

# ASEE Chemical Engineering Division Newsletter



## IN THIS ISSUE:

### CHAIR'S MESSAGE

Page 1: Conference Programming, Goals, Elections and more....

### ELECTIONS

Pages 2-7: Please vote for one candidate for Chair-Elect (Lisa Bullard or Tom Marrero), one candidate for Director (Daniel Lepek or Joseph A. Menicucci Jr.), and one candidate for Secretary/Treasurer (Laura Ford). Check your email listed with ASEE for your personal ballot link. Votes must be received by Friday, May 31, 2013.

### IN MEMORIAM

Page 8: Don Woods (1935-2013)

### COMICAL ENGINEERING

Page 9: Pete Ludovice will entertain at the ASEE Chemical Engineering Division Awards Banquet with Comical Engineering

### 2013 PROGRAM

Pages 10 - 14: Program overview for the Atlanta meeting. Session moderators are noted. Please contact programming chair, Daniel Lepek [lepek@cooper.edu](mailto:lepek@cooper.edu) with any questions.

## A Message from the Chair

*"Spring is the time of plans and projects." - Leo Tolstoy (Anna Karenina)*

Friends:

Spring has sprung, your lawn's in clover, isn't it great, the school year's over (at least almost, sort of...)! Anyway, is the school year, and your involvement in engineering education ever really over? Often, not so much. In terms of the ASEE CHED calendar, it is once again time for our annual election of officers for the next set of terms. We will be electing officers to fill the terms of Chair Elect, Director, and Secretary/Treasurer. Once again, we have an excellent slate of candidates. Even though it could be accurately argued that you could not make a bad choice, please do take the time to make a choice. Your vote is important! Please exercise your franchise.

No message about the election of new officers would ever be complete without the extension of our thanks to the outgoing office holders. Lisa Bullard has completed serving a term as Director, and Laura Ford has completed her second term as Secretary/Treasurer. Let's give them both a rousing "virtual" round of applause!

*"Summer's lease hath all too short a date." - William Shakespeare (Sonnets)*

I know that I always enter the summers between terms of teaching with a massive "to do" list. Rework those class notes, plan that new project, get really ready for the next term ahead of time, mow the lawn, these are always tasks that are featured prominently on that list. Unfortunately, when the new school year rolls around, that "to do" list has evolved into a "should have done" list. There is, however, one summer activity that I can count on to help re-charge my teaching batteries and put me into a good mental place for entering the next school year. That activity is attending and participating in the ASEE annual meeting. In case you have been living under a rock and have missed the news, this year's ASEE Annual Conference will be held from June 23-26 in Atlanta, GA. The ASEE has come up with a great byline for this year's conference: "Engineering Education: Frankly, We Do Give a D\*mn." Our program chair, Daniel Lepek, has managed the assembly and organization of a great set of papers and posters for this year's meeting. In addition to attending sessions, the conference offers great opportunities to meet and greet other engineering educators both formally and informally. Find out exactly what other chemical engineering faculty are doing. Outside of the conference, Atlanta offers many sites to see and things to do. One new conference feature, at least new to me, is comedy entertainment at our ChE Division Award's Banquet. On Monday evening, Dr. Pete Ludovice will provide us with a show. His normal act is entitled "Feel the Power of the Dork Side," so we might be able to anticipate what to expect. I know that I am looking forward to this addition to our traditional presentation of the division awards. [FYI - Dr. Ludovice is a faculty member in the Dept of Chemical & Biomolecular Engineering at Georgia Tech.]

I hope to see you all in Atlanta!!

Mike Prudich, Ohio University



# CHEMICAL ENGINEERING DIVISION ELECTION 2013

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Your involvement in selecting the next leaders of our division is welcomed and encouraged. We have an excellent slate of candidates for three positions: Division Chair-Elect, Director, and Secretary/Treasurer. Biographical information and Candidate's statements are included on the following pages.

**Choose one for Division Chair-Elect:**

Lisa Bullard  
Tom Marrero

**Choose one for Director:**

Daniel Lepek  
Joe Menicucci

**Choose one for Secretary/Treasurer:**

Laura Ford

The online election is token-based, and each person listed in the ASEE ChED roll with a valid email address will receive an individual tokenized link to the election site.

**TO VOTE:**

- **Check your email listed with ASEE for your personal link to your online ballot.**  
***\*If you do not receive an email ballot, please contact David Silverstein at [SilverDL@engr.uky.edu](mailto:SilverDL@engr.uky.edu).***
- **Alternatively, you may print this page, neatly print your name at the top, then neatly circle your choices and fax to David Silverstein at 270-534-6317.**

**Votes must be received by Friday, May 31, 2013**

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## *Position: Division Chair-Elect*

- 1) **Lisa Bullard**
- 2) **Tom Marrero**

This person would serve one year as Chair-Elect and then serve as Chair in 2014-2015.

# Lisa Bullard

Dept. of Chemical & Biomolecular Engineering  
North Carolina State University  
email: [lisa\\_bullard@ncsu.edu](mailto:lisa_bullard@ncsu.edu)



I appreciate your consideration for election as Chair-Elect for the Chemical Engineering Division of ASEE. I am currently an Alumni Distinguished Undergraduate Professor and Director of Undergraduate Studies in the Department of Chemical and Biomolecular Engineering at North Carolina State University. I received my BS in Chemical Engineering from NC State and my Ph.D. in Chemical Engineering from Carnegie Mellon University. I served in engineering and management positions within Eastman Chemical Company from 1991-2000 before returning to join the faculty at NC State. I currently teach the material and energy balance course, a professional development seminar, and the senior design course at NC State.

My educational scholarship interests include teaching and advising effectiveness, academic integrity, process design instruction, and the integration of writing, speaking, and computing within the curriculum. I am active in both ASEE and the AIChE Education Divisions and see these as complementary groups to maximize the impact of educational scholarship on our discipline. My commitment to engineering education is reflected in 20 published articles and 41 presentations and conference proceedings in the area of engineering education and educational scholarship, as well as more than 40 invited lectures and teaching workshops for both faculty and graduate students.

I have been honored as the recipient of ASEE's Southeast Section Mid-Career Teaching Award (2013), ASEE's Raymond W. Fahien Award (2010), ASEE's Joseph J. Martin Award (2007, 2010, and 2013), John Wiley Premier Award for Engineering Education Courseware (2009), NCSU Faculty Advising Award (2008), National Effective Teaching Institute Fellow (2007), NCSU Alumni Outstanding Teacher Award (2005), and the George Blessis Outstanding Undergraduate Advisor Award (2005). I currently serve on the Editorial Board of Chemical Engineering Education and am completing a term as a Director in our ASEE CHE Division.

If elected to serve as the Chair-Elect and later Chair, I look forward to working with the division leadership team to continue the excellent programming at the ASEE Annual Conference and to put a strong team in place to lead the ASEE ChE Summer School in 2017. Continuing the vital partnership with the AIChE Education Division should also be a priority for our Division. The late women's basketball coach at NC State, Kay Yow, was known for saying, "The first third of your life is about learning, the second third is about earning, and the last third is about returning." ASEE and the CHE Division in particular have been invaluable to support me in becoming a better educator over the last decade, and if elected, I am looking forward to returning that benefit in the form of service to the Division and to its current and future members.

## *Position: Chair cont...*

This person would serve one year as Chair-Elect and then serve as Chair in 2014-2015.

- 1) Lisa Bullard
- 2) Thomas Marrero

# Thomas R. Marrero

Department of Chemical Engineering  
University of Missouri  
email: [MarreroT@missouri.edu](mailto:MarreroT@missouri.edu)



Thank you for your consideration to be a Chemical Engineering Chair Elect, ASEE.

Currently, I am a professor in the Chemical Engineering Department, University of Missouri. In the past, I have been an officer of several professional organizations and continue to serve with the American Institute of Chemical Engineers and the International Freight Pipeline Society.

Since 1979 I have taught in Columbia; my teaching has been dominated by elective courses in the Department's environmental options. Namely, Environmental Chemodynamics, Air Pollution Control, Hazardous Waste Management, and (now) Sustainable Energy. I have also taught the Undergraduate Laboratory, Thermodynamics, and Design. In addition, I teach a one-credit Green Engineering course in the Honors College.

Immediately prior to joining the University of Missouri, for one-year I was a Visiting Professor at Texas A & M University, College Station.

I received my BS in Chemical Engineering from the Polytechnic Institute of Brooklyn in 1958, my MS from Villanova University in 1959, and my Ph.D. in Chemical Engineering from the University of Maryland, College Park. I am a Professional Engineer in Missouri and a Fellow of the American Institute of Chemical Engineers.

After my MS I worked in design engineering for the Martin-Marietta- Nuclear Division and researched with the W. R. Grace-Research. In 1967 I returned to the graduate school on a full time basis. After earning my PhD, with a minor in Chemical Physics, I held a post-doctoral opportunity for one-year then returned to industry, first with Babcock-Wilcox Company- research, and then with the General Electric Company-Nuclear Division.

With regard to the ASEE, I have been a member since 1987. In 2012, my second article was published in Chemical Engineering Education. This article, as the previous one (published in 1994), was about my instruction in the undergraduate chemical engineering laboratory.

If elected to be a ChE Chair Elect, I look forward to applying my broad experience to serve the ASEE leadership. My career is an example of the value of ChE education. As a Chair Elect of the ChE division, I would try to enhance opportunities for faculty, students, and youth in chemical engineering careers; and encourage future students to realize that ChE's can make a difference!

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

**Votes must be received by Friday, May 31, 2013**

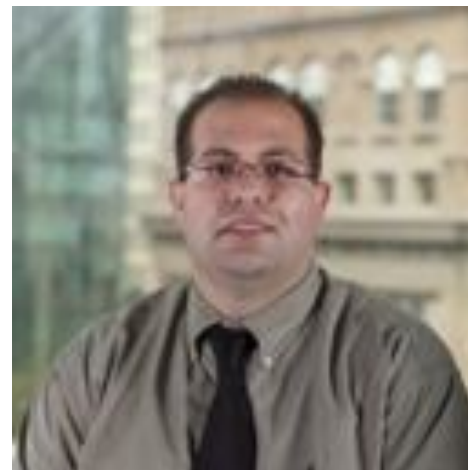
## *Position: Director*

This person would serve as an advisor to the executive board for a term of 2 years.

- 1) Daniel Lepek
- 2) Joseph A. Menicucci, Jr.

# Daniel Lepek

Department of Chemical Engineering  
The Cooper Union  
email: [lepek@cooper.edu](mailto:lepek@cooper.edu)



Thank you for considering and nominating me to be a candidate for the position of Director within the ASEE Chemical Engineering Division. Although I am a fairly new member and contributor to the division, over the past two years I have undertaken substantial leadership roles, such as serving as the Chemical Engineering Division Program Chair for the upcoming ASEE Annual Conference & Exposition in Atlanta. I am excited to run for the position of Director so that I can continue to serve in leadership roles and help both sustain and enhance the division's contributions to academic excellence within chemical engineering education.

Currently I am Assistant Professor of Chemical Engineering at The Cooper Union in New York City. I received my B.E. from The Cooper Union and Ph.D. from New Jersey Institute of Technology (NJIT), both in chemical engineering. During my time at The Cooper Union, I have been involved in all aspects of chemical engineering education: designing new graduate electives, revising the undergraduate curriculum, incorporating new technologies into core courses, improving student communication skills, engaging K-12 students, and advising the AIChE student chapter and Chem-E-Car team. I was also fortunate to receive the division's "Engineering Education" Mentoring Grant at the 2011 Annual Meeting.

If selected to become a Director, my ultimate goal is to serve both your needs as a division member and the overarching needs of the division itself. In my advisory role, I would like to strengthen the relationships between members so that we, as a whole, can advance the field of chemical engineering education together. In addition, I would like to increase our footprint within the engineering education community by working closely with the leadership of ASEE and other similar organizations.

Over the past few years I have received an enormous amount of guidance, mentoring, and support from the leadership of this division. Not only do I believe that it is my obligation to "pay it forward," but it is my pleasure to continue serving the division in leadership and non-leadership roles.

Thank you again for your consideration. I look forward to seeing you in Atlanta!

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

**Votes must be received by Friday, May 31, 2013**

## *Position: Director cont...*

This person would serve as an advisor to the executive board for a term of 2 years.

- 1) Daniel Lepek
- 2) **Joseph A. Menicucci, Jr.**

# Joseph A. Menicucci, Jr.

Chemical Engineering, School of Engineering  
Nazarbayev University

email: [jmenicucci@nu.edu.kz](mailto:jmenicucci@nu.edu.kz)



Thank you very much for considering me for the open position of Director of the Chemical Engineering Division of ASEE. I first became a member of the division after I attended the 2005 Annual Conference and Exhibition in Portland, Oregon courtesy of the Bring-a-Student program. I have since continued my involvement in the division by presenting papers at annual conferences, reviewing abstracts and papers within the division, and attending the 2012 Chemical Engineering Division Summer School.

I am currently an Assistant Professor of Chemical Engineering at Nazarbayev University in Astana, Kazakhstan. I was hired as one of the first five faculty members in the School of Engineering for our inaugural 2011-12 academic year. I believe my experiences in this post-Soviet republic will allow me to offer a unique perspective while aiding the division chair, meeting program chair, and other Division officers. My global perspective has not only been formed through my work in Kazakhstan; the School's founding Dean was a secondee from our school partner, University College London (UCL), and I had meetings with academic representatives of UCL on multiple occasions. I have recently been appointed to serve as an external examiner for three engineering courses being taught at Narvik University College in Narvik, Norway and will also develop a hands-on teaching laboratory as part of a project funded by the Norwegian Centre for International Cooperation in Education Eurasia Programme.

I believe my experience and comfort with supporting individuals in positions of leadership will allow me to be an effective Division Director. I earned my PhD from Montana State University-Bozeman in 2010. During my graduate studies, my research laboratory hosted Biofilms 2004, an International Water Association Conference. I was selected as the editorial secretary for this event, which was held in Las Vegas, Nevada. In this position, I: accepted papers, corresponded with authors, sent papers to reviewers, drove volunteers and conference materials from Bozeman to Las Vegas, and provided technical support during the conference.

More recently, I was elected to serve as the first Vice-Chair of the Nazarbayev University Faculty Senate. I relished the opportunity to work behind the scenes to address the numerous and ever-emerging issues associated with a start-up university. I am most proud of serving on the committee that drafted the Academic Regulations approved by the Academic Council of the University and of my efforts to help establish a faculty development program both within the School of Engineering and at the University level.

If given the opportunity to serve as a Division Director, I hope to offer more than just a global perspective to the Chemical Engineering Division of ASEE. I believe that the opportunity to engage in division activities as a graduate student not only piqued my interest in engineering education in general but also guided my decision to dedicate myself to trying to find and use the most effective tools to support student learning. My experience at the 2012 ASEE Chemical Engineering Summer School further strengthened that resolve. As a Division Director, I would hope to further participation of graduate students and early-career faculty members in division activities.

I appreciate this nomination and thank you for your consideration.

## Secretary/Treasurer

This person would serve as Secretary/Treasurer for a term of 2 years.

**1) Laura Ford**

### Laura Ford

Department of Chemical Engineering  
University of Tulsa

email: [laura-ford@utulsa.edu](mailto:laura-ford@utulsa.edu)

Laura Ford is an Associate Professor at the University of Tulsa. She earned her chemical engineering degrees at Oklahoma State University (BS) and the University of Illinois at Urbana-Champaign (MS and PhD). Her undergraduate students work in surface science of photovoltaic thin films, and her graduate students are part of a joint industry project on hydrate flow. She often teaches the senior lab courses as well as engineering science thermodynamics and fluid mechanics for several majors. She directs graduate students in practice teaching. Her teaching interests are in getting students more involved in classes to promote better understanding.



Laura has been the Division's secretary/treasurer since June 2009 and looks forward to the possibility of serving as secretary/treasurer for another two years.



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

**Votes must be received by Friday, May 31, 2013**

## *In Memoriam* **Don Woods**

Each year, the Chemical Engineering Division holds a moment of silence during the business meeting for those members of our profession who recently passed away. In the final revisions of this newsletter, we chose to include the recent sad news about Don Woods passing. We also extend our condolences to family and colleagues who have seen the passing of other key mentors and leaders of our profession.

### **Don Woods (April 17, 1935 - April 26, 2013)**

It is with sadness and a continued sense of loss and respect that the chemical engineering education community notes the passing of Don Woods. During his long and productive career, Don was a strong advocate for engineering education and a pioneer in the area of problem-based learning. Don always believed that we could learn ways to "teach smarter, not harder" (although it should be noted that Don was a hard worker) to improve student learning. Don was committed to educational outreach with a missionary zeal (over 500 workshop offerings!!), continually offering to share his insights and techniques through workshops on educational and professional development topics.

In reading Don's obituary: (<http://www.kitchingsteepeandludwig.com/obituaries/obituary.aspx?id=611>) I have learned that Don had been married for 52 years, had three children and five grandchildren and was an "artist, banjo player, square dancer, badminton player, builder, author, genealogist, and great reader." I am sure that Don's rich personal life provided a significant source of support for his professional endeavors.



**Communication and Condolences can be directed to the Woods family at:**

**Diane Woods  
128 Grindstone Way,  
Dundas, ON L9H7B8, CANADA**

His AIChE profile is available at <http://www.aiche.org/profile/donald-woods>.

\* ASEE Chemical Engineering Division Executive Committee



## Pete Ludovice will entertain with **Comical Engineering**

Chemical engineering professor by day and stand-up comedian by night, Pete Ludovice will present “Comical Engineering,” a humorous look at chemical engineering education that includes the value of humor in engineering education at the chemical engineering division banquet of the ASEE national meeting in Atlanta on Monday June 24th. Pete has performed at comedy clubs and technical conferences internationally for a decade, and is currently touring the U.S. with his one-man show “Feel the Power of the Dork Side,” a humorous look at science and engineering and its practitioners ([www.drpetecomedy.com/dorkside](http://www.drpetecomedy.com/dorkside)). Pete’s



research work at Georgia Tech

includes the computer simulation of synthetic and biological macromolecules and the use of humorous improvisation to catalyze technical innovation. He directs a student living-learning community on the use of humor to improve technical communication, education and innovation and will be speaking on this topic at the ASEE International Forum, the Saturday before the National Meeting in Atlanta. Pete devotes a lot of effort to science and engineering

outreach and one such effort is his radio show on science and technology. “Science, only funnier” is the motto of this weekly program on WREK-Atlanta, 91.1FM entitled “Inside the Black Box” ([www.insidetheblackbox.org](http://www.insidetheblackbox.org)).

**The Chemical Engineering Division Banquet will be held at the Gordon Biersch Brewery Restaurant on 848 Peachtree Street NE, Atlanta, GA 30308, Monday, June 24th from 7 to 9 pm.**



# 2013 Annual Conference: Atlanta, GA 23-26 June



## Monday June 24, 2013

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### **M112·Chemical Engineering Division Executive Committee Meeting**

**Monday, 7:00 AM - 8:30 AM, Georgia World Congress Center, A308 A**

*Moderated by Michael Prudich*

A closed meeting of the ChED Executive Committee.

### **M412·Future Directions in Chemical Engineering Education**

**Monday, 12:30 PM - 2:00 PM, Georgia World Congress Center, A315**

*Moderated by Daniel Lepek*

This special session will seek to answer the question: What are the future directions in which chemical engineering education is going and how can we best prepare our students? In particular, we will discuss the role of technology in how it enhances (or perhaps detracts from) student learning. In this unique panel session, the discussion will be lively and the invited speaker is \*you.\*

1. **Invited speakers: YOU – please come, ready to share your thoughts!**

### **M512·Real and Virtual - “New” Approaches to Teaching “Old” Courses**

**Monday, 2:15 PM - 3:45 PM, Omni CNN Center Hotel, Omni - Hickory**

*Moderated by Margot A. Vigeant and Thomas R. Marrero*

Session focuses on new additions to the Chemical Engineering core curriculum, looking at both new topics and new approaches for existing topics in this area.

1. **A Heat Conduction iPhone and iPad App for Engineering Education** Dr. Jason M. Keith (Mississippi State University), Mr. Gerald C Nelson (Mississippi State University), Mrs. Abby Lammons Thompson (Mississippi State University), Mr. John Louis Gazzini (Nimbus Mobile LLC), and Read Sprabery (Computer Engineering at Mississippi State University)
2. **Improving Student Attitudes Toward the Capstone Laboratory Course Using Gamification** Prof. Daniel D. Burkey (University of Connecticut), Mr. Daniel D. Anastasio (University of Connecticut), and Dr. Aravind Suresh (University of Connecticut)
3. **Use of Studio-based Learning in a Material/Energy Balance Class** Dr. Richard L. Zollars (Washington State University), Dr. Christopher Hundhausen (Washington State University), and Mr. Adam Scott Carter (Washington State University)
4. **Solving Material Balance Problems at Unsteady State using a Remote Laboratory in the classroom** Dr. Darinka del Carmen Ramirez (Tecnológico de Monterrey (ITESM), México) and Dr. Manuel E Macías (ITESM, Campus Monterrey)
5. **Teaching Thermodynamics Through Video Media** Dr. James P Abulencia (Manhattan College), Dr. Margot A. Vigeant (Bucknell University), and Dr. David L. Silverstein (University of Kentucky)

# 2013 Annual Conference: Tuesday, 12 June



## M612-Special Session: Chemstations Lectureship Award and Presentation

**Monday, 4:30 PM - 6:00 PM, Omni CNN Center Hotel, Omni - International Ballroom B**

Dr. Clayton Radke, University of California, Berkeley, winner of this year's Lectureship Award sponsored by Chemstations, Inc, will give a lecture on a topic of his choice. This award is presented to a distinguished engineering educator to recognize and encourage outstanding achievement in an important field of fundamental chemical engineering theory or practice. The individual shall demonstrate achievement through the formulation of fundamental theory or principles, improvements of lasting influence to chemical engineering education with books and/or articles, and the demonstration of success as a teacher. In addition, evidence of the ability to conduct original, sound, and productive research, and an interest in the progression of chemical engineering through participation in professional and educational societies shall be demonstrated.

## M712 ChE Division Awards Dinner

**Monday, 7:00 PM - 9:00 PM, Gordon Biersch Brewery Restaurant on 848 Peachtree Street NE**

Ticketed event: \$60.00 advanced registration and \$70.00 on site registration.

At this dinner, the Chemical Engineering Division will recognize and celebrate the accomplishments of the awards winners. Come meet your colleagues, celebrate their accomplishments, have fun, and enjoy the comedic stylings of the world's only chemical engineering professor / stand-up comic, Pete Ludovice!

## Tuesday June 25, 2013

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### T112-Chemical Engineering Chairs Meeting

**Tuesday 7:00 AM to 8:30 AM, Georgia World Congress Center, A308 B**

Come meet your fellow chairs and discuss topics of interest.

### T212-Grasping the "Concept"

**Tuesday 8:45 AM to 10:15 AM, Omni CNN Center Hotel, Omni - Juniper**

*Moderated by Dr. David L. Silverstein P.E. and Dr. Shannon Ciston*

- The Effect of Inquiry-Based Activities and Prior Knowledge on Undergraduates' Understanding of Reversibility** Dr. Katharyn E. K. Nottis (Bucknell University), Dr. Margot A Vigeant (Bucknell University), Dr. Michael J. Prince (Bucknell University), and Ms. Ana Gabriela Aguilera Silva (Bucknell University)
- Concept Group Exercises for Continuous Improvement of Students Learning Abilities** Prof. Rajesh V. Shende (South Dakota School of Mines and Technology)
- Semester-long Concept Development Projects in Chemical Engineering Electives Course** Dr. Adrienne R. Minerick (Michigan Technological University)
- Implementation of State-of-the-Art Learning Tools in the School of Engineering at Nazarbayev University in the Post-Soviet Republic of Kazakhstan** Ms. Sayara Saliyeva (Nazarbayev University), Dinara McLaughlin (Affiliation unknown), Dr. Moulay Rachid Babaa (School of Engineering, Nazarbayev University, 53, Kabanbay batyr Ave., Astana, 010000, Republic of Kazakhstan.), Dr. Hella Tokos (School of Engineering, Nazarbayev University), Prof. Stefaan Jan Rogier Simons (University College London), Prof. Sarim Naji Al Zubaidy (Nazarbayev University), and Dr. Joseph A. Menicucci Jr. (Nazarbayev University)
- Examining the Innovation-Decision Process: A Preliminary Study of the AIChE Concept Warehouse** Ms. Debra Gilbuena (Oregon State University), Ms. Christina Smith (Oregon State University), Mr. Bill Jay Brooks (Oregon State University), Talia Sidne Finkelstein (Oregon State University), and Dr. Milo Koretsky (Oregon State University)

# 2013 Annual Conference: Tuesday, 25 June



## **T412-Chemical Engineering Poster Session & Unit Operations Lab Bazaar**

**Tuesday 12:30 PM to 2:00 PM, Georgia World Congress Center, Exhibit Hall A1**

*Moderated by Dr. Michael E. Prudich and Dr. Maddalena Fanelli*

This is the poster session for the Chemical Engineering Division

1. **A Computer-Controlled Biodiesel Experiment** Dr. William M. Clark (Worcester Polytechnic Institute), Mr. Nicholas Janeiro Medeiros (Worcester Polytechnic Institute), Donal James Boyd (Affiliation unknown), Jared Snell (WPI), and Lucas J. Brutvan (Worcester Polytechnic Institute)
2. **Tools for Teaching Batch Distillation Inductively using Process Simulation** Landon Mott (University of Kentucky), Dr. Jeffrey R. Seay (University of Kentucky), and Dr. David L. Silverstein (University of Kentucky)
3. **Industry practice training through modular classroom exercises** Dr. Arthur Felse (Northwestern University)
4. **A Versatile Compressible Fluid Experiment** Dr. William M. Clark (Worcester Polytechnic Institute)

## **T512-Using Communication and Writing Techniques to Improve Student Learning**

**Tuesday 2:15 PM to 3:45 PM, Omni CNN Center Hotel, Omni - Juniper**

*Moderated by Dr. Richard L. Zollars P.E. and Prof. Daniel D. Burkey*

1. **Effects of Requiring Students to Write Abstracts for Homework Problem Solutions** Dr. Kevin D. Dahm (Rowan University) and Dr. Stephanie Farrell (Rowan University)
2. **A Reflective Writing Assignment to Engage Students in Critical Thinking** Dr. Taryn Melkus Bayles (University of Maryland, Baltimore County)
3. **Promoting Metacognition through Reflection Exercises in a Thermodynamics Course** Prof. Mariajose Castellanos (University of Maryland, Baltimore County) and Dr. Joshua A. Enszer (University of Maryland Baltimore County)
4. **Authenticity Promotes Student Engagement and Learning in a Stand-Alone Technical Communications Course** Dr. Shannon Ciston (University of California, Berkeley) and Mr. Sean Poust (University of California-Berkeley)

## **T612: Perspectives and Approaches to Teaching Simulation and Design-Based Courses**

**Tuesday 4:00 PM to 5:30 PM, Omni CNN Center Hotel, Omni - Juniper**

*Moderated by Dr. William M. Clark and Prof. Rajesh V. Shende*

1. **A new motivation and perspective on teaching simulation and design: The development of a dynamic process model in conjunction with an operator training simulator (OTS)** Dr. Richard Turton P.E. (West Virginia University)
2. **Efficient and Effective Instruction in Process Simulation Across the Chemical Engineering Curriculum** Dr. Rebecca K. Toghiani (Mississippi State University), Dr. Hossein Toghiani (Mississippi State University), and Dr. Larry Everett Pearson (Mississippi State University)
3. **Assessing Metacognitive Awareness during Problem-Solving in a Kinetics and Homogeneous Reactor Design Course** Dr. Nelly Ramirez-Corona (Universidad de las Americas Puebla), Prof. Ramirez Apud Lopez Zaira (Universidad de las Americas Puebla), Prof. Aurelio Lopez-Malo (Universidad de las Americas Puebla), and Dr. Enrique Palou (Universidad de las Americas Puebla)
4. **How We Teach: Capstone Design** Dr. David L. Silverstein (University of Kentucky), Dr. Lisa G. Bullard P.E. (North Carolina State University), Dr. Warren D. Seider (University of Pennsylvania), and Dr. Margot A. Vigeant (Bucknell University)

# 2013 Annual Conference: Tuesday, 25 June



## Wednesday June 26, 2013

### W212 · "Modular" Learning

Wednesday 8:45 AM to 10:15 AM, Omni CNN Center Hotel, Omni - Juniper

Moderated by Dr. Kevin D. Dahm and Prof. Joseph A. Menicucci Jr.

1. **Using Energy Modules to Introduce Sustainable Engineering and Improve Retention of Chemical Engineering Undergraduate Students** Dr. Jason M. Keith (Mississippi State University), Dr. Bill B. Elmore (Mississippi State University), Dr. William Todd French (Mississippi State University), Dr. Hossein Toghiani (Mississippi State University), and Dr. Rebecca K. Toghiani (Mississippi State University)
2. **An Instructional Module on Thermally Coupled Columns for Undergraduate Chemical Engineering Separations** Dr. Priscilla J. Hill (Mississippi State University), Dr. Carlen Henington (Mississippi State University), and Dr. Rebecca K. Toghiani (Mississippi State University)
3. **A Modular Approach of Integrating Biofuels Education into Chemical Engineering Curriculum** Dr. Qinghua He (Tuskegee University), Ms. Rong Zhang (Auburn University), Dr. Jin Wang (Auburn University), Mr. Frank Leonard Armstead III (Tuskegee University), Mr. Rong Zhu Walburn (Affiliation unknown), Mr. Donald Ray Johnson Jr (Affiliation unknown), and Julius Lenard Taylor II (Tuskegee University Research Assistant)
4. **Loose Change and Dishwasher Optimization: Creative Applications of Engineering Statistics** Dr. Matthew Cooper (North Carolina State University - Department of Chemical and Biomolecular Engineering)
5. **New Hands-on Fluid Mechanics Cartridges and Pedagogical Assessment** Jacqueline K Burgher (Washington State University), Mr. David Finkel (Washington State University), Mr. Bernard J. Van Wie (Washington State University), Dr. Olusola Adesope (Washington State University-Pullman), Dr. Shane A. Brown P.E. (Washington State University), and Mr. Justin William Atkinson (Affiliation unknown)

### W412·Chemical Engineering Division Business Meeting

Wednesday 12:30 PM to 2:00 PM, Georgia World Congress Center, A405

Moderated by Michael Prudich (Ohio University) and David Dixon (South Dakota)

An open business and planning meeting for all members and potential members of the Chemical Engineering Division. Stop in and help plan our work for the coming year!

### W512·"How Do We Compare?" - Students, Case Studies, and Learning Approaches

Wednesday 2:15 PM to 3:45 PM, Omni CNN Center Hotel, Omni - Juniper

Moderated by Dr. Zenaida Otero Gephardt P.E. and Ms. Debra Gilbuena

1. **Living in Two Worlds: Comparing Chemical Engineering Students to Other Engineers and Chemists** Ms. Allison Godwin (Clemson University) and Dr. Geoff Potvin (Clemson University)

# 2013 Annual Conference: Wednesday, 26 June

2. **A Comparison of Peer Evaluation Methods in Capstone Design** Dr. Joshua A. Enszer (University of Maryland Baltimore County) and Prof. Mariajose Castellanos (University of Maryland, Baltimore County)
3. **Comparing a Modified Problem-Based Learning Approach To a Traditional Approach to Teaching Heat Transfer** Dr. Christi P. Patton Luks (University of Tulsa)
4. **Mapping Rural Students' STEM Involvement: Case Studies of Chemical Engineering Undergraduate Enrollment in the States of Illinois and Kansas** Mr. Joel J. Versypt (University of Illinois at Urbana-Champaign) and Dr. Ashlee N. Ford Versypt (Massachusetts Institute of Technology)

## W612-Bringing Industrial Applications into the Classroom

**Wed. 4:00 PM to 5:30 PM, Omni CNN Center Hotel, Omni - Juniper**

*Moderated by Dr. Allen Hersel and Dr. Ashlee N. Ford Versypt*

1. **Nom nom nom: Two years of Applied Food Science and Engineering as a chemical engineering elective** Dr. Margot A. Vigeant (Bucknell University)
2. **Analysis of Biodiesel Production and its Derivatives for a College Campus** Emilia Golebiowska (Affiliation unknown), Mr. Giovanni Kelly II (Affiliation unknown), Dr. Yassir M. Samra (Affiliation unknown), and Dr. James P. Abulencia (Manhattan College)
3. **Interactive Pedagogical Tools to Integrate Pharmaceutical Applications in the Chemical Engineering Curriculum: News from the ASEE 2012 Summer School** Dr. Zenaida Otero Gephardt (Rowan University), Dr. C. Stewart Slater (Rowan University), Dr. Stephanie Farrell (Rowan University), and Dr. Mariano Javier Savelski (Rowan University)
4. **Integrating Risk Assessment in the Unit Operations Laboratory** Dr. Maddalena Fanelli (Michigan State University), Dr. Daina Briedis (Michigan State University), Dr. Dennis J. Miller (Michigan State University), and Dr. Martin C. Hawley P.E. (Michigan State University)
5. **Introducing K-12 Students to the Field of Pharmaceutical Engineering** Dr. Daniel Lepek (The Cooper Union), Ms. Charmian Wu (Tufts University), and Mr. Ryan Poling-Skutvik (Affiliation unknown)

<http://www.asee.org/conferences-and-events/conferences/annual-conference/2013>

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