

# ASEE Chemical Engineering Division Newsletter

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## A Message from the Chair:



**Troy Vogel**

University of Notre Dame

### **In this issue...**

#### **Chair's Message**

Page 1

#### **CBEC Tour**

Page 2

#### **Award Recipients**

Pages 3-5

#### **Call for Nominations**

Pages 6-9

#### **Highlights from Summer School**

Pages 10-15

#### **Call for Papers**

Page 16

#### **Community Announcements**

Pages 17-18 – send any announcements you'd like included in future newsletters to [elif.miskioglu@bucknell.edu](mailto:elif.miskioglu@bucknell.edu)

What happened to summer? Many of us enjoyed a short break, others finally completed those little jobs which didn't have enough priority during the school year, others got around to finally finishing those home projects. Many of you were

at either or both of our outstanding conferences this summer.

Is the room half full or half empty? Well if you make it half as large as it needs to be, it's standing room only! Despite the room confusion, the national conference in Columbus (or Columbis, did you notice the misspelling?) was quite lively even until the Wednesday sessions. Many new friendships were formed and old ones strengthened. I am looking forward to Salt Lake City next summer. Our new programming chair, Dan Anastasio, has been working hard to put together an inspiring list of topics to help guide our programing. Abstracts are due soon, **October 18<sup>th</sup>**.

The 2017 summer school was exceptional as well. We had an unseasonably pleasant mid-70's and sunny week in Raleigh, NC full of over 170 inspired new chemical engineering faculty members. There were 55 workshops, 4 plenaries, and 3 evenings of participant posters. A big THANK YOU! to the organizing team, Lisa Bullard, Kevin Dahm, Jason Keith, David Silverstein, and Don Visco, for your dedication to the next generation of chemical engineering educators.

I am finally being acclimated to my new position at Notre Dame. A blessing and a curse of the Chemical Engineering curriculum is that it is more or

less the same in any program; M&E balance, thermo, transport, reactors... I suppose this makes it easy for academics, but does it serve our students and employers well?



Thank you to the new officers who have just started their terms: Josh Enszer will serve as Chair-elect, Ashlee Ford Versypt as Director, Milo Koretsky and Margot Vigeant as Awards Co-Chairs, and Elif Miskioğlu as Editor. Cheryl Bodnar will continue to serve as Secretary/Treasurer. Laura Ford is now the Past-Chair. Thank you all for helping this division serve the community of Chemical Engineering Educators.



# Columbus Highlight: CBEC Tour



At ASEE, the Chemical Engineering Division was treated to a special tour of Ohio State's Chemical and Biomolecular Engineering and Chemistry Building (known as CBEC). Department chair, Andre Palmer, and Associate Dean and Professor of Chemical Engineering, David Tomasko, gave welcoming remarks. Tours were led by graduate students, as well as faculty John Clay and Andy Maxson.



In addition to offering samplings of Columbus's finest food and drink, attendees were able to see CBEC's state of the art laboratory and teaching spaces, including the multi-story glass distillation column in the unit ops lab.



# 2017 ASEE Chemical Engineering Division Award Recipients

## Congratulations to all our award winners!

### **Lifetime Achievement Award in Chemical Engineering Pedagogy**

(in recognition of a lifetime of achievement in pedagogical scholarship  
and contribution to chemical engineering education)

***Presented by the Journal of Chemical Engineering Education***

John L. Falconer is the Mel and Virginia Clark Professor of Chemical and Biological Engineering and a President's Teaching Scholar at the University of Colorado Boulder. He has published more than 230 papers and has 19 patents in the areas of zeolite membranes, heterogeneous catalysis, photocatalysis, and atomic and molecular deposition. He has also published 11 papers related to education. He has directed the effort at the University of Colorado Boulder to prepare screencasts, ConcepTests, interactive simulations, and course packages for chemical engineering courses.



John D. Falconer  
University of Colorado

### **Lectureship Award**

***Sponsored by the ASEE Chemical Engineering Division***

Lorenz T. (Larry) Biegler is currently the Bayer University Professor and Head of Chemical Engineering at Carnegie Mellon University, which he joined after receiving his PhD from the University of Wisconsin in 1981. His research interests lie in computer aided process engineering (CAPE) and include flowsheet optimization, optimization of systems of differential and algebraic equations, reactor network synthesis and algorithms for constrained, nonlinear process control. Prof. Biegler has been an institute fellow at the National Energy Technology Lab, a visiting scholar at Northwestern University and Lehigh University, a scientist-in-residence at Argonne and Sandia National Labs, a Distinguished Faculty Visitor at the University of Alberta, a Chang Jiang scholar at Zhejiang University, a Gambinus Fellow at the University of Dortmund, a Fulbright Fellow at the University of Heidelberg, a Distinguished Jubilee Lecturer at IIT-Bombay and the Hougen Visiting Professor at the University of Wisconsin. He is an author on over 300 archival publications and two books and has given numerous invited presentations at national and international conferences.



Lorenz T. Biegler  
Carnegie Mellon University

# 2017 ASEE Chemical Engineering Division Award Recipients

## Ray W. Fahien Award

(for outstanding teaching effectiveness and educational scholarship  
for faculty members in their first 10 years)

Cheryl A. Bodnar, Ph.D., CTDTP is an Assistant Professor in the Department of Experiential Engineering Education at Rowan University. Dr. Bodnar's research interests relate to the incorporation of active learning techniques in undergraduate classes as well as integration of innovation and entrepreneurship into the engineering curriculum. In particular, she is interested in the impact that these tools can have on student perception of the classroom environment, motivation, and learning outcomes. She obtained her certification as a Training and Development Professional (CTDTP) from the Canadian Society for Training and Development (CSTD) in 2010, providing her with a solid background in instructional design, facilitation, and evaluation. She was selected to participate in the National Academy of Engineering (NAE) Frontiers of Engineering Education Symposium in 2013 and awarded the American Society for Engineering Education Educational Research Methods Faculty Apprentice Award in 2014.



Cheryl Bodnar  
Rowan University

## Joseph J. Martin Award

(for best paper in the ChE  
Division at the previous ASEE  
Meeting that also appears in the  
proceedings)

"Enhancing Conceptual Testing  
with Technical Writing"



Matthew Cooper  
North Carolina State University

## Best Poster Award

(for best poster at the previous  
ASEE Meeting)

"Self-Efficacy in Senior Design:  
Effects of Time and Team"



Elif Miskioğlu  
Bucknell University

## ChE Division Young Faculty/Future Faculty Mentoring and Travel Grant



Negar Beheshti Pour  
Washington State University

# 2017 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 the ASEE Chemical Engineering Division***



Michael Prince  
Bucknell University



Margot Vigeant  
Bucknell University



Katharyn Nottis  
Bucknell University

**Inspired to nominate a colleague for  
an award? Check out the call for  
nominations on the next page!**

# Call for Nominations

## Announcing 2018 ASEE ChE Division Awards!

Send packet contents (instructions on next page) as a single file to ASEE ChE Division Award Chairs:  
Margot Vigeant ([mvigeant@bucknell.edu](mailto:mvigeant@bucknell.edu)) and Milo Koretsky ([milo.koretsky@oregonstate.edu](mailto:milo.koretsky@oregonstate.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 small honorarium, \$500 travel allowance, and a commemorative plaque presented at the Chemical Engineering Division Banquet of the ASEE Annual Conference.

### 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 Thomas and Donna Edgar 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 small 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 W. 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 small honorarium and a commemorative plaque presented at the Chemical Engineering Division Banquet of the ASEE Annual Conference. See the Division website 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.

# Call for Nominations: Instructions for Nominating

The Chemical Engineering Division of ASEE presents awards to outstanding chemical engineering educators (described on previous page) at the Division Banquet during the annual ASEE meeting. Nominations of candidates for awards to be presented at the 2018 meeting in Salt Lake City, UT are due by January 15, 2018, with the winners notified in March 2018.

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

## ***Instructions for Assembling Nomination Packets***

Please assemble the nomination package in the following order:

- 1) Nominee Information – list the information found on the general ASEE awards form that may be found at [http://ched.asee.org/wp-content/uploads/2016/01/ASEE-ChED\\_Award-Nomination-Form.doc](http://ched.asee.org/wp-content/uploads/2016/01/ASEE-ChED_Award-Nomination-Form.doc). Include a 100-word maximum Citation, which will be used if the nominee wins the award.
- 2) Include a 700-word maximum description of the Rationale for the Nomination.
- 3) 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.
- 4) Include Other Supporting Information as required for that particular award. Please see the Chemical Engineering Division website for details on particular award criteria.
- 5) 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.

These instructions parallel those available at [www.asee.org](http://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.

## ***Instructions for Submission***

Award packets should be sent (as a single Word or PDF file) to ASEE ChE Division Award Chairs:

Margot Vigeant ([mvigeant@bucknell.edu](mailto:mvigeant@bucknell.edu)) and Milo Koretsky ([milo.koretsky@oregonstate.edu](mailto:milo.koretsky@oregonstate.edu))

Deadline: January 15, 2018

It is the nominator's responsibility to assemble all of the pertinent information into ONE electronic document that committee members can easily read.

*Do not submit to ASEE headquarters or through their web page. Paper submissions will not be accepted.*

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.

Contact the Awards Committee Chairs, Margot Vigeant ([mvigeant@bucknell.edu](mailto:mvigeant@bucknell.edu)) and Milo Koretsky ([milo.koretsky@oregonstate.edu](mailto:milo.koretsky@oregonstate.edu)) or consult the Division website (<http://www.asee-ched.org>) for more information; note amounts and dates on website may be out of date.

# Call for Nominations: Mentoring Grants

## Inviting Mentoring Grant Applications for 2017!

Application Deadline for these Mentoring Grants is October 31, 2017!

Send a single file to ASEE ChE Division Award Chairs:\*

Margot Vigeant ([mvigeant@bucknell.edu](mailto:mvigeant@bucknell.edu)) and Milo Koretsky ([milo.koretsky@oregonstate.edu](mailto:milo.koretsky@oregonstate.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 of each year. 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.

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.

### **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. The application consists of a curriculum vitae and a maximum one-page statement of interests in educational scholarship. 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.

\*A condition of receiving most awards and mentoring grants is attendance at the Chemical Engineering Division banquet at the 2018 ASEE Annual Meeting in Salt Lake City, UT June 23-27, 2018.

# Additional Awards

The following awards do not require a formal nomination packet, but we would like you to be aware of them:

## **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 small 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.

**For more information on national and other awards, visit the ASEE awards page at <https://www.asee.org/member-resources/awards>**

# Highlights from Summer School

## A word from the 2017 Summer School Chair...

The 2017 ASEE Chemical Engineering Summer School for Faculty recently concluded its run at North Carolina State University. As usual, there were a plethora of sessions conducted by leaders in chemical engineering education and research; posters presented by the newest generation of chemical engineering faculty to share their research and pedagogy; and great deal of comradery as networking opportunities abounded.

This Summer School featured a total of 242 registered attendees, of which 171 were new faculty members. This is a significantly larger Summer School than the previous 15, reflecting the rapid growth and turnover of the ChE professorate over the past five years.

The program was highlighted by several featured plenaries and other events. Leading off the meeting was an effective teaching workshop led by Rebecca Brent and Rich Felder. Nicholas Peppas contributed a historical perspective on chemical engineering education and exhorted faculty present to excel in all aspects of their practice. Phil Wankat presented a career-long perspective on executing effectively the role of faculty member. The Industry Day plenary gave attendees a chance to hear the industry perspective on process safety from Buddy Lang of Chevron and Tony Go of ExxonMobil, moderated by Troy Vogel.

The Summer School would not have been possible without external support. A grant from the National Science Foundation, our Diamond Sponsors Chevron and ExxonMobil, and our Graphite Sponsor International Paper enabled the planning team to pay forward their experiences at past Summer Schools. Lisa Bullard, Kevin Dahm, Jason Keith, David Silverstein, and Don Visco worked for the previous five years preparing for the event, assisted by Matt Cooper, Chuck Coronella, Marina Miletic, and Troy Vogel along with a host of NC State students to complete and execute the program.

Those interested in gaining access to workshop, plenary, and other resources (including photos) from the Summer School are invited to contact Kevin Dahm ([dahm@rowan.edu](mailto:dahm@rowan.edu)). Access is restricted to faculty members to protect course materials including solutions.



David Silverstein  
University of Kentucky

## Thank you to the 2017 Summer School Planning Team!



Lisa Bullard



Kevin Dahm



Jason Keith



Don Visco



Matt Cooper



Chuck Coronella



Marina Miletic



Troy Vogel

# Highlights from Summer School

## The Effective Teaching Institute by Richard Felder and Rebecca Brent



# Highlights from Summer School

## Insightful Plenaries



Education Plenary:  
Phil Wankat



Summer School Lecture:  
Nicholas Peppas



Industry Plenary: Tony Go and Buddy Lang



# Highlights from Summer School

## Fast-paced and Hands-on Technical Program



# Highlights from Summer School

## Developing Community: Food, Drink, and Games



# Highlights from Summer School

**Save the Date:  
Next Summer School is in 2022!**





# Call for Papers

## 2018 ASEE Annual Meeting June 24-27, 2018 in Salt Lake City, Utah

The Chemical Engineering Division (ChED) of ASEE invites papers for the 2018 Annual Conference and Exposition in Salt Lake City, Utah (June 24-27, 2018). 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.

Other topics of interest to ChED include, but are not limited to:

- Innovative use of technologies and new pedagogies in chemical engineering education.
- Contemporary perspectives (or new advances) in chemical engineering education
- Incorporating safety and regulatory compliance in chemical engineering curricula.
- Non-traditional learning experiences such as experiential, inquiry-based, problem-based, and immersive learning in chemical engineering.
- Bring-your-own-experiment/demo in chemical engineering (hands-on, online, and virtual).
- Works-in-progress you would like to discuss or solicit for feedback
- Learning outcomes, assessment, and accreditation of chemical engineering programs.
- Diversity initiatives in chemical engineering programs.
- Teaching professional skills in chemical engineering courses - critical thinking, creativity, communication, and collaboration skills.
- “What I Learned at CHE Summer School 2017” Ideas you have implemented based on take-aways from the ASEE ChED Summer School
- Business and entrepreneurship literacy in chemical engineering.
- All other topics related to chemical engineering education.

### Deadlines:

- **Abstract Submission Opens:** Tuesday, September 5<sup>th</sup>, 2017
- **Abstract Submission Closes:** Wednesday, October 18<sup>th</sup>, 2017
- **Notification on Acceptance/Rejection of Abstracts:** No later than Monday, November 6<sup>th</sup>, 2017



# Community Announcements: Special Endowment

## **H. Scott Fogler Endowment AIChE Chem-E-Car Competition® First Place Prize**



To recognize Scott Fogler's transformative impact on chemical engineering education, the AIChE Foundation has renamed and permanently endowed AIChE's Annual Chem-E-Car Competition® First Place Prize in his honor.

Colleagues, friends, and former students of Scott's have established this endowment to honor his legacy and commitment to the education of students and the practice of chemical engineering. Scott founded AIChE's signature Chem-E-Car Competition which has since been held throughout the world.

Scott was the 2010 AIChE President and is currently the Ame and Catherine Vennema professor of chemical engineering and the Arthur F. Thurnau professor at the University of Michigan in Ann Arbor.

The renaming of the Competition First Place Prize will be announced at the Annual AIChE Meeting and Student Conference in Minneapolis on October 29-November 3, 2017.

For more information about how you can join the effort to support the H. Scott Fogler Endowment, please go to <https://www.aiche.org/giving/impact/funds/h-scott-fogler-endowment> and/or contact [giving@aiche.org](mailto:giving@aiche.org). To make a contribution online, please go to <https://ecommerce.aiche.org/PersonifyEbusiness/Default.aspx?TabID=1514&productid=20538079&setskin=aiche>.



# Community Announcements (Continued)

## Job Posting

Campbell University seeks a Chemical Engineering Faculty to fill a full-time, tenure-track position at the rank of Assistant, Associate or Full Professor, beginning January 2018. Campbell founded a new School of Engineering in 2016 that offers the Bachelor of Science degree in General Engineering with concentrations in Mechanical Engineering and Chemical Engineering (with a pharmaceutical focus). The program utilizes an innovative hands-on, project-based approach to engineering education to ensure a strong foundation in engineering fundamentals while providing flexibility through multiple concentrations and collaborations with the College of Pharmacy and Health Sciences, multiple health science programs, and the College of Arts and Science, among others. This position intends to assist with development and implementation of the junior and senior years of the chemical engineering concentration, to include lecture courses and laboratory experiences. The position offers a unique opportunity for a scholar to provide leadership in building an innovative engineering program and in building the prominence of the new School and the University. For more information, see:

<http://chp.tbe.taleo.net/chp01/ats/careers/requisition.jsp?org=CAMPUNIV&cws=1&rid=1174>

## Educational Resource

Dr. Jeff Sirola has recorded a set of 10 videos on "Industrial Chemical Technology". This course was taught at CMU while Jeff was an instructor there. The videos (total 28 hours) are available at: <http://www.cmu.edu/cheme/education/online/industrial-chemical-technology.html>

The course was first offered at Carnegie Mellon University in 2011 while Dr. Sirola was the Distinguished Professor in Energy Systems. He is currently Professor of Engineering Practice at Purdue University. The course, which was primarily aimed at junior students of Chemical Engineering and Public Policy, was extremely well received as it provides a comprehensive view on the evolution of the chemical industry, emphasizing major technology changes and sustainability issues.

This course surveys key sectors of the chemical processing industries and discusses the structure of the industry and the historical development and evolution of the technologies which have shaped them and the common flowsheet elements which have proven to be commercially successful. Examples are drawn from a range of industry sectors, production scales, chemistries, and enabling technologies. The industry is examined in light of factors which have most influenced its development including raw materials of choice, energy availability, and the development of new unit operations, as well as those which will influence its future course including advances in science and technology, environmental impact minimization, water availability, and sustainability concerns.

## Photo Credits

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**Summer School:** Lisa Bullard, group photos Viki Redding; **Salt Lake City Skyline:** CountryLemonade