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ASEE Chemical Engineering Division Newsletter

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A Message from the Chair:

Ashlee N. Ford Versypt
University of Buffalo

I'm sure like me you are relieved to see the 2020-2021 academic year draw to a close. Your resilience, flexibility, endurance, and dedication are commendable. I wish you a summer with some quality time off and rest. As we look forward to elections and the upcoming annual meeting, we are planning for a hopeful future and continued community building. If you have issues or ideas that you want our chemical engineering education community to address, implement, or provide support for, please bring them to the attention of the current executive leadership team. Please take the time to vote in the election and to be in community with us with the virtual conference and the virtual social event outside the virtual conference.

Ashlee Ford Versypt

In this issue…

Call for Community Announcements

Please send any announcements you'd like included in the July ASEE Special Issue newsletter to elif.miskioglu@bucknell.edu. by **June 23rd!**

ChED Elections: Summary of Candidates

Candidate for Division Chair-Elect

Winner will serve as chair of ChE Division for 2021-2022

Reg Rogers
University of Missouri

David Silverstein
University of Kentucky

Candidates for Director

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

Michael Barankin
Colorado School of Mines

Elif Eda Miskioğlu
Bucknell University

Vote here by Friday, June 25th!

ChED Elections: Candidate for Chair-Elect

Reg Rogers
University of Missouri

I am honored and humbled to have been identified as a candidate for the Chair-Elect position within the Chemical Engineering Division of ASEE. I have been a member of ASEE since 2004 as a graduate student at the University of Michigan. During my time as a graduate student, I was one of the founding members of the Student Constituent Committee. My primary role was as Programming Chair. Though we were small, we were a tenacious group of individuals who carried a vision of seeing students become fully integrated within ASEE. We worked tirelessly to grow from committee to a full division. Our success in creating the Student Division continues to be seen today, which I am excited to see. It is this same attitude that I would like to bring to the forefront as we move the Chemical Engineering Division to the next level over the next several years.

Currently, I am an Associate Professor at the University of Missouri. In my current role at Mizzou, and previous role at Rochester Institute of Technology (RIT), I instructed multiple Chemical Engineering courses. My primary courses have been focused in the areas of Material and Energy Balances, Separation Processes, and Unit Operations Laboratory. In all of these courses, I designed them to not only teach the fundamentals but force students to develop out-of-the-box thinking. Development of life skills, in addition to the technical skills, has proven invaluable to the students as they translate the knowledge to their real-world experiential learning, as noted by students after completing an internship or co-op opportunity. Through consistent assessment, these courses have provided a platform for other courses to build on top of the skills attained from these courses.

My involvement within the ASEE Chemical Engineering Division includes completing my current term as Director and previously serving as the Programming Chair for the Annual Meeting in Tampa, FL. As Director, I primarily focused on assisting the division where needed, and included reviewing nominations for multiple division awards. As Programming Chair, I was heavily engaged in developing the technical program and division banquet, both of which were a huge success. I am extremely grateful for the opportunity to serve in both roles as I have been able to gain useful insight into the growth and development of the division. In addition to my service within ASEE, I am also serving as Chair for the Nanoscale Science and Engineering Forum (NSEF) within the American Institute of Chemical Engineers (AIChE). If given the opportunity to serve as a Chair-Elect, I will leverage my connections within both organizations to help provide advisory knowledge to the Chemical Engineering Division executive leadership for further growth of the division.

Given the current societal challenges we are facing from a diversity, equity, and inclusion standpoint, I view the role of the Chair-Elect to help spearhead new collaborations that will produce tangible results to foster a true understanding of diversity, equity, and inclusion in their native forms. We must understand that each of these words are unique and cannot be made synonymous as one catch phrase. Too many organizations have done this, and in the process, have diluted the genuine meaning of practicing diversity, equity, and inclusion as it should be practiced with people from various groups (i.e. underrepresented minorities/BIPOC, LGBQT+, women, people with disabilities, etc.). As someone who has been marginalized due to my identification/association with multiple groups, I have a first-person perspective on the issues at hand. I continue to strongly support individuals who identify with these different groups to provide an authentic professional and personal relationship that allows them to be their true selves. If elected Chair-Elect, I envision new pathways to make diversity, equity, and inclusion transformative within the Chemical Engineering Division and beyond. This includes a “straight talk” session where educators can be open about their struggles within their own university where DEI is only talked about but not genuinely practiced. Such conversations will lead to opportunities for developing actionable items that can be addressed individually and as a group.

Thank you for this opportunity to be considered for the Chair-Elect position in the Chemical Engineering Division.

ChED Elections: Candidate for Chair-Elect

David Silverstein
University of Kentucky

It is an honor to be nominated to serve in an historically important role for the members of the ASEE Chemical Engineering Division (ChED). I became involved very early in my academic career with the Division, and served first as its Membership Chair (2003-2006) and soon thereafter as Secretary-Treasurer (2005-2009) and Webmaster (2005-2015).

I was first nominated to run for Division Chair at the conclusion of my service as Secretary-Treasurer, but at the same time I was deeply engaged in helping start the AIChE Education Division (EdDiv) and declined. My roles during that process in AIChE (leading the formation committee and serving as Founding Chair), I believed, would conflict with the role of ChED Chair. Both the ASEE ChED and AIChE EdDiv have distinct but comparably important roles to play in our discipline and deserve focused leadership.

When in a leadership role my goal is to develop meaningful improvements that raise the performance of that body. In the case of the ASEE ChED today, my interest is primarily in continuing to grow efforts to build broad-based community around scholars interested in improving engineering education evaluated by and better understood through effective research practices.

Those efforts to build community do start with continuing to be a dissemination forum of choice for chemical engineers, both in the form of conference proceedings and presentations and through the Division's archival journal *Chemical Engineering Education* (for which I serve as an Assistant Editor [2019-present] and have served on its Publications Board [2010-2014] and as a Section Editor [2014-2019]).

Community building continues through the annual conference activities, both virtual but most critically when in person. This is not a passive activity (create an event and they will come). It takes directed effort to engage those not already connected during that narrow window of a conference. I do base some of what I do on my own experience. For example, I had always noted at conferences the groups of people who would collect for meals post-session while I often dined alone. Eventually, I had the opportunity to be a collector of people gathering for a meal and was deliberate about reaching out to those attending the meeting without other plans. Others later formalized those efforts (thanks Laura Ford!) that I think help engage new people into the ChED community. My experience can be useful, but it will take learning from experiences across the community to understand better how to engage broadly to continue to expand and deepen our connections.

The role in ASEE ChED that I am most proud of was as part of the Organizing Team for the 2017 ASEE Summer School for ChE Faculty. The Raleigh, NC meeting was a tremendous opportunity to facilitate building community amongst our newest colleagues and also to connect them to the most seasoned amongst us. I hope that those who had the opportunity to participate are also convinced that the event accomplished that objective.

I'll note that my first formal involvement with the ChED came after an election in which I unsuccessfully ran for a Director's role. That experience helped me learn early that not being elected to a role is definitely not a rejection of the value of a person's service.

Regardless of the election outcome, I look forward to continued involvement with the Division and its members. As Chair, my focus would be on channeling the experiences and interests of the Division membership into developing an action plan to both enhance value for current members and better understand what our message needs to be to prospective members.

ChED Elections: Candidate for Director

Michael Barankin
Colorado School of Mines

I am humbly requesting your consideration for the position of Director of the Chemical Engineering Division of ASEE. After starting my teaching career in Europe, teaching for nearly five years at the Hanze University of Applied Sciences in Groningen, I joined ASEE upon returning to the states in 2016 when I was hired at the Colorado School of Mines. Now an Associate Teaching Professor, I have served on over a dozen university committees and contribute actively to ASEE and CEE each year. In addition, I am involved in planning the Chemical Engineering Summer School, which will be held at Mines in 2022.

I have taught a wide range of chemical engineering courses, ranging from second year Thermodynamics and MEB to Transport & Separations. I currently (co-)manage our summer Unit Operations laboratory course as well as our Senior Design course, in a program that graduates about 150 chemical engineering undergraduates per year. In all of my courses, I present students with real-world challenges and practical applications of their knowledge and skills. I have developed many dozens of instructional videos for chemical engineering students, both on theoretical topics and concepts as well as practical example problem solutions, software tutorials, and lab experiment prep videos. And I have actively shared these materials (et al.) in the various VCP's held over the past two years. In addition, I have introduced new modalities (e.g., gamification) and am actively researching the effect of these, and my videos, on student learning.

As Director of the Chemical Engineering Division I hope to maintain the high standards set forth by the predecessors to this position. This division has always maintained excellent lines of communication and cooperation between ASEE and AIChE, and I hope to continue to deepen and strengthen these ties leading to synergistic development of activities that will be mutually beneficial to both societies. The connections we have developed during this pandemic (especially via the VCP's) are incredibly valuable, and I hope to continue these efforts, and stimulate such collaborations, well into the future.

I look forward to hearing (and implementing) more ideas from members in the future, and I appreciate your consideration for this important position.

ChED Elections: Candidate for Director

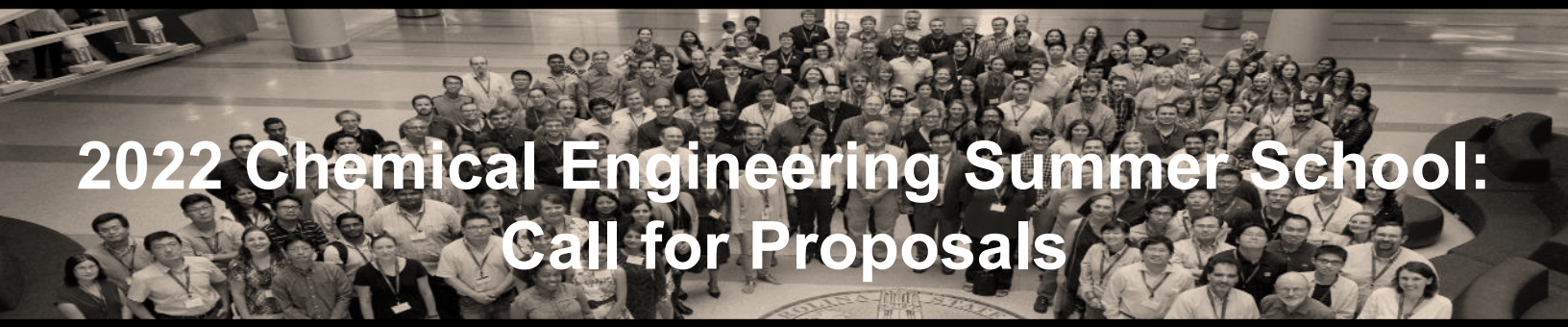
Elif Eda Miskioğlu
Bucknell University

My interest in pursuing an academic career has always been motivated by a strong desire to improve engineering education, and I was immediately thrilled when I discovered engineering education was itself an area of scholarship. This excitement was accompanied by a tension – how could I merge my interest in engineering education scholarship with my equally strong passion for my technical discipline of chemical and genetic engineering? Enter ASEE Chemical Engineering Division! ChED has been truly instrumental in supporting me through my transition to engineering education scholarship and navigating my early career.

Much has changed in the decade since my journey began, but my interests and motivation remain the same. As an Assistant Professor of Chemical Engineering at Bucknell University, I have the absolute joy and pleasure of teaching core courses in chemical engineering and electives in genetic engineering and professional communication. While my scholarship has expanded to focus on engineering broadly across many disciplines, it has been heavily molded by my foundation as a chemical engineer. My brief time co-oping with Dow Chemical as an undergraduate gave me a lens into process engineering and industry through which I continue to assess education. The desire to bridge the gap between the classroom and "real-life" engineering continuously drives my research direction. I am specifically interested in: 1) understanding the development of expertise and expert judgement, and 2) developing more effective means for supporting underrepresented minorities in engineering.

I am honored to be nominated for the position of Director. My role as the Division Newsletter Editor has given me a window into the inner workings of the executive board, and an even greater appreciation for the hard work and dedication involved in supporting our community. I have been particularly uplifted by our immense care for each other, and commitment to lowering barriers to participation and engagement for existing or potential members. This care is even more critical in current times, and I look forward to continuing to support, and be supported by, this community. Thank you for your time and consideration, and stay well.

Vote here by Friday, June 25th!



2022 Chemical Engineering Summer School: Call for Proposals

The 2022 Chemical Engineering Summer School will be held July 25 - July 29, 2022, on the campus of the Colorado School of Mines in Golden, Colorado. The summer school is intended to provide guidance and resources to help new faculty excel as teachers and as scholars. It is intended for early-career Chemical Engineering educators (as well as future faculty) in appointments of all types; instructional-, professional-, or tenure-track.

The planning committee at this time welcomes proposals to present sessions at the summer school. Our goal is to build a program that offers a broad range of high-quality sessions, so that individual participants can customize their summer school experience for their professional needs and goals. We seek sessions that address a topic or issue that is of significant interest to Chemical Engineering educators, and that will have a real and lasting impact on how the attendees will function as Chemical Engineering educators. We would like to solicit broadly three types of proposals:

- **Pedagogical Proposals (**150 min) are ones that address a particular instructional practice or pedagogical technique in education (e.g. active learning, problem-based learning, studio-based delivery, inclusive teaching practices, etc).
- **Content Proposals** (90 min) are ones that focus on providing attendees with materials and best practices in a specific area that they may be teaching (e.g. what topics and how to teach thermo, fluids, design, etc).
- **Broader Professional** Topics (90 min) center around professional activities beyond the other two (e.g. proposal writing, NSF broader impacts, advising, safezone). In addition, if your proposal contains a substantial component addressing Justice, Equity, Diversity and Inclusion, please describe that in the proposal as well.

Details on required components for the proposal are on the following page.

To submit a proposal, please fill out the Google Form at https://forms.gle/5T9qimqE2B5e4rec9, and include any documents as a single PDF. Proposals will be accepted between June 1, 2021 and September 1, 2021. We anticipate notifying presenters by December 31, 2021.

The Chemical Engineering Summer School supports workshop presenters by offering travel reimbursement for reasonable economy domestic travel expenses for up to two presenters per workshop, as well as housing and meals with the attendees in CSM residence and dining halls. Presenters are encouraged to stay through the entire Summer School and participate in workshops and social events along with attendees while not presenting. Presenters who wish to upgrade their travel or accommodation may do so at their own expense with reimbursement equivalent to the typical travel / residence hall expense.

For any questions on sessions, please contact the programming committee at ChESS+Program@bucknell.edu

2022 Chemical Engineering Summer School: Call for Proposals (continued)

The body of the proposal will be entered into a Google form (link on previous page), and should be at most the equivalent of 2 pages long (excluding appendices), and will address the following captions:

- **Title, Presenters, and Proposal Type** (pedagogical, content, broader professional practice; justice, equity, diversity, and inclusion).
- **Goals** - Explain the purpose of the session and its intended impact on the attendees. A typical workshop will have 3-5 goals of no more than 2,000 characters (about 300 words).
- **Scope and Content** - Outline the topical coverage of the session as specifically as possible in no more than 3,500 characters (about 550 words).
- **One Sentence Abstract** - For the program (no more than 280 characters).
- **Method of Delivery** - Describe how you intend to run the session. Since we strive for these workshops to be interactive, please explain in some detail the interactive elements you plan to include in your workshop (e.g. specific hands-on activities, small group discussions, brainstorming sessions, computer usage, etc.)
- **Take Home Materials** - Describe the materials that participants will receive from the session. These could include tangible items, electronic files, links to relevant materials accessible on the web, etc.
- **Presenter(s)** - Provide brief (1-2 pages, per person) biographical information on the individual or team that proposes to run the session, focusing on the presenter's relevant experience and preparedness to lead a session on the topic. Please include contact information for the entire team. There is no limit on the number of presenters for a session, but we may not be able to fully fund travel costs for sessions with more than two presenters.
- **Specific Logistical Needs** - Sessions will typically be held in fixed-seat classrooms equipped with projectors. Sessions will be run in parallel, so a typical workshop will have 20-50 participants in attendance. If you require a different kind of space than a fixed-seat classroom, or an upper limit on participants, please explain. If your session requires any resources beyond a projector, please list them and specify whether you will be bringing them or you need the host site to provide them.

The committee may follow up with you to request clarifications or to discuss possibilities for refining your session to make it more complementary in the program as a whole.

Community Announcements

Call for Participation – Heat Transfer Teachers & Scholars

Dear Chemical Engineering Educators,

I am part of a team of researchers at Stanford and Cornell studying student problem-solving in engineering science courses. We have developed a novel assessment of problem-solving in heat transfer that we believe captures students' problem-solving skills in real-world contexts.

We are in need of experts -- folks who have taught heat transfer in any discipline, or who study heat transfer in their research -- to validate the assessment. We are asking for volunteers to participate in 1-hour think-aloud Zoom interviews with our research team. You can sign up for a time here: https://calendly.com/eburkhol/heat-transfer-interview?month=2021-04

Your responses will be recorded and we will video record the session, but your identity will be masked in the publication or presentation of any results.

Many thanks in advance for your assistance!

Eric Burkholder, Soheil Fatehiboroujeni, Matthew Ford

See next two pages for job postings in our community!

Call for Participation: Nanoscience Research Conference: Molecular Foundry 2021 User Meeting – Free & Online

The Molecular Foundry is a nanoscience research facility at Berkeley Lab that provides visiting researchers ("users") with access to cutting-edge expertise and instrumentation in a collaborative, multidisciplinary environment.

The Molecular Foundry's 2021 Annual User Meeting will be **hosted virtually** with **free registration** to bring our scientific community together in a safe and accessible format.

We will feature keynote speakers Dr. Carmichael Roberts of Breakthrough Energy Ventures and Prof. Jim Pfaendtner of the University of Washington.
This annual conference focuses on frontier research topics of interest to that community of users, providing a forum to disseminate results and exchange ideas, and bringing together leading researchers, junior scientists, postdocs, and students.

Please join us!

Register by July 30:
https://usermeeting2021.foundry.lbl.gov/register/

Contribute an abstract for inclusion in one of our themed research symposia by May 26, or for a poster by June 30:
https://usermeeting2021.foundry.lbl.gov/abstract-submission/

For more information, contact:
foundry-useroffice@lbl.gov

Photo Credits: **Spring at the White House:** Joyce Boghosian, **ASEE Conference Logo**: ASEE, **Summer School Photo:** Lisa Bullard

Instructor/Assistant Teaching Professor

Department of Chemical and Biological Engineering
Montana State University – Bozeman

For complete job announcement and application procedures click on:
https://jobs.montana.edu/postings/24168

The Chemical & Biological Engineering Department is seeking professionals to serve as non-tenure track instructors for the upcoming academic year beginning August 18, 2021. Both full- and part-time employment is possible. Applications received by June 1 will receive priority consideration for the upcoming academic year. We seek those with the ability to teach a variety of courses in support of our two baccalaureate degree programs, Biological Engineering and Chemical Engineering, including: Material Science, Material and Energy Balances, Fluid Mechanics, Thermodynamics, Heat Transfer, Separation Processes, Chemical Reaction Engineering, Process Dynamics and Control, Bioprocess Engineering, Bioseparations, Transport, Biotransport, Unit Operations Laboratory, Design (capstone design course). In addition, opportunities exist for teaching courses within our new biomedical engineering program, developing courses, and teaching at the graduate level.

We hope to attract applicants who can teach in a diverse University community and have demonstrated ability in helping students from diverse backgrounds succeed. Montana State University is committed to providing a working and learning environment free from discrimination. As such, the University does not discriminate in the admission, access to or conduct of its educational programs and activities nor in its employment policies and practices on the basis of race, color, religion, national origin, ethnicity, creed, service in the uniformed services (as defined in state and federal law), veteran status, gender, age, political beliefs, marital or family status, pregnancy, physical or mental disability, genetic information, gender identity, gender expression, or sexual orientation or preference. In support of the University's mission to be inclusive and diverse, applications from qualified minorities, women, veterans and persons with disabilities are highly encouraged.

Please see our position description at the link above for additional information and application instructions.

For questions regarding this position, please contact:

Mary Byron
406-994-2221
Mary.byron@montana.edu

Equal Opportunity Employer, Veterans/Disabled

University of South Florida

Dept. of Chemical, Biological, and Materials Engineering

2021 – 2022 Faculty Search

The Department of Chemical, Biological, and Materials Engineering (ChBME) at the University of South Florida is seeking outstanding applicants for multiple tenure-track faculty positions at the rank of Assistant Professor. The department also seeks outstanding candidates for position(s) at the rank of Associate or Full Professor. Candidates must have a Ph.D. in Chemical Engineering or a closely related engineering or science field, demonstrated excellence in scholarly research, and a strong commitment to teaching undergraduate and graduate students. Applicants for the rank of Associate or Full Professor must have a strong record of externally funded research and outstanding scholarly publications. Applicants with research interests in all areas of chemical engineering are encouraged to apply, particularly those with interests in energy and sustainability, bioengineering and/or biotechnology, advanced materials and material processing, catalysis and reaction engineering, modeling/simulation, and separations. Applications from women and minority candidates are strongly encouraged.

The USF ChBME department is currently the fastest rising chemical engineering program in the U.S. according to USN&WR rankings for the past four consecutive years. It currently has 18 faculty members, 3 interdisciplinary affiliate faculty members, and 1 active Emeritus faculty member. The department has grown tremendously in recent years, currently ranking as one of the top 15 largest Chemical Engineering programs in the country based on student enrollment, and continues to undergo a significant expansion of its faculty and graduate programs. The department offers B.S., M.S., and Ph.D. degree programs in Chemical Engineering and an M.S. in Materials Science and Engineering. In addition to strong collaborations within the College of Engineering and a number of research centers on campus, faculty members engage in collaborations with faculty from across the College of Arts and Sciences and the extensive medical enterprise at USF including the College of Medicine, NCI Moffitt Cancer Center, USF Heart Institute, and USF Genomics Institute. With approximately 54,000 students, USF is one of the 10 largest public universities in the United States and is in the top 5% of U.S. universities based on total research expenditures. USF is located in Tampa, a thriving metro area of more than 3 million people situated in an idyllic location on Tampa Bay and the beautiful Gulf of Mexico.

Individuals interested in the positions should submit a detailed CV, names of four professional references, a brief statement of their teaching interests, and a detailed research plan. A cover letter indicating interest in a specific rank position should be included. Review of applications will continue until the positions are filled. Additional details and a method to submit applications for each rank position can be found through the USF hiring system at the following links:

Assistant Professor Positions: Job ID 26853

Associate Professor Positions: Job ID 26854

Professor Positions: Job ID 26855

USF is an equal opportunity/equal access/affirmative action institution.