



# Industrial & Engineering Chemistry

*Making Chemistry Work!*

## I&EC Executive Board

**Chair:** David Hobbs

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**Chair-Elect:** George Stanley

[gstanley@lsu.edu](mailto:gstanley@lsu.edu)

**Past-Chair:** Frankie Wood-Black

[fwoodblack90@gmail.com](mailto:fwoodblack90@gmail.com)

**Treasurer 2016-2017:** Janet Smith

[janet.smith@dowcorning.com](mailto:janet.smith@dowcorning.com)

**Secretary 2015-2016:** Sam Morton

[mortonsa@jmu.edu](mailto:mortonsa@jmu.edu)

**Councilor 2014-2016:** Spiro Alexandratos

[alexsd@hunter.cuny.edu](mailto:alexsd@hunter.cuny.edu)

**Councilor 2015-2017:** Melanie Moser

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**Councilor 2015-2017:** Mary Engelman

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**Councilor 2016-2018:** Martin Abraham

[martin.abraham@ysu.edu](mailto:martin.abraham@ysu.edu)

**Program Chair:** Edward Rosenberg

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**Program Secretary:** Sudhir Mulik

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**Social Media:** Samina Azad

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**Web/Newsletter:** Kevin Charette

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**Awards:** Leigh Martin

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**Membership:** Wasiu Adedepo Lawal

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**Historian:** Bill Flank

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**ACT Subdivision Chair:** Joe Saviano

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**GC&E Subdivision Chair:** Yinlun Huang

[yhuang@wayne.edu](mailto:yhuang@wayne.edu)

**GC&E Subdivision Chair-Elect:** Rich Engler

[engler.richard@epa.gov](mailto:engler.richard@epa.gov)

**GC&E Program Chair:** Qiang Xu

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**NCIA Subdivision Chair:** George Stanley

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**NCIA Subdivision Programming Chair:** Joe Zoeller

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**SST Subdivision Chair:** Corey Hawkins

[cahawkins@ntech.edu](mailto:cahawkins@ntech.edu)

**SST Subdivision Vice Chair:** Jerry King

[jwking1@uark.edu](mailto:jwking1@uark.edu)

**SST Subdivision Past Chair:** Peter Zalupski

[Peter.Zalupski@inl.gov](mailto:Peter.Zalupski@inl.gov)

## 2017 Spring Newsletter

### Chair's Report

I hope that 2017 has gotten off to a good start for everyone. As I am writing this about one month into my term as Chair of the division, I want to thank Frankie Wood-Black for her leadership as the 2016 Chair, Janet Smith as the Treasurer, Sam Morton as Secretary as well as all the other members of the executive committee for their efforts. It truly is amazing the amount of volunteer effort it takes to run an ACS division! Congratulations to George Stanley who was elected as Chair-Elect, Spiro Alexandratos re-elected as Councilor and Sam Morton, re-elected as Secretary. Finally, I want to thank Dustin James for his many years of service as the web master and Kevin Charette who is our new web master.



David Hobbs  
I&EC Chair

Please review the Treasurer's report that is provided later in the newsletter. As you can see, the division spent a good bit more than the income in 2016 largely due to the cost of the Strategic Planning Retreat in February of 2016 and assuming sole financial sponsorship of the ACS National Award for Industrial Chemistry. On behalf of the Division I congratulate Dr. Jane Frommer of IBM Research as the 2017 recipient of this award.

The technical program for the Spring Meeting in San Francisco is very strong with a total of 12 Symposia. These include the symposia for the ACS Award in Industrial Chemistry, the I&EC Division, International and Early Career Fellow Awards, the ACS Sustainable Chemistry and Engineering Lectureship Awards, and Ionic Liquids in Separations and Analysis.

The Fall Technical Program currently features four symposia, (1) E. V. Murphree Award, (2) Graduate Student Award, (3) ACS Fellows, and (4) Structural and Supramolecular Aspects of Metal Ion Separations. We continue to seek out and fund innovative ways to provide technical programs at national as well as regional meetings. Please contact our Program Chair, Ed Rosenberg, if you have suggestions and interest in organizing a symposium.

The division is actively working on achieving the four goals from our strategic planning retreat that was held a year ago. These goals include the following:

- (1) increase number of presentations, accessibility, and variety of I&EC programming
- (2) increase participation of industrial chemistry practitioners
- (3) create and implement a sustainable and strategic communications plan
- (4) develop enhanced program to recognize members & non-members.

Please do not hesitate to contact me with any comments or suggestions.

## Communication Committee

The Communication Committee has the following members - Samina Azad (Chair), Dustin James, Kevin Charette, Leigh Martin, John Engelman, and George Stanley. In addition, the committee recently recruited a newsletter editor, Yaozhong Zhang. Yaozhong is currently a Ph.D. student majoring in medicinal chemistry at Stony Brook University.

The committee's overarching goal is to improve communication and engagement with the members. We plan to keep the members updated with relevant information in a timely and consistent manner using the Division's website, social media pages, and newsletter. The newsletter contains IEC programming roadmaps at the National Meeting and the goal is to publish it twice a year a few weeks before each National Meeting. If there are items you would like to see included in the newsletter please contact Yaozhong.

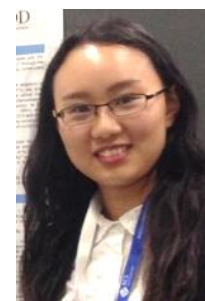
George Stanley designed the new Division Logo, shown below, which was approved by the Division's Executive Committee last year. He also designed the header image for this newsletter.



Kevin Charette has taken the role of Webmaster and is currently working on revamping the IEC Website. The Communication Committee selected Webs as an easy to work with platform for the website. Dustin James, Division's original webmaster is helping Kevin to update the website.



**Samina Azad**  
Communications  
Chair



**Yaozhong Zhang**  
Newsletter Editor

## I&EC Councilor

Dear Colleagues,

I am happy to take this opportunity to update you on my activities for the Division.

Our I&EC Fellows award program continues to operate superbly. All nominations are by members of this Division. The high caliber of our Fellows is evident by the current 2017 Fellows for whom separate symposia in their honor will be held in San Francisco:

Prof. Klavs Jensen, Warren K. Lewis Professor of Chemical Engineering at the Massachusetts Institute of Technology, was selected as the I&EC Division Fellow

Dr. Leigh Martin, Distinguished Staff Scientist at the Idaho National Laboratory (currently at the Oak Ridge National Laboratory), was selected as the I&EC Division Early Career Fellow

Dr. Kew-Ho Lee, President of the Korea Research Institute of Chemical Technology, was selected as the I&EC Division International Fellow

Ms. Michelle Cummings, Associate Research Development Specialist, Electronics and Lighting, at the Dow Corning Corporation, was selected as the I&EC Division Applied Chemical Technology (ACT) Fellow

Furthermore, I am pleased to announce our 2018 Fellows:

- Dr. Yong Wang, Laboratory Fellow and Associate Director of the Institute for Integrated Catalysis at Pacific Northwest National Laboratory and Voiland Distinguished Professor in Chemical Engineering at Washington State University, was selected as the I&EC Division Fellow



**Spiro Alexandratos**  
I&EC Councilor

- Dr. Beata Kilos, Associate Research Scientist in the Inorganic Materials and Heterogeneous Catalysis Group of the Dow Chemical Company, was selected as the I&EC Division Early Career Fellow
- Dr. Shahidah M Shariff, Head of Group Research and PETRONAS Research Chief Executive Officer, was selected as the I&EC Division International Fellow
- Mr. David Mackowiak, Lead Engineer/Scientist in the Proof of Concept lab at Honeywell UOP, was selected as the I&EC Division Applied Chemical Technology (ACT) Fellow

These lists highlight the Division's commitment to recognizing excellence in academia, industry, and national labs, by men and women regardless of age (hence the Early Career Fellows), degree (hence the ACT Fellows), and national origin (hence the International Fellows). They are the results of our 11<sup>th</sup> and 12<sup>th</sup> annual call for nominations; our 13<sup>th</sup> annual call for nominations has recently been sent to you, the members of the I&EC Division Fellows.

When you look at our Spring 2017 San Francisco program, you will see quite a few awards symposia. Their function is to highlight the prominent work undertaken in industrial and engineering chemistry.

I have always considered programming to be a central aspect of this division and encouraged participation by all members in programming symposia. If you would like to do so, you can always contact me, any of my fellow councilors, and the Program co-chairs Dr. Ed Rosenberg and Dr. Carter Abney.

### I&EC Councilor

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As a member of the Divisional Affairs Committee and this year's chair of the Multidisciplinary Programming Planning Group, I have continued to be interested in Divisional programming and its influence on ACS. We are excited about the theme programming that will be ongoing during the course of the year. Some of the themes that have been selected for future national meetings especially lend themselves to I&EC Division interest, and I would encourage our members to look at these themes to identify symposia that they can develop for each of those meetings. It would be great to see the Division increase its programming and to do so in a way that aligns with these nationally important thematic areas.

Through DAC, we are currently discussing allocation formulas by which ACS provides funding to the various divisions. Of current interest is more participation in international conferences and in regional meetings. I&EC is ahead of the curve on the regional meetings component, as we put into place a regional meetings incentive program several years ago. As a result, I&EC is already engaged with regional meetings. We certainly can do better, and I would encourage members to look at opportunities to build programming content for the regional meetings to take advantage of this incentive program. Our Division continues to focus on technical programming, and the more that we can do to reach into the regional meetings, the better we will serve our members.

There are additional matters coming to Council this year, and I encourage members to look at the agenda in advance of the meeting. I would be happy to discuss any issues with any of our members, so that I can better represent their views to the national society. Thank you for your interest.



**Martin Abraham**  
I&EC Councilor

## Treasurer's Report

As expected, expenses exceeded revenues in 2016. This was predominately due to two causes. The first was the strategic planning summit in February, which only happens every 5 – 10 years. The second cause was due to several grants and awards for which revenues came in 2015 but were spent in 2016, showing a net gain in 2015 and a loss in 2016. One area of concern is the declining revenue from dues and allotment and the increasing meeting expenses. Both will have to be monitored closely and adjustments made accordingly. Overall, there has been a modest gain over the past 3 years.

For 2017, Revenues are budgeted at \$79,650 which is a slight increase over the past 3 years. Although dues and allotment are expected to be slightly down, councilor reimbursement and grants/awards should come in higher in 2017. Expenses also are set at \$79,650, accounting for higher meeting expenses due to location (San Francisco and DC). At this point it is expected that I&EC expenses will not exceed revenues.



Janet Smith  
I&EC Treasurer

## Report from the Separation Science and Technology (SS&T) Subdivision

### Treasury and Finances:

The SS&T committed to financially support the following symposia and conferences during 2016: October, 2016, Separation Science and Technology Symposium, \$1,000.

The sponsorship was utilized to encourage the participation of students. There were 25 student participants at this year's meeting, which represented over one quarter of the total. A portion of the sponsor funding made possible a greatly reduced registration fee for student participation. The sponsorship also directly supported awards to the best student poster presenters.

### Programming:

SST sponsored a symposium entitled "Separations for the Nuclear Fuel Cycle in the 21st Century Revisited," organized by Gregg Lumetta and Ken Nash during the 2016 Spring ACS meeting in conjunction with NUCL Division.

Program for 2017 is:

I&EC Division Early Career Fellow Symposium: Honoring Dr. Leigh Martin, organized by Glenn Fugate 8 am – 12pm and 2pm – 6 pm, I&EC A at the Grand Hyatt San Francisco

The Symposium entitled "Ionic Liquids in Separations and Analysis", organized by Cory Hawkins and Mark Dietz, 1 pm – 5:20 pm, I&EC B at the Grand Hyatt San Francisco

The subdivision is planning further programming and the preliminary themes and organizers are: "Structural and Supramolecular Aspects of Ion Separations", is being organized by Carter Abney and Ross Ellis in Fall 2017 National Meeting in Washington DC.

### Elections:

Online elections were held in February 2017 for Vice-Chair Elect position. Mark Dietz (University of Wisconsin Milwaukee) was elected.

### List of Officers (2017):

- Cory Hawkins, Chair, Tennessee Technological University, 931-372-6819, cahawkins@tntech.edu
- Jerry King, Vice Chair, CFS & University of Arkansas, 479-251-1970, kingjw100@hotmail.com



Peter Zalupski  
SST past Chair

- Mark Dietz, University of Wisconsin, Milwaukee, 414-229-1748, dietzm@uwm.edu
- Kathryn Taylor-Pashow, Secretary, Savannah River National Laboratory, 803-725-8215, kathryn.taylor-pashow@srnl.doe.gov
- Peter R. Zalupski, Past Chair, Idaho National Laboratory, 208-533-7666, peter.zalupski@inl.gov
- Glenn A. Fugate, Member at Large, Oak Ridge National Laboratory, Nuclear Security & Isotope Technology Division, 865-576-3479, fugatega@ornl.gov

### Report from the Applied Chemical Technology (ACT) Subdivision

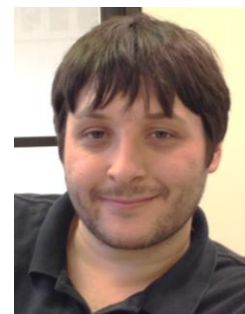
Hello, I&EC Members, my name is Joe Saviano and I hold the Chair position within I&EC's ACT Sub-division. I am a formulation chemist at Biosolutions LLC based in Grand Haven Michigan. I am excited to work with ACTS as it provides a unique opportunity to bridge the gap between Academia and Industry.

The ACTS subdivision open meeting is Saturday April 1<sup>st</sup> @ 10:00 AM in the San Francisco Marriot union Square Russian Hill Room. If anyone will be at the San Francisco meeting they are welcome to join.

Industrial chemists do not often get as much opportunity to enjoy the benefits of being an ACS member as the time and expense of the ACS spring and fall national meetings is often not supported by many corporations. I believe that I&EC can do a better job in providing membership value via non-meeting based programming that everyone can participate.

ACTS also hopes create localized national meeting programming in the near future as well. We are currently looking at this for March 2018 in New Orleans, Louisiana. If anyone is from the New Orleans area and would like to speak on Industry please reach out and let us know.

My goal is to help promote industry based programming in a way that industrial associates can benefit without having the expense of the ACS national Meetings. This will allow I&EC to provide its membership with Insight, professional development and networking opportunities that will benefit the industrial chemical enterprise.



Joe Saviano  
ACT Chair

### Report from the Green Chemistry and Green Engineering (GC&E) Subdivision

**Qiang Xu** (Professor, University Scholar & Distinguished Faculty Research Fellow, Dan F. Smith Department of Chemical Engineering, Lamar University)

**Academic history:** Dr. Xu obtained his B.S. degrees in chemical engineering and environmental engineering respectively, both in 1998; Ph.D. degree in 2003 in chemical engineering, all from Tsinghua University, China. Dr. Xu has published over 100 peer-reviewed papers and given over 200 invited talks and international conference presentations. He is the recipient of Excellence in Process Development Research Award of AIChE in 2016, Lamar University Merit Award in 2010, University Scholar Award in 2012, and Lamar Distinguished Faculty Research Fellow in 2015.



Qiang Xu  
GC&E Chair

**Research interest:** process synthesis, product scheduling, dynamic simulation and optimization with particular applications in pollution prevention and waste minimization, energy saving, process safety, flexibility analysis, and air quality analysis for oil and gas/chemical/petrochemical industries. Specifically, his studies on industrial flare minimization have been successfully applied in multiple chemical plants and resulted in notable economic, environmental, and societal benefits.

**I&EC service:** Programming Chair of the Green Chemistry and Green Engineering Subdivision of ACS and the Chair-elect of Technology Transfer & Manufacturing Subdivision of AIChE (American Institute of Chemical Engineers).

**Statement:** Green Chemistry and Green Engineering is the most promising and challenging research/application area in the coming era of U.S. smart manufacturing. Let's work hard together to promote our division in a better position to face the grand challenge and opportunity.

### Message from the Membership Chair – Wasiu Adedapo Lawal

Fellow IEC members, we would like your feedback on what you think the division can do to enhance the value of your membership. Any suggestions on what we could be doing will be much welcome.

Please send your suggestions to Wasiu Lawal: [Wasiulawal79@gmail.com](mailto:Wasiulawal79@gmail.com)



Wasiu Adedapo Lawal  
Membership Chair

### I&EC Symposia at the Spring National ACS Meeting in San Francisco (April 2-6, 2017)

I&EC Division Events Schedule Outline

#### Saturday, April 1

*Subdivision Meetings @ San Francisco Marriot Union Square Russian Hill Rm.*

ACT: 10:00 AM-11:00 AM

NCIA 11:00-12:00 PM

SS&T: 12:00-1:00 PM

*Division Meetings @ San Francisco Marriot Union Square Russian Hill Rm.*

Programing Committee: 1:00-2:00 PM

Steering Committee Meeting: 2:00-3:00 PM

#### Sunday, April 2

I&EC: B - I&EC International Fellow Symposium: Honoring Professor Kew-Ho Lee (Technical Program)  
8:00 AM-12:00 PM @ Grand Hyatt San Francisco

I&EC: B - Ionic Liquids in Separations & Analysis-Oral (Technical Program)  
1:00 pm-5:20 PM @ Grand Hyatt San Francisco

I&EC: A - I&EC Division Fellow Award Symposium: Honoring Professor Klavs Jensen  
(Technical Program)

1:00 pm-5:00 PM @ Grand Hyatt San Francisco

Executive Committee Dinner, 7 PM TBA

**Monday, April 3**

I&EC: A - 2017 ACS Sustainable Chemistry & Engineering Lectureship Awards: Symposium in honor of Gregg Beckham (Technical Program)

8:00 AM - 12:00 PM @ Grand Hyatt San Francisco

I&EC: B - Symposium in honor of Michelle Cummings, ACT Fellow (Technical Program)

8:00 AM - 12:00 PM @ Grand Hyatt San Francisco

I&EC: B - ACS Award in Industrial Chemistry: Symposium in honor of Jane Frommer (Technical Program)

1:30 PM - 5:30 PM @ Grand Hyatt San Francisco

I&EC: A - 2017 ACS Sustainable Chemistry & Engineering Lectureship Awards: Symposium in honor of Jinlong Gong (Technical Program)

1:30 PM - 5:30 PM @ Grand Hyatt San Francisco

**Tuesday, April 4**

I&EC: B - 2017 ACS Sustainable Chemistry & Engineering Lectureship Awards: Symposium in honor of Helen Sneddon (Technical Program)

8:00 AM - 12:00 PM @ Grand Hyatt San Francisco

I&EC: A - 2016 E.V. Murphree Award in Industrial & Engineering Chemistry: Symposium in honor of Michael M. Thackeray (Technical Program)

8:00 AM - 12:35 PM @ Grand Hyatt San Francisco

I&EC: A - 2016 E.V. Murphree Award in Industrial & Engineering Chemistry: Symposium in honor of Michael M. Thackeray (Technical Program)

1:30 PM - 5:30 PM @ Grand Hyatt San Francisco

**Wednesday, April 5**

I&EC: A - I&EC Division Early Career Fellow Symposium: Honoring Dr. Leigh Martin (Technical Program)

8:00 AM - 12:00 PM @ Grand Hyatt San Francisco

I&EC: A - I&EC Division Early Career Fellow Symposium: Honoring Dr. Leigh Martin (Technical Program)

2:00 PM - 6:00 PM @ Grand Hyatt San Francisco

I&EC: A - General Posters-Poster (Technical Program)

6:00 PM - 8:00 PM @ Grand Hyatt San Francisco

**Wednesday, April 5**

I&EC: A - General Papers (Technical Program)

8:00 AM - 12:15 PM @ Grand Hyatt San Francisco

I&EC: A - General Papers (Technical Program)

1:30 PM - 5:30 PM @ Grand Hyatt San Francisco

## I&EC Division Fellows Award 2017

It is a pleasure to inform you that the Division is requesting nominations for the 12th annual I&EC Division Fellows Award. The I&EC Division includes the Separation Science and Technology (SST), Novel Chemistry with Industrial Applications (NCIA), Green Chemistry and Engineering (GCE), and Applied Chemical Technology (ACT) subdivisions.

**(1) I&EC Division Fellow:**

Prof. Klavs Jensen, Warren K. Lewis Professor of Chemical Engineering at the Massachusetts Institute of Technology

**(2) I&EC Division Early Career Fellow:**

Dr. Leigh Martin, Distinguished Staff Scientist at the Idaho National Laboratory (currently at the Oak Ridge National Laboratory), was selected as the I&EC Division Early Career Fellow

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

Ms. Michelle Cummings, Associate Research Development Specialist, Electronics and Lighting, at the Dow Corning Corporation

**(4) I&EC Division International Fellow:**

Dr. Kew-Ho Lee, President of the Korea Research Institute of Chemical Technology