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ASEE Chemical Engineering Division Newsletter

Editor: Matthew Cooper (mecoope3@ncsu.edu), North Carolina State University

A Message from the Chair:

Laura Ford
University of Tulsa

Another academic year has flown by for those of us with early May graduations! One of my more reflective seniors realized that the faculty see a steady stream of students: there are always new freshmen and graduate students coming in, and always another group of graduates leaving. The leadership of our division is like that, too: officers complete their terms, new officers are elected, and new volunteers move in. Thanks go to Matt Cooper at NC State for editing our newsletter since the Fall 2013 edition, to Milo Koretsky at Oregon State for serving as director for two years, and to Christi Patton Luks as our past-chair. Elif Miskioglu at Bucknell University has stepped up as our new editor, and we are glad to have her involved. It is time to vote for a new chair-elect and a new director for the Division, so look for information about candidates in this newsletter and in your email.

Sessions are shaping up for the Annual Conference and are described later in the newsletter. We will have all of the usual sessions and the Lectureship with Prof. Lorenz Biegler, but there are a few new things in the schedule. We chose not to hold any division sessions in the new timeslots available on Sunday. We will have our Division Business Meeting during the time set aside for those Tuesday evening, and that will be followed by a tour of the new Chemical & Biomolecular Engineering and Chemistry Building at The Ohio State University (transportation provided). Join us for light refreshments there, and I expect a group will go out for dinner afterwards. Also new is a Work-in-Progress session for research not yet completed to be held on Wednesday afternoon, so come by to give feedback to these authors.

Many of us are looking forward to the Summer School for Chemical Engineering Faculty at NC State. Check if any of your new faculty are going. Ask them what they hope to gain from the Summer School, and think about how you can mentor them or connect them with the right people. Check with them after Summer School to see what new ideas they have, and encourage them to try what they learned. Making that extra effort can magnify the effect of the Summer School and improve the learning of our students, and that is what we are all here for.

May your efforts to help your students learn be fruitful.

Laura

In this issue…

2017 ELECTIONS FOR ASEE OFFICERS

- **Candidate for Division Chair-Elect:**
  - *Winner will serve as chair of ChE Division for 2018-2019*

Joshua Enszer
University of Delaware

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

Ashlee N. Ford Versypt
Oklahoma State University

Candidate for Division Chair-Elect

Joshua Enszer

Assistant Professor of Instruction
Department of Chemical and Biomolecular Engineering
University of Delaware
Email: enszer@udel.edu

I am honored to be nominated to run for Chair-Elect in ASEE's Chemical Engineering Division. I currently work as an Assistant Professor of Instruction at the University of Delaware, in the first full-time, continuing-track (non-tenure-track) position in Chemical and Biomolecular Engineering. Prior to my current appointment, I was a Lecturer in chemical engineering at the University of Maryland, Baltimore County, and before that, I was Interim Course Coordinator for the First-Year Engineering at the University of Notre Dame. The Chemical Engineering Division of ASEE has played a prominent role in my professional development: while at UMBC, I was a participant in both the ASEE Summer School and the National Effective Teaching Institute, and this year, I will serve as a presenter at the Summer School.

I have been teaching chemical engineering courses part time since completing my M.S. from the University of Notre Dame in 2008. My teaching appointment became full time after finishing my Ph.D. in 2010. Between Notre Dame, UMBC, and now UD, I have taught every core course in the curriculum except for kinetics and heat and mass transfer. My favorite course continues to be material and energy balances, one of the only courses I taught or co-taught at each of these institutions. My work in teaching has been recognized with an appointment as Academic Innovation Fellow at UMBC in 2013, and most recently with the 2017 College of Engineering Excellence in Teaching award at Delaware.

Since joining the faculty at Delaware in 2015, I have become faculty advisor for our student chapter AIChE, its Chem-E-Car team, and co-advisor for our student chapter of oSTEM. I have also been working as an academic consultant for the Center for Chemical Process Safety, where I am part of the next generation of the e-learning initiative, updating and adding interaction to the online SAChE modules. My contributions to ASEE and AIChE have most recently been in exploring the gamification of learning and improving the way we embed process safety into the curriculum. My current projects are largely focused on improving the diversity of our undergraduate populations in both my department and college at the University of Delaware. Many of these projects are thanks to the connections I have made through our organization. I hope to continue to build upon my scholarship and service through a leadership role in our Chemical Engineering Division. Thanks very much for your consideration.

Candidate for Director

Ashlee N. Ford Versypt

Assistant Professor
School of Chemical Engineering
Oklahoma State University
Email: ashleefv@okstate.edu

Professor Ashlee N. Ford Versypt holds three degrees in chemical engineering: a B.S. from the University of Oklahoma and an M.S. and a Ph.D. from the University of Illinois at Urbana-Champaign. During graduate school, she was awarded the Department of Energy Computational Science Graduate Fellowship (DOE CSGF) and the National Science Foundation Graduate Research Fellowship. In 2013, she was recognized as the Frederick A. Howes Scholar in Computational Science. In 2012-2014, she was a postdoctoral research associate at the Massachusetts Institute of Technology. While a postdoc, she was recognized with the Keystone Partnership Award by the Girl Scouts of Eastern Massachusetts Council for her impact on STEM programming with Girl Scouts and the SWE Boston Professional Section. She was also active in mentoring other women in STEM from middle school and high school girls through collegiate and postdoctoral scholars. Dr. Ford Versypt received the Joseph J. Martin Award for outstanding paper in the Chemical Engineering Division at the 2013 ASEE Annual Meeting. Currently, Prof. Ford Versypt is an assistant professor in the School of Chemical Engineering at Oklahoma State University (OSU). In her first year, she was voted by the engineering student body to receive the Outstanding Mentor Award for the College of Engineering, Architecture, and Technology. Over the last 15 years, she has been the instructor for more than 25 K-12 STEM outreach events through Girl Scouts, Boys & Girls Club, Society of Women Engineers, Boy Scouts, and classroom visits in three states. She currently leads a hands-on chemical engineering design module based on her research for the local Summer Bridge program for incoming engineering freshmen. She teaches reaction engineering and process control as well as a graduate elective in computational science and engineering. Her research interests are in mathematical and computational modeling of biomedical and pharmaceutical systems and the scholarship of teaching and learning. Since 2015, she has served as the coordinator for the Conoco Phillips Lectureship in Chemical Engineering Education seminar series at OSU. She also serves on the planning committee for the ASEE Midwest Section Conference to be held at OSU in Sept. 2017. She has co-chaired sessions at the annual meetings for the ASEE Chemical Engineering Division in 2013 and for the AIChE Education Division in 2016. In 2017, she was named as the recipient of the OSU College of Engineering, Architecture, and Technology Excellent Teacher Award.

Visit http://ched.asee.org/2017-asee-chem-e-division-board-elections/ by May 26 to cast your ballot!

DIVISION CELEBRATIONS AND EVENTS!

Special ChE Division Events!

M405A: Chemical Engineering Lectureship Awards Presentation
Monday 1:30 – 3:00 PM
The 2017 Chemical Engineering Lectureship Award Session features a presentation by this year's award winner, Prof. Lorenz Biegler of Carnegie Mellon University.

Buy Your Awards Dinner Tickets Early – Save $10!

M705: Chemical Engineering Awards Banquet
Monday 7:00 – 9:00 PM at Hubbard Grille & Wine on High
Ticketed Event: $60.00 advanced registration and $70.00 on site.
Come join the ChE Division in a social setting as we honor this year's award recipients.

ChE Division Informal Dutch Treat Dinner
Tuesday 8:30 PM (Location To Be Determined)
Meet up after the CBEC tour on Tuesday to select a restaurant for a casual, dutch treat dinner with ChE colleagues.

PANELS, WORKSHOPS AND OPEN MEETINGS

M534A: Interdivisional Town Hall Meeting: The Culture of Teaching
Monday 3:15 – 4:45 PM
Addressing the question: What is the culture of engineering instruction on our campuses, and how can we change it to attain the objectives that we hold as engineering educators?
Speaker: Atsushi Akera

T605: Chemical Engineering Business Meeting
Tuesday 5:00 – 6:00 PM
An open business and planning meeting for **all** existing and potential members of the Chemical Engineering Division. Feel free to stop by, meet everyone and help plan for the coming year.

T705: Tour of The Ohio State University's New Chemical Engineering (CBEC) Building
Tuesday 6:30 – 8:30 PM
The unit operations laboratory and teaching spaces will be highlighted and light refreshments served. Transportation will be provided to/from campus.

ChE Division Technical Sessions

MONDAY, JUNE 26

M505: Professional Skills Development

Monday 3:15 – 4:45 PM (Moderator: Cheryl Bodnar)

1. **Chemical Engineering Student Perceptions of Communication Development from Participation in Game-Based Activities** Abigail Jane Kulhanek and Cheryl Bodnar (Rowan University)
2. **Integration of Industrially Relevant Examples in ChE Courses** John Dee Clay (Ohio State University)
3. **No More Death by PowerPoint! Using an Alternative Presentation Model in a ChE Unit Operations Laboratory Course** Matthew Cooper (North Carolina State University)
4. **Self-Reflection Assignments for Evaluating Non-Technical Skills and Setting Goals for Professional Development** Ashlee Nicole Ford Versypt (Oklahoma State University)

TUESDAY, JUNE 27

T105: Novel Pedagogical Techniques I: Online, Electronic and Apps!

Tuesday 8:00 – 9:30 AM (Moderator: Jennifer Pascal)

1. **Evaluating the Impact of Online Delivery of a Process Dynamics and Control Course** Mary Staehle (Rowan University)
2. **Flipping the Chemical Engineering Process Control Class with e-Lessons** Thomas Marlin (McMaster University)
3. **Reading analytics and student performance when using an interactive textbook for a material and energy balances course** Matthew Liberatore (University of Toledo)
4. **What representations am I using in my courses? Here's an "app" for that!** Elif Miskioglu (Bucknell University)

T305: Chemical Engineering Division Poster Session

Tuesday 11:30 AM – 1:00 PM

1. **Development and Usage of an Online Homework System in a Chemical Engineering Curriculum** Kyle Joe Branch and Anthony Butterfield (University of Utah)
2. **WIP: Annotations and discussions of textbooks and papers using a web-based system** Matthew Liberatore (University of Toledo)

ChE Division Technical Sessions

TUESDAY, JUNE 27 (cont'd)

T405: Novel Pedagogical Techniques II: Potpourri

Tuesday 1:30 – 3:00 PM (Moderator: Matthew Cooper)

1. **A Collaborative and Interdisciplinary Course in Drug Delivery Systems** Miriam Wattenbarger (University of Pennsylvania)
2. **Can structured reflection enhance learning in a heat and mass transfer course?** Heather Chenette (Rose-Hulman Institute of Technology)
3. **Nontraditional, interdisciplinary immersive approach to Chemical Engineering design: A case study assessment and analysis** Rebecca Jo Pinkelman (Technische Universität Darmstadt), David J. Dixon (South Dakota School of Mines and Technology) and Manfred J Hampe (Technische Universität Darmstadt)
4. **Using Student Developed Comics to Promote Learning of Transport Phenomena Concepts** Jennifer Pascal (University of Connecticut) and Tiffany Lauren Pascal (New Mexico State University-Carlsbad)

T505: Open Forum in Chemical Engineering Education

Tuesday 3:15 – 4:45 PM (Moderator: Matthew Liberatore)

1. **The state of the chemical engineering curriculum: Report from the 2016 survey** Margot A. Vigeant (Bucknell University), Kevin D. Dahm (Rowan University) and David L. Silverstein P.E. (University of Kentucky)

WEDNESDAY, JUNE 28

W105: Early ChemE Education

Wednesday 8:00 – 9:30 AM (Moderator: Kevin Dahm)

1. **A Pharmacokinetic Simulation-Based Module to Introduce Mass Balances and Chemical Engineering Design Concepts to Engineering Freshmen** Grace Harrell, Alexandra McPeak and Ashlee Nicole Ford Versypt (Oklahoma State University)
2. **Integrating Problem-based and Project-based learning in large enrollment freshman engineering courses** Bill Elmore (Mississippi State University)
3. **Jigsaws & Parleys: Strategies for engaging sophomore level students as a learning community** Jamie Gomez, Vanessa Svihla and Abhaya Datye (University of New Mexico)
4. **Films, Foams and Powders: Using Food to Introduce First Year Students to Chemical Engineering** Polly R. Piergiovanni (Lafayette College)

ChE Division Technical Sessions

WEDNESDAY, JUNE 28 (cont'd)

W305: Work-In-Progress Oral Session

Wednesday 11:30 AM – 1:00 PM (Moderator: Daniel Anastasio)

1. **Using Student Generated Senior Design Project Ideas to Achieve ABET Student Outcomes in a Chemical Engineering Process Design and Economics Course** Jason White and Ahmet Palazoglu (University of California, Davis)
2. **WIP: An On-going Analysis of the Impact of Assigning Online Thermodynamic Homework in place of Traditional Homework** Louis Reis, Katie Evans and Dexter Cahoy (Louisiana Tech University)
3. **Work-In-Progress:Tools for Creating Variable Parameter Homework Problems** John Eric Wagner, Amanda Malefyt and Jon Koch (Trine University)
4. **Work-in-Progress: Visualization and Simulation of the Thermal Boundary Layer around a Cylinder as a Classroom Demonstration** Negar Beheshti Pour, David Thiessen and Bernard Van Wie (Washington State University)

W405: Labs and Experiments

Wednesday 1:30 – 3:00 PM (Moderator: Daniel Burkey)

1. **BYOE-Cold Boiling** Kristen Ann Thompson (Loras College)
2. **Impact of Course Structure on Learning and Self-Efficacy in a Unit Operations Laboratory** Janie Brennan (Washington University in St. Louis), Shawn Nordell (Washington University in St. Louis), and Erin Solomon (Washington University in St. Louis)
3. **Leading an Effective Unit Operations Lab Course** John Dee Clay (Ohio State University)
4. **Why not just run this as a demo? Differences in students' conceptual understanding after experiments or demonstrations** Margot Vigeant (Bucknell University), Michael Prince (Bucknell University), Katharyn Nottis (Bucknell University), Milo Koretsky (Oregon State University), Edward Bent (Bucknell University), Rachel Cincotta (Bucknell University) and Kyle Andrew MacDougall (Bucknell University).

Check out ched.asee.org for additional details!

Community Announcements

Farewell – Thanks for Reading!

This will be my last issue as Newsletter Editor for the ASEE Chemical Engineering Division. It has been a fun and interesting experience, but I now pass the torch to Elif Miskioglu of Bucknell University (good luck Elif!). Thanks to CHED for this opportunity and to all of you for reading these past four years. –Matt Cooper

Open Assistant Teaching Professor / Instructor Position at Rutgers NB

The Department of Chemical and Biochemical Engineering at Rutgers University–New Brunswick invites applications for a full-time, non-tenure track Instructor or Assistant Teaching Professor position beginning Fall 2017. Primary duties will include teaching and maintenance of the undergraduate chemical engineering laboratory. Minimum qualifications include a Master's degree in ChE or a closely related field. More information at http://jobs.rutgers.edu/postings/41149

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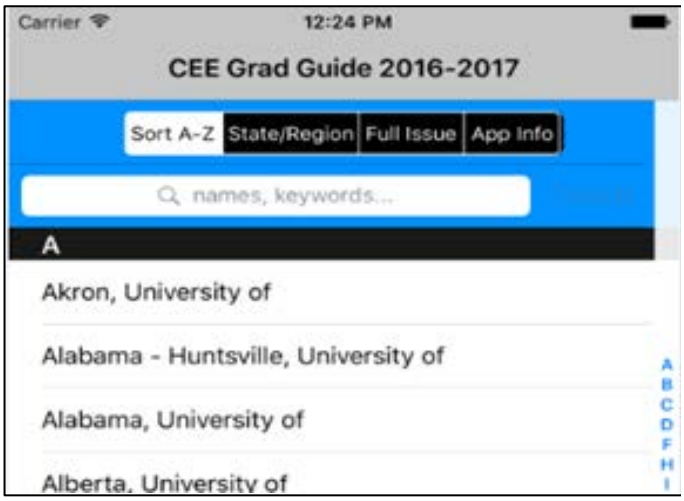
Free Graduate Guide App from CEE!

Interested in graduate school in ChE, but do not know where to start looking? The journal *Chemical Engineering Education* has released a free app for iPhone and iPad that gives information and links to over 100 graduate programs – download at:

https://itunes.apple.com/us/app/chemical-engineering-grad/id1048394040?mt=8

If you don¹t have an iPhone or iPad, you can access the graduate school information using your browser by going to http://www.che.ufl.edu/cee/ and clicking on Graduate Programs.



Can't wait to see everyone in Columbus!

Check out ched.asee.org for additional details!