# **Chemical Bond – February 2019**



Vol. 70, No. 2, February, 2019

Editor's note: the original announcement ran in November, but the deadline is now much closer. Buret Battlers Ho!

### Buret Battle Back on (Front) Burner first published 11 November 2018

Save the date: Feb 25, 2019!

The annual Battle of the Burets titration face-off will be hosted again this year by SIU-Edwardsville. Registration and pizza begin at 6:00 pm; then pizzas-down, goggles-on buret-wielding at 6:30.

Each school may send up to two teams of two students each. Each student will do three individual titrations; the group score is the sum of the scores for the team.

If you are a high school chemistry teacher and you have not received an email with registration information, please contact the coordinator by email or phone (below). If you are a high school chemistry student (or know one) and haven't heard about this competition from your teacher, the time to start cajoling is now.

Registration deadline is 4 pm on Monday, Feb 11.

Students' attire must cover the legs and feet; splash goggles must be worn in the lab. Please park in the visitor lot (pay lot, \$1/hr); reimbursement is available upon request. Download a campus map here.

Questions? Please contact Kevin Tucker by email or phone 618.650.5868.



## Kids and Chemistry: 2018 in review first published 5 January 2019

(editor's note: many apologies to Dr. Joseph, who submitted this in November)

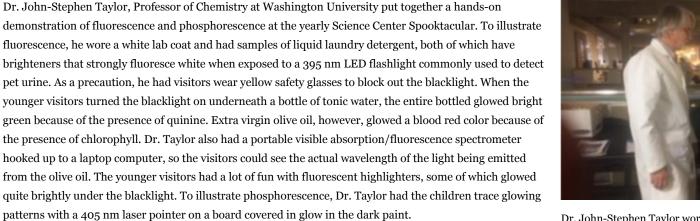
Reported by Dr. Reni Joseph, Kids and Chemistry coordinator



Mr. Eric Hill demonstrating the Geiger counter

such as bananas, smoke detectors, and Fiesta wares were used to measure radioactivity. M & M's were used to demonstrate half-life and the idea of radioactive decay. Special thanks to our volunteers who worked very hard to make this event a success. Thanks to Mr. Eric Hill, Dr. Bill Uhland, Dr. Elaine Jurkowski, and Miss Cinda Sue Page.

Kids and Chemistry celebrated National Chemistry week with a Spooktacular event hosted by the St Louis Science center on October 27th. Demonstrations included the composition of the atom and the meaning of going nuclear. In addition, we also had demonstration using Geiger counter to measure radioactivity. Samples





Dr. John-Stephen Taylor working with a young scientist in the making

Students (K-12) also participated in an illustrated poem contest as part of National Chemistry Week. "Chemistry is Out of This World" was the theme of the contest. The winners of the poem contest are Chloe Ogier, Hadassah Stone, and Secret Phillips. Congratulations to the winners! 'Kids and Chemistry' conducted STEM camps in the summer of 2018 on 'The three states of Matter' and 'Nuclear Chemistry'. The camps were held at Beaumont and Cottleville Knights of Columbus. Thanks to our volunteers- Michael Barnes, Rebekah Colacot, Mr. Eric Hill and Dr. Bill Uhland for making this event a success.

# Chemistry is pHun Partners with Maryville University



Students from Maryville University Chemistry Department assist with "States of Matter" at Pond Elementary School, November 1, 2018. Left to right: Fujr Ibrahim, Will Ridley, Marilyn Vazquez.

Dr. Anuradha "Anu" Vummenthala, Assistant Professor of Chemistry at Maryville University, has suggested the formation of a partnership with "Chemistry is pHun", an outreach program of the St. Louis Section of ACS. Dr. Vummenthala had participated in a workshop where Chemistry is pHun partnered with the Math and Science Network of Greater St. Louis to present a program for 7th-10th grade women at the Expanding Your Horizons conference in March, 2018. She learned about the "States of Matter" program presented to second grade students in the Rockwood and Kirkwood School Districts and thought this was an excellent opportunity for her chemistry students at Maryville to appreciate the importance of their classroom studies and serve as role models for the next generation of scientists.

As a result of Anu's suggestion, Maryville chemistry students have begun serving as assistants and presenters with Will Ridley, Coordinator for Chemistry is pHun. Maryville students Fujr Ibrahim and Marilyn Vazquez presented for 2nd graders at Pond Elementary School in Rockwood on November 1st, and Morgan Bertolino and Caleb Holaway presented at Tillman Elementary School in Kirkwood on December 19th. The new partnership is already garnering positive feedback from 2nd graders. Teachers and administrators reported that it was very well received. Future collaborations in January and March, 2019, are planned.

If you would like to learn more about this or other programs of Chemistry is pHun, please email Will Ridley, or phone 314.920.1507.

# Another Salute to Excellence: delayed but not denied

Now hear this!

first published 21 January 2019

Our Section normally announces "Salutes to Excellence" at the Continuity Dinner. But this year ... crickets. For reasons your reporter has not been able to suss out, lauding excellence was not a feature of this past December's Continuity Dinner. Well, it was, but in other categories (cough, cough - Jeff Cornelius and his Distinguished Service Award – cough, cough).

(A real newspaper reporter would say something like, "It is not clear why ...", completely passive-fying the lack of details. A pretend reporter just admits he has no idea.)

Anyway, we do have excellence to laud, and it's happening here and now. Cynthia Chapple, the energetic leader of the Minority Affairs subcommittee, has caught the eye of the excellence-lauders for her singlehanded efforts at restoring Minority Affairs as a dynamic and relevant service/activity of the Section. She is no longer single-handed, by the way, because she has also recruited a co-chair, one Chanté Summers, to share Chair Suzy Hartmann at the January, 2019, board meeting responsibilities, ideas, and future plaudits.

How's that for burying the lede?

Update: the reason Salutes to Excellence were not announced at the Continuity Dinner is that the winners were not able to attend. There's another one in the wings. Stay tuned.

### Show-and-tell time: chemistry career days for high school students first published 22 January 2019

Mentor-A-Chemistry-Class jumps into gear this spring at University City High School, our very first school partner.

The Committee on Minority Affairs would like to invite all minority chemists, chemical professionals, and chemical business professionals to come with us as we introduce high school chemistry students to our careers in chemistry. The goal of this outreach opportunity is to expose high school sophomores to chemistry careers in the St Louis region and beyond, to give insight into chemistry degree programs and to help minority students think of chemistry as a degree and career path for them.



It will take a commitment of only one visit per semester to the school, to deliver an enthusiastic, informative description of your day on the job and answer questions. Email Cynthia Chapple for more information. Or, if you already like the idea and want to jump in with both feet, sign up here. Our first three dates are already set: February 8th, March 25th, and April 8th from 11:30 am to 12:30 pm. All we need is you.

### Call for Nominations: Saint Louis Award 2019 first published 28 January 2019

Nominations are solicited for the St Louis Award, which has been sponsored by the Monsanto Company (now Bayer) and administered by the St Louis Section-ACS. Nominees should be individuals who have made outstanding contributions to the profession of chemistry and demonstrated potential to further the advancement of the chemical profession. The awardee is selected by a review committee constituted by the St Louis Section-ACS. The award, consisting of a \$1,500 honorarium and a plaque, is presented at the St Louis Award Banquet, which is typically held in October during National Chemical Week.

At the time of the nomination, nominees must not have previously received the Midwest Award or any national ACS-sponsored award. Nominees must be members or affiliates of the St Louis Section of the ACS. Nomination packets received by April 30 are considered for award presentation in October.

#### Nomination packages (vide infra) should be prepared as a single Portable Document Format (PDF) file and sent by email to John-Stephen Taylor taylor@wustl.edu

Nomination letters, required as an integral component of the nomination PDF-file-package, can be formally addressed to:

John-Stephen Taylor, Ph.D.

- ACS Saint Louis Award Coordinator
- Department of Chemistry

Saint Louis, Missouri 63130.

- Campus Box 1134 Washington University
- 1 Brookings Drive

Nomination packages (single PDF-file) should include, in this order:

- 1. a face page with the award name, the nominees name, and the date of the nomination; 2. a nominating letter, which includes note of any significant activities with the Local Section;
- 3. two additional seconding letters (not more) from individuals who have had a close professional affiliation with the nominee;
- 4. a brief biography of the nominee (one page or less); 5. a concise description of the nominee's chief accomplishments in the field (one page or less); and
- 6. a list of publications and patents.
- Additional details can be found at URL http://www.stlacs.org/st-louis-award/.

## Big, diverse turnout at 2018 Undergrad Research Symposium first published 29 January 2019

The 2018 ACS-St Louis Section Undergraduate Research Symposium was held Friday, November 2nd, from 2:30-5:00 p.m. in the Science Laboratory West building at Southern Illinois University-Edwardsville. Twenty-two presenters from six area universities shared work from fifteen projects. In addition to learning from each other, students had an opportunity to explain their work to a range of undergraduate students, graduate students, and faculty. More photos from the event are available via the section's Flickr account.



Attendees and presenters at the 2018 ACS Undergraduate

• 1st: Christine Campisi, mentored by Timothy Wencewicz of Washington University-St Louis, for Towards the total synthesis of the acyclic analog of tabtoxinine- $\beta$ -lactam

Awards were made to the following students (not all co-authors and collaborators are listed):

- 2nd (tie): Anna L Grobelny, mentored by Ryan Groeneman of Webster University, for Solid state [2+2] cycloaddition reactions within pure and mixed co-crystals based upon dihalogenated resorcinols and
- 4-stilbazole Anusree Natraj, mentored by Johnathan Barnes of Washington University-St Louis, for Synthesis of
- sequence-defined redox-responsive polyviologens o 4th: Chris Perry, mentored by Sarah Luesse of Southern Illinois University-Edwardsville, for Effect of substituted 2-furaldehyde and 2-nitrophenol components on Passerini-Smiles couplings
- Honorable Mention: Sarah Neisch, mentored by Dana Baum of Saint Louis University, for Advances in comb-branched DNA synthesis

Appreciation is extended to all the attendees and volunteers. We would also like to announce new organizers for the undergraduate research symposium for 2019: Welcome to Monica Rieth and Samira Azad!



Symposium organizers for 2019: Monica Rieth and Samira Azad.

## Call for Nominations: 2019 ACS Midwest Award first published 30 January 2019

Your assistance in identifying candidates for the 2019 ACS Midwest Award is solicited. In 1944, the St. Louis Section of the American Chemical Society established the ACS Midwest Award to recognize outstanding achievements an individual made in chemistry in the Midwest Region. From that point on, the award is conferred annually on a scientist who has made meritorious contributions to the advancement of pure or applied chemistry, chemical education, and the profession of chemistry. The contributions must have been made during a period of residence in the geographical area defined by the territories of the Local Sections that participate in the Midwest Regional Meeting (MWRM) of the ACS (see map for reference). Nominees can work in industry, academia, government, or private practice.

The 2019 ACS Midwest Award will be presented at the 54th Midwest Regional Meeting of the ACS held in Wichita, KS from October 16-19, 2019. Ceremonies feature a Midwest Award Symposium, a Midwest Award Lecture and the Midwest Awards Banquet usually scheduled on the Thursday of the meeting. The Award consists of a medallion and a cash honorarium and is presented by the St. Louis Section Chair at the Midwest Awards Banquet. Conditions of this Award include that the recipient gives the Midwest Award Lecture and attends the Midwest Awards Banquet.

Nominations should consist of

- a nominating letter for the nominee and two or more seconding letters
- $\circ\,$  a CV for the nominee • a brief biography for the nominee
- documented and objective information regarding the outstanding achievements of the nominee.
- If the nominee is an academician, a list of people who received advanced degrees under her or his direction should be provided. Activities by the nominee that support the ACS in the Midwest Region constitute an additional criterion.

Please submit nominations electronically via a single pdf file to the e-mail address given below. All nominations must be received on or before the deadline, Sunday March 31, 2019 (11:59 pm CST). The review panel (made up of chemistry professionals, resident in the Midwest Region), also will consider unsuccessful applications for the ACS Midwest Award from the past two years.

If you have questions, please contact Jim O'Brien at obrien@jinx.umsl.edu or call (314) 757-5717 (cell).

Nominations should be directed to:

St. Louis, MO 63121

Dr. Jim O'Brien. 2019 ACS Midwest Award Coordinator, and Department of Chemistry and Biochemistry University of Missouri-St. Louis One University Blvd.

## Recognition Night 2019: Let's do this thing first published 30 January 2019

Recognition Night celebrates and recognizes 50, 60, and 70-year ACS members and Distingtuished Service Award winner Jeff Cornelius. Jeff is a past Chair of the Section and currently serves as Treasurer (and all that implies). Many other Past Chairs of the St Louis Section will gather, including Immediate Past Chair, Ben

Research Symposium. (photo, Susan D Wiediger)

Award recipients at the 2018 Undergraduate Research Symposium, l. to r.: Anna L Grobelny (2nd), Anusree Natraj (2nd), Christine Campisi (1st), Sarah Neisch (Honorable Mention), and Chris Perry (4th) (photo Dana Baum)



Barth, who will give an entertaining after-dinner talk.

Our evening is March 16th. Our venue is Balaban's, 1772 Clarkson Rd, Chesterfield, MO 63017. Balaban's is in a Dierberg's mall in the northeast quadrant of Clarkson Road and Baxter Road in Chesterfield. Long-time St Louisans: please don't make the mistake of thinking it's still in the Central West End. It isn't.

Mains menu, choice of: ◦ beef tenderloin

 bacon-wrapped scallops • eggplant roulade (vegan and gluten-free) Agenda:

6:00 - Reception/social hour

6:45 - Dinner 7:45 - Program:

Past Chair's Address (Ben Barth) Introduction of 50, 60, and 70-year members

Distinguished Service Award presentation to Jeff Cornelius

RSVP by March 9th to Susan Hartmann, Chair of the St Louis Section-ACS, with the following information: Name(s)

Number attending \_\_\_\_\_ × \$30 each = amount remitted \$\_ Make checks payable to St Louis Section-ACS, and mail to:

Jeffrey Cornelius 1 Maybeck Place

Elsah, IL 62028

or send in advance of the dinner to our PayPal account.

## Awards Night 2019 first published 31 January 2019

Save the date!

Awards Night will be held this year from 6:00 - 9:00 pm on Monday, April 15th, 2019. The venue this year is Vue 17, located across from the Galleria. It is on the 17th floor, so the views of the city as the sun sets will be something to see!



#### Vue 17 1034 S. Brentwood Blvd, Suite 1700

St. Louis, MO 63117 Free parking is available in surface lots and the garage.

Winners of the high school chemistry contest, the high school chemistry teacher-of-the-year, and the outstanding junior chemistry students at area colleges and universities will all be recognized.

Agenda:

6:00 PM - Reception/social hour 6:30 PM - Dinner

7:15 PM - Awards program

Whether you're coming to applaud a particular honoree or you're an interested bystander, all are welcome. Student winners and high school teachers receive a complimentary dinner; others may attend for \$25 each. Those wishing to attend the award ceremony only may arrive at 7:15. All attendees must RSVP by Wednesday, April 10th, to the Awards Night coordinator, Leah O'Brien at lobrien@siue.edu or 618-650-3562.

## IYPT2U first published 31 January 2019

controversial.

[First in a series of occasional posts for the International Year of the Periodic Table.]

As anyone who has been perusing their C&EN knows, the United Nations has declared 2019 the International Year of the Periodic Table, and the American Chemical Society will be sponsoring a number of related events.

Although 1869 may be viewed as the official year for Dimitri Mendeleev's discovery of the periodicity of the elements – not the table itself – the concept was controversial. An author writing in the early 1900s referred to the recent development of the periodic table as the feat of organization that would transform chemistry from a random assemblage of information into a true science with predictive power. I regret that I cannot more accurately identify the source of that perspective, but I was browsing Rice University's Fondren Library in the mid 1990s when I read that, and I did not record the exact quote and citation at the time. However, I was intrigued by the idea that this structure that I had taken for granted had so (relatively) recently been





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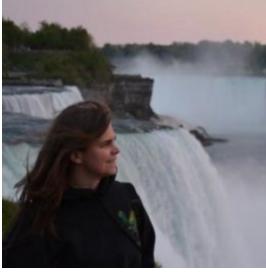
Arguably the most well-known form of the periodic table, familiar to decades of chemistry students... although some may remember it with fewer elements.

have only ever worked with the version of the periodic table that fits so nicely on a standard sheet of paper, and might be surprised by Sam Lemonick's article in the January 7th C&EN

Some readers may

discussing ongoing controversy about arranging the elements. In addition to structures such as the left step or the long form, you can peruse Wikipedia and the web to find more exotic spirals and three-dimensional tables. Several authors have written book-length discussions of the periodic table, many of which discuss various formats and their advantages and disadvantages. Eric Scerri, the author of one such text, is arguably (and he does seem to enjoy a good argument) the most prominent of those engaged in the periodic table debate in the USA.

Other readily recognized images of science have multiple associations: the microscope or DNA might be used in forensics or medicine as well as biology; the planetary atom is identified with chemistry, physics, and with nuclear power; iconic photos of famous scientists such as Albert Einstein or Marie Curie pop up everywhere including internet memes. The periodic table is closely identified with chemistry, making it one of our most central images as well as a crucial concept and tool. So take the periodic challenge, vote for your favorite element, and enjoy the year of the periodic table as the world celebrates our icon!



Guest author: Susan Wiediger

Susan Wiediger, Associate Professor of Chemistry at SIU-Edwardsville, is the Education Committee chair for the local section, as well as (obviously) a big fan of the central paradigm of the Central Science.





## **Board of Directors**

St Louis Section-ACS Board of Directors meets the second Thursday of each month, usually at the Glen Echo Country Club (map and driving directions). Meetings are open to all members, and all are encouraged to attend. Elected officers and chairs of major committees vote on questions put to the Board; others in attendance have voice but no vote.

If you want to attend for dinner, please contact the section Chair at least a week in advance. The usual cost of the dinner is \$20 (\$10 for post-docs and unemployed members). Bar service and dessert are optional extras. Members wishing to become active in section activities are welcomed for their first dinner as guests of the section.

### Date: Feb 14

Social hour, cash bar: 6:00 pm Call to order: 6:30 pm (Board Meeting suspended during dinner service)

## Future meetings: Mar 14, Apr 11

Maryville University

Seminars are approximately once a month on Thursdays, 4-5 pm. Details are available on the university's seminar page. All seminars are free and open to the public. Contact Jason Telford for more information.

## Saint Louis University

Seminars are generally on Fridays at 12 noon in Carlo Auditorium, Tegeler Hall, unless noted otherwise. Refreshments follow. For the most up-to-date information, refer to the department's seminar page or contact Brent Znosko, znoskob@slu.edu.

## University of Missouri–St Louis

Mondays at 4 pm in 451 Benton Hall, unless otherwise specified. Refreshments 15 minutes prior to seminar time. For timely information on visiting seminar speakers, contact the Chemistry Department, 314.516.5311, or visit the seminar schedule. The department has additional seminar series

# which are also accessible from this page. Washington University

Seminars are in McMillen 311 at 4 pm unless otherwise noted. For information, consult the departmental events page. Related seminars, including endowed seminar series and the WU med school biochemistry series, are linked here as well.

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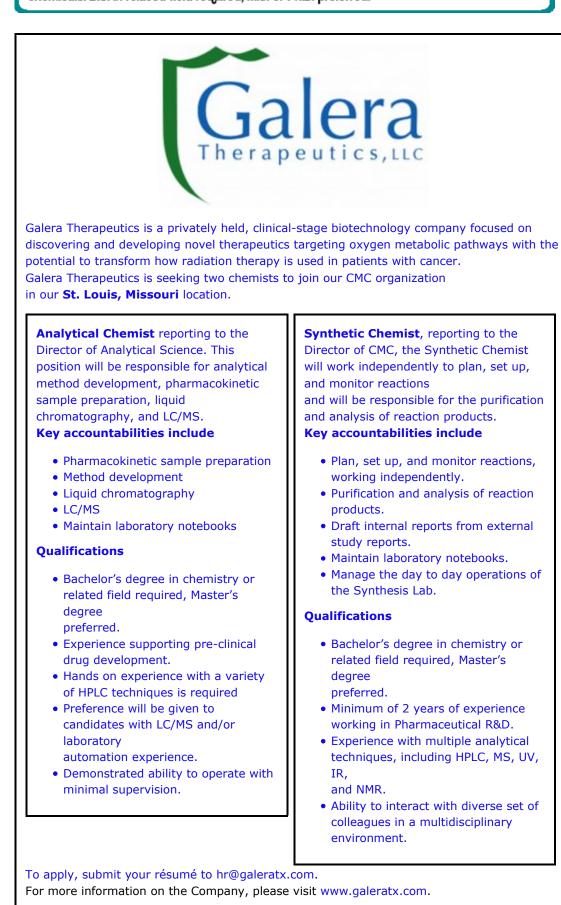
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Experienced Organic Radiochemist Ideal candidate should have 5-10 years experience in radiosynthesis using carbon-14 and tritium. Candidates with experience using carbon-13 and deuterium will also be considered. Applicant must have extensive experience in multi-step, small-scale organic radiosynthesis, as well as vacuum line techniques to handle, purify, and transfer small amounts of volatile chemicals under vacuum. Ph.D. required.

## Biochemist

Applicant must have experience with enzume extraction, biochemical sunthesis, gel electrophoresis; purifications by EP, TLC, and paper chromatography. Ph.D. required.

Analytical/Preparative HPLC Chemist Ideal candidate should have experience in both analytical and preparative HPLC. Applicant must have experience with analytical and preparative HPLC techniques for radioactive chemicals. B.S. in related field required, M.S. or Ph.D. preferred.





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