

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



The start of another school year is here! Some of us are a quarter (!) of the way through the semester already, and others will be starting the quarter very soon. Another year of new graduate students excited to work on *your* project, students pumped up about finding a particular kind of internship, and the look of understanding dawning on a face as the student finally gets it. Another year with students forgetting prerequisite material and making experiment-ruining mistakes in the lab, and the university cutting the budget or freezing accounts again. Our jobs certainly have their ups and downs! What are you doing to have more of those positive moments this year? What are you doing new this term to help your students learn better, to see more understanding looks, and to have less forgotten material? My changes for this semester are trying on-line homework and pairing my sophomores with seniors for a laboratory session. These are not big changes, but a series of small improvements made over many terms can add up to a significant difference for my students. Maybe you can try a small change for your classes, if a big change such as flipping your classroom seems overwhelming, as it does for me.

We have to spend time on our own professional development, too. The Call for Papers for the 2017 ASEE Annual Conference and Exposition is out, and abstracts are due all-too-soon. Have you thought about what you can present next summer? Or thought about what you prepare for the 2018 conference?

Don't forget your regional conference may be a less-expensive opportunity for networking, seeing the work of others, and presenting your own work.

We have a chance to help our newest faculty members become better teachers and researchers through the Summer School for Chemical Engineering Faculty next summer. Have you submitted a workshop proposal to share your expertise? Or have you encouraged a local engineer in industry to submit a proposal? Are you ready to encourage your department chair to send your new faculty members?

We also want to recognize our members who received awards for their work over the past year. Please see the list in the newsletter and congratulate the awardees when you see them. Please nominate your deserving colleagues for next year's awards.

Thank you to the new officers who have been elected for this next year: Troy Vogel as Chair-elect and Matthew Cooper as Director. Cheryl Bodnar continues to serve as Secretary/Treasurer, and Milo Koretsky as Director. Christi Patton Luks is now Past-Chair. Thank you for your work to make this division run!

Let's get out there and do our best to help our students learn!

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2016 ASEE Chemical Engineering Division Award Recipients



William H. Corcoran Award

For the best paper published in the previous calendar year
in *Chemical Engineering Education*:

Sponsored by Eastman Chemical Corporation

Randy D. Weinstein
(Villanova University) is
recognized for his paper,
"Improved Performance via
the Inverted Classroom"



Joseph J. Martin Award

For the best paper in the ChE Division:

**Jacob J. Elmer, Noelle K. Commolli, William J. Kelly,
and Zuyi (Jacky) Huang (Villanova University)** are
recognized for their paper "Preparation of Biology Review
and Virtual Experiment / Training Videos to Enhance
Learning in Biochemical Engineering Courses"



Best Poster Award

For the best poster in the ChE Division:

**Christi L. Patton Luks (Missouri University of Science
& Technology) & Laura P. Ford (University of Tulsa)**
are recognized for their poster "Analysis of a Small
Gamification Addition to Labs"



CACHE Award

For contributions to computing in chemical engineering:

Sponsored by the CACHE Computing Corporation

Milo Koretsky (Oregon State University)

Milo Koretsky is a Professor
of Chemical Engineering at
Oregon State University. He
received his B.S. and M.S.
degrees from UC San Diego
and his Ph.D. from UC
Berkeley, all in Chemical
Engineering. He currently

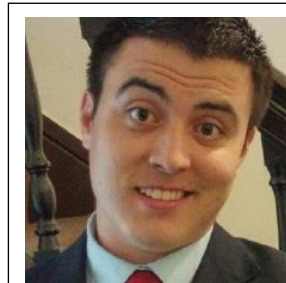


has research activity in areas related to engineering
education and is interested in integrating technology into
effective educational practices and in promoting the use of
higher-level cognitive and social skills in engineering
problem solving. Towards this end, his group has
developed innovative tools including the AIChE Concept
Warehouse, the Industrially - Situated Virtual Labs, and
the concept-based Interactive Virtual Labs. His research
interests particularly focus on what prevents students from
being able to integrate and extend the knowledge
developed in specific courses in the core curriculum to the
more complex, authentic problems and projects they face
as professionals.

ChE Division Graduate Student Future Faculty Grant

For chemical engineering graduate students who have not
presented at an ASEE Annual
Conference:

Matthew R. Markovetz
(University of Pittsburgh)



2016 ASEE Chemical Engineering Division Award Recipients



Chemstations Lectureship Award *Sponsored by Chemstations, Inc.*

Mark Prausnitz
(Georgia Institute of
Technology)



Mark Prausnitz is a Regents Professor and holds the J. Erskine Love Jr. Chair in Chemical & Biomolecular Engineering at the Georgia Institute of Technology. He earned his BS from Stanford and PhD from MIT, both in chemical engineering. In addition to teaching mass and energy balances to sophomores, Dr. Prausnitz has developed courses on pharmaceutical development for senior undergraduates at Georgia Tech and doctoral students from multiple Atlanta-area universities that emphasize the holistic process of bringing a drug from concept to the market. Dr. Prausnitz and his colleagues carry out research on biophysical methods of drug delivery, which employ physical mechanisms, including microneedles, lasers, ultrasound, electric fields and heat, to control the transport of drugs and vaccines in the body. Dr. Prausnitz's microneedle technology has been the focus of six human clinical trials and he has co-founded four start-up companies. Dr. Prausnitz supervises a laboratory containing 25 doctoral and postdoctoral researchers, has published more than 225 peer-reviewed articles, has given more than 200 invited talks and has won numerous awards.

Ray W. Fahien Award

For outstanding teaching effectiveness and educational scholarship for faculty members in their first 10 years:

Dr. Matthew Cooper is a Teaching Assistant Professor in the Department of Chemical and Biomolecular Engineering at North Carolina State University where he teaches Material and Energy Balances, Unit Operations, Transport Phenomena and Mathematical/Computational Methods. He is the recipient of the 2014 NCSU Outstanding Teacher Award, 2014 ASEE Southeastern Section Outstanding New Teacher Award, and currently serves as the National ASEE Chemical Engineering Division's newsletter editor. Dr. Cooper's research interests include effective teaching, conceptual and inductive learning, integrating writing and speaking into the curriculum and professional ethics.

Matthew E. Cooper
(North Carolina State University)



**Congratulations to
all ChE Division
Award Winners!**



Announcing 2017 ASEE ChE Division Awards!



Send one file to ASEE ChE Division Award Chairs: Bernard Van Wie (bvanwie@wsu.edu) and Joseph Menicucci (joseph.menicucci@montana.edu)

ASEE ChE Division Lectureship Award

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. The recipient presents a lecture at the ASEE summer school. The award consists of a \$3,000 honorarium, \$500 travel allowance, and a commemorative plaque presented at the Chemical Engineering Division Banquet of the ASEE Annual Conference.

CACHE Award for Excellence in Computing in Chemical Engineering Education

This award, sponsored by the CACHE Corporation, is presented for significant contributions in the development of computer aids for chemical engineering education. The award consists of a \$1,000 honorarium and a commemorative plaque presented at the Chemical Engineering Division Banquet of the ASEE Annual Conference.

Ray W. Fahien Award

This award is given in honor of Ray Fahien, who was editor of Chemical Engineering Education from 1967-1995, and who was effectively the founding father of the journal, establishing it as a premier publication vehicle in the field of chemical engineering education. Professor Fahien selflessly gave his time and talents to advance pedagogical scholarship, particularly in the careers of young educators, through his dedication to the journal and the profession. The award is given annually to an educator who has shown evidence of vision and contribution to chemical engineering education, consists of a \$1,500 honorarium and a commemorative plaque presented at the Chemical Engineering Division Banquet of the ASEE Annual Conference. See the Division web site for more details on the award criteria. Educators who have been faculty members for not more than ten years as of July 1st in the year of the award are eligible.

Donald R. Woods Lifetime Achievement

Award in Chemical Engineering Pedagogy

This award is given in honor of Donald R. Woods, a renowned engineering educator and long-time faculty member at McMaster University. This award will normally be given for lifetime achievement, recognizing a sustained career of contributions to pedagogical practice, scholarship, and/or mentoring that not only caused innovative and substantial changes, but also inspired other educators to new behaviors that benefit students in Chemical Engineering. The award will be presented on an as merited basis, not necessarily annually. Acceptance of the award implies the obligation to attend the Chemical Engineering Division Awards Banquet at the ASEE Annual Conference.

The following awards do not require a formal nomination packet:

William H. Corcoran Award

This award is presented each year for the most outstanding article published in *Chemical Engineering Education*. Nominations are not accepted. All published papers in a calendar year are automatically considered. The award consists of a \$1500 honorarium (per paper) and a commemorative plaque presented at the Chemical Engineering Division Banquet of the ASEE Annual Conference.

Best Poster Award

The Best Poster Award is presented for the most outstanding Chemical Engineering Division poster presentation at the ASEE Annual Conference. Nominations are not accepted. Papers must be presented at the chemical engineering division poster session to be considered. The award consists of a commemorative plaque presented at the Chemical Engineering Division Banquet of the ASEE Annual Conference.

Joseph J. Martin Award

The Joseph J. Martin Award is presented for the most outstanding Chemical Engineering Division paper presented at the ASEE Annual Conference. Nominations are not accepted. All papers presented that also appear in the conference proceedings are automatically considered. The award consists of a commemorative plaque presented at the Chemical Engineering Division Banquet of the ASEE Annual Conference.

Call for Nominations

The Chemical Engineering Division of ASEE presents awards to outstanding chemical engineering educators at the Division Banquet during the annual ASEE meeting. Nominations of candidates for awards to be presented at the 2017 meeting in Columbus, OH are due by January 15, 2017, with the winners notified in March 2017.

Please consider nominating one of your faculty or a colleague at another school for an ASEE Chemical Engineering Division Award!

Award packets should be sent (as a single file) to:
Bernard Van Wie (bvanwie@wsu.edu) and
Joseph Menicucci (joseph.menicucci@montana.edu)
ASEE ChE Division Awards Chairs



Instructions for Assembling Nomination Packets

Please assemble the nomination package in the following order. These instructions parallel those available at www.asee.org. Nominating a faculty member for an award implies that the nominee has been informed and consents to the nomination and conditions of the award.

Do not submit to ASEE headquarters or through their web page.

Submit nominations electronically following the procedure described below to the ASEE ChE Division Awards Chairs by January 15, 2017.

Paper submissions will not be accepted.

Nominations should be sent as ONE Word or PDF file. The document should have sections for nominee information, citation, rationale, curriculum vitae, additional information as required for that award, and letters of support. It is the nominator's responsibility to assemble all of the pertinent information into ONE electronic document that committee members can easily read.

1. Nominee Information – list the information found on the general ASEE awards form that may be found at http://www.asee.org/members/awards/nomForm_paper.cfm
2. Include a 100-word maximum Citation, which will be used if the nominee wins the award.
3. Include a 700-word maximum description of the Rationale for the Nomination.

4. Include a Curriculum Vitae containing the following information: Degrees earned (university and granting dates); other postgraduate study; record of positions held; publications, including all books, published papers and articles; ASEE activities and offices held; awards, honors and inventions, etc.
5. Include Other Supporting Information as required for that particular award. Please see the Chemical Engineering Division web site for details on particular award criteria.
6. Include a maximum of 8 Letters of Support for the nomination. These letters may be from peers, students, and/or former students as appropriate to the award.

Any nominee for an award may be re-nominated using the original nomination package for one additional year only by sending an email to the Awards Chair along with the electronic award nomination. However, reference letters should be updated for the year of the renewed application. After the re-nomination a complete new nomination is required.

Submit the entire nomination as ONE electronic file to bvanwie@wsu.edu and joseph.menicucci@montana.edu by January 15, 2017. General, procedural or other questions about the awards should be directed to these Awards Committee Chairs.

Contact the Awards Committee Chairs, Bernard Van Wie (bvanwie@wsu.edu) and Joseph Menicucci (joseph.menicucci@montana.edu) or consult the Division website (<http://www.asee-ched.org>) for more information.



Inviting Mentoring Grant Applications for 2017!

Send one file to: Bernard Van Wie (bvanwie@wsu.edu) and Joseph Menicucci (joseph.menicucci@montana.edu)

ChE Division Young Faculty / Future Faculty Mentoring and Travel Grant

All chemical engineering or chemistry faculty within their first two years of teaching, or graduate students in chemical engineering or a related field and intending to go into teaching as a career are eligible. There will be at most one or two grants per year.

Applications are due October 31, 2016. Applicants must have submitted an abstract to meet the mid-October deadline for the following summer's ASEE conference. For *faculty* the application consists of a curriculum vita, a maximum one-page statement of interest in educational scholarship and a copy of any submitted abstracts. For *graduate students* the application consists of a one-page nomination letter by a faculty member who is a member of ASEE, the student's resume, and the abstract of any ASEE talks with the student as a coauthor. Applications will be reviewed by a committee consisting of the awards chairs and directors. If there is a conflict of interest, the directors will identify another member of the committee. Award announcements will be within two weeks of the application submission.

The amount of the grant is \$900, intended to subsidize travel to the conference, and will include a ticket to the ChE Division Banquet. A condition of the grant is that the winner attends the meeting and presents their paper. The grant will be presented at the ChE Division Banquet. The grant winner(s) will be provided with a ChE Division mentor (an individual determined by the ASEE CHED executive committee) who will meet with the grant winner for both formal and informal interactions during the meeting. Preference will be given to first-time attendees at the ASEE Annual Conference. For graduate students the grant is intended to build upon the existing ASEE "Bring-A-Student" program.

The previous ChE Division Mentoring and Travel Grant for New Attendees and the ChE Division Graduate Student "Future Faculty" Grant have been combined into one larger award named the ChE Division Young Faculty / Future Faculty Mentoring and Travel Grant. Be sure to encourage young educators to apply!

ChE Division "Engineering Education" Mentoring Grant

All chemical engineering or chemistry faculty who have not attended an ASEE Annual Conference in the past five years are eligible for this grant. More than one grant may be given annually. A faculty member may apply for this grant by January 15, 2017. The application consists of a curriculum vitae and a maximum one-page statement of interests in educational scholarship.

Applications will be reviewed by a committee consisting of the awards chairs and directors. If there is a conflict of interest, the directors will identify another member of the committee. The grant will be a ticket to the ChE Division Banquet. The grant winner(s) will be provided with a ChE Division mentor (an individual determined by the ASEE CHED executive committee) who will meet with the grant winner for both formal and informal interactions during the meeting.

Application Deadlines:

Young Faculty / Future Faculty Travel Grant:

October 31, 2016!

"Engineering Education" Mentoring Grant:

January 15, 2017!

- A condition of receiving most awards and mentoring grants is attendance at the Chemical Engineering Division banquet at the 2017 ASEE Annual Meeting in Columbus, OH June 25 – 28 2017.
- For more information on national and other awards, visit the ASEE awards page at <http://www.asee.org/member-resources/award>

CALL for PAPERS!

2017 ASEE Annual Meeting

June 25 – 28, 2017 in Columbus, OH



The Chemical Engineering Division (ChED) of ASEE invites papers for the 2017 Annual Conference and Exposition in Columbus, Ohio (June 25-28, 2017). Papers on all topics related to chemical engineering education will be considered. In addition, suggestions / proposals for panel discussions, workshops and cross-divisional sessions are welcome.

2017 will be a Year of Action in STEM as related to P-12 activities (Preschool – Grade 12), so topics relating to outreach activities, encouraging underrepresented groups in STEM, and effective programs for STEM pipeline building are especially welcomed. Other topics of interest to ChED include, but are not limited to:

• Innovative use of technologies and new pedagogies in chemical engineering education.	• Learning outcomes, assessment, and accreditation of chemical engineering programs.
• Contemporary perspectives (or new advances) in chemical engineering education.	• Diversity initiatives in chemical engineering programs.
• Incorporating safety and regulatory compliance in chemical engineering curricula.	• Teaching professional skills in chemical engineering courses - critical thinking, creativity, communication, and collaboration skills.
• Non-traditional learning experiences such as experiential, inquiry-based, problem-based, and immersive learning in chemical engineering.	• Bring-your-own-experiment in chemical engineering (hands-on, online, and virtual).
• Business and entrepreneurship literacy in chemical engineering.	• All other topics related to chemical engineering education.

Deadlines:

- *Abstract Submission Opens:* Tuesday, September 6th, 2016
- *Abstract Submission Closes:* Sunday, October 16th, 2016
- *Notification on Abstract Acceptance/Rejection:* No later than Sunday, November 6th, 2016

Abstract submission window opened September 6 and closes October 16, 2016!

Community Announcements

Welcome new ASEE ChE Division Officers!

- *Division Chair-Elect:* Troy Vogel
- *Director:* Matthew Cooper

Awards for ASEE ChE Division Members!

Congratulations to...

- Michael J. Prince on being named an ASEE Fellow!
- Milo Koretsky on receiving the William Elgin Wickenden Award for best paper published in JEE (with D. Friedrichsen, B. Sherret, E. Gummer and A. Champagne)!
- Milo Koretsky, Margot Vigeant, and Michael Prince on receiving the Best Paper Award in ASEE PIC 1 (with S. Mihelic and K. Nottis)!

US Didactic donates to ASEE ChE Division!

The ASEE CHED would like to thank US Didactic for their generous donation of \$1500 to the division. Pictured to the right is US Didactic representative Oliver Scheel presenting the donation to Past-Chair Christi Patton Luks at the recent ASEE Annual Conference in New Orleans!



Photo Credits:

1. <http://www.oilfieldchristianfellowship.com/PageDisplay.asp?p1=9555>
2. PackPix, located at <http://www.ncsu.edu/photos>.

Send announcements for future issues of the
ASEE CHED Newsletter to

Matthew Cooper at mecoope3@ncsu.edu

July 29 - August 4, 2017
North Carolina State University
Raleigh, North Carolina



Chemical Engineering Division

Faculty Summer School

Presenter Proposals: June 1 - Nov. 30, 2016

Participant Registration: Nov. 1, 2016 - Jan. 31, 2017

**Since 1931, the ChE Summer School has offered
early-career faculty:**

- Professional development workshops
- Keynote lectures and panels
- Networking opportunities
- Family-oriented activities

In collaboration with the



www.chesummerschool.org