DivCHED Newsletter
Spring 2019

In Remembrance of Glenn Crosby

Theoretical Frameworks for Research in Chemistry/Science Education

ACS Fellows Nominations Due April 1, 2019

ACS 257th National Meeting
Chemistry for New Frontiers
March 31 - April 4, 2019 | Orlando, FL

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Letters from the Executive Committee

From the Chair, Irv Levy [irv.levy@gordon.edu]

I'm currently obsessed with Freddy Mercury having seen Bohemian Rhapsody first on the huge screen in glorious Imax and then, repeatedly, on the tiny screen (my iPad). Consequently, I begin with a Queen lyric, “I've paid my dues / Time after time / I've done my sentence / But committed no crime / And bad mistakes / I've made a few.”

Even though I was program chair and a member of the Division's Executive Committee for about a decade (I've done my sentence?), there was an enormous learning curve when joining the leadership succession. I could have done nothing but for the many volunteers and officers of the division who guided me, especially since I was recovering from a medical event during the past year. As Freddie would sing, “I thank you all!” Thanks to all of our wonderful volunteers and officers but especially to our division's Wonder Woman, Cheryl Frech. Seemingly without frustration, she has hand-held me through the various duties of the chair, hopefully helping me escape any bad mistakes. If this is true, credit belongs to Cheryl; if mistakes were made, they belong to me.

One of the main items on the radar this year is the division's financial health. We are, in fact, financially healthy but there is an important issue that has to be handled or the future health of the division is at risk. In short, year upon year we are spending more than the income received through member dues and income from the monies from the Mothership, as we often refer to ACS. The good news is that we are very aware of the situation. Many thanks are due to our Treasurer, David Licata, and the chair of the Finance Committee, Cathy Middlecamp, as well as the members of the Finance committee.

So, as in any budget, there are two ways to address the situation, reduce spending and/or increase income. We have been working to find ways to reduce our spending without causing harm to the various agendas we support. It's not as easy as we would like since the budgets were already lean. To increase income we are looking at various possibilities. This week began the spring fundraiser at WGBH, my local NPR radio station, and it reminds me that we could also be looking for more support from those who appreciate the services that we offer. Toward that end we are working to carefully delineate the various benefits that come with membership in the division. How can you help? Thanks for asking! Each of us could make a personal commitment to help find one new member for the division in this coming season, perhaps a new colleague or a student who is heading into chemistry education. We have much to offer in the professional growth of those folks. Sadly, we can't give you a cool periodic table blanket as the Mothership does in their Member-Get-a-Member program but we can give you our endless thanks. Or you could choose to donate to the division. If 10% of our members made a $5 monthly donation to the division then it would be transformational in our financial health. At this writing, we don't have a mechanism in place to accept this sort of a donation but we’re on it and, once we do, I will send out an email to all of our members encouraging this. So start saving the change from your morning coffee!

Together we will build the health of the division to meet our mission, “To engage our global network of members by communicating, promoting and effectively identifying opportunities and resources responsive to the spectrum of chemistry teaching and learning environments.”

We are the champions, my friends!

Irv Levy
Gordon College
Chair of DivCHED

Know Your Way Around the Division

If you need to pay membership dues, want to make a contribution to the DivCHED Service Award fund, or want to know about money, budgets, etc., contact the Treasurer.

If you want to change your mailing address, want a Division publication, or want to know about official Division actions, etc., contact the Secretary. If you want to receive this DivCHED Newsletter (or not receive it), contact the Secretary.

If you want to bring an idea before the Executive Committee or want to make an opinion known, contact the Member-at-Large.

If you want to contribute something to DivCHED News, contact Heather Johnson.
Letters from the Executive Committee

From the Chair-Elect, Dawn Del Carlo [dawn.delcarlo@uni.edu]
I hope 2019 is off to a fantastic start for all of you. As your chair-elect I want to thank you all for your vote of confidence in me as I move into the Chair succession in the Division. I have to say, I'm a bit overwhelmed by the learning curve (cliff?) but am excited to be learning about the inner workings and benefits of the Division; a lot of which I actually didn't know about until I took on this role and started to be included on all the committees' and boards' emails. Which made me wonder why it is that I, as a DivCHED member for over 20 years who has been involved in a variety of committees, don't know about all these things? Was I just not on the right email list(s)?

Much like yourselves, I receive the Newsletter (back when it was in paper form and now via email), and I read it…or at least I thought I did. There is so much to communicate about who we are as a Division and all that we do. How do we do that best? So this is where you all come in, if you've read this far, here's your chance: Click on this link to tell me that yes, you do indeed read the newsletter (and clearly my note to you here). That's it. Just a quick click. However, if you have a few minutes to spare after that, click to the next page to provide more detailed feedback. I promise that's the last page and won't take more than 5 min. There is a lot of great work happening in the Division and better communication highlights those efforts to a wider audience. But secondly, people who know what is going on in the Division will (hopefully) be inspired to get involved because they know what that involvement entails.

I look forward to reading your responses, serving the Division to the best of my ability over the next 3 years, and hopefully seeing you in Orlando!

Dawn Del Carlo
University of Northern Iowa
DivCHED Chair-Elect

From the Immediate Past Chair, Cheryl Frech [cfrech@uco.edu]
I hope you and your students are traveling to the upcoming ACS meeting in Orlando. Orlando is a “new” city for an ACS meeting, so it will be interesting to explore a new venue. If you are at the meeting March 29-April 4, we hope you will join us at various DivCHED events. The open meeting of the division’s Executive Committee will be Saturday, March 30 at 1:30 pm in the Orange County Convention Center (OCCC). The division’s brief business meeting will be at 4:30 pm on Sunday, March 31, also in the OCCC, immediately preceding the Social Reception from 5:30-7:00 pm. The reception is a great place to learn how to get involved in the division. Bring a chemistry educator friend!

The Orlando ACS meeting has CHED programming for every interest. On Monday, April 1, join us to recognize the outstanding contributions of our former division chair, Cathy Middlecamp. A symposium in her honor will start at 8:30 am in the OCCC. Then stop in at the Music and Chemistry in Education Workshop from 1:00-3:00 pm in the Hilton Orlando Hotel. My chemistry department has a large number of faculty members who play or have played musical instruments, and that’s not unusual.

CHED will participate in the “Division Row” at Sci-Mix on Monday evening at 8:00 pm. Drop by the division poster and tell people about our robust division programming, awards, and meetings.

If you need travel support for future meetings, you can apply for a CHED travel award. Watch for the application to be posted on the division website and apply before September 15. These $1000 awards help support travel to the spring 2020 ACS meeting in Philadelphia or the Biennial Conference on Chemical Education (BCCE) to be held in July 2020 on the campus of Oregon State University.

As always, we need you! Chemical educators at all levels are encouraged to volunteer to serve on a committee, task force, governing board, or as an officer. You can express your areas of interest by completing a simple form: http://www.divched.org/content/nominations-ched-committees-elected-positions.

Cheryl B. Frech
University of Central Oklahoma
DivCHED Immediate Past Chair
From the Secretary/Councilor, Dan King [dk68@drexel.edu]

I hope you and your students are traveling to the upcoming ACS meeting in Orlando. Orlando is a “new” city for an ACS meeting, so it will be interesting to explore a new venue. If you are at the meeting March 29-April 4, we hope you will join us at various DivCHED events. The open meeting of the division’s Executive Committee will be Saturday, March 30 at 1:30 pm in the Orange County Convention Center (OCCC). The division’s brief business meeting will be at 4:30 pm on Sunday, March 31, also in the OCCC, immediately preceding the Social Reception from 5:30-7:00 pm. The reception is a great place to learn how to get involved in the division. Bring a chemistry educator friend!

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From the Division Ledger, David P. Licata [treasurer@divched.org]

Division Budget – I am looking forward to seeing some of our hard-working Division members in Orlando soon. I know that there are many of you who put in a great deal of effort to keep Division programs running, and to support our many activities at both national and regional meetings.

Many of our committees have great ideas to involve more people, improve their programs, and provide more and better service to members. Unfortunately, many of these ideas require additional funds, and that is something the Division is short of just now. As the Division has worked toward greater professionalism in our operations, we have engaged a Business Manager, a Meeting Planning Partner (to enhance the Biennial Conference program), and we have had an Administrative Assistant for many years.

While we hope that these changes will all improve what the Division does, and the member services it offers, they also cost money. As a result, the approved budgets over the past few years have had deficits greater than $100,000. Fortunately, by making wise choices, none of the final budgets have actually been in arrears by nearly that amount. Nonetheless, hard choices must be made.

The Finance Committee is taking the lead in finding areas to cut expenses as well as making the difficult choices on which of the excellent proposals for expanding committee work and programs can be funded. It is not fun or easy to cut or deny funding for the good ideas and volunteers who wish to do extra work to support the Division and increase service to members. I hope that committee chairs and members, as well as all the Division members will help us with the cost-cutting efforts as well as understand when a good idea has to be put off until finances improve.

Reimbursements and Grant Payments – In conjunction with the Business Manager we introduced a new page on the Division website for many of our Financial operations. We did not anticipate that there would be conflicts between the PC and MAC versions of Microsoft products, so some of the people who used our Financial page were unable to submit forms as needed.

If you need travel support for future meetings, you can apply for a CHED travel award. Watch for the application to be posted on the division website and apply before September 15. These $1000 awards help support travel to the spring 2020 ACS meeting in Philadelphia or the Biennial Conference on Chemical Education (BCCE) to be held in July 2020 on the campus of Oregon State University.

As always, we need you! Chemical educators at all levels are encouraged to volunteer to serve on a committee, task force, governing board, or as an officer. You can express your areas of interest by completing a simple form.

Daniel King, PhD  
Drexel University  
Secretary/Councilor

David P. Licata  
Division Treasurer
From the Member-At-Large, Deanna Cullen [cullendeanna@gmail.com]

The 257th ACS meeting is quickly approaching. I am pleased to say that I really look forward to the committee meetings I attend at the fall and spring conferences as well as the occasional virtual meeting in between. I feel privileged to serve as your representative on the New Member Committee, the Long Range Planning Committee, the Board of Trustees of the ACS Examinations Institute and the Executive Committee of the Division.

The decisions to move the ACS Exam Institute to a permanent location and hiring a Business Operations Manager have both proven to be beneficial over the past couple years. The operation is more financially stable without being connected to a host institution. Of course, research continues to be an important aspect of the Institute under the leadership of Director Kristen Murphy and Associate Director Jeffery Raker. Moving forward, the Institute continues to work toward establishing a reliable method of providing secure online study materials and electronic delivery of exams, while maintaining a healthy financial position to ensure longevity and stability into the future.

The New Member and Long Range Planning Committees are both working toward improved communication and creating resources to inform both potential and current members of DivCHED. A part of the LRPC plan is to produce materials intended to inform and support committee chairs in their duties. I hope you will take a few moments and consider what types of information you think would be helpful for us to share. What questions do you have about DivCHED, your membership or ACS in general? If you have any suggestions for these committees, I will be happy to bring them into our discussion. You can reach me through the DivCHED website contact form.

If you will be in Orlando, I hope you will check out the schedule of committee meetings. All of our meetings will be held at the Orange County Convention Center and many of them are open to all members. And, I hope you make a point to stop in for our DivCHED social reception (Room W314B) from 5:30 – 7pm. It is a great opportunity to meet old friends and get to know some new ones as well.

Best Regards,

Deanna Cullen
Whitehall High School Chemistry
Member at Large
In Remembrance of Glenn Crosby

by John and Betty Moore

Glenn A. Crosby, Chair of the Division of Chemical Education in 1982, passed away on December 2, 2018 at the age of 90. Glenn was born and raised in southwestern Pennsylvania, where he received a bachelor’s degree, Magna Cum Laude, from Waynesburg College (now Waynesburg University). Glenn’s graduate work was at the University of Washington, where he received a Ph.D. under Paul C. Cross. He did postdoctoral study with Michael Kasha at Florida State University and then took a faculty position at the University of New Mexico. In 1967 he moved to Washington State University, where he conducted research in chemical physics on structural and electronic aspects of optical, magnetic, and photophysical properties of transition-metal complexes. Glenn trained many graduate students and won many awards including Humboldt Fellow, Fulbright Fellow, and ACS Award in Chemical Education.

What set Glenn Crosby apart—and is not evident in a list of achievements and awards—was his indefatigable zeal and tireless work on behalf of chemistry, education, and young people. Glenn’s efforts were inextricably intertwined with those of his wife, Jane L. Crosby, whose death in May 2016 was honored in this publication that year. Both Glenn and Jane were recipients of Division of Chemical Education Outstanding Service Awards, he in 2003 and she in 2006. Together they organized and encouraged chemical education programming at regional meetings, raised funds to endow ACS Regional Awards for Excellence in High School Teaching, organized and led workshops for high school teachers at Biennial Conferences on Chemical Education (Operation Progress during the 1990s), and ran summer science camps for middle school children. Glenn and Jane were joint recipients of the Charles Lathrop Parsons Award for service to the ACS in 2009. When he ran for ACS President in 1998, Glenn (and his opponent, Daryle Busch) were the first candidates to provide their chemistry education statements to the *Journal of Chemical Education*, a tradition that continued for a decade and called significant attention to ACS’s role in supporting chemistry education.

Glenn (and Jane) Crosby’s contributions to the Division of Chemical Education went much further. In 1978, at a Long-Range Planning Conference held in Fort Collins, CO, just prior to the fifth BCCE, Glenn proposed and then initiated a long-range plan for programming at national ACS meetings that energized DivCHED’s activities for decades. He created a system in which an overall program chair provides continuity and meeting chairs provide on-the-spot organization that persists to this day. Programming for high school teachers was part of the mix, as were special Breakthrough Lectures that brought to division members summaries of recent research developments, often described by Nobel Prize winners. These lectures were translated into print in the *Journal of Chemical Education*, bringing them to an even larger audience. At the same time Jane initiated a newsletter that was distributed with national meeting abstracts (on paper—remember that cellulosic material?) with the goal of better informing members about DivCHED activities. Glenn and Jane also participated with the two of us in hosting Hospitality Suites at national meetings. Back in those days, there were few social events at national meetings and the suite provided a place for division members to relax, develop friendships, and meet others who might be recruited to become members.

Glenn Crosby could see possibilities others missed and he went far beyond just hoping that someone would bring them to fruition. For 30 years he organized, proselytized, and fund-raised to make things happen that benefited chemistry education and chemistry educators as well as students and children—all with impish glee. Glenn Crosby’s effective efforts on behalf of our division should spur us to re-examine possibilities that we too can reach out to groups outside DivCHED, bring in new faces and new ideas, and encourage the broadest possible range of participants in chemical education activities.
News, Materials, Reports & Opportunities

Attention New DivCHED Members!

The Division would like to welcome all new members of ACS Division of Chemical Education. Many of you may have joined this Division to network and become more involved. An easy way to get involved may be joining a committee. To do so, fill out the form on the Divisions webpage to self-nominate yourself for participation in one of the 15 committees. Visit here for the nominations form: http://www.divched.org/content/nominations-ched-committees-elected-positions. You can also find a copy of this form in this section of the newsletter.

The Dorothy and Moses Passer Education Fund, Deadline April 1, 2019

Applications Being Accepted for the Dorothy and Moses Passer Education Fund.

This Fund was established by a generous donation of Dorothy and Moses Passer. Moses (Mike) Passer was for many years the head of the ACS Education Division. The Fund grants for teachers at two- and four-year colleges or universities that do not have any advanced degree programs in the chemical sciences.

The awards support continuing educational activities that must be directly related to the applicant’s teaching and must take them away from their campus.

The applicant must be a full time faculty member at his or her institution. The applications are reviewed by a committee. There is no application form but the application must include a description of the proposed activity and how it relates to his/her teaching with dates, locations, titles and contacts; a brief description of the applicant’s institution and department; a short curriculum vita; an itemized estimate of expenses, amount of aid requested and sources of all supplemental funds. No support will be given for general attendance at national, regional or local ACS meetings or for any sabbatical support.

Closing dates are three times each year: January 1, April 1, and September 1. Applications may be submitted online http://www.divched.org/content/passer-education-grant-application-form or emailed in pdf format to the Chair of the Passer Education Grant Review Committee, Catherine MacGowan, cmacgowan@georgiasouthern.edu.

Division of Chemical Education Travel Award, Application Deadline is September 15, 2019

DivCHED provides this service to members to grant financial support for travel to meetings. Up to 12 members will receive the award each year. The DivCHED Travel Award provides up to 80% of travel expenses for one meeting with a limit of $1,000 for the Spring National ACS Meeting. To be considered for this award, you must be in at least your third year as a member of the Division of Chemical Education at the time of application. The award application deadline is September 15, 2019. Visit http://divched.org/content/division-chemical-education-travel-award-application for more information and to apply.

ACS Division of Chemical Education International Travel Award

The Division of Chemical Education funds a Travel Award each year in support of a division member who presents and fully participates in an international chemical education conference held outside the U. S. The awardee will have the responsibility to communicate information and insights gained at the conference to the membership through available CHED publications and by postings on the DivCHED Website.

At the New Orleans meeting, the Executive Committee adopted guidelines developed by the International Activities Committee (IAC); these are described below. Questions as well as completed applications can be sent electronically on or before November 30, 2019, to Resa Kelly, current chair of CHED IAC. She can be reached at resa.kelly@sjsu.edu.

Eligibility:
The applicant must be a member of the Division of Chemical Education and be a full-time college, university, or high school faculty member. Preference will be given to junior and/or under-represented faculty members who have not had the opportunity to attend an international meeting in chemical education.

Selection Process:
1. An announcement about the availability of this Award for the following year will be submitted for publication in the Fall CHED Newsletter, appropriate issues of JCE, and to C&EN News. The announcement will also be posted on the CHED website.
2. The application package is due November 30 each year. It should be sent to the Chair of CHED-IAC. The award, presently $2000.00, is made for the following year.
3. CHED-IAC members serving on the Awards sub-committee appointed by the CHED-IAC Chair will review the applications.
4. The selected applicant will be announced by January 15 each year. An alternate will be selected in case the original awardee is not able to attend.

Application Package: Submit applications to http://divched.org/content/acs-divched-international-activities-travel-award.
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From Previous Awardees....

“One of my goals for this meeting was to network with other chemists. Many times the most valuable information is gleaned from informal discussions with other attendees.”

“At the 2016 BCCE I was able to discuss my desire to find another position with colleagues and also explore opportunities with businesses surrounding the poster sessions.”

“Attending the ACS National Meeting in San Diego in March provided a variety of experiences that will benefit my career as a teacher, researcher, and member of the division.”

“I successfully presented my work to a large audience, learned about other researchers’ work in symposiums and poster sessions, discussed research and teaching with practitioners and researchers, participated YCES committee activities, and became a YCES member afterwards.”

“The first impact of conference attendance was encouragement – I am not alone and there are other educators that are seeking to hone their craft in order to enrich the lives of students.”

“It was truly remarkable to be surrounded by so many enthusiastic colleagues who share my passion for chemical education and research!”

Visit [http://divched.org/content/division-chemical-education-travel-award-application](http://divched.org/content/division-chemical-education-travel-award-application) for more information and to apply.
James Bryant Conant Award in High School Chemistry Teaching

Sponsor: Journal of Chemical Education and ChemEdX

Purpose: To recognize, encourage, and stimulate outstanding teachers of high school chemistry in the United States, its possessions or territories, at the national level.

Nature: The award consists of $5,000 and a certificate. Up to $2,500 for travel expenses to the meeting at which the award will be presented will be reimbursed. A certificate will also be provided to the recipient’s institution for display.

Eligibility: The award will be granted regardless of race, gender, age, religion, ethnicity, nationality, sexual orientation, gender expression, gender identity, presence of disabilities, and educational background. Any individual, except a member of the award selection committee or currently enrolled student of the nominee, may submit one nomination or support letter in any given year. Local sections are especially encouraged to submit nominations for the award. The nominee must be actively engaged in the teaching of chemistry in a high school (grades 9-12).

Deadline: November 1 apply online

ACS Fellows Nominations Due April 1, 2019

Nominations for ACS fellows opened February 1, 2019 and will close at 11:59PM on April 1, 2019. The American Chemical Society (ACS) Fellows Program was created by the ACS Board of Directors in December 2008 to recognize members of ACS for outstanding achievements in and contributions to science, the profession, and the Society. Eligibility criteria for nominees and nominators and the selection criteria can be found here: http://www.acs.org/content/acs/en/funding-and-awards/fellows/eligibility-criteria.html

Nominations come from four sources: ACS national committees, ACS technical divisions, ACS local sections, and individual ACS members. See http://www.acs.org/content/acs/en/funding-and-awards/fellows/nomination-types.html.

Call for Nominations: The 2019 James Flack Norris Award for Outstanding Achievement in the Teaching of Chemistry

Deadline: April 15th, 2019

Nominations are invited for the 2019 James Flack Norris Award, which consists of a certificate and an honorarium of $3,000 and is given annually by the Northeastern Section (NESACS). The presentation will take place at a ceremony and dinner in November and will include a formal address by the awardee. The Award was established in 1950 by NESACS to honor the memory of James Flack Norris (1871-1940), a professor of chemistry at Simmons College and M.I.T., chair of NESACS in 1904, and ACS President in 1925-26.

For more information on how to apply, download the Call for Nominations.

For more information about the Award including a list of past award recipients, see http://www.nesacs.org/awards_norris.html. Any questions about the Award or the nomination process should be directed to the Chair of the Norris Award Committee, George A. O’Doherty, G.ODoherty@neu.edu.

Outstanding Service to the Division Award

The Division of Chemical Education, Inc. selects a division member each year for the annual DivCHED “Outstanding Service to the Division Award”. The award is presented at the fall National ACS meeting during the Sunday evening CHED Reception. The guidelines for this award are that the awardees be members of CHED and have contributed outstanding service to CHED. Individuals who currently hold office or chair a committee in CHED would not be eligible for this award until their term of office has expired. I am accepting nominations until April 30 for the 2019 award. Please send your nomination with supporting information to Frank Torre, Chair Recognition Committee, ftorre@springfieldcollege.edu.

Introduction to Theoretical Frameworks for Research in Chemistry/Science Education

Discipline-based educational research often builds upon three elements: a theoretical perspective or “lens,” a methodology or methodological framework; and a set of explicit research questions the study will try to answer. Evidence for the fundamental role theoretical frameworks play in educational research can be found in the decision by editors of journals that publish this work to require an explicit description of the theoretical framework for a study in order for a manuscript to be considered for publication.

For many years, one of us (GMB) would ask colleagues who taught “research methods” courses for educational research whether there was a resource to which he could refer his graduate students that provided the detail needed to select an appropriate theoretical framework for a study. They would often laugh and comment that they wished there was a book of this nature to which they could refer their own students.

Eventually, a group of graduate students who had pursued a Ph.D. in chemical education research at Purdue and several of the faculty at Purdue decided that we would try to generate a volume of this nature for use in the chemical education research community. Many of the chapters in this book begin by describing the source of a particular theoretical framework; explain why this framework was appropriate for a particular study; and provide examples from the research literature of studies that used that framework.

When Prentice-Hall no longer sold copies of this book, we asked the publisher to return the copyright to us. For several...
years, we had Printing Services at Purdue produce copies of the book that were provided to people at cost. More recently, we have had PDF files of the book's content posted on the chemical education website of several countries. Because of requests from members of the CER community, we have provided PDF files of the book for the DivCHED website.

George Bodner, Purdue University

MaryKay Orgill, UNLV.

**Call for Symposia & Workshops Proposals for the 26th Biennial Conference on Chemical Education**

Call for Symposia & Workshops Proposals for the 26th Biennial Conference on Chemical Education

Oregon State University, July 18 -23, 2020

https://bcce2020.org/register/call-for-symposia/

The conference will be held on the beautiful campus of Oregon State University in Corvallis, OR from July 18th through 23rd, 2020. The 26th BCCE, like its predecessors, is designed to provide you with opportunities for interacting with chemistry instructors of all levels in formal and informal settings. There will be a mixture of plenary lectures, symposia, workshops, chemical demonstrations, poster sessions, exhibits and tours of chemistry research areas. The URL for the 26th BCCE is https://bcce2020.org/ A highlight of the conference is an outdoor musical performance by Al D. Hyde and the Key Tones, a classic rock-n-roll band comprised of all chemistry educators, on Wednesday evening July 22nd.

The organizers are seeking to recruit programming that appeals to a variety of chemistry educators and science educators with a range of backgrounds and experience in chemistry and pedagogy. At this point we are seeking symposia organizers and workshop facilitators to submit titles and descriptions of their symposium and workshop. We are looking for symposia and workshops to address topics related to chemical education, K-16. We will have programming for college and pre-college instructors. The theme of our conference is “Chemistry is Paramount”. The Division of Chemical Education of the ACS provides oversight and mentorship for the Biennial Conferences on Chemical Education.

To submit a symposium or workshop, please refer to the conference website: https://bcce2020.org/register/call-for-symposia/

There you will find the requirements for submitting a symposium or workshop proposal and the link to our MAPS site.

The deadline for submissions of symposia and workshop proposals to the American Chemical Society DivCHED 26th BCCE MAPS web site is 11:00 p.m. EDT FRIDAY, AUGUST 23, 2019. We look forward to seeing our colleagues at Oregon State University for this Chemistry is Paramount celebration of Chemical Education.
ChemEd X: An Online Community for Chemistry Teachers

Who We Are

Chemical Education Xchange (ChemEd X, www.chemedx.org) provides a welcoming place for high school and college chemistry teachers to collaborate globally, to communicate experiences, and to share pedagogical ideas and tips. All ChemEd X content is moderated and includes articles and activities, which are peer-reviewed by high school and college-level chemistry teachers, as well as blogs, “picks,” and event announcements. Registered users (sign up for free) can enjoy interactive features by asking questions and providing comments. New and experienced teachers alike have contributed curriculum resources and ideas they have used successfully in their own classrooms. Among the topics considered are Modeling Instruction, project-based learning, technology applications, and standards-based grading.

Our Mission

To provide an online platform that allows readers and contributors to:

- **Xplore** resources and activities related to the central science
- **Xperience** with one another the profession of teaching chemistry
- **Xtend** outside the boundaries of traditional chemistry
- **Xchange** knowledge, ideas, and instructional materials

“ChemEd X is like the ultimate teacher staff room. Every teacher there is passionate, kind, and great at what they do. They are always willing to help and share, and I always come away as a better educator. It is a huge bonus for my students.”

Chad Husting
Sycamore High School

Our History

ChemEd X has a long association with the *Journal of Chemical Education (JCE)*. For many years, *JCE* offered chemistry teachers resources beyond the scope of the journal itself via *JCE* Online. *JCE* Online included software collections, assessment resources, and other materials specifically of interest to the chemistry teaching community.

In 2009, the Division of Chemical Education of the American Chemical Society and ACS Publications entered into an agreement to co-publish *JCE*. The shared publishing agreement did not include many *JCE* Online resources. Given the popularity and usefulness of those resources, now called “legacy material,” chemedx.org was created in 2012 to host the
resources. However, ChemEd X offers much more than the JCE Online resources and has become a virtual home for members of the high school chemical education community.

Since its inception, ChemEd X has not only continued to host legacy material, but has expanded to become a dynamic space for collaboration and community building. Recognizing its significance to the high school community as well as its application to other communities of practice within chemical education, the ACS Division of Chemical Education Board of Publication has established Chemical Education Xchange as an independent entity operating separately from JCE with its own Editor-in-Chief and staff. Jon Holmes, former editor of JCE Software and JCE Online and currently Managing Editor for JCE, has been selected by the Board of Publication to serve as Editor-in-Chief for ChemEd X. Although JCE and ChemEd X are now separate entities and feature different kinds of content, they continue to share similar goals and to support each other in advancing teaching and learning in chemistry.

Our Future

ChemEd X intends to serve communities of practice within chemical education. Other than the pre-college community where we currently concentrate, look for ChemEd X to provide services to the two-year college and the chemical education research communities starting this year. ChemEd X Conferences, a virtual conference service at conference.chemedx.org, is currently organizing its first conference and we expect to offer this service to other chemical education communities. ChemEd X strives to serve as a virtual home for its communities of practice and as its communities expand and identify desired online services, we will endeavor to provide those services.
How To Get Involved

In order to thrive, ChemEd X depends on content contributed by members of the chemical education community. To review the types of content you might contribute to ChemEd X, please go to www.chemedx.org. To submit content, go to “Request to contribute.”

Interactive features (such as posting comments) are available to registered users and registration is free. Registered users may choose to receive monthly newsletters highlighting recent content and may also request their own personal blog to informally share ideas.

A paid subscription provides critical support for ChemEd X. Paid subscribers gain access to premium ChemEd X content, which includes legacy material formerly available at JCE Online with the “Chemistry Comes Alive!” video and image collection, the “ChemEd X video collection,” and other instructional web-based software.

ChemEd X is maintained by chemistry teachers as a service to their peers. Deanna Cullen, a high school chemistry teacher from Michigan, serves as the Editor for the pre-college community. Twelve “lead contributors,” representing a wide variety of expertise in the field, serve as advisors and most contribute content on a regular basis.

Readers can follow ChemEd X on Facebook or on Twitter @ChemEdX.

For Further Information

The following Journal of Chemical Education articles provide more information:

JCE Chemical Education Xchange
Jon L. Holmes DOI: 10.1021/ed3007617

JCE Chemical Education Xchange: X Marks the Spot for Finding Quality Chemistry Education Resources
Deanna M. Cullen DOI: 10.1021/ed300790q

Direct inquiries and questions to:

Jon Holmes jon.holmes@chemedx.org Editor-in-Chief
Deanna Cullen deanna.cullen@chemedx.org Editor

“’ As a teacher, my best ideas, inspiration, and encouragement come from other teachers. ChemEd X provides a platform for me to share my best practices, learn from others, and engage in the chemistry education community. I find myself posting more to ChemEd X than my own blog because I know my posts will be seen by more people, and I will receive meaningful feedback from fellow educators.”

Lauren Stewart
Sylvania Northview High School
Nomination Form for CHED Committees & Elected Positions

Below are listed the various committees or elected positions of the CHED Division. If you are interested in serving, or if you know of division members who are willing to become involved please complete this form. For more information, please visit the Division of Chemical Education website or contact the individuals listed below.

Committees
Biennial Conference (BCC)
Chemistry Education Research (CER)
Chemistry in the Two Year College (COCTYC)
Computers in Chemical Education (CCCE)
Finance (FC)
Pre College (PreC)
International Activities (CIA)
Long-Range Planning (LRPC)
New Member (NMC)
Passer Portfolio (PPC)
Personnel & Nominations (CPN)
Program (PC)
Recognition (RC)
Regional Meetings (RMC)
Safety (SC)
Younger Chemistry Education Scholars (YCES)

Elected Positions (3 year terms)
Chair-Elect (Chair, Immediate Past Chair)
Secretary/Councilor
Treasurer
Member-at-Large (3 positions)
Alternate Councilor (4 positions)

Boards
Board of Publications (J. Chem. Ed.)
Board of Trustees (Exams Institute)

Name ____________________________________________________________

Institution _______________________________________________________

E-Mail ____________________________________________________________

Committee or Position ____________________________________________

Name ____________________________________________________________

Institution _______________________________________________________

E-Mail ____________________________________________________________

Committee or Position ____________________________________________

Jennifer Lewis, Chair, Personnel & Nominations
University of South Florida
Department of Chemistry/
Department of Women’s & Gender Studies
4202 East Fowler Avenue FAO 011
Tampa, Florida 33620
jennifer@usf.edu

Irvin J. Levy
Gordon College
Chemistry Department
255 Grapevine Road
Wenham, MA 01984
Irv.Levy@gordon.edu
**Division of Chemical Education Teaching Excellence Endowment**

Why are you a chemist? Many of us would agree with Eli Pearce, Past President of the American Chemical Society (ACS), when he said “my excellent high school teacher was definitely responsible for my choosing chemistry as a career.” And now you can join the effort to ensure that the great teachers who launch so many scientific careers are recognized and rewarded by their professional society!

The ACS Division of Chemical Education has stepped forward to establish an endowment that will support awards for high school science teachers in every Region of the ACS. By establishing an effort to solicit funds for the Division of Chemical Education Teaching Excellence Endowment, the Division is making a firm financial commitment to high school science teaching, ACS Regions, and the profession of chemistry. But the project will not be successful without your help.

Our goal is not just a financial one; we are anxious to assemble a lengthy list of donors containing names, of both individuals and collective entities, that will demonstrate to the secondary education community that there is a large number of science professionals who appreciate the value of good science teaching in the Nation's high schools and who are willing to reward it.

Join other individuals and organizations that have already contributed to the. Most of all join what will be thousands of people who know, without that special teacher, their future would look very different.

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**DivCHED Publications**

Division Members are involved in a wide variety of activities that lead to publications in the area of chemical education.

The Journal of Chemical Education is the main publication outlet for the division.

DivCHED is also responsible for the publication of the ACS Exams via the Examinations Institute.

Other journals in which Members publish scholarly articles include:
- The Chemical Educator
- Education in Chemistry
- Science Education
- Journal of Research in Science Teaching
- International Journal of Science Education
- Journal of College Science Teaching
- The Science Teacher
- ChemMatters
- Chemistry Education Research and Practice
Division of Chemical Education Teaching Excellence Endowment!

I want to help ensure that our great teachers are recognized and rewarded!

I am donating $______________ to the Endowment.

Select category:

- __ Lead up to $99
- __ Tin $100-249
- __ Iron $250-499
- __ Nickel $500-999
- __ Copper $1000-2499
- __ Silver $2500-4999
- __ Gold $5000-9999
- __ Platinum $10000 or more

NAME(S) to appear on donor's list: ____________________________________________________________ (PLEASE PRINT)

Address ___________________________________________________________________________________
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(city) (state) (zip)

Phone ___________________________ Email ___________________________

Date ____________________________

___ My gift is given in honor of ___________________________

___ My gift is given in memory of ___________________________

Select method of payment:

___ Check:
Payable to: The American Chemical Society Division of Chemical Education Teaching Excellence Endowment

___ Credit card (select one):
   ____ Visa  ____ MasterCard  ____ American Express

   Card number ___________________________ Expiration date __________
   Cardholder name ___________________________
   Signature ____________________________________________

___ Stock transfer (call 800-227-5558 ext. 8092 for instructions)

Mail to:  The Department of Meetings and Expositions Services/CHED HS Fund
American Chemical Society
1155 16th Street NW
Washington, DC 20036

Thank you for your contribution. All gifts of $250 or more will be acknowledged in writing. Acknowledgment will be sent to others upon request.
Membership Form

Introduce a friend, colleague, or student to the Division of Chemical Education

I wish to join DivCHED:  ____ as a Member, $20/year (for ACS members only)
    ___ as an Affiliate, $20/year (for non-ACS members). Affiliates have all
    membership privileges except voting for CHED Councilors and holding
    elective office.
    ___ as a Student, $20/year (for student ACS members only)

New members will receive information about CHED in general and about its major activities such as the
Exams Institute, the Journal of Chemical Education/JCE Software/JCE Online, and 2YC3.

The ACS Membership Application is available online at
www.acs.org/content/acs/en/membership-and-networks.html

General Information

Your Name: _______________________________  ACS membership no.: _______________________________

Home Address:  Send mailings here  Work Address:  Send mailings here

__________________________________________  ___________________________________________

__________________________________________  ___________________________________________

Email: ____________________________________  Email: _____________________________________

Did anyone encourage you to become a DivCHED member?  Yes  No
If yes, who? __________________________________

Payment Information

Payment ($20) must be made in U.S. funds on a U.S. bank—by draft or credit card. Purchase orders not
accepted. There is a $30 charge for all returned checks.

___ Check or money order enclosed, payable to ACS Division of Chemical Education, Inc.
    ___ MasterCard  ___ VISA  ___ American Express  ___ Discover

___ ___________  ___________  ___________  ___________  ___________  Credit Card Number

Expiration Date Month: _____ Year: ______
Signature of Card Holder: __________________________________

Return This Form

Mail: American Chemical Society, Member and Subscriber Services,
PO Box 182426, Columbus, Ohio 43218-2426
Phone: (800) 333-9511, Fax (614) 447-3671
E-mail: service@acs.org
News from ACS Exams Institute, Kristen Murphy, Director [kmurphy@uwm.edu]

Greetings to all from ACS Exams. We welcome a new colleague to our Board of Trustees, Dawn Del Carlo, the new Division Chair-Elect and a welcome back to Bill Donovan who had previously served on the Board. We also say farewell to Deborah Exton and MaryKay Orgill. Thank you for all you have done for ACS Exams, you will both be dearly missed. Your dedication to the mission and needs of the Division were evident from all of your hard work and are very much appreciated.

We are very excited to announce that we have been working hard to make changes to our collection of study materials. Our general chemistry study guide has been substantially updated in a second edition available starting October 15, 2018. This new edition includes many more practice problems, a very clear distinction between first-term and second-term material and link to common textbook chapters, and a designation of conceptual items for those students preparing for a conceptual exam as well as an opportunity to assess themselves using this type of problem. In addition, starting earlier this year, our organic chemistry study guide is under revision for a second edition as well. Similar to the general chemistry study guide, we are increasing the number of problems, linking content more explicitly to textbook resources and providing more advanced problems as applications of organic chemistry. This is slated to be available starting January 1, 2020.

Since our last newsletter, exam security and integrity remain a high priority. We continue to implement new strategies and business practices to protect the hard work of many exam committee members as well as preserve the critically important assessments so many of us rely on for standardized testing. We would like to continue to stress to everyone in the community how important it is to work together to maintain the integrity of secure exams and impress on our colleagues and students the gravity of illegally posting or distributing copyrighted material. Finally, we ask that if any postings of our exams or study materials are found, please contact us so we can take the appropriate steps to remove these materials and pursue action to prevent posting of these materials in the future.

Exam development has stabilized into a regular cycle of 7 to 10 new exams per year. We are excited to offer two new exams: a single-semester general-organic-biochemistry exam (GB18D) and three general chemistry quarter exams (GC19Q1, GC19Q2, GC19Q3). Our newly released exams are:

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*Due to be ready for purchase no later than April 15th, 2019

Field testing also continues in full swing. This spring we are trial testing a number of tests:

<table>
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<th>Field-testing Exams, Spring 2019</th>
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<td>100</td>
<td>2</td>
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<td>43-45</td>
<td>60</td>
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</tbody>
</table>
If you are interested in participating in field testing, please let us know. As always, there is no cost to you as we provide all test booklets and answer sheets. We require that you return student performances to us to assist us in the final stage of exam development. We are very appreciative of the vast number of faculty and instructors who serve on these exam committees and the chairs who lead these groups. If you are interested in serving on future exam committees, please let us know. We are regularly starting new committees, particularly in general and organic chemistry.

We realize the Chemical Health and Safety exam may be less familiar. This exam has been developed to target a second-year student, completing organic chemistry laboratory. Some of the topics covered on the test are:

- Safety culture (including regulations and protocols)
- Properties of chemical (including definitions and features of major categories)
- Physical hazards (including common equipment and procedures)
- Chemical health and safety information resources (including SDS, NFP and GHS)
- Risk assessment and management (including assessment and managing risks)
- Personal protective equipment
- Managing chemicals (including waste and storage)
- Emergency equipment and response

Please note, this exam is not designed and cannot be used for certification of safety or safety training achievement; it is designed to be used as a diagnostic only.

We would also like to specially thank all faculty and instructors who participated in trial testing in fall, 2018. We were so pleased at the fantastic response to the request to field-test exams.

The business continues to be strong with 2018 finishing as another stable year. Under the outstanding leadership of our Business Operations Manager, Julie Adams, our business has been strong and our continued stability will enable the continued operations of ACS Exams far into the future. Cherie Krayna continues to be the bright voice when you call us, and Steve Koester as our shipping clerk ensures the safe arrival of your orders; we are so happy to work with such a great group.

Our research staff continues to change as well. Later this year, we will be joined by Ashford Fellow (2019), Prof. Olga Michels from Luther College. We also said farewell to Dr. Shalini Srinivasan and Dr. Jessica Reed as they moved on to their next exciting steps in their careers. The research accomplished by our team continues to be outstanding.

As always, ACS Exams would not function without the numerous and dedicated board members, exam committee chairs and members, trial testing faculty and instructors, and the focus group participants. The highest quality work that ACS Exams has the honor of producing is only possible due to the many, many people who contribute to this work. It continues to be a humbling and extraordinary experience working with you all. And, if you are interested in working with us on exam committees or through development projects, please let us know. For this and all other concerns or matters related to ACS Exams, please feel free to contact me at kmurphy@uwm.edu.

We thank you all for your continued support of ACS Exams!

Best to you all,
Kristen Murphy

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**Chemical Education Research Committee**

Melanie Teichert [teichert@usna.edu] and Joi Walker [WALKERJOI15@ecu.edu], Co-Chairs

Greetings from the Chemical Education Research Committee (CERC)! We have been busy with new and continuing initiatives that forward our mission to inform chemical educators, foster scholarship, and encourage improvement of the quality of chemistry education research.

Specifically, we are working on the following, and look forward to discussing many of these at our upcoming committee meeting in Orlando.

**Chemistry Education Research Sponsored Symposia and Events:**

- NEW: BCCE 2020 Symposium on Research-Based Instructional Strategies in Chemistry Education
  - In collaboration with SOCED, the Two-Year College Chemistry Consortium, and the American Association of Chemistry Teachers
  - New initiative in the planning stages, stay tuned for updates as BCCE 2020 approaches!

- New and Noteworthy in Chem Ed Research symposia at Spring ACS Meetings
- Research to Practice symposia at BCCE and Fall ACS Meetings (during non-BCCE years)
- CER symposia at all national meetings (Spring and Fall ACS as well as BCCE)
- BCCE 2018 Methods Symposia
  - Organized with YCES to promote professional development
  - Symposia on Theoretical Frameworks, Quantitative Methods, and Qualitative Methods
  - Exploring ways to make available for dissemination to the broader community

**Additional CER Initiatives:**

- Undergraduate CER poster judging and awards (Spring ACS meetings in collaboration with YCES)
Committee/Board Reports

- Moderation of the CER listserv through the ChemEd-X server
- Development of CER resources web pages
- Collaboration with the Royal Society of Chemistry on Webinar series
- Collaboration with other technical divisions (such as the Division of Organic Chemistry) to offer joint symposia to help bridge CER research to practice

We will have an open meeting in Orlando on Tuesday, 2 April 12:00 – 1:30 in Convention Center Room W312C. All are welcome to join us and contribute to our efforts. We hope to see many of you there!

Melonie Teichert – CER Committee Chair
United States Naval Academy

Joi Walker – CER Committee Co-Chair
East Carolina University

International Activities Committee

Resa Kelly [resa.kelly@sjсу.edu] and Wendy Schatzberg [schatzberg@dixie.edu], Co-Chairs

Since the last newsletter the committee has gained two new members: Corina Brown and Gabriela Szteinberg. We look forward to having them participate in the committee activities and bring their unique perspectives in upcoming years! While we have gained two new members, we must also thank those who have ended their terms on the committee: Allison Flynn and Roy Tasker. We extend our deep gratitude for their service to the committee.

The IAC travel award had many great and wonderful applicants this year, it was quite the abundance of riches. The award went to Dr. Felicia Umanah, an international member who is a lecturer at Akwa Ibom State University in Ikot Akaden, Mkpat Enin, Nigeria. Dr. Umanah plans to attend the 23rd Annual Green Chemistry and Engineering Conference hosted by the American Chemical Society’s Green Chemistry Institute in Reston, Virginia in June. We hope that this upcoming year we see a lot of new international applications applying for the award. It is never too early to advertise for the 2020 International Travel Award due November 30, 2019. We will share updates on upcoming international meetings that our members plan to attend and how we can best report on the happenings at these events.

Resa Kelly in collaboration with former DivCHED IAC chair Carmen Valdez Gauthier, represented the DivCHED IAC at the Ibero Americano de Quimica conference in Lima, Perú held in October of 2018. The symposium focused on the ways that we engage students to learn chemistry concepts that have interdisciplinary connections, and real-world applications or that bridge to advanced chemistry concepts.

For the upcoming ACS Spring Meeting (2019) in Orlando, Florida we initially attempted to organize two symposia that fit with the interests of international members: Science Olympiads and International Perspectives of Chemistry Education Teaching and Practice. We merged the two concepts into a symposium that is co-organized by Alexey Leontyev, Wendy Schatzberg, Akiko Nakamura, and Resa Kelly. We look forward to hearing the talks and seeing people listening and enjoying the great international research that is going on!

In order to highlight the work other DivCHED committees are doing, we extended an invitation for a representative from other committees to attend the DivCHED IAC meeting and discuss their specific international interests. For the upcoming meeting, Dave Finster will be representing DivCHED Safety Committee to share work that is being done that has international relevance.

In the spirit of the BCCE social, we have asked that the Chair Succession highlight international members attending DivCHED symposia at the Sunday afternoon DivCHED Social by announcing their names at the event. We hope this will create a stronger sense of community. DivCHED IAC members should attend the social and we encourage everyone to reach out to international guests and invite them into your professional network of DivCHED friends.

Thank you to all our members: Nicole Becker, Conrad Bergo, Corina Brown, Charlie Cox, Alison Lemay, Sarah Hansen, Alex Leontyev, Akiko Nakamura, Stephanie Ryan, Hannah Sevian, and Gabriela Szteinberg.

Respectfully,

Resa Kelly, San Jose State University and Wendy Schatzberg, Dixie State University
Committee/Board Reports

Regional Meetings Committee, Marty Perry [Marty.Perry@stlcop.edu] Chair

The Regional Meetings Committee (RMC) is charged by the Division to:

1. Provide oversight of the ACS Division of Chemical Education Region Awards, which includes the development and maintenance of Award Guidelines, participation in the selection and presentation of the Region Award winners;

2. Insure that a Chemical Education Program is part of each Regional Meeting;

3. And promote the purpose and work of the ACS Division of Chemical Education.

RMC is pleased to outline in this NEWSLETTER Report recent efforts to address its charge.

1. ACS Division of Chemical Education Region Awards:

   Fall 2018 Awardees for Excellence in High School Teaching

Eight of the ten ACS Regions held meetings in 2018 providing opportunities to recognize and reward excellence in the teaching of high school chemistry. We reported in the Fall 2018 issue of the NEWSLETTER on the one Spring Award; RMC is pleased to report on the following four region Awards presented in Fall 2018.

The 53rd ACS Midwest Regional Meeting, October 21-23, 2018, Ames, IA

The winner of the 2018 Division of Chemical Education Midwest Region Award for Excellence in High School Chemistry Teaching, in Honor of John E. Bauman, Jr., is Maricar Harris from Wichita Collegiate Upper School in Wichita, KS.

Maricar Harris, Wichita Collegiate Upper School chemistry teacher and science department chair, is one who seeks to engage, encourage, and challenge any student who enters her classroom. She teaches Chemistry 1, AP Chemistry, and Advanced Chemistry Research. A teacher for over 18 years, she has been at Collegiate for the past five years. Maricar tries to foster the joy of sharing science with others. Along with a middle school math teacher, she chaperoned a group of middle school girls to Silicon Valley to hear women from companies (such as Facebook, SalesForce, Snap, and Mendel Biological) speak about their careers in tech related fields. Her upper school students have accompanied her to American Chemical Society meetings to hear circuit speakers. She utilizes student laboratory aides to facilitate her Duke TIP class for middle schoolers. She has invited kindergarteners to her classroom to watch science demonstrations done by current chemistry students. Utilizing a gas chromatograph to analyze samples in the research lab, students in her research class present their findings at the KU School of Medicine Research Forum each April.

Maricar continually strives to improve her teaching methods. She earned a Master in Education degree with a concentration in Curriculum and Instruction from Baker University in December 2018. She is currently working toward a Master of Science in Chemistry Education through Illinois State University. In addition to graduate school work, Maricar seeks professional development opportunities. In 2016, she presented a session on “Chemistry Review Games” at the national NSTA meeting in Nashville. She has attended AP Summer Institutes at Rice University and University of Nebraska – Omaha. This past summer, she traveled to Washington D.C. for a week long, grant funded workshop on food safety sponsored by the FDA and NSTA.

Developing critical thinking skills, learning problem solving processes, gaining self-confidence, and establishing a solid work ethic are her goals for her students each year. Chemistry class is the vehicle through which this is accomplished. Maricar pushes her students to learn more and to do better, and she supports them along the way.

The 70th ACS Southeast Regional Meeting, October 31-November 3, 2018, Augusta, Georgia

The winner of the 2018 Division of Chemical Education Southeast Region Award for Excellence in High School Chemistry Teaching is Dr. Romina Jannotti from Hagerty High School in Oviedo, FL.

Dr. Jannotti began teaching in 2005, following her Ph.D. work in the field of mitochondrial DNA repair. Her primary goal is that all students understand that science, and its methods, can be applied to any problem. Dr. Jannotti’s teaching philosophy centers on the use of discovery to develop critical thinking. She routinely utilizes Process Oriented Guided Inquiry Learning (POGIL) to provide students opportunities to formulate conclusions and begin to see learning as an interactive process of refining one’s understanding. As a High School POGIL Initiative Partner, Dr. Jannotti has tested materials for the national organization and trained facilitators. Through her efforts, POGIL is now embedded in instructional plans for all levels of chemistry in her district. In the laboratory, Dr. Jannotti’s students collaboratively perform authentic experiments, collecting data to develop statistically significant claims. Her AP classroom is 100% flipped with class time being used to explore simulations, conduct experiments, focus on calculations, and fine-tune understanding. Her approach has attracted the largest annual AP Chemistry enrollments in the county with pass rates routinely above the national average.
and 15-17 points above the average for the state of Florida. This accomplishment was recognized in 2017 with a Hispanic Heritage teaching award from Governor Rick Scott. In 2016, Dr. Jannotti established AP Research at Hagerty. AP Research students work on original investigations culminating in a research paper and oral defense. Several of her students have won local, national, and international prizes for technical writing, science fair, Science Olympiad, and ACS “Outstanding High School Student.” Some have graduated high school as published authors and procured additional research opportunity with Dr. Jannotti’s help. Dr. Jannotti’s students view her as a life-long mentor. While some past students contact her while pursuing bachelor’s degrees for help with current chemistry classes, others come back after completing their degrees to report that their experiences were smoother because of the chemistry foundation she laid.

The 74th ACS Southwest Regional Meeting, November 7-10, 2018, Little Rock, AR

The winner of the 2018 Division of Chemical Education Southwest Region Award for Excellence in High School Chemistry Teaching is Usha Devathosh from North Houston Early College High School in Houston, TX.

Mrs. Usha Devathosh is a passionate chemistry instructor at North Houston Early College High School. She has over 12 years of teaching experience in Houston ISD and four years in Houston Community college as an adjunct chemistry professor. She worked in Oceanography, Environmental Science and Biotechnology industrial research laboratories after receiving her Master of Science in Organic Chemistry, Bachelor of Science in Chemistry, and a Bachelor of Science Degree in Education. She is currently pursuing a doctoral degree in education with a major in curriculum and instruction and expecting graduation in December 2018. Mrs. Devathosh is a third-place recipient of 2018 Ernest and Sarah Butler award for excellence in Science Teaching by Texas Medical Association and received the Thomas Aczel Award for Outstanding High School Chemistry Teacher in 2014 by American Chemical Society. She was finalist for KBR Science Teacher award in 2013. She has presented at various conferences which includes Space Exploration Educator inter-national conference - Space Center, Houston – 2012.

Mrs. Devathosh is a member of American Chemical Society, Science Teacher Association of Texas, Associate Chemistry Teachers of Texas and American Educational Research Association.

The ACS Western Regional Meeting, October 27, 2018, Pasadena, CA

The winner of the 2018 Division of Chemical Education Western Region Award for Excellence in High School Chemistry Teaching is Arlene Laurison from Sheldon High School in Sacramento, CA.

Arlene Laurison holds a B.A. in Chemistry from CSU Fresno and a M.S. in Chemistry from CSU Sacramento. She worked in industry for 10 years performing Gas Chromatography and High-Performance Liquid Chromatography analyses. She also managed and trained others in these analyses and served as a Chemical Hygiene Officer. Her teaching ability is reflected in her being chosen as the “Most Influential Teacher” at Sheldon High School (SHS) seven times in 18 years. As one of her recommender’s comments, “She understands differentiation better than most people. … Her knowledge of reading strategies enables her to appropriately connect students to the textual content. [Her] practical experience … as a chemist has prepared her to augment the curricula with real world, relevant examples of chemistry’s societal applications.” She currently holds leadership positions on the Elk Grove Unified School District’s Next Generation Science Standards (NGSS) Transition Team and in the Noyce Sacramento Math and Science Teacher Leaders (SacMAST-L) program. Both of these positions allow Ms. Laurison to “teach the teachers.” Arlene is also the 2018 recipient of the Janan Hayes High School Teacher Award from the Sacramento Section of the ACS.

Finalists for the Fall 2018 ACS Division of Chemical Education Region Awards for Excellence in High School Teaching:

In 2014 RMC began the practice of using the CHED Newsletter to recognize all nominees for the Region Award for Excellence in High School Teaching and the schools at which they teach. In the tables below we list each Region Award, the 2018 Recipient, and all those whose complete nomination portfolios came before the Region Awards Committees.
### 2018 ACS Division of Chemical Education Midwest Region Award for Excellence in High School Teaching, in Honor of John E. Bauman, Jr.

#### Awardee

<table>
<thead>
<tr>
<th>Maricar Harris</th>
</tr>
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<tbody>
<tr>
<td>Wichita Collegiate School</td>
</tr>
<tr>
<td>Wichita, KS 67206</td>
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</table>

#### Finalists

<table>
<thead>
<tr>
<th>Randolph Francis Brull</th>
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<tbody>
<tr>
<td>Thomas More Prep- Marian High School</td>
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<tr>
<td>Hays, KS 67601</td>
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<table>
<thead>
<tr>
<th>Roseanne Hoffman</th>
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<tbody>
<tr>
<td>Harrisonville School District</td>
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<tr>
<td>Harrisonville, MO 64701</td>
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<thead>
<tr>
<th>Jennifer Wilson</th>
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<tbody>
<tr>
<td>Blue Springs High School</td>
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<tr>
<td>Blue Springs, MO 64015</td>
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</table>

### 2018 ACS Division of Chemical Education Southeast Region Award for Excellence in High School Teaching

#### Awardee

<table>
<thead>
<tr>
<th>Romina M. Jannotti</th>
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<tbody>
<tr>
<td>Paul J. Haggerty High School</td>
</tr>
<tr>
<td>Oviedo, FL 32765</td>
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#### Finalists

<table>
<thead>
<tr>
<th>Avrill Buerstetta</th>
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<tbody>
<tr>
<td>Ravenwood High School</td>
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<tr>
<td>Brentwood, TN</td>
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<table>
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<tr>
<th>Jim Cherry</th>
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<tbody>
<tr>
<td>Summit High School</td>
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<tr>
<td>Spring Hill, TN 37174</td>
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<table>
<thead>
<tr>
<th>Jessica Enlow</th>
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<tbody>
<tr>
<td>Cox Mill High School</td>
</tr>
<tr>
<td>Concord, NC 28027</td>
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<table>
<thead>
<tr>
<th>Anita Gangwani</th>
</tr>
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<tbody>
<tr>
<td>Evans High School</td>
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<tr>
<td>Evans, GA 30809</td>
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<tr>
<th>Michael Mury</th>
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<tbody>
<tr>
<td>All Saints Academy</td>
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<tr>
<td>Winter Haven, FL 33880</td>
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<tr>
<th>LaShawn McNeil</th>
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<tbody>
<tr>
<td>Lincoln High School</td>
</tr>
<tr>
<td>Tallahassee, FL 32311</td>
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</tbody>
</table>

### 2018 ACS Division of Chemical Education Southwest Region Award for Excellence in High School Teaching

#### Awardee

<table>
<thead>
<tr>
<th>Usha Devanthosh</th>
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<tbody>
<tr>
<td>North Houston Early College High School</td>
</tr>
<tr>
<td>Houston, TX 77065</td>
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#### Finalists

<table>
<thead>
<tr>
<th>Casey Akin</th>
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<tbody>
<tr>
<td>College Station High School</td>
</tr>
<tr>
<td>College Station, TX 77845</td>
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<table>
<thead>
<tr>
<th>Alicea Chaloupka</th>
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<tbody>
<tr>
<td>Christ the King Cathedral High School</td>
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<tr>
<td>Lubbock, TX 79413</td>
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<thead>
<tr>
<th>Theresa Delong</th>
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<tbody>
<tr>
<td>College Park High School</td>
</tr>
<tr>
<td>The Woodlands, TX 77384</td>
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<table>
<thead>
<tr>
<th>Carolyn Ericson</th>
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<tbody>
<tr>
<td>Clements High School</td>
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<tr>
<td>Sugar Land, TX 77479</td>
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<tr>
<th>Gale Hunt</th>
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<tbody>
<tr>
<td>Hebron High School</td>
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<tr>
<td>Carrolton, TX 75010</td>
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<tr>
<th>Jo L. M. King</th>
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<tr>
<td>Heritage High School</td>
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<tr>
<td>Frisco, TX 75035</td>
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<thead>
<tr>
<th>Gary Layman</th>
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<tbody>
<tr>
<td>Bartlesville High School</td>
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<tr>
<td>Bartlesville, OK 74006</td>
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<table>
<thead>
<tr>
<th>Debra Rogers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parkview Arts/Science Magnet High School</td>
</tr>
<tr>
<td>Little Rock, AR 72204</td>
</tr>
</tbody>
</table>
2018 ACS Division of Chemical Education Western Region Award for Excellence in High School Teaching

AWARDEE

Arlene Laurison
Sheldon High School
Sacramento, CA 95829

FINALISTS

John Burns
Westminster High School
Westminster, CA 92683
Garrett Lim
Walnut High School
Walnut, CA 91789
Paul Matsumoto
Galileo Academy of Science and Technology
Sacramento, CA 94109
Heather Shafer
Bishop Garcia Diego High School
Santa Barbara, CA 93105
Larry Walker
Calabasas High School
Calabasas, CA 91302

Region Award Nominations:

RMC continues to pursue ways by which a spectrum of Society-affiliated groups can participate in the Region Award nomination process.

Converting Regions Awardees to James Bryant Conant Nominees:

Beginning with the 2015 Region Awards, DivCHED Representatives to individual Regional Meetings took leadership roles to facilitate the nomination of Region Awardees for the James Bryant Conant Award.

2. Chemical Education Programming at Regional Meetings:

DivCHED Representative Involvement in Programming

RMC is increasing its efforts to contact organizing committees early on in the planning process to not only encourage Chemical Education programming but to also volunteer to organize a symposium, general session, or poster session. RMC is also exploring partnerships with AACT to encourage and sponsor pre-college programming at regional meetings.

Regional Meeting Planning Conference (RMPC):

The RMC was represented by Marty Perry at the Regional Meetings Planning Conference (RMPC) held on January 25-27, 2019 at the ACS Leadership Institute in Atlanta, GA. Leaders for the upcoming ACS Regional Meetings were provided information about how the Division of Chemical Education can assist their organizing committees with programming support. Attendees were also provided award guidelines for the Excellence in High School Teaching Award.

3. Promotion of ACS Division through Regional Meetings:

RMC continues its joint project with the New Members Committee involving the design, preparation, and display of a poster that describes, using text and images, the mission and activities of the Division of Chemical Education. The poster is displayed by the DivCHED Representative, at each of the Regional Meetings, in a formal poster session and/or in the Registration area. The poster serves as a device to disseminate information about Division and to recruit new members to the Division.
Safety Committee Report, Dave Finster [dfinster@wittenberg.edu] Chair

Some positive safety news… for a change

Most often, when safety shows up in our news feeds, we find a story about an experiment, demonstration, or industrial process gone awry, with injuries to individuals or damage to property or the environment. As chemists, we often feel pain not only on behalf of those harmed, but also for our chosen profession, which seems dangerous and uncontrollable, and our educational institutions, which are sometimes charged with preparing practitioners insufficiently.

Despite that beginning, I have some good news to share.

While safety has always been a key issue for chemists, safety has been part of the American Chemical Society’s Core Value of Professionalism, Safety, and Ethics (1) since December 2016. Many individuals and groups have worked hard to develop what this means to the society. We have seen significant changes in many areas in the recent past — to name just a few, safety expectations for journal articles, the spread of safety moments, and the development of risk and hazard assessments as a more routine part of laboratory work. Here are a few more recent and upcoming items for your attention.

Some members of the CHED Safety Committee updated the Safety Guidelines for Chemical Demonstrations. The article discussing these updated Guidelines appeared in the Journal of Chemical Education (web date, January 2018); as an Editor’s Choice, it is freely available (2). You could also stop by the ACS booth if you will be at the National Meeting in Orlando to pick up a copy of the Guidelines or discuss them with folks.

The ACS Exams Institute has an updated Chemical Health and Safety exam currently in development. This exam, focused on safety topics typically addressed in the first two years of a chemistry curriculum, is currently in pilot testing and should be available by the end of this calendar year. Consider participating in the pilot testing or implementing the exam at your institution after it is issued — contribute to our understanding of the current state of safety knowledge among our undergraduates nationally, while also getting a sense of how well your students are learning safety topics.

In Spring 2018, ACS President Peter Dorhout convened a Safety Summit; several venues reported on results from that Summit, including in C&EN. One of the projects springing from that summit was a Safety Education Summit, convened by President Bonnie Charpentier, which was held in March 1–2, 2019. Thirty folks from a range of stakeholder groups met to come up with some initiatives that aligned with the ACS strategic plan and could help move safety education forward. Participating in the summit was an invigorating experience for many members of the CHED Safety Committee. Educators from all types of institutions, industry and EH&S representatives, and folks from all parts of ACS including divisions, governance, and staff, shared perspectives and ideas to propose key issues to advance. Watch for reports and more from that summit, including (just to give a couple venues) information in C&EN and symposia sessions in San Diego.

Implementing safety as a core value throughout the educational system — from K-12, through associates, bachelors, masters, and doctoral degrees, and in continuing education for all types of chemists and those who use chemistry, regardless of employment sector — will happen most effectively if we have input from many of the members of the Division of Chemical Education. Some of you may be contacted by people seeking your expertise and input as projects move forward; I hope you will agree to participate. Some of you may see calls for participation, such as will occur for the special JCE safety issue in early 2020, and find that they align with your endeavors. If you have an interest in safety education and would like to become more proactively involved, I am confident that members of the CHED Safety Committee or others within the ACS would be willing to help you get connected. However, please feel free to contact me and I will try to connect you with appropriate folks and projects.

References


**Younger Chemistry Education Scholars Committee, Jordan Harshman [jth0083@auburn.edu]**

YCES Asks for DivCHED Input on Recruitment into CER

The Younger Chemistry Education Scholars (YCES) has the mission of recruiting new students into the CER field and creating a network for those students. Traditionally, YCES has focused our efforts on the latter goal by hosting professional development, networking events, and a variety of activities with the goal of connecting CERers whether they come from large programs or whether they are the only one in their department doing CER. We are by no means abandoning this goal and will continue to put on these events. However, we would like to focus on an area that we have not traditionally put as much emphasis in the past: recruitment.

Thanks to DivCHED, YCES been able to operate a booth at the Spring ACS for the last few years that promotes CER to the undergraduates that visit the Graduate Recruitment Fair. We interface with 50 – 150 students through this channel and have been able to reach several chemists about the benefits of CER. Most of the reactions we see are in the tune of “this is really interesting; I don’t think I’ve heard of this kind of research before.” While we are happy to reach the students that we can, we feel that we can do more to actively spread the word about options in undergraduate, and postdoctoral opportunities in CER as well as CER in general.

YCES is particularly interested in the recruitment of new students into CER. As a recent article in JCE1 has demonstrated, CER has grown impressively, but at least 17 programs that once offered Ph.D. or M.S. degrees no longer do so. Spreading the word about CER and actively recruiting students is likely vital to its long-term survival, and younger members of the CER community feel this impact. Less CER programs means less opportunities for graduate work, postdoc positions, and faculty positions. Fewer people at conferences lead to less interactions and sharing of ideas, potentially isolating students further. I do not wish to come across as mongering fear, but do believe that young CERers particularly would benefit greatly from CER's expansion and experience detrimental effects from its shrinkage.

This, along with a variety of other reasons, is why YCES would like to renew our interest in recruiting students to CER. However, YCES cannot (and arguably should not) do this by ourselves. Therefore, we would like to solicit the help of all DivCHED members as well as offer up our assistance to anyone with similar goals. YCES will be brainstorming ideas for how we can disseminate CER to chemists and recruit more students into the CER field. We have a google doc where we have been listing our suggestions that will be discussed at our upcoming meeting in Orlando ([https://docs.google.com/document/d/1NimA7VhWmG5No_Qy9YoD8pGAEL-t6koVsX7hmEDLPa/edit](https://docs.google.com/document/d/1NimA7VhWmG5No_Qy9YoD8pGAEL-t6koVsX7hmEDLPa/edit)) that all are welcome to provide their input. We will not likely be able to engage in all activities listed, but welcome any suggestions.

We fully understand that YCES is not the only party interested in this goal, which is why we would like to collaborate with anyone dedicated to recruitment and dissemination of CER. If you have activities in place and need foot soldiers on the ground to conduct them, please let me (Jordan Harshman, jharshman@auburn.edu) know what we can do to help. If you have ideas but don’t have the luxury of time to put those ideas into action, we are happy to help in anyway we can. And if in the future YCES decides to pursue various activities, we will likely be reaching out to you and we hope that you will consider helping us achieve our goal.


Jordan Harshman
Assistant Professor, Department of Chemistry and Biochemistry
Auburn University
268 Chemistry Building
harshmanresearchgroup.com
257th ACS Meeting & Exposition, Orlando, FL
March 31 - April 4, 2019

Theme: Chemistry for New Frontiers

Meeting Co-Chairs:
Deborah Bromfield-Lee, Florida Southern College dbromfieldlee@flsouthern.edu
Amy Cannon, Beyond Benign, Amy_Cannon@beyondbenign.org

Chemistry Teachers Day Chair:
Sherri Rukes, Libertyville High School, scrukes@comcast.net
Michael Mury, All Saints Academy, All Saints Academy in Winter Haven, FL

Undergraduate Poster Chair:
Nicole DiFabio, Undergraduate Programs Office, American Chemical Society, N_DiFabio@acs.org
Jessica Roberts, American Chemical Society j_roberts2@acs.org

CHED Program Chair:
Patrick Daubenmire, Loyola University Chicago, pdauben@luc.edu

GSSPC Organizers:
Judith De Mel, Ashley Fulton, Nichole E. M. Kaufman, Peter Kei, Joshua A. Lutz, Christopher Sumner, Tia K. Vargas-Myers, Louisiana State University, “Swimming in Molasses and Walking in a Hurricane - Artificial Molecular Machines and the Next Generation of Molecular Control.”

Program Synopsis

SUNDAY MORNING

Section A
Orange County Convention Center Room W315A
Chemistry Teachers Day Program
S. C. Rukes, Organizer
M. Mury, Presiding

Section B
Orange County Convention Center Room W312A
Strategies Promoting Success of Two-Year College Students
Cosponsored by CTA
A. M. Palmer, Organizer
L. J. Anna, V. L. Miller, K. S. Owens, Organizers, Presiding
A. Palmer, Presiding

Section C
Orange County Convention Center Room W312B
NMR Spectroscopy in the Undergraduate Curriculum
Financially supported by Bruker BioSpin, JEOL, MESTRELAB Research, Anasazi Instruments
D. P. Soulsby, A. S. Wallner, Organizers, Presiding

Section D
Orange County Convention Center Room W311A
Active Learning in Organic Chemistry
J. L. Muzyka, Organizer
A. Leontyev, Organizer, Presiding

Section E
Orange County Convention Center Room W311B
Advances in e-Learning, Digital Learning & Online Education
D. A. Canelas, Organizer, Presiding

Section F
Orange County Convention Center Room W311C
International Perspectives on Chemistry Education & Olympiads
Cosponsored by IAC
A. Leontyev, A. Nakamura, Organizers
W. E. Schatzberg, Organizer, Presiding
R. M. Kelly, A. Leontyev, Presiding

Section G
Orange County Convention Center Room W311D
Underrepresented Minority Groups in Chemistry Education
R. E. Gibbons, G. Rocabado, Organizers, Presiding

Section H
Orange County Convention Center Room W311E
Undergraduate Research Papers
J. V. Ruppel, N. L. Snyder, Organizers
C. V. Gauthier, Organizer, Presiding

SUNDAY AFTERNOON

Section A
Orange County Convention Center Room W315A
Chemistry Teachers Day Program
S. C. Rukes, Organizer
M. Mury, Presiding

Section B
Orange County Convention Center Room W312A
Strategies Promoting Success of Two-Year College Students
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A. M. Palmer, Organizer
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Section C
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Section D
Orange County Convention Center Room W311A
Active Learning in Organic Chemistry
J. L. Muzyka, Organizer
A. Leontyev, Organizer, Presiding

Section E
Orange County Convention Center Room W311B
Advances in e-Learning, Digital Learning & Online Education
D. A. Canelas, Organizer, Presiding

Section F
Orange County Convention Center Room W311C
Green and Sustainable Chemistry Theory & Practice: Chemistry for New Frontiers
Cosponsored by CEI
Financially supported by ACS Green Chemistry Institute; I&EC Green Chemistry Subdivision
E. J. Brush, J. E. Wissinger, Organizers, Presiding

Section G
Orange County Convention Center Room W315A
Underrepresented Minority Groups in Chemistry Education
R. E. Gibbons, G. Rocabado, Organizers, Presiding

Section H
Orange County Convention Center Room W311E
Undergraduate Research Papers
C. V. Gauthier, N. L. Snyder, Organizers
J. V. Ruppel, Organizer, Presiding

SUNDAY EVENING
Section A
Orange County Convention Center West Hall C
General Posters
MONDAY MORNING
Section A
Orange County Convention Center Room W315A
Chemistry & Our Common Future: 2019 George C. Pimentel Award Symposium in Honor of Cathy Middlecamp Symposium in Honor of Cathy Middlecamp
Cosponsored by CEI
M. A. Fisher, Organizer, Presiding

Section B
Orange County Convention Center Room W312A
Training Professional Teaching Assistants
C. S. Bagwill, D. Sokic-Lazic, Organizers, Presiding

Section C
Orange County Convention Center Room W312B
Process-Oriented Guided Inquiry Learning (POGIL)
R. S. Moog, Organizer, Presiding

Section D
Orange County Convention Center Room W311A
Chemistry Education Research: Graduate Student Forum
D. V. Xue, Organizer
T. N. Abell, R. E. Gibbons, Organizers, Presiding
D. Xue, Presiding

Section E
Orange County Convention Center Room W311B
There's an App for That
E. A. Aleman, K. Stone, Organizers, Presiding

Section F
Orange County Convention Center Room W311A
Green Chemistry Student Chapters: Stories of Success
Cosponsored by SOCED
Financially supported by ACS Green Chemistry Institute; I&EC Green Chemistry Subdivision
M. C. Enright, J. Mackellar, Organizers
D. Constable, M. Enright, Presiding

Section G
Orange County Convention Center Room W311D
PolyEd: Incorporating Polymer Chemistry in Undergraduate & High School Curricula
Cosponsored by POLY
E. S. Sterner, Organizer
E. S. Sterner, Presiding 1:30 Introductory Remarks. 1:35 CHED 312. Withdrawn

Section H
Orange County Convention Center Room W311E
Undergraduate Research Papers
C. V. Gauthier, J. V. Ruppel, Organizers
N. L. Snyder, Organizer, Presiding

Section I
Orange County Convention Center Room W311D
Processes for Chemical Education: Digital & Online Tools for Learning
M. Mccartney, Organizer, Presiding

MONDAY AFTERNOON
Section A
Orange County Convention Center Room W315A
Chemistry & Our Common Future: 2019 George C. Pimentel Award Symposium in Honor of Cathy Middlecamp Symposium in Honor of Cathy Middlecamp
M. A. Fisher, Organizer

Section B
Orange County Convention Center Room W312A
Enhancing Chemical Education with 3-D Printing
P. Bernard, J. D. Mendez, L. A. Porter, Organizers, Presiding

Section C
Orange County Convention Center Room W312B
Process-Oriented Guided Inquiry Learning (POGIL)
R. S. Moog, Organizer, Presiding

Section D
Orange County Convention Center Room W311A
Chemistry Education Research: Graduate Student Forum
D. V. Xue, Organizer
T. N. Abell, R. E. Gibbons, Organizers, Presiding
D. Xue, Presiding

Section E
Orange County Convention Center Room W311B
There's an App for That
E. A. Aleman, K. Stone, Organizers, Presiding

Section F
Orange County Convention Center Room W311C
UN Sustainable Development Goals: Unique Opportunities for the Chemical Enterprise
Cosponsored by CEI
Financially supported by ACS Green Chemistry Institute; I&EC Green Chemistry Subdivision
E. J. Brush, J. E. Wissinger, Organizers, Presiding

Section G
Orange County Convention Center Room W311D
PolyEd: Incorporating Polymer Chemistry in Undergraduate & High School Curricula
Cosponsored by POLY
E. S. Sterner, Organizer
E. S. Sterner, Presiding 1:30 Introductory Remarks. 1:35 CHED 312. Withdrawn

Section H
Orange County Convention Center Room W311E
Undergraduate Research Papers
C. V. Gauthier, J. V. Ruppel, Organizers
N. L. Snyder, Organizer, Presiding

Section I
Orange County Convention Center West Hall C
N. Di Fabio, J. Roberts, Organizers

Undergraduate Research Posters Agricultural & Food Chemistry
Cosponsored by AGFD and SOCED

Undergraduate Research Posters Analytical Chemistry
Cosponsored by ANYL and SOCED

Undergraduate Research Posters Biotechnology
Cosponsored by BIOL and SOCED

Undergraduate Research Posters Chemical Education
Cosponsored by SOCED

Undergraduate Research Posters Colloid & Surface Chemistry
Cosponsored by SOCED

Undergraduate Research Posters Computational Chemistry
Cosponsored by COMP and SOCED

Undergraduate Research Posters Environmental Chemistry
Cosponsored by ENVR and SOCED

Undergraduate Research Posters Geochemistry
Cosponsored by GEOC and SOCED

Undergraduate Research Posters Green Chemistry & Sustainability
Cosponsored by CEI and SOCED
Financially supported by ACS Green Chemistry Institute; I&EC Green Chemistry Subdivision

Undergraduate Research Posters Inorganic Chemistry
Cosponsored by INOR and SOCED

Undergraduate Research Posters Medicinal Chemistry
Cosponsored by MEDI and SOCED
Undergraduate Research Posters Nanochemistry
Cosponsored by SOCED

Undergraduate Research Posters Organic Chemistry
Cosponsored by SOCED

Undergraduate Research Posters Physical Chemistry
Cosponsored by SOCED

Undergraduate Research Posters Polymer Chemistry
Cosponsored by PMSE, POLY and SOCED

**MONDAY EVENING**

Section A
Orange County Convention Center Room W315A

**Revamping Practical Chemistry Teaching for the New Frontier**
Cosponsored by PMSE, POLY and RUBB
C. Ruks, Organizer, Presiding

Section B
Orange County Convention Center West Hall C

**Sci-Mix**
D. C. Bromfield-Lee, A. S. Cannon, I. J. Levy, Organizers

**Section C**
Orange County Convention Center West Hall C

**Successful Student Chapters**
N. Di Fabio, J. Roberts, Organizers

**TUESDAY MORNING**

Section A
Orange County Convention Center Room W315A

**ACS-CEI Award for Incorporation of Sustainability into Chemistry Education**
Cosponsored by CEI and PROF
H. Middlecamp, S. O. Obare, Organizers, Presiding

Section B
Orange County Convention Center Room W312A

**ACS Award for Achievement in Research for the Teaching & Learning of Chemistry**
Cosponsored by PROF
M. Bunce, Organizer
C. H. Atwood, Organizer, Presiding

Section C
Orange County Convention Center Room W312B

**GSSPC: Artificial Molecular Machines & the Next Generation of Molecular Control**
Cosponsored by COLL, I&EC, ORGN‡, PHYS, POLY and PRES
C. Kei, J. A. Lutz, T. Myers, C. Sumner, Organizers, Presiding

**Section D**
Orange County Convention Center Room W311A

**Research in Chemistry Education**
S. D. Wiediger, Organizer
C. J. Luxford, Organizer, Presiding

**Section E**
Orange County Convention Center Room W311B

**Advancing Undergraduate Research in Chemistry: Best Practices for New Frontiers**
B. L. Gourley, Organizer
R. M. Jones, Organizer, Presiding

**Section F**
Orange County Convention Center Room W311C

**Green Chemistry as a Pillar of Safety Education**
Cosponsored by CHAS
Financially supported by ACS Green Chemistry Institute; I&EC Green Chemistry Subdivision
J. E. Wissinger, Organizer
H. Weizman, Organizer, Presiding

**Section G**
Orange County Convention Center Room W311D

**Transforming the Undergraduate Chemistry Laboratory to Teach Transferrable Skills & Develop Young Scientists**
Cosponsored by ANYL
B. Abrams, Organizer
R. Georgiadis, Organizer, Presiding

**Section H**
Orange County Convention Center Room W311E

**Core Ideas, Crosscutting Concepts & Science Practices: Three-Dimensional Learning in Chemistry**
K. Bain, M. Cooper, M. H. Towns, Organizers

**TUESDAY AFTERNOON**

Section A
Orange County Convention Center Room W315A

**Porphyrens & Related Macrocycles in Undergraduate Teaching & Research**
J. V. Ruppel, Organizer, Presiding
T. Hamilton, N. Snyder, Presiding

Section B
Orange County Convention Center Room W312A

**ACS Award for Achievement in Research for the Teaching & Learning of Chemistry**
Cosponsored by PROF
D. M. Bunce, Organizer
C. H. Atwood, Organizer, Presiding

**Section C**
Orange County Convention Center Room W312B

**GSSPC: Artificial Molecular Machines & the Next Generation of Molecular Control**
Cosponsored by COLL, I&EC, ORGN‡, PHYS, POLY and PRES
C. Kei, J. A. Lutz, T. Myers, C. Sumner, Organizers, Presiding

**Section D**
Orange County Convention Center Room W311A

**Research in Chemistry Education**
S. D. Wiediger, Organizer
C. J. Luxford, Organizer, Presiding

**Section E**
Orange County Convention Center Room W311B

**Advancing Undergraduate Research in Chemistry: Best Practices for New Frontiers**
B. L. Gourley, Organizer
R. M. Jones, Organizer, Presiding

**Section F**
Orange County Convention Center Room W311C

**Green Chemistry as a Pillar of Safety Education**
Cosponsored by CHAS
Financially supported by ACS Green Chemistry Institute; I&EC Green Chemistry Subdivision
J. E. Wissinger, Organizer
H. Weizman, Organizer, Presiding

**Section G**
Orange County Convention Center Room W311D

**Transforming the Undergraduate Chemistry Laboratory to Teach Transferrable Skills & Develop Young Scientists**
Cosponsored by ANYL
B. Abrams, Organizer
R. Georgiadis, Organizer, Presiding

**Section H**
Orange County Convention Center Room W311E

**Perspectives on Climate Change Literacy & Education: Local to International**
Cosponsored by CEI
G. P. Foy, K. E. Peterman, Organizers, Presiding

**WEDNESDAY MORNING**

Section A
Orange County Convention Center Room W315A

**Extending the Reach of Outreach**
S. K. St Angelo, Organizer, Presiding

Section B
Orange County Convention Center Room W312A

**Bridging the Divide: Relating Chemistry to Biology & the Humanities**
P. B. Nolibos, Organizer
P. M. Todebush, Organizer, Presiding

Section C
Orange County Convention Center Room W312B

**Core Ideas, Crosscutting Concepts & Science Practices: Three-Dimensional Learning in Chemistry**
K. Bain, M. Cooper, M. H. Towns, Organizers
G. Rodriguez, Organizer, Presiding
Bain, Presiding

Section D
Orange County Convention Center Room W311A
Research in Chemistry Education
S. D. Wiediger, Organizer
C. J. Luxford, Organizer, Presiding

Section E
Orange County Convention Center Room W311B
Curricular Innovations in Undergraduate Chemical Education Impacted by NSF
R. K. Boggess, Organizer
C. A. Burkhardt, Organizer, Presiding

Section F
Orange County Convention Center Center Room W311C
Engaging Undergraduates with Raman Spectroscopy
M. D. Sonntag, Organizer, Presiding

Section G
Orange County Convention Center Room W311D
Research on Learning in the Laboratory
Sandi-Urena, Organizer
M. J. Chrzanowski, Organizer, Presiding
S. Sandi, Presiding

Section H
Orange County Convention Center Room W311E
Students as Informal Educators: Student use of NISE Net Explore Science: Let’s Do Chemistry Kits
L. Raines, D. F. Sittenfeld, Organizers, Presiding

WEDNESDAY AFTERNOON

Section A
Orange County Convention Center Room W315A
Fundamentals of Chemistry Outreach Education: From Program Design to Assessment
Cosponsored by CCA, LSAC, SOCED and YCC
E. J. Brush, S. Nellutla, Organizers
E. S. Garcia Segu, Organizer, Presiding
S. Nellutla, Presiding

Section B
Orange County Convention Center Room W312A
Bridging the Divide: Relating Chemistry to Biology & the Humanities
P. B. Nolibos, Organizer
P. M. Todebush, Organizer, Presiding

Section C
Orange County Convention Center Room W312B
Core Ideas, Crosscutting Concepts & Science Practices: Three-Dimensional Learning in Chemistry
M. Cooper, M. H. Towns, Organizers
K. Bain, J. G. Rodriguez, Organizers, Presiding

Section D
Orange County Convention Center Center Room W311A
Research in Chemistry Education
C. J. Luxford, Organizer
S. D. Wiediger, Organizer, Presiding

Section E
Orange County Convention Center Room W311B
Curricular Innovations in Undergraduate Chemical Education Impacted by NSF
C. A. Burkhardt, Organizer
R. K. Boggess, Organizer, Presiding

Section F
Orange County Convention Center Center Room W311C
Coexistence of Joy, Motivation, & Learning in Chemistry Classrooms
I. Eilks, Organizer
O. Gulacar, Organizer, Presiding

Section G
Orange County Convention Center Room W311D
Designs to Improve Learning Outcomes in an Allied-Health Chemistry Course

C. E. Brown, Organizer, Presiding

THURSDAY MORNING

Section A
Orange County Convention Center Room W223A
General Papers
Fun Topics to Teach
A. Fleming, Organizer
A. Russell, Presiding

Section B
Orange County Convention Center Center Room W312A
General Papers
Curriculum Issues
S. A. Fleming, Organizer
L. Aronne, Presiding

Section C
Orange County Convention Center Center Room W312B
General Papers
S. A. Fleming, Organizer
M. Dunphy, Presiding

Section D
Orange County Convention Center Center Room W311A
Research in Chemistry Education
C. J. Luxford, Organizer
S. D. Wiediger, Organizer, Presiding

Section E
Orange County Convention Center Center Room W311B
Observing & Measuring Classroom Instructional Practices
E. Saitta, Organizer, Presiding
All meetings and events listed will be held at the Orange County Convention Center 9800 International Dr, Orlando, FL 32819

http://www.occc.net/
1-800-345-9845

## Friday, March 29

Finance Committee (open)
Room W330A
3:00PM – 5:30PM

## Saturday, March 30

<table>
<thead>
<tr>
<th>Event</th>
<th>Room</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACS Exams Institute, Board of Trustees (open)</td>
<td>W312A</td>
<td>7:30AM – 12:00PM</td>
</tr>
<tr>
<td>JCE, Board of Publications (open)</td>
<td>W311H</td>
<td>7:30AM – 12:00PM</td>
</tr>
<tr>
<td>Program Committee (open)</td>
<td>W315A</td>
<td>10:30AM – 12:00PM</td>
</tr>
</tbody>
</table>

## Sunday, March 31

<table>
<thead>
<tr>
<th>Event</th>
<th>Room</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biennial Conference Committee (open)</td>
<td>W315B</td>
<td>8:30AM – 10:00AM</td>
</tr>
<tr>
<td>International Activities Committee (open)</td>
<td>W314A</td>
<td>8:30AM – 10:30AM</td>
</tr>
<tr>
<td>Regional Meetings Committee (open)</td>
<td>W315B</td>
<td>12:00PM – 2:00PM</td>
</tr>
<tr>
<td>Long Range Planning Committee (open)</td>
<td>W314A</td>
<td>2:30PM – 4:30PM</td>
</tr>
</tbody>
</table>

## Monday, April 1

<table>
<thead>
<tr>
<th>Event</th>
<th>Room</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Younger Chemistry Education Scholars Committee (open)</td>
<td>W312C</td>
<td>8:00AM – 9:00AM</td>
</tr>
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</table>

## Tuesday, April 2

<table>
<thead>
<tr>
<th>Event</th>
<th>Room</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Education Research Committee (open)</td>
<td>W312C</td>
<td>12:00 PM – 1:30PM</td>
</tr>
</tbody>
</table>
**AGENDA – Executive Committee (Open)**

*Division of Chemical Education*

*Saturday, March 30, 2019*

*Orange County Convention Center, Room W315A, Orlando, FL*

1. The agenda packet is available on the Division web site: http://www.divched.org/
2. The Executive Committee (ExComm) consists of 19 members, 13 elected members, plus the Editor, *J. Chem. Educ.*; Chair, Board of Publication; Examinations Institute Director and the Chair, Board of Trustees; Program Committee Chair; Biennial Conference Committee Chair. Only ExComm members are present in Executive Session. Input is welcomed from all in attendance at the Open Session, but ExComm members are the only persons who may vote on actions before the Executive Committee.
3. Reimbursement forms for ExComm members will be provided via interactive form on the Division's website and attached separately. Under the tab - Financial. http://www.divched.org/financial

**Open Session -1:30PM to 4:00PM**

<table>
<thead>
<tr>
<th>Action (X)</th>
<th>Time</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>1:30</td>
<td>Call to order</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Approve meeting agenda and consent agenda reports</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td>Approval of the Fall 2018 ExComm Meeting Minutes, Open Session</td>
</tr>
</tbody>
</table>

**Introductions**

- Chair's Announcements – I. Levy
- Around the circle introductions with favorite elements
- Welcome to new members of ExComm
- Councilor serving as parliamentarian
- Business Meeting of the Division and Social on Sunday
- Awards announcement for Division members
- SOCED overview
- IYPT Activities?

- Past Chair’s Announcements – C. Frech
- Chair Elect’s Announcements – D. Del Carlo
- Secretary’s Announcements – D. King
- Public Relations Task Force / Twitter and Social Media Strategy – T. Holme
- website revamp, social media, newsletter—H. Johnson
- Finance Committee update – C. Frech
- Treasurer’s General Report - D. Licata
- Discussion to develop list of benefits of Division membership – M. Head
- Division dues discussion – D. Licata
- Program Committee Report – P. Daubenmire
- Biennial Conference Committee Update – D. Sykes
- Operations Manual Update Process – D. Cullen
- Division Councilors' Report – R. Allen, I. Black, S. Mitchell

3:00 Break

3:15 ACS Education Division Highlights – J. Wesemann

AACT Representative – A. Modic

Board of Publication Oral Report – E. Yezierski

Board of Trustees of the ACS Exams Institute Oral Report – A. Grushow

ACS books presentation – A. Koenig

Open Discussion/Input to the Executive Committee

Committee Chair Voices – updates or concerns from any standing committee

3:45 Open Discussion/Input to the Executive Committee

AACT Representative – A. Modic

ACS Education Division Highlights – J. Wesemann

Recognition of Division Award Winners – C. Frech

4:00 Adjourn Open Session
Chemistry Teacher Program
Reduced price for pre-college (high & middle school) teachers!
All day Sunday & Monday afternoon programming for teachers
Full access to the chemistry teacher program AND the entire ACS meeting AND the exposition!
Networking opportunities with other chemistry teachers
Earn Professional Development hours

Registration
Cost for Middle/High School (Pre-College) Teachers: $125

Pre-college teacher registrants:
The Chemistry Educators Luncheon is included with your registration, as generously provided by the ACS Division of Chemical Education.

Your registration includes full access to the ACS meeting and exposition hall.

PD Hours
Attendees can track up to 24 professional development hours for sessions attended at the ACS National Meeting. Forms will be distributed during the chemistry teacher programing. Upon submission of the form, a certificate will be mailed documenting hours of participation.

Visit www.acs.org/chemistryteacherprogram for up-to-date information

Follow #ACSTeacherDay on Twitter

Schedule
Sunday
Chemistry Teacher’s Day – Morning Session
Location: Orange County Convention Center, Room W315A | 8:30 AM - 12:00 PM
Symposium Organizers: Sherri Rukes & Michael Mury
Introductory Remarks
Chemistry and the final frontier: Student designed sustainable payloads at the edge of space
Lurea J. Doody
Elements of paper science: Material for teaching chemistry
D. Keller
Viral videos as teaching tools
Raychelle M. Burks
What’s in a name? — Possibly death and taxes!
Richard Hartshorn
Geography of the periodic table
Carmen J. Giunta
IAACT and the IYPT
Sherri C. Rukes
Chemistry Educators Luncheon
Location: Orange County Convention Center, Room W315A | 12:00 PM - 1:00 PM

Chemistry Teacher’s Day – Afternoon Session
Location: Orange County Convention Center, Room W315A | 1:00 - 5:00 PM
Symposium Organizers: Sherri Rukes & Michael Mury
James Bryant Conant Award in High School Teaching - Elements of a thermodynamically favorable classroom
Derrick C. Wood
Take home labs: Taking science beyond the classroom
Aimee Modic
Supporting and assessing molecular-level sensemaking
Ryan Stowe
Simple, hands-on activities from ChemEdX
Erica Posthuma-Adams and Thomas S. Kuntzeleman

Teachers of Chemistry Reception
Location: Hyatt Regency Orlando, Plaza International Ballroom J | 5:00 PM - 7:00 PM
After a day of hands-on activities and presentations, join other teachers, as you eat, drink and talk about more chemistry!
Reception hosted by:
American Association of Chemistry Teachers (AACT)
ACS-Hach Programs
ACS ChemClubs

Monday
Revamping Practical Chemistry Teaching for the New Frontier
Location: Orange County Convention Center, Room W315A | Time: 4:00 - 7:35 PM
Symposium Organizers: Sherri Rukes
Deepen your students’ STEM experience by adding various inquiry/engineering design challenges with several Make-n-Take items
Sherri Rukes
Through the eyes of a baby
Robert A. Wesolowski
The new frontier: Car chemistry moving from carbon (How it was, to how it is, to where it is going)
Andrew Nydam
Music and Chemistry in Education Workshop sponsored by ACS SOCED

There is Chemistry in Music

Don’t Miss the Music and Chemistry in Education Workshop
(sponsored by the ACS Society Committee on Education)
Hosted by Peter Banks, former chemistry teacher and teacher at Purcell School for Young Musicians, U.K.

Join us for a workshop specifically designed to explore the connections between chemistry and music. The Music and Chemistry in Education Workshop gives attendees the opportunity to meet with like-minded chemists to share their own perspectives and experiences joining the disciplines of chemistry and music. There will be a panel discussion led by Peter Banks, former chemistry teacher at the world-renowned Purcell School for Young Musicians in the U.K. The panel discussion will focus on interface between chemistry and music as it pertains to education and teaching and performance and composition.

The workshop will conclude with performances from John F. Berry, Professor of Chemistry, University of Wisconsin-Madison on violin and Professor Patrick Holland from the Department of Chemistry, Yale University on piano. We encourage you to stay for the SOCED Open Meeting from 3:00-4:00 pm. Topic: Integration of the arts and sciences in higher education as recently highlighted in the May 2018 report from the National Academies of Sciences, Engineering, and Medicine.

WHEN:
Monday, April 1, 2019
1:00 pm to 3:00 pm

WHERE:
Hilton Orlando Hotel, Lake Eola A/B Room
Orlando Shuttle Map

SHUTTLE HOURS OF OPERATION

Sunday, March 31
7:00 AM – 10:00 AM .......................................................... 15 minute service
10:00 AM – 4:00 PM .............................................................. 30 minute service
4:00 PM – 7:00 PM .............................................................. 15 minute service
7:00 PM – 11:00 PM .............................................................. 30 minute service

Monday, April 1
7:00 AM – 10:00 AM .......................................................... 15 minute service
10:00 AM – 4:00 PM .............................................................. 30 minute service
4:00 PM – 11:00 PM .............................................................. 15 minute service

Tuesday, April 2
7:00 AM – 10:00 AM .......................................................... 15 minute service
10:00 AM – 4:00 PM .............................................................. 30 minute service
4:00 PM – 7:00 PM .............................................................. 15 minute service
7:00 PM – 11:00 PM .............................................................. 30 minute service

Wednesday, April 3
7:00 AM – 11:00 PM .............................................................. 30 minute service

Thursday, April 4
7:00 AM – 6:00 PM .............................................................. 60 minute service

For all shuttle inquiries and wheelchair assistance, please call TMS: 1-866-439-8564

CAMPUS MAP
### Future ACS National Meetings

<table>
<thead>
<tr>
<th>Meeting</th>
<th>Date</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>258th ACS National Meeting &amp; Exposition Chemistry &amp; Water</td>
<td>August 25-29, 2019</td>
<td>San Diego, CA</td>
</tr>
<tr>
<td>260th ACS National Meeting &amp; Exposition Chemistry from Bench to Market</td>
<td>August 16 - 20, 2020</td>
<td>San Francisco, CA</td>
</tr>
<tr>
<td>261st ACS National Meeting &amp; Exposition</td>
<td>March 21 - 25</td>
<td>San Antonio, TX</td>
</tr>
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</table>

### 2019 Regional ACS Meetings

<table>
<thead>
<tr>
<th>Meeting</th>
<th>Date</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>Great Lakes Regional Meeting (GLRM)</td>
<td>May 1, 2019</td>
<td>Lisle, IL</td>
</tr>
<tr>
<td>Middle Atlantic Regional Meeting (MARM)</td>
<td>May 30, 2019</td>
<td>UMBC, Baltimore</td>
</tr>
<tr>
<td>Central Regional Meeting (CERM)</td>
<td>June 4, 2019</td>
<td>Midland, MI</td>
</tr>
<tr>
<td>Northwest Regional Meeting (NORM)</td>
<td>June 16, 2019</td>
<td>Portland, OR</td>
</tr>
<tr>
<td>Northeast Regional Meeting (NERM)</td>
<td>June 23, 2019</td>
<td>Saratoga Springs, NY</td>
</tr>
<tr>
<td>Midwest Regional Meeting (MWRM)</td>
<td>October 16, 2019</td>
<td>Wichita, KS</td>
</tr>
<tr>
<td>Southeastern Regional Meeting (SERMACS)</td>
<td>October 20, 2019</td>
<td>Savannah, GA</td>
</tr>
<tr>
<td>Southwest Regional Meeting (SWRM)/RMRM</td>
<td>November 13, 2019</td>
<td>El Paso, TX</td>
</tr>
</tbody>
</table>
Note: The Executive Committee consists of 19 members, 13 elected members, plus the Chair, Board of Publication; Chair, Board of Trustees; Chair, Program Committee; Chair, Biennial Conference Committee; Editor, J. Chem. Educ. and Director, Examinations Institute who are both nonvoting members.
2019 DivCHED Committee Chairs

Executive Committee (ExComm)
Irvin J. Levy
(Address Page )

Board of Publication (PUB)
Ellen Yezierski
Miami University
Tel. 513.529.2819
Yeziere@miamiOH.edu

Board of Trustees, ACS Exams Institute (EXAM)
Alexander Grushow
Rider University
Tel. 609.896.5095
grushow@rider.edu

Biennial Conference Committee (BCC)
Dan G. Sykes
(Address Page )
MaryKay Orgill
University of Nevada, Las Vegas
Tel. 702.895.3580
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Melonie Teichert
United States Naval Academy
Tel. 410.293.5217
melonie@alum.mit.edu
Joi Walker
East Carolina University
Tel. 252.328.9772
Walkerjoi15@ecu.edu

Committee on Chemistry in Two-Year Colleges (COCTYC)
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Delta College
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chairelect2018@2yc3.org

Committee on Computers in Chem Ed (CCCE)
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chmiddle@wisc.edu

High School Chemistry Committee (HSCC)
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jlmking@hotmail.com
Rachel Morgan Theall
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rmtheall@semo.edu

Committee on International Activities (CIA)
Resa Kelly
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Tel. 408.924.4940
Resa.kelly@sjus.edu
Wendy Schatzberg
Dixie State University
Tel. 435.879.4374
schatzberg@dixie.edu

Committee on Personell & Nominations (CPN)
Jennifer Lewis
University of South Florida
Tel. 813.974.1286
jennifer@usf.edu
Gail Webster
Guilford College
Tel. 336-316-2486
gwebster@guilford.edu

Program Committee (PC)
Patrick Daubenmire
(Address Page )

Recognition Committee (RC)
Frank Torre
Springfield College
Tel. 413.748.3380
ftorre@springfieldcollege.edu

Regional Meeting Committee (REGMET)
Marty Perry
St. Louis College of Pharmacy
Tel. 314.446.8176
Marty.Perry@stlcop.edu

Safety Committee (SC)
David Finster
Wittenberg University
Tel. 937.327.6441
dfinster@wittenberg.edu

Web Committee (WEB)
Jon Holmes
Journal of Chemical Education
Tel. 608.262.7917
jholmes@chem.wisc.edu

Young Chemists (YCC)
Jordan Harshman
Auburn University
jth0083@auburn.edu
Biennial Conference

Dan Sykes (13-15, 16-18, 19-21), Chair (17-18), Co-Chair (19-21)

MaryKay Orgill (13-15, 16-18, 19-21), Co-Chair (19-21)
Justin Carmel (18-20)
Renee Cole (17-19)
Scott Donnelly (18-20)
Irv Levy (17-19)
Suzette Mooring (15-17, 18-20)
Barbara Murry (18-20)
Alice Putti (18-20)
Clarissa Sorensen-Unruh (17-19)
Vickie Williamson (12-14, 15-17, 18-20)

MaryKay Orgill (13-15, 16-18, 19-21), Co-Chair (19-21)

Computers in Chemical Education

Xavier Prat-Resina (11-13, 14-16, 17-19), Chair (18), Co-Chair (19)

Tanya Gupta (16-18, 19-21), Co-Chair (19-21)
Ehren Bucholtz (19-21)
Jordi Cuadros (11-13, 14-16, 17-19)
Ling Huang (17-19)
Jennifer Muzyka (12-15, 18-20), Chair (16-17)
Nickelson (15-17, 18-20)
Maria Pacheco (17-19)
Harry Pence (11-13, 14-16, 17-19)
Justin Shorb (15-17, 18-20)
Rick Spinney (18-20)
Jason Telford (19-21)

Long Range Planning Committee

Kim Linenburger Cortes (15-17, 18-20), Chair (19-20)
Iona Black (14-16, 17-19)
Bill Donovan (2018-20)
Jack Hayes (19-21)
Tom Higgins (18-20)
James MacArthur (17-19)
Sherry Rukes (18-20)
DavidLicata, ExOfficio (18-20)
DeannaCullen, ExOfficio (17-19)
Cheryl Frech (15-17, 18-20), ExOfficio (19)

New Member

Michelle Head (13-15, 16-18, 19-21),
Chair (16-18, 19-21)
MaryBeth Anzovino (16-18, 19-21)
Katherine Aubrecht (16-18, 19-21)
Rich Bauer (17-19)
Dawn DelCarlo (17-19)
NicholeDePaul (12-14, 15-17, 18-20)
UshirKulatunga (15-17, 18-20)
LaKeishaMcClary (18-20)
CinziaMuzzi (15-17, 18-20)
Andrismith (18-20)
DeannaCullen (17-19) Member-at-Large

Passer Portfolio

CatherineMacGowan (13-15, 16-18, 19-21), Chair (15, 16-18, 19-21)
ReneeBeeton (18-20)
WilliamDonovan (17-19)
RebeccaEikey (15-17, 18-20)
JulieEllefson-Kuehn (16-18, 19-21)
LisaHoferkamp (15-17, 18-20)
WilliamMiller (15-17, 18-20)
ArleneRussell (13-15, 16-18, 19-21)
DavidLicata, Ex Officio (18-20)

Personal & Nominations

JenniferLewis (13-15, 16-18, 19-21), Chair (15, 16-18, 19-21)

Gail Webster (15-17, 18-20), Co-Chair (19)
Roxie Allen (14-16, 17-19)
LauraAnna (15-17, 18-20)
ChrisBauer (17-19)
TomHiggins (14-16, 17-19)
ArleneRussell (15-17, 18-20)
SusanShelbie (16-18, 19-21)
JulieSmist (12-14, 15-17, 18-20)
DanKing, Ex-Officio (17-19)

Two-Year College Chemistry Consortium

Peter Larkowski, Chair
RobertKojima, Chair-Elect '19
ScottDonnelly, Chair-Elect '20
KathyCarrigan, Past Chair and DivCHED Rep
TamikaDuplessis, Online Conference Coordinator
JulieEllefson-Kuehn, Treasurer
JasonJadin, Membership Chair
AmyJoSanders, Workshops Liaison
DeeDeeAllen, Industrial Sponsors Chair
MaryRoslonski, Future Sites Coordinator
JonathanGittins, Newsletter Editor
LucaPrezianti, Webmaster

Electronic Activities

ResaKelly (13-15), Chair (17-18) Co-Chair (16, 19)
WendySchatzberg (17-19) Co-Chair (19)
Nico Becker (15-17, 18-20)
ConradBergo (14-16, 17-19)
CorinaBrown (19-21)
CharlieCox (15-17, 18-20)
SarahHansen (15-17, 18-20)
AlexeyLeontev (17-19)
AkikoNakamura (17-19)
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