



Industrial & Engineering Chemistry

Making Chemistry Work!

2021 Fall Newsletter

I&EC Executive Board

Chair: Carter Abney
Carter.abney@borregaard.com

Chair-Elect: Bond Calloway
TC39@mailbox.sc.edu

Past-Chair: Samuel Morton
mortonsa@jmu.edu

Treasurer 2020-2021: Kevin Charette
charetk@gmail.com

Secretary 2021-2022: Maria Kriz
maria.kriz@smi.doe.gov

Councilor 2019-2021: Leigh Martin
martinlr@ornl.gov

Councilor 2021-2022: Jacqueline Kiplinger
kiplinger@lanl.gov

Councilor 2021-2023: Mary Engelman
mkmooore123@gmail.com

Program Chair: Anna Ivashko
anna.c.ivashko@exxonmobil.com

Deputy Program Chair: John Clegg
jclegg@g.harvard.edu

Program Secretary: June Kowalski
junekowalski@gmail.com

Public Relations Chair: Samina Azad
samina.azad@gmail.com

Newsletter: Maria Kriz
Maria.Kriz@smi.doe.gov

Awards: Leigh Martin
martinlr@ornl.gov

Membership: Glenn Fugate
fugatega@ornl.gov

Industry Associate: John Engelman
jengelman@gmail.com

Parliamentarian & Historian: Bill Flank
wflank2@gmail.com

Member at Large: Kathryn Taylor-Pashow
Kathryn.Taylor-Pashow@smi.doe.gov

Member at Large: George Stanley
gstanley@lsu.edu

SST Subdivision Chair: Shannon Mahurin
mahurin@ornl.gov

SST Vice Chair: Neil Williams

SST Vice Chair-Elect: Marek Piechowicz

SST Secretary: Abdul Momen

Chair's Report

Dear Members of the I&EC Division,

A question often asked is what value is added by Division membership. I'm sure if you ask various leaders, you'll get a range of altruistic reasons – a desire to give back to the Division or wanting to invest in the next generation of scientists, but I also wanted to share some of the reasons I began serving and continue to serve in Division leadership.

Early in my career, service in a professional society was almost a requirement for career progression. I needed the opportunities to present my research, network with other scientists, and receive the occasional recognition and awards that were necessary for professional advancement. I also discovered that organizing a symposium was an excellent way to design a program filled with research that was immediately pertinent to mine, while personally meeting some of the world leaders in the discipline. Activity in a Division was essential to realize all of the above.

More recently, I have come to appreciate the opportunity to learn and practice the business leadership skills that accompany Chairing the Division. While similar skills can be (and are) developed in my formal career, having this "leadership sandbox" has allowed a comparatively low-risk environment to learn and evaluate how I function in a leadership role, and how to best respond when people push back on tasks and items that I consider priorities. It has also afforded a dose of humility and a greater measure of empathy for those in management.

As I approach the end of my term as Chair, I offer one more reason for involvement: it provides a place for to belong. Due to the pandemic, three national meetings have been either cancelled or virtual, and while the science has remained accessible, we all know this is only a part of why we attend the meetings. Yet when I remember my first ACS conferences, the feeling was all too similar – I had all the science, but none of the belonging.

If any of these thoughts or reasons have resonated with you, I hope you'll consider serving in the Division as well. You're leaving much of the value of Division membership unrealized if you aren't engaged in some manner of service. Please contact any of the leadership if you're interested in learning more about where you can get involved.



Carter Abney
I&EC Chair

Chair Elect Report

The Steering committee has been hard at work defining a new strategic plan for the I&EC division. Over a series of meetings, we have defined a strategy and are now beginning to finalize tactical goals that will be achieved over the next few years. The strategy for expanding I&EC's portfolio lies on three principal attributes: 1) Communicating national science & engineering issues and problems, 2) Aligning I&EC's capabilities with government related program funding, and 3) Customer engagement. Identifying national and/or international problems that can be uniquely solved by the I&EC in partnership with industry, national laboratories and government

will lead to significant program expansion in the form of running national symposia and conferences. The growth strategy also matches I&EC's current capabilities or recommends new capabilities that can be leveraged to solve complex problems. These strategic capabilities are identified through building external partnerships, hosting workshops, and communicating research, development and demonstration projects that identifies technology and/or capability gaps that exist and are beneficial to support national interests. Most importantly, the strategy relies on continuous customer engagement which will allow I&EC to build lasting collaborative relationships with program managers who seek to grow their internal programs while aiding the division to complete its mission



Bond Calloway
Chair Elect

I&EC Division Member Highlight

I&EC Graduate Student Symposium Organizer



Prof. Michael Matthews founded and has been the primary organizer of the annual *Industrial & Engineering Chemistry (I&EC) Graduate Student Award Symposium* since the Denver National ACS Meeting in 2011. This symposium was designed to involve and recognize our youngest division members and give them a chance to show off their research projects. Mike recruited Prof. George Stanley (LSU, retired) to help with the symposium, but has been the driving force for advertising and organizing the symposium.

Mike is getting ready to step down from being the main organizer of this symposium and the I&EC division is looking for someone willing to work with Mike and George for a year and then take over the job for Fall, 2023. If you are interested in getting involved, please contact any of the I&EC officers. The division is extremely appreciative of Mike's efforts over the years, which extend well past the Graduate Student Symposium.

Mike received his Ph.D. in Chemical Engineering from Texas A&M University in 1986. He was on the faculty of the University of Wyoming from 1987 to 1993 and was recruited to the University of South Carolina in January 1994, where he still works. He has served the Department of Chemical Engineering as Associate Chair, Interim Chair, Department Chair, as well as chair of the Tenure and Promotion Committee. He became an Associate Dean in 2011, and currently is the Senior Associate Dean for Research and Graduate Programs, as well as Vice Dean of the College of Engineering and Computing. As if that wasn't enough, he also serves as Associate Vice President for Research at the University of South Carolina. He is currently codirector and co-PI of the university's Bridge to the Doctorate program, an NSF initiative that provides fellowship support to under-represented minority doctoral students in the STEM fields. He is also the university's representative to the National GEM Consortium. Mike also serves South Carolina as chair of the EPSCoR State Committee.

Mike began his service to ACS in 1994 and was the founding chair of the Green Chemistry & Engineering (GC&E) Subdivision of I&EC (1999-2004). He served as I&EC Division Chair in 2007, and in the Chair-elect and Past Chair positions. The Division was subsequently recognized with an ACS ChemLuminary Award based on accomplishments in 2007. He was one of three Centennial Committee Organizers (with Bill Flank and Martin Abraham) who planned the Division's 100th Anniversary celebrations at the 2008 New Orleans and Philadelphia meetings. He also co-edited (with Flank and Abraham) ACS Symposium Series 1000, "Innovations in Industrial and Engineering Chemistry." This volume was developed as part of the centennial activities. Mike participated in the I&EC Division Planning Retreat in October 2008 and thus helped craft the division's Strategic Plan at the time. He has also been active in the Green Chemistry activities of ACS, having presented papers and organized sessions at the annual Green Chemistry & Engineering Conference. He served on the Editorial Advisory Board of *I&EC Research* from 2008 to 2010.

The photo below is from the I&EC Graduate Student Awards Symposium at the San Diego National ACS meeting in August, 2019. A virtual awards symposium was organized and held in August, 2020 despite the COVID-19 outbreak. Mike and George Stanley recruit judges from academics and industry to assist them in choosing the top three talks from the symposium, which receive monetary awards and a plaque. A symposium luncheon, sponsored and paid for by I&EC, is usually held when we have in-person meetings.



Salute to Excellence

The I&EC is pleased to recognize the following members for service to chemistry and the American Chemical Society.

<https://cen.acs.org/people/awards/2021-ACS-National-Award-winners-part-I/99/i1>

2021 Fellow of the ACS

Congratulations to Dimitris Katsoulis on the distinction of becoming a 2021 ACS Fellow.

[Announcing the 2021 ACS Fellows](#)

Award for Volunteer Service to the American Chemical Society

Mary K. Engelman

Sponsor: ACS

Citation: For exemplifying the spirit of volunteerism through her efforts to increase public awareness of chemistry and to promote science to students of all ages

Current position: Retired from Eastman Chemical

Education: AS, chemical technology, Northeast State Community College; BS, interdisciplinary studies, Liberty University

Engelman on what drives her passion for volunteering: “Volunteering provides me a sense of accomplishment. First, I love to give back to the next generation of professionals. Second, I get to develop skills that you cannot optimize in a classroom.

We learn about communication, problem solving, leadership, etc. in a classroom. However, to optimize the skills, you must put these skills to practice. Volunteering provides a person with the opportunity to develop these types of skills. I enjoy working as a team member or as a leader on a team to problem solve or develop a new process. I volunteer because it feels right to me.”

What Engelman’s colleagues say: “It is difficult to quantify the multitude of ways the ACS has benefited from Mary’s involvement at every level. Mary has provided leadership wherever she has served and done so willingly, and she has become a role model for others who want to be active in their professional society.”—Dawn Mason, Eastman Chemical



Mary K. Engelman
Credit: Courtesy of
Mary K. Engelman

ACS Award in Inorganic Chemistry

Kristin Bowman-James

Sponsor: MilliporeSigma

Citation: For her fundamental contributions to inorganic chemistry by providing insight to anion coordination from a transition metal coordination perspective

Current position: University Distinguished Professor, University of Kansas

Education: BS and PhD, chemistry, Temple University

Bowman-James on her biggest research challenge: “Convincing my inorganic colleagues that anion coordination is a viable area of chemistry and in some ways like transition metal coordination. While some caught on right away, others were (and probably some still are) diehards. My current challenge is tackling an anion that possesses a significant range of negative charges (−1 to −12). We are using supramolecular chemistry to unravel the structural chemistry of this quirky, structurally elusive, and highly phosphorylated biomolecule, myo-inositol-1,2,3,4,5,6-hexakisphosphate, known as phytate.”

What Bowman-James’s colleagues say: “Kristin’s research over the last several decades has shown both originality in thought and creativity in fundamental inorganic chemistry. Supramolecular chemists tend to come from an organic chemistry background, but with her inorganic background and approach, Kristin has described a new type of coordination chemistry: the supramolecular coordination chemistry of anions.”—Darren Johnson, University of Oregon



Kristin Bowman-James
Credit: Courtesy of
Kristin Bowman-James

Francis P. Garvan–John M. Olin Medal:**Carol J. Burns**

Sponsor: Francis P. Garvan–John M. Olin Medal Endowment

Citation: For exceptional service to the chemistry community through pioneering research in actinide chemistry, service in national security, and championing workforce development and equity in science

Current position: Executive officer and laboratory fellow, science, technology, and engineering, Los Alamos National Laboratory

Education: BA, chemistry, Rice University; PhD, inorganic chemistry, University of California, Berkeley

What gets Burns's creative juices flowing: "I feel most creative when working in a team in which my colleagues bring a diversity of backgrounds and perspectives. Everyone has something unique to contribute, and we all have something to learn from each other's good ideas. When challenged with a tough problem to solve (either immediately in front of us or a long-term challenge), it can be very invigorating to brainstorm in this kind of environment."

What Burns's colleagues say: "Burns's research program in actinide coordination and organometallic chemistry has contributed substantially to our understanding of the electronic structure of the early actinides and inspires much current work in the field."—Geraldine Richmond, University of Oregon



Carol J. Burns

Credit: Courtesy of
Carol J. Burns

Councilor' Report

Once again, the COVID-19 pandemic in the U.S. and worldwide, has required ACS to re-evaluate how to conduct the ACS Fall meeting and conference. ACS will follow all CDC and state guidelines for COVID-19 and ACS has created a COVID-19 protocol safety plan that will be shared with all attendees, staff, vendors, and venues. I&EC will conduct virtual programming for the Fall National ACS Meeting. The health and safety of all ACS members, meeting attendees, staff, and the residents of Atlanta is the #1 concern for ACS.

Action Items for the 2021 Fall ACS Meeting:

- Election to Council Policy Committee
- Election to Committee on Committees
- Election to Committee on Nominations and Elections
- Recommendation to continue the "Committee on Environmental Improvement"
- Petition to Amend the Duties of the Committee on Minority Affairs
- Approval of "Professional Employment Guidelines"

Special Discussion for Council: Ideas to increase involvement and membership from business and industry.

ACS National Elections will be conducted starting Sept 27, 2021.

- Candidates for ACS President-Elect: Judith, C. Giordan and John C. Warner
- Candidates for District I: D. Richard Cobb and Katherine L. Lee
- Candidates for District V: Lisa Balbes and Joseph A. Heppert



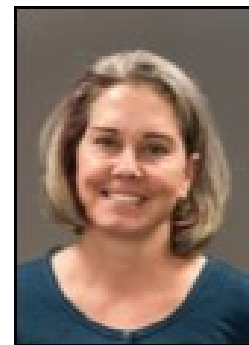
Mary Engelman
I&EC Councilor



Leigh Martin
I&EC Councilor

Future ACS Meetings and Themes:

- Fall 2021-August 22-26, Atlanta, GA, “Resilience of Chemistry”
- Spring 2022-March 20-24, San Diego, CA, “Bonding through Chemistry”
- Fall 2022-August 21-25, Chicago, IL, “Sustainability in a Changing World”
- Spring 2023-March 26-30, Indianapolis, IN, “Cross Roads of Chemistry”
- Fall 2023 August 12-17, San Francisco, CA, TBD
- Spring 2024 March 17-21, New Orleans, LA, TBD
- Fall 2024 August 18-21, Denver, CO, TBD
- Spring 2025 March 24-27, San Diego, CA, TBD
- Fall 2025 August 17-21, Washington, DC, TBD



Jaqueline Kiplinger
I&EC Councilor

Programming Chair's Report

Dear I&EC Members,

First of all, I would really like to thank you for continuous support of I&EC Programming by either attending our symposia, reaching out with symposia ideas, or through all the other means. Hopefully Fall 2021 National Meeting is the last meeting where we meet mostly virtually, and I really look forward to seeing everybody in person in the near future!

We will be having a very interesting program at the upcoming Fall 2021 Meeting and I hope you get a chance to dial in. In particular, I would like to highlight Graduate Student Award Symposium and Molten Salt Symposium. Both symposia have been reoccurring over the past several Fall National Meetings and I want to thank Michael Matthews and George Stanley for their efforts with the Graduate Student Award Symposium and Jim Wishart, Joanna Mcfarlane, Aleksandr Ivanov, Vyacheslav Bryantsev, Kristian Myhre, and Hunter Andrews for their continuous organization and support of the Molten Salt symposium.



Anna C. Ivashko
I&EC Programming
Chair

Below is a more comprehensive list of the symposia we will be hosting during the Fall 2021 National Meeting:

Molten Salt Symposium
Graduate Student Award Symposium
I&EC Fellow Award Symposium in Honor of Dr. Steven Serkiz
Advanced Separation Technologies for Green Chemistry
ACS Award in Separations Science and Technology
I&EC General Papers

We are extremely honored to have George Stanley help with the organization of the “Innovation, Entrepreneurship, and Industrial-Academic-Government Collaborations” PRES symposium that H.N. Cheng is organizing as a part of his presidential initiatives. If you have a chance, I highly encourage you to attend and participate.

As always, we are looking for ideas and initiatives for I&EC Programming and I am excited to announce that we will have an interesting program lined up for the 2022 as well. More details will come as we get closer to the Spring National Meeting.

I would like to thank John Clegg (Deputy Programming Chair) and June Kowalski (Programming Secretary) for their time and efforts! It has not been easy to navigate in the ever-changing environment, but with their help, I&EC Programming persevered.

For any questions and ideas in regard to I&EC Programming please contact any of us on the Programming Committee! Hoping to see everyone at an in-person meeting in the near future!!

Communications Chair's Report

Greetings, I&EC members! I hope this message finds you well. The Fall National Meeting is right around the corner. I hope you will attend our online programs and events. Please check out the division's programming information listed in the newsletter.

The new website is nearly complete. We are still updating some of the content. Please visit the website (link below) and send us your comments and feedback.

<https://acs-iec.org/>

Please consider joining our social media pages (Linkedin and Facebook) and send us any content you would like posted on these sites.

Please note that the I&EC Division attempts to contact you currently through the mail chimp service for membership and constant contact for announcements, the newsletter, and other notifications. Please ensure that emails from these services are unblocked and not going to your spam folder.

Enjoy the rest of the summer and be safe!



**I&EC
Communication/PR
Chair**

Membership

Greetings to our current members as well as our new ones. Please note that the I&EC Division attempts to contact you currently through the mail chimp service for membership and constant contact for announcements, the newsletter, and other notifications. Please ensure that emails from these services are unblocked and not going to your spam folder.

The Membership Committee is compiling a list of volunteer opportunities within other committees and the I&EC Division. Please contact us at iec.membership.committee@gmail.com for more information.



**Glenn Fugate
Membership
Committee Chair**

SS&T Subdivision

Greetings from the SS&T Subdivision. We're excited about the upcoming Fall meeting where SS&T will have programming entitled "Advanced Separation Technologies for Green Chemistry." Election season is here, and ballots are being prepared. Speaking of elections, one way to get involved in the SS&T Subdivision is to run for an officer position. If you are interested, please reach out to me or any of the other subdivision officers and we would be happy to answer any questions. Another way to get involved in the subdivision is to organize a symposium in your area of interest in separations science. We always welcome new ideas for symposia highlighting emerging areas and recent advances in separation science.



**Shannon Mahurin
SS&T Subdivision
Chair**

2021 I&EC Elections

Annual I&EC elections are upcoming. The following members were put forth by the Executive Committee as candidates for the 2021 election and will take office in January 2022. If you are interested in running for an elected position in 2022, please contact Carter Abney (Carter.abney@borregaard.com) by the end of the year.

Chair elect (serves in the three-year chair succession of Chair-elect, Chair, and Past-Chair, one position)

Anna Ivashko:

Anna has been involved with the I&EC Division since March 2019. She started out as a Programming Secretary, and in March 2020 became a Programming Chair and has served as the Programming Chair since. Despite the challenging environment of COVID-19 pandemic, Anna along with the support of Programming Deputy Chair and Programming Secretary was able to leverage and pivot I&EC Programming and successfully carry out 2020 and 2021 Programs in virtual and ever-changing environments and our Programming is running successfully. Her vision for the future of the I&EC Division is around bringing in young professionals and have them interested in Industrial and Engineering Chemistry and where their work and skills can make impact. She is also interested in helping the young professionals connect with and learn from more experienced members be it about ACS, work, chemistry, or other I&EC topics.

Anna has a mixed background in chemistry and data analytics. In her daily job she serves as a bridge between the data and experimental communities and her work primarily focuses on scale-up of novel materials. She joined ExxonMobil as a contractor Laboratory Technician in 2015, became a permanent hire Research Technician in 2019, and Catalyst Scale-Up Technologist in 2019. Outside of work Anna enjoys travelling around the world, skiing, going to the beach, reading, flying, and hiking.

Treasurer (serves a 2-year term)

Kevin Charette:

Kevin Charette received his BA in Chemistry in 2012 from Ferris State University. He worked doing development work in the lab for US Paint, a paints and coatings company, before going out into the field as a Technical Service Representative. He currently works as an Account Manager for US Paint.

He has been an active member of ACS since 2011 and been involved with I&EC since 2016, serving as Chair-Elect (2017) and Chair (2018) of the Applied Chemical Technology subdivision of I&EC and as Treasurer of I&EC since 2020.

Councilor (serves a 2-year term)

Leigh Martin:

Leigh R. Martin holds a B Sc. In Chemistry (1998) University of York, an M Sc. In Instrumentation and Analytical Science (1999) UMIST, and Ph D in Chemistry (2003) from the University of Manchester. Leigh has held research positions at British Nuclear Fuels, Washington State University, Idaho National Laboratory. In 2016 he moved to Oak Ridge National Laboratory as a Senior R&D Scientist and is currently the Group Leader of the Fuel Cycle Chemistry group. His research is currently focused on f-element separations and coordination chemistry and nuclear nonproliferation and safeguards. Dr. Martin has been a member of the ACS since 2005, his previous service includes 2012 Chair of the Separation Science and Technology Subdivision of I&EC, 2015 Chair of I&EC Division and 2019 Councilor for I&EC Division.

It is my belief that the industrial chemistry community has a lot to offer ACS council as our community is the ultimate end goal of chemistry research, however the needs of this community is often forgotten. During the last 2 years I have worked on the MAC committee in the development of Membership 2.0, that should be rolling out in 2022, it is my hope that this is one of the ways that we will promote move value for our industrial members. It would be my honor to serve the I&EC members for another term as Councilor for the Division of Industrial & Engineering Chemistry.

Member Announcements

We are beginning a new section of the Newsletter "Member Announcements". Please send any news you would like your colleagues to know (promotion, first job, award, paper published, new patent, position available, position wanted, ...) to Newsletter Editor Dr. Maria Kriz at Maria.Kriz@srnl.doe.gov.

Call for Nominations: I&EC Division Fellows Award for the Class of 2023

It is a pleasure to inform you that the Division is now receiving nominations for the 17th annual I&EC Division Fellows Award.

The I&EC Division will make up to four awards annually:

(1) I&EC Division Fellow:

A chemist or engineer is selected from an academic, industrial, or government laboratory based on innovative contributions to the areas in which they have published within applied chemistry and/or chemical engineering. Patents are given equal weight to papers in the open literature and nominations from industry are encouraged.

(2) I&EC Division Early Career Fellow:

The criteria are the same as those for Division Fellow, but the award is for an individual up to 40 years old (as of the current calendar year) and thus in the earlier stage of their career.

(3) I&EC Division Applied Chemical Technology Fellow:

A chemist or engineer with an undergraduate degree as the terminal degree is selected from an academic, industrial, or government laboratory based on outstanding technical contributions.

(4) I&EC Division International Fellow:

The criteria are the same as those for Division Fellow, but the award is for an individual working outside the United States. For the I&EC Division Fellow, I&EC Division Early Career Fellow, and I&EC Division Applied Chemical Technology Fellow: The award consists of a plaque naming the awardee a Fellow of the I&EC Division, registration to the Spring meeting at which the award will be presented, complimentary one-year membership in the Division, and a \$1000 travel award. The awardee will be announced on the Division's website, be recognized during the I&EC Division award presentation symposium and be asked to contribute a talk to the I&EC Division award presentation symposium during the Spring 2022 meeting.

For the International Fellow: The award consists of a plaque naming the awardee an International Fellow of the I&EC Division, registration to the Spring meeting at which the award will be presented, complimentary one-year membership in the Division, and a travel award of up to \$2500 for economy airfare to the ACS meeting and up to 4 nights at a hotel so that he or she may attend the meeting. The awardee will be announced on the Division's website, be recognized during the I&EC Division award presentation symposium and be asked to contribute a talk to the I&EC Division award presentation symposium during the Spring 2022 meeting.

The awardee is welcomed to work with the IEC Programming Chair to organize a topical symposium if desired.

NOMINATIONS for I&EC Division Fellow, I&EC Division Early Career Fellow, and I&EC Division International Fellow:

The nominator must be a member of the I&EC Division and will submit a letter detailing how the candidate's work has advanced the fields of applied chemistry and chemical engineering. Additionally, the candidate's CV and up to five relevant publications/patents should be provided. A letter seconding the nomination is required. NOMINATIONS for I&EC Division Applied Chemical Technology Fellow: The nominator, who must be a member of the Division, is invited to submit a nominating letter detailing how the work of the nominee contributed to applied chemistry and/or chemical engineering. The nominee is to have an undergraduate degree as the terminal degree. The number of oral and written presentations as well as any outside articles or patents should be listed. Additionally, the candidate's CV and up to five relevant publications/patents should be provided.

Please send nominations to Dr. Glenn Fugate (acs.iec.fellow.award@gmail.com) who will forward them to the other members of the selection committee.

***The deadline is 31 December 2021. ***

Thank you.

Dr. Glenn A. Fugate



**Industrial & Engineering
Chemistry**

Making Chemistry Work!