair, has been working hard with many presenters to put together another great program. I also encourage you to consider inviting a colleague, who hasn't been to ASEE recently, to attend. And, if you have a student interested in becoming a faculty member, check into the “Bring-a-Student” program.

Finally, I bring to your attention another important educational opportunity this summer, the Safety and Chemical Engineering Education (SACHE) 2014 Faculty Workshop. This will be hosted by Chevron from 17-20 August in Richmond CA. There are about 8 open spaces for this excellent workshop. Contact Ron Willey ([r.willey@neu.edu](mailto:r.willey@neu.edu)) to apply or for more information.

I look forward to seeing you all in Indianapolis in a couple of months. Meanwhile, enjoy the spring season!

*Sincerely,*

*David Dixon, SDSMT*

2014

# ELECTIONS

FOR  
ASEE

# OFFICERS

- **Candidates for Division Chair-Elect (choose one):**

- *Winner will serve as chair of ChE Division for 2015-2016*



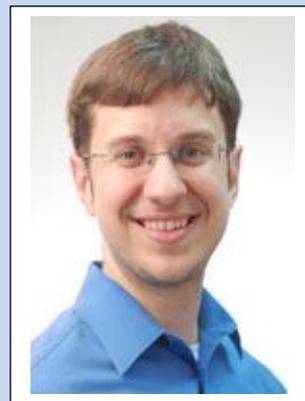
**Christi Patton-Luks**  
*University of Tulsa*

- **Candidates for Director (choose one):**

- *Winner will serve as an advisor to the executive board for a term of 2 years*



**Michael Elsass**  
*University of  
Dayton*



**Joshua Enszer**  
*University of Maryland -  
Baltimore County*



# Candidate for Division Chair-Elect

## Christi Patton-Luks

*Applied Associate Professor  
Department of Chemical Engineering  
The University of Tulsa  
Email: [christi-luks@utulsa.edu](mailto:christi-luks@utulsa.edu)*



I am delighted to be nominated for chair-elect of the Chemical Engineering Division of ASEE. As Applied Associate Professor at the University of Tulsa, I have more than 15 years of experience teaching chemical engineering students. I received my PhD in Chemical Engineering and MS in Applied Mathematics from the University of Tulsa and my BS in Chemical Engineering from Texas A&M University. Immediately after receiving the BS, I worked for Stauffer Chemical in Baton Rouge, LA. I left that position for graduate studies and remained in Tulsa, first doing research for the Wax Deposition Joint Industry Project and then teaching at the University of Tulsa. I believe that the most important work that I have done is in guiding young engineering students in the development of the technical and life skills that they will need for a successful career.

I have been very active in ASEE and AIChE. I am the 2014 membership chair for AIChE's education division and the vice-president of Omega Chi Epsilon. I also have served the national AIChE by chairing the Women's Initiative Committee, the Global Outreach Committee, and the Societal Impact Operating Council. My involvement in ASEE has been very heavy in the multi-disciplinary sections and zones. I recently completed a term as the Zone III chair and served on the ASEE Board of Directors. ASEE and its ChemE division have provided great value to my career, and I look forward to the opportunity to contribute to the continued growth of this group.





# Candidates for Director

## Michael Elsass

*Director*

*Department of Chemical and Materials Engineering  
University of Dayton*

*Email: [mike\\_elsass@yahoo.com](mailto:mike_elsass@yahoo.com)*



I am honored to be nominated as a candidate for the ASEE Chemical Engineering Division Director. My involvement with ASEE has introduced me to a group of individuals whose passion for engineering education has motivated me to better innovate my teaching. As my career develops further, I hope to be active with ASEE and continue working with the dedicated faculty of the Chemical Engineering Division.

I earned my BCME from University of Dayton in 1992, and my graduate degrees from Ohio State University (MS 1996, PhD 2001). While I was finishing my doctorate, my advisor took a position with UCLA. Consequently, I completed two post-doctoral projects funded by the Abnormal Situation Management Consortium at UCLA following graduation. I then took positions as adjunct faculty at both Ohio State and Dayton while also serving as a consultant for Primatch. In 2008, I became a full-time Lecturer at Dayton and am currently the Director of Chemical Engineering (2013 – present).

I knew early in graduate school that I was passionate about teaching and working with college students. I served as a Teaching Assistant at Ohio State for 13 quarters (which I believe is still the department record) and the University of Dayton has allowed me to focus my efforts on engineering education. I won the University of Dayton Chemical Engineering Teaching Award in 2006 and 2007. In 2000, I was introduced to ASEE in the Teaching Engineering class at Ohio State. My first presentation at ASEE as a faculty member was in 2012, and I am currently the Chemical Engineering Division Program Chair (I'm one of the people sending those annoying emails).

While it is relatively early in my teaching career, I believe that the breadth of my teaching experience has given me a distinct perspective on chemical engineering education. I hope to use this experience, as well as the resources provided by ASEE, to continue to innovate engineering education. I greatly appreciate the nomination and, if elected, I look forward to contributing to the ASEE Chemical Engineering Division mission.



# Candidates for Director

## Joshua Enszer

*Lecturer*

*Department of Chemical, Biochemical and Environmental Engineering  
University of Maryland – Baltimore County*

*Email: enszer@umbc.edu*



I am grateful to be considered for the open Director position in ASEE's Chemical Engineering Division and happy for the opportunity to give back to the organization that has already done a lot for me in the first years of my career. I earned my chemical engineering degrees from Michigan Technological University (BS, 2005) and the University of Notre Dame (MS, 2008; PhD, 2010). I have been a lecturer in the University of Maryland, Baltimore County's Chemical, Biochemical, & Environmental Engineering department since 2011. In 2013, I was awarded one of the inaugural designations of Academic Innovation Fellow from UMBC's President's Office for my work on increasing conceptual connections among courses in our chemical engineering curriculum.

I participated in both the ASEE Summer School for Chemical Engineering Faculty and the National Effective Teaching Institute in 2012. I have been a member of ASEE since 2009, and have prepared at least one paper for each Annual Meeting since 2010, usually in our division. I have served as reviewer for the Annual Meeting for two years. I value my affiliation with the Chemical Engineering Division of ASEE (and the Education Division of AIChE) for its potential for mentorship and collaboration.

In my first three years at UMBC, I have taught or co-taught eight different courses in the engineering curriculum, from first-year engineering through senior capstone design, and I have launched our summer program to help eligible transfer students decrease time to graduation. I have helped through curricular and course reform to increase the technical communication, modeling and simulation, and chemical process safety content in our course sequence. My interests in chemical engineering education include the use of technology to enhance possibilities in communication (such as electronic portfolios) and in game-based learning, and much of this work is sustained thanks to connections made through Summer School and annual conferences. I am thankful for the nomination for Director and am happy to be of service if elected.

**Check your email listed with ASEE for your  
personal link to your online ballot.**

**Votes must be received by Friday, May 30**

June 15 – 18, 2014

**MONDAY, JUNE 16****M412: Panel: Future Directions of ChE**  
*12:30 – 2:00 PM (Moderator: Michael Elsass)*

Back by popular demand, this is an open discussion panel session where we will discuss topics relevant to chemical engineering education and where we see it going in the future - this session traditionally involves spirited discussion! The esteemed panel is composed of the audience, which means the invited speaker is you!

**M712: Chemical Engineering Awards Dinner**  
*7:00 PM at Harry & Izzy's Steakhouse*

*Ticketed Event: \$70.00 advanced registration and \$80.00 on site.*

Come meet your colleagues in a social setting (no Powerpoint slides!) and dine at an Indianapolis favorite. And how can a place with “Izzy’s” in the title not be entertaining!

**TUESDAY, JUNE 17****T412: Chemical Engineering Division Poster Session**  
*12:30pm – 2:00 pm*

- 1. Work in Progress: A Vision for the First “Product Innovation Sequence” for Chemical Engineers** Dr. Cheryl A. Bodnar (University of Pittsburgh), Prof. Eric J Beckman (Chemical Engineering Department, University of Pittsburgh), Dr. Joseph J. McCarthy (University of Pittsburgh), and Dr. Steven R Little (University of Pittsburgh)
- 2. Using a Journal Article with Sophomores to Increase Lifelong Learning Confidence**  
Dr. Laura P Ford (University of Tulsa)

**T612B: Chemstations Lectureship Awards Presentation**  
*5:45pm – 7:15 pm***WEDNESDAY, JUNE 18****W412: Chemical Engineering Business Meeting**  
*Wednesday 12:30 pm – 2:00 pm*

An open business and planning meeting for **all** existing and potential members of the Chemical Engineering Division. Please stop by, meet the group and help plan for the coming year.

**Special ChE Division Events!**

# ChE Division Technical Sessions



## MONDAY, JUNE 16

### **M512: Curriculum Development and Assessment in Chemical Engineering**

*Monday 2:15 pm – 3:45 pm*

(Topics in this session cover curricular level topics such as ABET and AIChE.)

1. **Examining Diffusion Networks and Identifying Opinion Leaders: A Case Study of the AIChE Concept Warehouse** Dr. Debra M. Gilbuena (Oregon State University), Christina Smith (Oregon State University), Dr. Bill Jay Brooks (Oregon State University), and Dr. Milo Koretsky (Oregon State University)
2. **Results from the AIChE Education Annual Survey: Chemical Engineering Electives** Dr. Margot A Vigeant (Bucknell University) and Dr. David L. Silverstein P.E. (University of Kentucky)
3. **A Systematic Approach to Prepare for ABET Accreditation** Dr. Vincent Wilczynski (Yale University) and Ms. Isabella M Quagliato (Yale University: School of Engineering & Applied Science)

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## TUESDAY, JUNE 17

### **T212: Design, Creativity and Critical Thinking in the Chemical Engineering Curriculum**

*Tuesday 8:45 am – 10:15 am*

(In this session, topics will cover new approaches and new domains to expand student horizons beyond traditional chemical engineering topics and educational approaches. )

1. **Conducting Project-based learning with a large chemical engineering freshman cohort using LEGO NXT robotics** Dr. Bill B Elmore (Mississippi State University)
2. **A Creative Experience for Chemical, Food, and Environmental Engineering Students in a Material Balances Course** Mrs. Silvia Husted, Prof. Aurelio Lopez-Malo, and Dr. Enrique Palou (Universidad de las Americas Puebla)
3. **Examining the Entrepreneurial Mindset of Senior Chemical Engineering Students as a Result of Exposure to the Epistemic Game “Nephrotex”** Mr. Kerry Michael Rogy (Affiliation unknown), Dr. Cheryl A. Bodnar (University of Pittsburgh), and Dr. Renee M Clark (University of Pittsburgh)
4. **Mitigating Chemical Engineering Design Team Miscommunications with Knowledge of Myers-Briggs Type** Kathryn F Trenshaw and Dr. Troy J. Vogel (University of Illinois, Urbana-Champaign)
5. **Development of Drug Delivery Elective for Chemical Engineers** Dr. Christopher R Anderson (Lafayette College)



## TUESDAY, JUNE 17 (cont'd)

### **T512: Improving Laboratory Education in Chemical Engineering**

*Tuesday 2:15 pm to 3:45 pm*

(Topics in this session discuss approaches to update the traditional chemical engineering laboratory experiences to better serve both students and faculty.)

1. **Comparing Misconceptions in Fluid Mechanics Using Interview Analysis Pre and Post Hands-on Learning Module Treatment** Jacqueline K Burgher (Washington State University), Mr. David Finkel (Affiliation unknown), Prof. Bernard J. Van Wie (Washington State University), and Dr. Olusola Adesope (Washington State University-Pullman)
2. **The Paperless Lab – Streamlining a Modern Unit Operations Laboratory Course to Reduce Faculty Time Commitment** Dr. Matthew Cooper (North Carolina State University)
3. **Automated Process Control Laboratory Experience: Simultaneous Temperature and Level Control in a Continuously Stirred Tank Reactor System** Dr. Joshua A. Levinson (Lafayette College), Dr. Eric L. Maase (University of Massachusetts-Lowell), and Glen Thomas Tennyson (Affiliation unknown)
4. **A Course in Problem Solving with Experimental Design** Dr. Joshua A Enszer (University of Maryland, Baltimore County)
5. **Artificial Organs Leading to Real Engineering Learning [Work-in-Progress]** Dr. Mary M. Staehle, Dr. Tom Merrill, and Dr. Stephanie Farrell (Rowan University)

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### **T612: Virtual and Online Learning Tools in Chemical Engineering Education**

*Tuesday 4:00 pm – 5:30 pm*

(This session will discuss new online and computer based tools, how these tools can improve student experience, and how the faculty can incorporate the tools in the classroom.)

1. **Development of Interactive Virtual Laboratories to Help Students Learn Difficult Concepts in Thermodynamics** Alec Steven Bowen, Mr. Daniel Robert Reid, and Dr. Milo Koretsky (Oregon State University)
2. **Improving Student Interaction with Chemical Engineering Learning Tools: Screencasts and Simulations** Dr. Garret Nicodemus, Prof. John L., Dr. Will, Mrs. Katherine Page McDanel, and Dr. Jeffrey Steven Knutsen (University of Colorado at Boulder)
3. **Simulation-Based Guided Explorations in Process Dynamics and Control** Dr. Mary M. Staehle (Rowan University) and Dr. Babatunde A Ogunnaike (University of Delaware)
4. **Educational Modules on Solar Energy** Dr. Jason M. Keith, Liz Rayfield, and Niraj Kashinath Palsule (Mississippi State University)
5. **Incorporating the Online Encyclopedia of Chemical Engineering Equipment Into Your Course Activities** Dr. Susan M. Montgomery (University of Michigan)

# ChE Division Technical Sessions



## WEDNESDAY, JUNE 18

### **W212: Improving Introductory Experiences in Chemical Engineering**

*Wednesday 8:45 am – 10:15 am*

(Remember how your first chemical engineering classes seemed so complex and obtuse? Topics in this session discuss how to make the early classes in the chemical engineering curriculum more accessible.)

1. **Writing Abstracts of Homework Problem Solutions: Implementation and Assessment in a Material Balances Course** Dr. Kevin D. Dahm and Dr. Stephanie Farrell (Rowan University)
2. **Studio-based Learning in Multiple Material/Energy Balance Classes** Dr. Richard L. Zollars (Washington State University)
3. **Integrating Freshmen into Exploring the Multi-faceted World of Engineering and Sustainability through Biofuels Synthesis from Waste Cooking Oil** Ms. Laura-Ann Shaa Ling Chin, Dr. Justinus Agus Budi Satrio, and Dr. Kenneth A. Kroos (Villanova University)
4. **Fostering the Development of Critical Thinking in an Introduction to Chemical Process Engineering Design Course** Mrs. Gladis Chávez-Torrejón, Mrs. Silvia Husted, Dr. Nelly Ramirez-Corona, Prof. Aurelio Lopez-Malo, and Dr. Enrique Palou (Universidad de las Americas Puebla)



**Can't wait to  
see everyone  
in  
Indianapolis!**

**Check out**

**<http://www.asee-ched.org>**

**for additional details!**