

ASEE Chemical Engineering Division Newsletter

Editor: Elif Eda Miskioğlu, Bucknell University (elif.miskioглу@bucknell.edu)

A Message from the Outgoing Chair:



David Silverstein
University of Kentucky

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Call for Community Announcements

Please send any announcements you'd like included in the monthly newsletter to elif.miskioглу@bucknell.edu.

Dear ASEE Chemical Engineering Division,

It seems hard to believe that the summer is well underway, and that means it is time for the ASEE Annual Meeting and Exposition. Our time to Baltimore will be well spent thanks to the efforts of *Program Chair Janie Brennan*, *Local Arrangements Chair Neha Raikar*, and the scholarship of our authors presenting their work. If you haven't already made your plans to participate, perhaps the schedule of sessions plus special events (starting page 4) will entice you to make a last-minute trip to Baltimore's Inner Harbor!

In addition to the aforementioned conference information, we have more news of importance. Our elections were recently concluded resulting in some terrific additions to your Division leadership (see page 2). As a bonus for those attending, you'll have the opportunity to meet those officers (and other members) that you don't already know. While the scholarly aspect of our meeting is important, I have always believed that the opportunity to engage with our colleagues was the real value-add of attendance. So do not hesitate to reach out and meet a few new people (even if you're an introvert like me—we can meet and then talk or not talk depending on where our social reserves are at the time!) while at the conference.

I would be remiss if I didn't emphasize that if you're interested in getting involved with Division activities, we have a range of chances for you to do so. Some are elected positions, and some are appointed. Plus we're always interested in supporting our colleagues with ideas we can help make a reality. Just come to our business meeting on Tuesday of the Conference, or reach out to any of our officers.

This conference also marks the beginning of the end of my service to the Division as your chair. I am grateful for the chance to serve in this role as our Institutional Leadership has risen to the need to address the fiscal challenges faced by ASEE. Despite the constraints of deferred financial resources, we've still been able to plan our banquet (thanks again Neha!), award our recognitions (thanks *committee co-chairs Margot Vigeant and Ashlee Ford Versypt* and our many reviewers), and execute our conference plan. Our key activities (both of which are funded independently from ASEE) remain strong, with an excellent 2022 Summer School led by *Margot Vigeant* and her crew and a high quality yet rapidly developing *Chemical Engineering Education* journal led by *Editor Don Visco* and *Publications Board Chair Milo Koretsky*.

In the midst of facing acute challenges, I have been highly impressed (and not extremely surprised) at how our community has responded. There have been many good questions asked, but none with malice. There has been concern expressed, but often accompanied by offers to help. Because of our shared commitment to our students and each other (and the leadership resulting from that commitment), ASEE and the ChED will emerge from this situation stronger than ever.

I am very pleased to be able to turn leadership of this Division over to the very capable *Reg Rogers* as *incoming Chair* and *Janie Brennan* as *incoming Chair-elect* at the end of the month. While I cannot imagine a time not being involved with the ChED, I know each of these individuals will leave their mark in service through their leadership.

I look forward to seeing many of you in Baltimore!

David Silverstein

2022-23 ASEE ChED Chair

ChED Elections

Congratulations to Our Elected Officers!

Chair-Elect

Will serve as chair
of ChE Division for 2023 - 2024



Janie Brennan
Washington University in St. Louis

Secretary/Treasurer

Will serve as Secretary/Treasurer
of ChE Division for 2023 - 2024



Victoria Goodrich
University of Notre Dame

Director

Will serve as an advisor to the executive
board for a term of 2 years



Nagu Daraboina
University of Tulsa



CEE Corner: Call for Assistant Editor Applicants

Up to 3 Assistant Editor positions available in Chemical Engineering Education

The journal, Chemical Engineering Education (CEE), is published through the Chemical Engineering Division of ASEE (also affiliated with the EdDiv of AIChE). The journal is looking to fill up to 3 Assistant Editor positions.

If you wanted to engage with CEE as an Assistant Editor, now is your opportunity. Details on application requirements can be found [here](#).

From the pool of applicants, the search committee will select several individuals for a virtual interview. Please be sensitive to the application requirements.

Anyone with an interest is encouraged to apply. If you are not interested, but know of someone who might be interested, please encourage them to apply. The deadline for all applications is July 10.

If you have any questions, contact cee@che.ufl.edu.



Community Announcements

Seeking Candidates for AIChE Education Division Board

The Education Division is seeking nominations for 3 open positions:

Second Vice-Chair
Director
Director

The Second Vice-Chair serves on the committee for our conference programming and assists the First Vice-Chair and Chair in conducting Division business. Directors of the division serve on the division board and customarily oversee special division projects such as our Future Faculty Mentoring Program, creating new awards, increasing division membership, etc.

Nominees must be active AIChE and Education Division members.

Nominations are due by July 1st, 2023 – please send them to the chair of the Nominating Committee Ben Davis at ben.davis@cooper.edu

Annual Conference: ChED Summary

Looking for an easy way to access all the ChED session information at your fingertips? Check out the Google calendar of events made by our Program Chair, Janie! Not a google user? Have no fear, Janie made a public URL that's accessible by everyone!

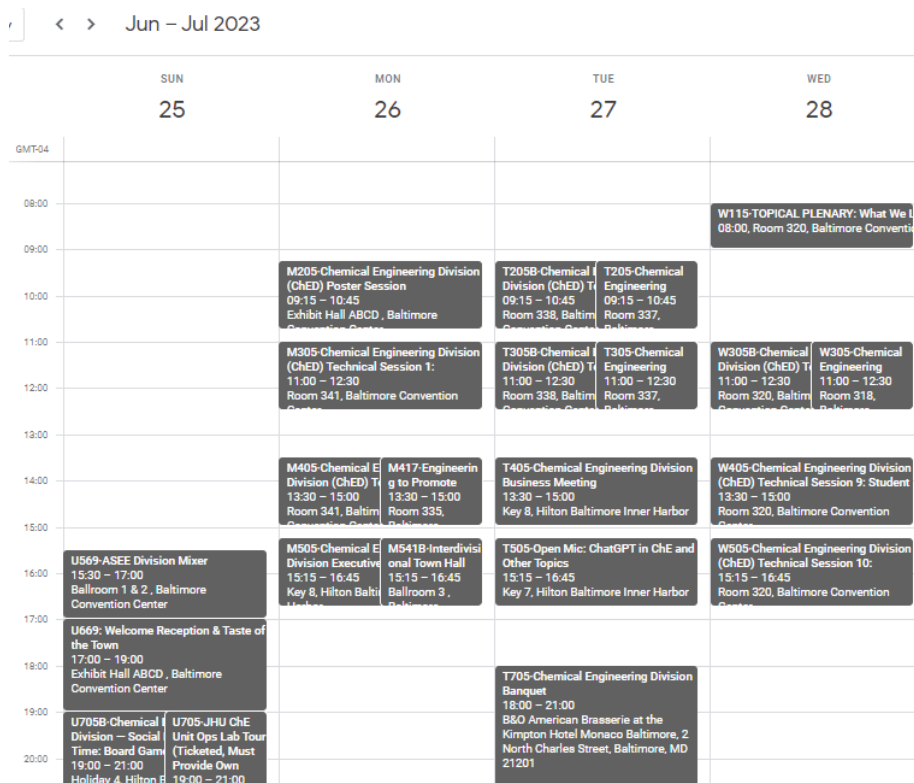
Links and a screenshot of what you'll see is below. Once you open the Google Link or the Public Sharing URL, click on any event to see the full details – session title, location, speaker information. **Big thanks to Janie for putting this together for us!**

Google Link:

<https://calendar.google.com/calendar/u/0?cid=YTEwYmQ0ZmRjMDc2YTA4MGU0Yzg3ZTRjODA5YTBINzY2Y2UzOTQ3ODk5NTEyMzk1YzFmYWY1ODczMzMwMDEzMKBncm91cC5jYWxlbmRhci5nb29nbGUuY29t>

Public URL:

<https://calendar.google.com/calendar/u/0/embed?src=a10bd4fdc076a080e4c87e4c809a0e766ce3947899512395c1faf58733300132@group.calendar.google.com&ctz=America/NewYork>



GMT-04	SUN 25	MON 26	TUE 27	WED 28
08:00				W115-TOPICAL PLENARY: What We L 08:00, Room 320, Baltimore Convent
09:00		M205-Chemical Engineering Division (ChED) Poster Session 09:15 – 10:45 Exhibit Hall ABCD, Baltimore Convention Center	T205B-Chemical Division (ChED) T 09:15 – 10:45 Room 338, Baltimore Convention Center	T205-Chemical Engineering 09:15 – 10:45 Room 337, Baltimore Convention Center
11:00		M305-Chemical Engineering Division (ChED) Technical Session 1: 11:00 – 12:30 Room 341, Baltimore Convention Center	T305B-Chemical Division (ChED) T 11:00 – 12:30 Room 338, Baltimore Convention Center	T305-Chemical Engineering 11:00 – 12:30 Room 337, Baltimore Convention Center
12:00				W305B-Chemical Division (ChED) 11:00 – 12:30 Room 320, Baltimore Convention Center
13:00				W305-Chemical Engineering 11:00 – 12:30 Room 318, Baltimore Convention Center
14:00		M405-Chemical Engineering Division (ChED) T 13:30 – 15:00 Room 341, Baltimore Convention Center	M417-Engineering to Promote 13:30 – 15:00 Room 335, Baltimore Convention Center	T405-Chemical Engineering Division Business Meeting 13:30 – 15:00 Key 8, Hilton Baltimore Inner Harbor
15:00				W405-Chemical Engineering Division (ChED) Technical Session 9: Student 13:30 – 15:00 Room 320, Baltimore Convention Center
16:00	U569-ASEE Division Mixer 15:30 – 17:00 Ballroom 1 & 2, Baltimore Convention Center	M505-Chemical Engineering Division Executive 15:15 – 16:45 Key 8, Hilton Baltimore Inner Harbor	M541B-Interdivisional Town Hall 15:15 – 16:45 Ballroom 3, Baltimore Convention Center	T505-Open Mic: ChatGPT in ChE and Other Topics 15:15 – 16:45 Key 7, Hilton Baltimore Inner Harbor
17:00	U669: Welcome Reception & Taste of the Town 17:00 – 19:00 Exhibit Hall ABCD, Baltimore Convention Center			W505-Chemical Engineering Division (ChED) Technical Session 10: 15:15 – 16:45 Room 320, Baltimore Convention Center
19:00	U705B-Chemical Division – Social Time/ Board Game 19:00 – 21:00 Holiday 4, Hilton Baltimore	U705-JHU ChE Unit Ops Lab Tour (Ticketed, Must Provide Own Food) 19:00 – 21:00 Holiday 4, Hilton Baltimore		T705-Chemical Engineering Division Banquet 18:00 – 21:00 B&O American Brasserie at the Kimpton Hotel Monaco Baltimore, 2 North Charles Street, Baltimore, MD 21201
20:00				

Annual Conference: ChED Special Events

Join ChE Division colleagues at one of our Celebrations or events!

Johns Hopkins University Unit Ops Tour – Ticketed Event

Sunday, June 25th from 7:00 – 9:00 PM

Rideshare dropoff point: Mason Hall, 3101 Wyman Park Dr, Baltimore, MD 21218

You must have a ticket to participate in this event, as there is limited capacity.

Dr. Sakul Ratanaalert and Dr. Nagma Zerine of the Johns Hopkins Department of Chemical and Biomolecular Engineering department will host this tour of their unit operations teaching laboratory. Attendees will have to find own transportation to the site, but ridesharing is encouraged. For help with finding a carpool group, contact ChED Program Chair Janie Brennan.

Chemical Engineering Division — Social Hangout Time: Board Games and More!

Tuesday, June 27th 7:00 – 9:00 PM, Holiday 4 – Hilton Baltimore Inner Harbor

Come hang out with your pals (or soon-to-be new pals) in the Chemical Engineering Division! There will be board games and other activities to enjoy. The Unit Ops lab tour is scheduled for the same time. If you plan on attending the tour, the social time should be still be going afterward.

Chemical Engineering Business Meeting

Tuesday, June 27th 1:30 to 3:00 PM, Key 8 – Hilton Baltimore Inner Harbor

The Business Meeting of the Chemical Engineering Division will include an annual update from all officers and election of new officers.

Chemical Engineering Division Open Mic: ChatGPT in ChE and Other topics

Tuesday, June 27th 3:15 – 4:45 PM, Key 7 – Hilton Baltimore Inner Harbor

In response to the advent of ChatGPT, the usual Open Mic session will include a special focus on the role of artificial intelligence (AI) in chemical engineering education (ChE). A panel of faculty will highlight their experiences with ChatGPT, then open up the session for more general discussion. The session can include broader discussion about any topic related to the current state of ChE, as well as ideas for future ASEE meetings.

Chemical Engineering Division Awards Banquet – Ticketed Event

Tuesday, June 27th 6:00 PM to 9:00 PM, B&O American Brasserie (2 N Charles St)

Ticketed Event: \$75.00 advanced registration

Join us for the presentation of this year's ChE Division awards!

Annual Conference: ChED Sessions

Sunday, June 25th

ASEE Division Mixer

3:30 – 5:00 PM, Ballroom 1 & 2, Baltimore Convention Center

Join your friends and colleagues at our member engagement event - the Division Mixer

Welcome Reception & Taste of the Town

5:00 – 7:00 PM, Exhibit Hall ABCD, Baltimore Convention Center

Chemical Engineering Division — Social Hangout Time: Board Games and More!

7:00 – 9:00 PM, Holiday 4 – Hilton Baltimore Inner Harbor

Come hang out with your pals (or soon-to-be new pals) in the Chemical Engineering Division! There will be board games and other activities to enjoy. The Unit Ops lab tour is scheduled for the same time. If you plan on attending the tour, the social time should be still be going afterward.

ChE Unit Ops Lab Tour (Ticketed, Must Provide Own Transportation)

7:00 – 9:00 PM, Rideshare dropoff at address below:

Mason Hall, 3101 Wyman Park Dr, Baltimore, MD 21218

You must have a ticket to participate in this event, as there is limited capacity. Dr. Sakul Ratanalert and Dr. Nagma Zerín of the Johns Hopkins Department of Chemical and Biomolecular Engineering department will host this tour of their unit operations teaching laboratory. Attendees will have to find own transportation to the site, but ridesharing is encouraged. For help with finding a carpool group, contact ChED Program chair Janie Brennan.

Annual Conference: ChED Sessions

Monday, June 26th

M205-Chemical Engineering Division (ChED) Poster Session

9:15 – 10:45 AM, Exhibit Hall ABCD, Baltimore Convention Center

Board 29: Compiling Census Data and Atmospheric Repository Data to Infer Socio-Environmental Trends

Dr. Joe Woo (Lafayette College)

Board 30: Incorporating the Impact of Engineering Solutions in Global, Economic, Environmental, and Social Contexts into our Core Curriculum

Taryn Melkus Bayles (University of Pittsburgh), Dr. Joaquin Rodriguez (University of Pittsburgh), and Robert Enick (Affiliation unknown)

Board 31: Research Experiences and Mentoring in Separations

Mr. Thomas McKean (University of Arkansas), Jorge Almodovar (University of Arkansas), and Dr. Ranil Wickramasinghe P.E. (University of Arkansas)

Board 32: Work in Progress: A Laboratory Platform for Learning for Chemical Engineering

Benjamin Miles Phillips (Baylor University), Dr. Anne Marie Spence (Baylor University), and Alexandre Yokochi (Affiliation unknown)

Board 33: Work in Progress: Active Learning of Kinetics and Reactor Design Through a Jupyter Notebook

Mr. Jaafar Ballout (Texas A&M University at Qatar) and Mamoun Al-Rawashdeh (Texas A&M University at Qatar)

Board 34: Work in Progress: Simple, Scalable Interventions to Address Academic and Mental-Health Barriers in Engineering Undergraduates

Prof. Maureen Tang (Drexel University), Ms. Tamara Galoyan Galoyan (Affiliation unknown), and Shannon Capps (Affiliation unknown)

M305-ChED Technical Session 1: Diversity, Equity, and Inclusion in ChE

11:00 AM– 12:30 PM, Room 341, Baltimore Convention Center

Equality, Diversity and Inclusion (EDI) in the Chemical Engineering Curriculum: Working in Partnership with Students to Create Sustainable Practices

Dr. Deesha Chadha (Imperial College, London), Jerry Y.Y. Heng (Affiliation unknown), and Emerald Sun (Affiliation unknown)

Session paper continued on Page 8.

Annual Conference: ChED Sessions

Monday, June 26th continued...

M305-ChED Technical Session 1: Diversity, Equity, and Inclusion in ChE (cont...)

11:00 AM– 12:30 PM, Room 341, Baltimore Convention Center

Do Small Collaborative Learning Communities within a Larger Class Increase Students' Sense of Belonging and Learning?

Dr. Mechteld Veltman Hillsley (Pennsylvania State University) and Dr. Stephanie Butler Velegol (Georgia Institute of Technology)

Opportunity Gaps for Women in Chemical Engineering: A Quantitative Critical Investigation

Prof. Eric Burkholder (Auburn University)

Designing and Implementing a Workshop on the Intersection between Social Justice and Engineering

Kavitha Chintam (Northwestern University), Dr. Alexis N. Prybutok (University of Washington), Willa Brenneis (Affiliation unknown), Jonathan M. Chan (Affiliation unknown), Joie Green (Affiliation unknown), Ruihan Li (Affiliation unknown), Meagan Olsen (Affiliation unknown), Sapna L. Ramesh (Affiliation unknown), Carolyn E. Ramirez (Affiliation unknown), Dhanvi Ram Vemulapalli (Affiliation unknown), and Dr. Jennifer Cole (Northwestern University)

Impact of "The Design of Coffee," A General Education Chemical Engineering Course, on Students' Decisions to Major in STEM Disciplines

Esohe Fawole (University of California, Davis), Glauca Prado (University of California, Davis), Prof. William Ristenpart (University of California, Davis), and Dr. Jason White (University of California, Davis)

M405-ChED Technical Session 2: Community Retrospectives

1:30 – 3:00 PM, Room 341, Baltimore Convention Center

Graduate Ph.D. Chemical Engineering Curriculum: Progress in Twenty Years

Mrs. Emily Nichole Ingram (University of Kentucky) and Dr. Malgorzata Chwatko (University of Kentucky)

Community Perspectives on Chemical Engineering Education

Milo D. Koretsky (Tufts University), Dr. Lisa G. Bullard, P.E. (North Carolina State University, Raleigh), Prof. Joshua A. Enszer (University of Delaware), Dr. Allison Godwin (Purdue University, West Lafayette), Dr. Vanessa Svihla (University of Texas, Austin), and Dr. Sindia M. Rivera-Jiménez (University of Florida)

Session papers continued on Page 9.

Annual Conference: ChED Sessions

Monday, June 26th continued...

M405-ChED Technical Session 2: Community Retrospectives (cont...)

1:30 – 3:00 PM, Room 341, Baltimore Convention Center

Preliminary Reflections and Assessment of the 2022 Chemical Engineering Summer School

Dr. Margot A. Vigeant (Bucknell University), Dr. Daniel Anastasio (Rose-Hulman Institute of Technology), Prof. Michael David Mau Barankin (Colorado School of Mines), Taryn Melkus Bayles (University of Pittsburgh), Dr. Daniel D. Burkey (University of Connecticut), Dr. Laura P. Ford (The University of Tulsa), Dr. Tracy Q. Gardner (Colorado School of Mines), Dr. Milo Koretsky (Tufts University), Dr. Daniel Lepek (The Cooper Union), and Prof. Matthew W Liberatore (The University of Toledo)

National Trends and Models for Teaching-Track Faculty in Chemical Engineering

Dr. Stephanie Butler Velegol (Pennsylvania State University), Dr. Lisa G. Bullard P.E. (North Carolina State University, Raleigh), Taryn Melkus Bayles (University of Pittsburgh), and Dr. Katie Cadwell (Syracuse University)

Is Poor Classroom Attendance a Virtual-Learning Hangover or the New Normal? A Qualitative Study

Dr. Matthew Cooper (North Carolina State University, Raleigh) and E. Daniel Cardenas-Vasquez (North Carolina State University, Raleigh)

M417-Engineering to Promote Social Justice

1:30 – 3:00 PM, Room 335, Baltimore Convention Center

Historically, engineers have rarely been at the table in key conversations about technological governance, but engineering graduates must work to support justice, equity, diversity, and inclusion while understanding and mitigating any side effects. They also must be involved in decisions related to these issues.

This topic was discussed at the 2022 Interdivisional Town Hall; the panel will bring closure to that event and prepare for 2023. The four speakers participated in the 2022 Town Hall. Questions to be discussed include:

How can engineers use their privilege to help create a more equitable world?

What is the engineer's responsibility in showing up for social justice?

What curricular and co-curricular approaches will effectively introduce students to appropriate ways to incorporate social justice into design?

How can engineering educators capture social justice in learning outcomes and assessments?

What ethical authority do we need to assert and how?

How do educators ensure that students today emerge from our programs with the knowledge and ethical frameworks necessary to play a critical role in a civil society?

Annual Conference: ChED Sessions

Monday, June 26th continued...

M417·Engineering to Promote Social Justice (continued)

1:30 – 3:00 PM, Room 335, Baltimore Convention Center Description

Panelists will also take questions from the audience.

For those interested in: Advocacy and Policy and Broadening Participation in Engineering and Engineering Technology

Moderated by Dr. Elizabeth Cady

Speakers (full bios available on Nemo or the Google Calendar links!)

Dr. Jennifer L. Cole, Northwestern University

Jennifer L. Cole is the Assistant Chair in Chemical and Biological Engineering in the Robert R. McCormick School of Engineering and the Associate Director of the Northwestern Center for Engineering Education Research at Northwestern University.

Dr. Jerrod A Henderson, University of Houston

Dr. Jerrod A. Henderson (“Dr. J”) is an Assistant Professor in the William A. Brookshire Department of Chemical and Biomolecular Engineering in the Cullen College of Engineering at the University of Houston (UH).

Trevion S Henderson, Tufts University

Dr. Trevion Henderson is an Assistant Professor of Mechanical Engineering at Tufts University.

Kaylla Cantilina, University of Michigan

Kaylla Cantilina recently earned her PhD in Design Science at the University of Michigan’s College of Engineering. An artist turned engineer, she holds degrees from the University of Michigan in Industrial and Operations Engineering (M.S.), Design Science (M.S.), Industrial Design (B.A.), and Political Science (B.A.), as well as a graduate certificate in Engineering Education Research

M505·Chemical Engineering Division Executive Committee Meeting

3:15 – 4:45 PM, Key 8, Hilton Baltimore Inner Harbor

This meeting is open only to Chemical Engineering Division executive board members.

M541B·Interdivisional Town Hall Meeting: Preparing Engineering Students for an Ever-Changing Planet

3:15 – 4:45 PM, Ballroom 3, Baltimore Convention Center

The annual Interdivisional Town Hall offers the opportunity for members from different divisions and...

Annual Conference: ChED Sessions

Monday, June 26th continued...

...attendees to come together to discuss topics of interest across the entire ASEE membership. This year's discussion will focus on the student experience and how we as faculty and instructors may make a difference. We will explore several important topics related to changing curriculum, course structure, and culture in engineering education.

The first half will allow for intimate, roundtable conversations based on provided discussion prompts, listed below. The second half of the Town Hall will briefly introduce the Engineering for One Planet (EOP) initiative, including the EOP Framework and two companion teaching guides, to help faculty and administrators bring sustainability into courses, programs, departments and institutions. Participants will collaboratively engage with EOP teaching tools through an interactive activity to generate sustainability-focused exercises for existing core engineering courses. Together, we will produce a curricular reference guide for engineering instructors to integrate sustainability into required engineering courses without overhauling an entire course. This co-created teaching guide will acknowledge participant contributions and be made available for free download to anyone on the EOP website.

Both parts of the Town Hall will lead directly to roundtable discussions to share recommendations and generate ideas. Individuals will be asked to share and apply their skills, knowledge, and expertise to these conversations in crafting shareable deliverables for guiding future effort.

Topic 1 — The Changing Context of DEI in Engineering Education

Topic 2 — The Impact of Generative AI on Engineering Education

Topic 3 — Changing the Curriculum, Course Structure, and Culture of Engineering Education

Topic 4 - Understanding and Supporting Students Where They Are Day-to-Day

More information on each topic is available in the Google Calendar link, or on Nemo!

For those interested in: Advocacy and Policy, Broadening Participation in Engineering and Engineering Technology, and New Members

Moderated by: Dr. Lynn A. Albers, Dr. Micah Lande, Dr. Bala Maheswaran, Cindy Cooper, Cindy Anderson, Dr. Michael K. J. Milligan P.E

Call for Volunteers to Assist at the Town Hall!

We would welcome a member or two to assist at the Town Hall itself on Monday, June 26th 3:15-4:45 pm in Ballroom 3 of the Convention Center. The room is set up with round tables and we will need a facilitator at each table to lead and record the discussion. Please feel free to email

Lynn.Albers@hofstra.edu with your name and email, and note that you're from ChED, to join our final Zoom planning meeting on Wednesday, June 21st at 2 p.m. EST.

Annual Conference: ChED Sessions

Tuesday, June 27th

T205-ChED Technical Session 3: Work-in-Progress Part 1

9:15 – 10:45, Room 337, Baltimore Convention Center

Work-in-Progress: Developing a Research Plan for a Retrospective Analysis of the Effect of Bridging Courses on Student Success in Graduate Studies

Dr. Matthew Cooper (North Carolina State University, Raleigh) and Dr. Lisa G. Bullard, P.E. (North Carolina State University, Raleigh)

Work-in-Progress: Unpacking Graduate Teaching Assistants' (GTAs) Taught Practice — Exploring Training through Decisional Capital

Dr. Deesha Chadha (Imperial College London) and Dr. Umang Vinubhai Shah (Department of Chemical Engineering, Imperial College London, South Kensington, London SW7 2AZ)

Work-in-Progress: A Pedagogical Unboxing of Reservoir Simulation with Python — Backward Design of Course Contents, Assessment, and Pedagogy (CAP)

Dr. Olatunde Olu Mosobalaje (Covenant University) and Moses Olayemi (Purdue University, West Lafayette)

Work-in-Progress: Optimization and Consolidation of a Chemical Engineering Lab-on-a-Kit

Prof. Fernando Mérida (University of Florida), Prof. Carlos Rinaldi (Affiliation unknown), Luis Gallego (University of Florida), Andrew Stephen Kraus (Affiliation unknown), Hyeongbeen Joo (Affiliation unknown), and Elizabeth Louise Meier (University of Florida)

Work in Progress: Using Experiment-centric Learning Pedagogy to Increase Student Understanding of Chemical Principles and Concepts

Temileye Omopariola Ibirinde (Affiliation unknown), Adebayo Iyanuoluwa Olude (Morgan State University), Mr. Pelumi Olaitan Abiodun (Morgan State University), Dr. Oludare Adegbola Owolabi, P.E. (Morgan State University), Dr. Niangoran Koissi (Morgan State University), Dr. Krishna Bista (), Neda Bazyar Shourabi (Pennsylvania State University, Berks Campus), Frank Efe (Affiliation unknown), and Dr. Jumoke 'Kemi' Ladeji-Osias (Morgan State University)

Work-in-Progress: Expanding Use of Affordable Transport Equipment — Fluidized Bed with Applications for Bio- and Chemical Catalysis

Zeynep Ezgi Durak (Washington State University), Prof. Bernard J. Van Wie (Washington State University), David B. Thiessen (Washington State University), Dr. Olusola Adesope (Washington State University), and Oluwafemi Johnson Ajeigbe (Affiliation unknown)

T205B-ChED Technical Session 4: Junior & Senior Year Curriculum

9:15 – 10:45 AM, Room 338, Baltimore Convention Center

Develop the Mindset of Engineering for One Planet in Chemical Process Control

Zuyi Huang (Villanova University)

Session papers continued on Page 13.

Annual Conference: ChED Sessions

Tuesday, June 27th (continued)

T205B-ChED Technical Session 4: Junior & Senior Year Curriculum (cont...)

9:15 – 10:45 AM, Room 338, Baltimore Convention Center

Process Control Laboratory Projects: Technical Training, Team Development, and Global Collaboration

Dr. Joaquin Rodriguez (University of Pittsburgh), Dr. Schohn L. Shannon (University of Pittsburgh), Michael McMahon (Affiliation unknown), and Hseen Baled (Affiliation unknown)

Hands-on Experience in Solving Real-World Problems via a Unique Student-Faculty-Industry Collaboration Program

Miss Swapana Subbarao Jerpoth (Rowan University), Dr. Robert P. Hesketh (Rowan University), Dr. Kirti M. Yenkie (Rowan University), Dr. C. Stewart Slater (Rowan University), Sean Curtis (Affiliation unknown), Michael Fracchiolla (Affiliation unknown), and David Anthony Theuma (Affiliation unknown)

The Incorporation of Safety throughout the Core Curriculum

Taryn Melkus Bayles (University of Pittsburgh), Dr. Joaquin Rodriguez (University of Pittsburgh), and Robert Enick (Affiliation unknown)

How We Teach: Capstone Design

Dr. Laura P. Ford (The University of Tulsa), Dr. Jennifer Cole (Northwestern University), Dr. Kevin D. Dahm (Rowan University), Dr. Bruce K. Vaughn (American Institute of Chemical Engineers), Dr. Marnie V. Jamieson (University of Alberta, Canada), Dr. Luke Landherr (Northeastern University), Dr. David L. Silverstein, P.E. (University of Kentucky), Dr. Troy J. Vogel (University of Notre Dame), Dr. Christy Wheeler West (University of South Alabama), and Dr. Stephen W. Thiel (University of Cincinnati)

T305-ChED Technical Session 5: Work-in-Progress Part 2

11:00 AM – 12:30 PM, Room 337, Baltimore Convention Center

Work in Progress: Promotion of Growth Mindset in Introductory Mass and Energy Balance Course in Chemical Engineering

Dr. Nagma Zerín (Johns Hopkins University) and Dr. Sakul Ratanalert (Johns Hopkins University)

Work In Progress: A Teamwork Training Model to Promote the Development of Teaming Skills in Chemical Engineering Students.

Dr. Carlos Landaverde-Alvarado (University of Texas, Austin)

Session Papers continued on Page 14.

Annual Conference: ChED Sessions

Tuesday, June 27th (continued)

T305-ChED Technical Session 5: Work-in-Progress Part 2 (cont...)

11:00 AM – 12:30 PM, Room 337, Baltimore Convention Center

Work in Progress: Studying Loss of Long-Term Knowledge Retention in Chemical Engineering Undergraduate Courses

Dr. Gaurav Giri (University of Virginia)

Work in Progress: Lessons Learned from Teaching Culturally Relevant Engineering Design in K-12 Classrooms and Applying Them to Undergraduate Engineering Courses

Dr. Bethany Jean Klemetsrud, P.E. (University of North Dakota) and Frank M. Bowman (University of North Dakota)

Work in Progress: Evolution of an ABET Assessment Program for Chemical Engineering at Texas A&M University-Kingsville, a Regional Hispanic-Serving Institution

Dr. Matthew Lucian Alexander, P.E. (Texas A&M University, Kingsville)

Introduction of a Carbon Dioxide Capture Experiment in a Senior Chemical Engineering Laboratory Course

Iram Rahman (The Cooper Union for the Advancement of Science and Art) and Dr. Amanda Simson (The Cooper Union for the Advancement of Science and Art)

T305B-ChED Technical Session 6: First-Year & Sophomore Year Curriculum

11:00 AM – 12:30 PM, Room 338, Baltimore Convention Center

Reproducible High Reading Participation and Auto-Graded Homework Completion across Multiple Cohorts When Using an Interactive Textbook for Material and Energy Balances

Samantha Yanosko (Affiliation unknown) and Prof. Matthew W. Liberatore (The University of Toledo)

Clustering of Animation View Times in an Interactive Textbook for Material and Energy Balances

Tanner Hilsabeck (Affiliation unknown), Breanne Crockett (Affiliation unknown), Amir Parsaei (Affiliation unknown), Kevin S. Xu (Case Western Reserve University), and Prof. Matthew W. Liberatore (The University of Toledo)

Teaching Fugacity through Comics and Assessing the Impact on Student Confidence and Understanding

Dr. Luke Landherr (Northeastern University)

Session papers continued on Page 15.

Annual Conference: ChED Sessions

Tuesday, June 27th (continued)

T305B-ChED Technical Session 6: First-Year & Sophomore Year Curriculum (cont...)

11:00 AM – 12:30 PM, Room 338, Baltimore Convention Center

Bridging the Gap between Industry and Academia, and Developing Students' Engineering Identity

Dr. Betul Bilgin (The University of Illinois, Chicago), Hasiya Najmin Isa (Affiliation unknown), Emily Seriruk (Affiliation unknown), and Cody Wade Mischel (Affiliation unknown)

Experiments for a Computing Class

Dr. Christi L. Patton Luks (Missouri University of Science and Technology)

Chemical Engineering Business Meeting

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Chemical Engineering Division Open Mic: ChatGPT in ChE and Other topics

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In response to the advent of ChatGPT, the usual Open Mic session will include a special focus on the role of artificial intelligence (AI) in chemical engineering education (ChE). A panel of faculty will highlight their experiences with ChatGPT, then open up the session for more general discussion. The session can include broader discussion about any topic related to the current state of ChE, as well as ideas for future ASEE meetings.

Chemical Engineering Division Awards Banquet – Ticketed Event

Tuesday, June 27th 6:00 PM to 9:00 PM at B&O American Brasserie (2 N Charles St)

Ticketed Event: \$75.00 advanced registration

Join us for the presentation of this year's ChE Division awards!

Wednesday, June 28th

TOPICAL PLENARY: What We Learned at the Revolution: Insight and Impact in the Context of the 2015 and 2016 NSF RED Projects

8:00 – 9:00 AM, Room 320, Baltimore Convention Center

This topical plenary will explore the impact of the NSF Revolutionizing Engineering and Computer Science Departments (RED) program on the institutions that were funded in 2015 and 2016. Now that...

Annual Conference: ChED Sessions

Wednesday, June 28th (continued)

...those projects are complete, we can learn a great deal about academic change and the transformation of engineering curricula in the middle years of undergraduate education.

Each of the RED project participants served on their institution's respective RED teams as PI, disciplinary faculty, or engineering education expert. Their perspectives will provide insights about the impact of RED on their departments and what non-RED departments can learn and apply to their own educational contexts.

The session will appeal to attendees in all disciplines of engineering and computer science, since the RED program is open to all disciplines. The session will encourage the dissemination of RED project products through collaboration between RED and non-RED departments and for individuals to learn more about the RED program and submit their own proposals as a result.

The following RED team members will participate:

Dr. Ann Gates (University of Texas El Paso, computer science)

Dr. Tony Maciejewski (Colorado State, electrical engineering)

Dr. Stephanie Farrell (Rowan University, civil engineering)

Dr. Ed Berger (Purdue University, mechanical engineering)

Dr. Susannah Davis (University of New Mexico, chemical engineering)

Dr. Susan Lord (University of San Diego, general engineering)

Dr. Luke Lester (Virginia Tech, electrical engineering)

Dr. Diane Rover (Iowa State University, electrical engineering)

Dr. Mary Lou Maher (University of North Carolina Charlotte, computer science) (m.maher@uncc.edu)

The session will be moderated by Dr. Tom Martin (tmartin@nsf.gov), Virginia Tech/NSF rotator, and Dr. Julia Williams (williams@rose-hulman.edu), RED Participatory Action Research Project (REDPAR). Dr. Martin was co-PI for the Virginia Tech RED project and Dr. Williams serves as PI for REDPAR, which designed the academic change curriculum used by RED and supported their change efforts.

Also participating are Dr. Donna Riley (riley1@unm.edu), the program officer who initiated RED while she was at NSF, Dr. Julie Martin (martin.4071@osu.edu) who served as the program officer for RED, and Dr. Kemi Ladeji-Osias (jladejio@nsf.gov), current NSF program officer for the RED program.

W305-ChED Technical Session 7: Innovative Pedagogy

11:00 AM – 12:30 PM, Room 318, Baltimore Convention Center

Numerical Problem Solving across the Curriculum with Python and MATLAB Using Interactive Coding Templates: A Workshop for Chemical Engineering Faculty

Austin N. Johns (The State University of New York, Buffalo), Dr. Robert P. Hesketh (Rowan University), Prof. Matthew D. Stuber (University of Connecticut), and Dr. Ashlee N. Ford Versypt (The State University of New York, Buffalo)

Session papers continued on Page 17.

Annual Conference: ChED Sessions

Wednesday, June 28th (continued)

W305-ChED Technical Session 7: Innovative Pedagogy (cont...)

11:00 AM – 12:30 PM, Room 318, Baltimore Convention Center

Sensemaking of Block Flow Diagrams in Chemical Engineering

Prof. Jiamin Zhang (University of California, Riverside), John Ellington Byars (Auburn University), and Prof. Eric Burkholder (Auburn University)

Chemical Engineers' Creating Concept Maps: A Prewriting Activity

Dr. Elif Miskioglu (Bucknell University)

A Comparison between Individually-Prepared and Team-Prepared Study Guides in a Sophomore Chemical Engineering Thermodynamics Course

Dr. Donald P. Visco Jr. (University of Akron), Nidaa Makki (University of Akron), and William Grover Brown (Affiliation unknown)

Ungrading in Chemical Engineering: Attempting to Eliminate Exams, Deadlines, and Anxiety by Refocusing on Learning Instead of Grades

Dr. Luke Landherr (Northeastern University)

W305B-ChED Technical Session 8: Lab Module Development

11:00 AM – 12:30 PM, Room 320, Baltimore Convention Center

An Inquiry-Based Learning STEM Outreach Module to Teach Principles of Bioadhesives and Tissue Repair

Mr. Christopher James Panebianco (Icahn School of Medicine, Mount Sinai), Neharika Bhadouria (Affiliation unknown), Olivia Saebyul Kim (Affiliation unknown), Jillian R. Frost (The Cooper Union for the Advancement of Science and Art), Angela Huang (Affiliation unknown), Poorna Dutta (Affiliation unknown), Andrea Vernengo (Affiliation unknown), and Dr. Jennifer Weiser (The Cooper Union for the Advancement of Science and Art)

Process Control Experiment Using an Arduino Board and LED Lights

Dr. Maddalena Fanelli (Michigan State University) and Mr. Ryan Daniel Atkinson (Michigan State University)

Development and Use of an Adaptable Arduino-Based Control System for Bench-Top Process Control Experiments

Dr. Stacy K. Firth (University of Utah), Prof. Anthony Butterfield (University of Utah), and Mason John (Affiliation unknown)

Session papers continued on Page 18.

Annual Conference: ChED Sessions

Wednesday, June 28th (continued)

W305B-ChED Technical Session 8: Lab Module Development (cont...)

11:00 AM – 12:30 PM, Room 320, Baltimore Convention Center

Design and Study of a Packed Absorption Column for CO₂ Scrubbing

Dr. Maddalena Fanelli (Michigan State University), Alexis Chuong (Affiliation unknown), and Mr. Robert Selden (Michigan State University)

Design, Construction, and Analysis of a Chemical Engineering Unit Operations Laboratory Pumping Experiment

Dr. Andrew Maxson (The Ohio State University) and Jacob Strayer (Affiliation unknown)

W405-ChED Technical Session 9: Student Experiences in Laboratory Courses

1:30 PM – 3:00 PM, Room 320, Baltimore Convention Center Description

Implementation of Undergraduate Coaches as a Student Resource in a Laboratory Course

Prof. Adam T. Melvin (Louisiana State University and A&M College)

Open-Ended Experiential Learning Opportunities in the Chemical Engineering Unit Operations Laboratory: A Qualitative Research Study

Dr. Erick S. Vasquez (University of Dayton), Kelly Bohrer (University of Dayton), Dr. Matthew Dewitt (University of Dayton), and Soubantika Palchoudhury (Affiliation unknown)

Student Agency in Chemical Engineering Laboratory Courses across Two Institutions

Dr. Vanessa Svihla (University of New Mexico), Ms. Madalyn Wilson-Fetrow (University of Texas, Austin), Prof. Eva Chi (University of New Mexico), Dr. Jennifer R. Brown (Montana State University, Bozeman), Prof. Stephanie G. Wettstein (Montana State University, Bozeman), Ms. Catherine Anne Hubka (University of New Mexico), and Dr. Ruben D. Lopez-Parra (University of New Mexico)

Experimental Self-Efficacy and Troubleshooting Ability in a Chemical Engineering Laboratory

Caroline Crockett (University of Virginia), Dr. George Prpich (University of Virginia), and Dr. Natasha Smith P.E. (California State University-Channel Islands)

Qualitative Analysis of Student Experience in a Chemical Engineering Laboratory

Dr. Heather Chenette (Rose-Hulman Institute of Technology), Dr. Gregory T. Neumann (Rose-Hulman Institute of Technology), and Dr. Daniel Anastasio (Rose-Hulman Institute of Technology)

Rubric Development for Technical Reports in Chemical Engineering Unit Operations Laboratory Courses

Dr. Jennifer R. Brown (Montana State University, Bozeman), Prof. Stephanie G. Wettstein (Montana State University, Bozeman), and Dr. Douglas J. Hacker (University of Utah)

Annual Conference: ChED Sessions

Wednesday, June 28th continued...

W505-ChED Technical Session 10: Teaming and Professional Skills

3:15 PM – 4:45 PM, Room 320, Baltimore Convention Center

Using Senior Peer Mentoring for Experiential Learning of Core Chemical Engineering Topics

Dr. Mariajose Castellanos (University of Maryland, Baltimore County) and Dr. Neha B. Raikar (University of Maryland, Baltimore County)

Student Perceptions of the Place, Mode, and Teacher Contribution to Teamwork within Undergraduate Chemical Engineering

Abishek Sekhar (Affiliation unknown), Dr. Peter Neal (The University of New South Wales, Sydney, Australia), and Dr. Sarah Grundy (The University of New South Wales, Sydney, Australia)

Team Building Games to Reinforce the Training of Chemical Engineering Students in Team Skills Based on Collaboration Leadership

Dr. Joaquin Rodriguez (University of Pittsburgh), Hseen Baled (Affiliation unknown), and Michael McMahon (Affiliation unknown)

Preparing Engineering Students to Find the Best Job Fit: Starting Early with the Career Development Process

Dr. Cheryl Carrico, P.E. (E4S, LLC), Dr. Holly M. Matusovich (Virginia Tech), and Dr. Sreyoshi Bhaduri (ThatStatsGirl)

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