

MARCH 2020 VOLUME 42 NO. 3

SILICON VALLEY CHEMIST

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April Meeting Info.

Tuesday, April 7, 2020, 6-9pm (6-7pm social, 7-8pm dinner, 8-9pm seminar) Michael's at Shoreline: 2960 N. Shoreline Blvd Mountain View, CA \$20 for students · \$35 for non-students Register at: <u>http://svacs.org/events</u>

April Dinner Meeting and Seminar: Production Redefined: Carbon's Digital Light Synthesis Platform

Dr. Rolland will provide an overview of the Carbon Digital Light Synthesis[™] (DLS[™]) technology and Digital Manufacturing Platform. We will discuss how DLS provides the key elements of speed, materials, and software to enable true digital manufacturing at scale. Carbon's dualcure materials enable a broad portfolio of high performance resins for a variety of production applications.

By combining light-curable chemistry with thermally-curable chemistry,



Dr. Jason Rolland, SVP of Materials at Carbon high resolution parts with outstanding mechanical and thermal performance are now possible. Finally, he will present a variety of production applications enabled by DLS across a range of industries including consumer, automotive, dental, and medical.

As SVP of Materials at Carbon,

Dr. Jason Rolland leads the development of new polymer materials for use with

continued on page four

Chair's Message

Matt Greaney



This month brings the Spring ACS National Meeting in Philadelphia, PA, from March 22-26 with the theme "Macromolecular Chemistry: The Second Century". Like all

recent National Meetings, a robust attendance of over 10,000 is expected. The annual Spring and Fall ACS National Meetings provide nearly a week for scientists from around the world to present their latest research, network with peers, and take advantage of numerous benefits that the ACS provides to the membership. (A great deal on internal ACS governance takes place as well, but I'll elaborate upon that in a future Message). These ACS benefits are targeted towards students, professionals, and retirees alike, with specific programs and resources for every group.

From personal experience, I'd say that every National Meeting seems to take on a character of its own. I remember my first ACS meeting in Salt Lake City, Utah, where I had a chance to present a poster on my M.S. research.

continued on the next page

Silicon Valley Section: An Outstanding Local Section

Each year in February, the local sections are required to submit a report to National ACS on our activities and financial health. We also get an opportunity to self-nominate for Chemluminary awards. The Chemluminary awards are given each year at the Fall national meeting, which will be in San Francisco in August. We have nominated ourselves for multiple awards for individual activities as well as the "big" award: "Outstanding Section of the Year." Here is the nomination we submitted. 2019 was an excellent year for Silicon Valley section. We have a very active section. In 2019, we conducted 35 overall events. This included 8 dinner meetings, 8 public outreach activities, 3 activities run by the YCC committee, presented two "teach the teacher" symposia, administered a grant program to support science education in middle schools, participated in chemistry Olympiad, and honored 4 chemists with local section awards.

In addition to the above, we added 4 new events that we have not done before:

- Bay Area ACS symposium, cosponsored by the California Local section, and local industries such as Merck, Gilead, Cytokinetics and many other companies
- Chemistry Escape room, which was a novel event involving the chemistry clubs at Santa Clara University and San Jose State University
- YCC sponsored chemistry trivia night
- High school chemistry mentoring

Chair's Message, continued from front page

Intimidated and over stimulated by hundreds of pages of programming, I made a point to take complete advantage of the opportunity and be present for the full day, every day, waking up by 6:30 am to ensure I had a good seat for the 8 am morning session start, staying through the last talk of the day, and then grabbing a quick breather and bite prior to taking in the evening poster sessions. For those who still have energy after such a busy day, there always seems to be plenty of attendees ready to go out, enjoy the town, and make new friends. The Salt Lake City National Meeting was my first of many that served as the moment I realized how massive, rich, and dynamic the chemistry community really is. It helped shape my future decisions on a PhD program and eventual job. If you've never been to an ACS National Meeting, I'd strongly encourage you to add it on the "To Do" list. This may be an easy item to soon check off considering that the Fall 2020 ACS National Meeting will be held at Moscone Center in San Francisco from Sunday August 16-20.

All of that said, attending a National Meeting can be somewhat cost/time-prohibitive. Enter your local section. Part of the appeal of National Meetings is the rich lineup of technical presentations as well as the networking opportunities that occur when 10,000+ scientists occupy the same square mile. Luckily for us, the geographical boundaries of the Silicon Valley section (as well as the California section) encompass a plethora of cutting-edge science companies. As your local section representatives, we've made recent efforts to take advantage of our geographical proximity to this portion of the technical sector by featuring heads of local companies at our monthly dinner meetings, arranging tours of local laboratories and R&D centers, and organizing symposia highlighting new developments from academia and industry. You don't have to pay to fly to and stay in another state to regularly attend technical ACS gatherings!

One example of this is the recently held Bay Area Chemistry Symposium (BACS), where over 200 local scientists converged upon the new Merck Research Laboratories in South SF for a full day symposium on the latest and greatest on the field of Chemical Biology, Process Chemistry, Medicinal Chemistry, and Computational Chemistry. The feedback from this event was so overwhelmingly positive that we've begun the planning efforts for the 2020 BACS to be held at Gilead Sciences in Foster City on Friday, November 6, 2020. A similar effort is underway to organize an Energy and Materials BACS. I'd encourage anyone interested in helping organize such an event to contact me directly at Chair@svacs.org or greaney19@gmail.com. Details on the 2020 BACS will be posted in this newsletter and on the SVACS.org website as they develop. In addition to the 2020 BACS, our April 7, 2020 dinner meeting will feature Dr. Jason Rolland, Senior Vice President of Material at Carbon. Carbon has revolutionized 3-D printing and was recently named the C&EN 2020 "Top Start-Up To Watch". This will surely be an interesting presentation. Additional dinner meetings and outreach events are planned for 2020, so be sure to check our website and this monthly newsletter for more details.

While ACS National Meetings are absolutely worth your time and efforts to attend, your local section provides programming offering a convenient alternative for scientific stimulation and networking. I sincerely hope you have the chance to attend both types of meetings. One thing's for certain, you'll never have a shortage of potential friends to make, colleagues to catch up with, or interesting science to learn when you attend a local or national ACS meeting.

Matt Greaney is the 2020 Chair of the Silicon Valley section as well as a Councilor for the 2020-2022 term. Please reach out to Matt with any comments, requests, or suggestions at chair@scvacs.org.

Chemistry Quiz

Question of the Month:

How many allotropes of phosphorus are known to exist? What are they?



Last Month's Chemistry Quiz Answer:

The NSF Survey of Earned Doctorates published at the end of 2019 reports that 2,810 Doctoral degrees in Chemistry were awarded in 2018. Which sub-diciplines had the highest and lowest number of Doctoral degrees?

- Organic chemistry: 574
- Medicinal Chemistry: 86

https://ncses.nsf.gov/pubs/nsf20301/datatables#group3

Local Science Fairs

Susan Oldham-Fritts

This month is your last chance to judge at one of this year's county science fairs, all qualifiers for student advancement to the International Science and Engineering Fair, ISEF. While the cost is minimal (a day of your time judging at your local science fair), the return is great (encouraging middle and high school students to participate in the world of STEM - science, technology, engineering, and math). We need additional members for our SVACS sponsored special awards judging team at the Synopsys Championship on March 12th (contact me at sofritts@gmail.com to join us). Our dedicated team of chemists judge about 200 projects in the fields of biochemistry, chemistry, and earth and environmental science. Or sign up as a category judge for one the following regional science fairs -and ask professionals you know in botany, biology, and the behavioral/social sciences to judge, too.

The interaction between the students and judges is the heart of each and every science fair. The encouragement, gentle critique, and interest we as judges share with the students benefit all of the participants. <u>No matter which</u> <u>fair is closer to home, please volunteer now!</u>

- Synopsys Championship: March 12, San Jose Convention Center, San Jose
 - (https://science-fair.org/judges-3/category-judges/judging-registration/)
- Golden Gate STEM Fair: March 13, U.S. Army Corps of Engineers Bay Model Visitors Center, Sausalito
 - (https://ggstemfair.org/login)
- Santa Cruz County Science and Engineering Fair: March 14, Santa Cruz County Fair Grounds, Watsonville
 - (https://ca-scc.zfairs.com/?f=7482c7e8ffce-4b54-8ef3-3919bccafddd)
- San Mateo County Science, Math, &Technology Fair: March 15, San Mateo Events Center, Fiesta Pavilion, San Mateo
 - (https://www.stemfair.net/judges-and-volunteers)
 - Monterey County Science & Engineering Fair: March 29, California State University, Monterey Bay, University Center, Bldg. 29 Seaside www.montereycountysciencefair.info

*Many students at these competitions are first time science fair participants.

SV Section Nomination, continued from front page

The inaugural Bay Area ACS symposium (BACS) was attended by 203 Northern California chemistry professionals and learners came together for an all-day event on November 8, 2019 in South San Francisco. The growing number of pharmaceutical, high tech, start-up and other scientist-employing businesses in the San Francisco Bay area translates into a growing demand to showcase both employers and potential employees who are local to northern California. While individual educational institutions hold career events for their own students, the Bay Area Chemistry Symposium provided a forum for candidates at all stages of their careers. BACS was designed to serve the local chemistry community by providing an environment for interaction between professionals, students, & established chemistry enterprises of academia, government & industry. It succeeded, reflected in the responses to a feedback survey afterwards (attached). The success of BACS 2019 sets good precedence for BACS becoming a sustainable, annual event. In fact, BACS 2020 has already held its first organizational meeting in February 2020. The day-long program included presentations from industry and academia, and grad student & post-doc short talks & posters. These three talks were delivered by Carolyn Bertozzi (Stanford), Richmond Sarpong (UC Berkeley), & Bill DeGrado (UCSF). Topics covered synthetic, medicinal, & process chemistry; future years will diversify the choice of subjects, with feedback suggesting computational chemistry, coding academy, advanced analytical methods, materials & energy. Attendees came from 8 universities and 31 companies, from start-ups to major industrial research labs. Overwhelming support for an event of this kind was evidenced with financing from the local industries of Gilead, Novartis, Merck, AbbVie, Genentech, Millipore Sigma, Google, Cytokinetics, Pharmaron. Schrodinger, Theravance Biopharma, Chemical Computing Group, Maze, Arcus Biosciences, Nurix, Cambridge Isotope Laboratories, and Ideaya Biosciences. From the demand for attendee slots and from the feedback received in our follow-up survey, we learned the magnitude of the hunger among scientists, students, grad students, post-docs and institutions for a regular event to bring together chemists in our region. While we had to close registration at 200 due to facility capacity, demand would have doubled that number.

The chemistry escape room was a new event conducted at Santa Clara University and San Jose

State University. This event was funded by a grant from the Senior chemist committee, and was designed to promote interaction between YCC and SCC. We ran the escape room for the chemistry clubs at Santa Clara University and San Jose State University. At each university, teams of 4-6 students would work together to solve the challenges and figure out what had happened to Dr. Quicksilver, a fictional local professor who has gone missing. One of the features of a typical escape room is that there are no explanations for what to do, how to do it, or even what constitutes a component of a puzzles. The participant is simply expected to use observation, general knowledge and curiosity to solve the puzzle.

On July 17th, the YCCs of the Silicon Valley and California sections hosted our first Chemistry Trivia Night at Freewheel Brewing Company in Redwood City. The event drew attendees of all ages from around the Bay and 10 teams competed for the moniker of Chemistry Trivia Champion. The four rounds highlighted knowledge of general chemistry, local chemistry, chemistry tools (a picture round), and chemistry-related trivia. It was a highly competitive evening of play with several teams neck-in-neck, though Team Galway came through at the end to win it all, scoring 26 out of the possible 32 points (edging out Team East Bay Collective by a single point)! Overall a fun night - special thanks to Freewheel Brewery and to our YCC officers for planning and hosting the event. The Chemistry Trivia night was wellreceived and fun to run. We plan to connect with the California Section YCC again (as well as AIChE Northern California) to do at least one event again this summer. Because Freewheel Brewery was so generous with us, we will likely reach out to them again (as well as look for other venues). The YCC also conducted a student networking speed dating night and the 3rd Annual beer brewing contest.

2 SVACS members, Avni Gandhi representing biological chemistry and Jane Frommer representing nanochemistry, visited San Jose Leigh High School Oct 31,2019. They were invited by the student president of the chemistry club, students who chose to attend our chemistry session did so at the expense of Halloween festivities in the gym! The dedication filter yielded lively & productive Q&A. A national chemistry week event was also held at the Los Altos High School.

These first-time events build on a long tradition at Silicon Valley local section of trying new approaches to reach our constituents. In 2018, we sponsored the highly successful NoBelles play at 4 different college venues in the Bay Area. This play showcased the importance that women have made in the sciences. In 2017, we instituted a Beer brewing contest at a local brewery, where the home brew winner was offered the opportunity to brew a commercial scale batch of their beer and sell it through the local brewer organization. The beer contest is now in its third year.

In addition to all the outreach and public activities, the Silicon Valley section is also paying attention to local section governance. We have started a Strategic goals task force to create a mission and strategic plan for the future. We have also re-energized our nominations committee to make sure whenever possible that we have contested elections and that we bring new people into the section governance. In 2019, two of our 7 councilors are relatively new to the section as well as 4 of the 7 alternate councilors. This provides a good balance of experience and new enthusiasm to the Executive Committee. We have also started a METT grant funded effort to revitalize our website and newsletter and posting more events on social media. Lastly, our financial health is good. We have an annual budget of about \$80,000, and a balance sheet of approximately \$250,000. We do run with a small annual shortfall (\$8,000 in 2019) but are in a good overall financial position.

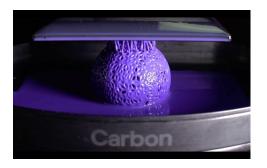
ACS Editor's Choice— Open Access to Important New Research

With ACS Editors' Choice, ACS offers free public access to new research of importance to the global scientific community. These peerreviewed, open access articles consist of research that exemplifies the Society's commitment to improving people's lives through the transforming power of chemistry.

The selection of these articles is based on recommendations by the scientific editors of ACS journals from around the world; all ACS Publications articles published in 2014 and forward are eligible to be recommended for ACS Editors' Choice.

Useful hyperlinks:

- <u>View all ACS Editors' Choice Articles</u>
- Sign up for email alerts
- About ACS Editors' Choice
- Frequently Asked Questions



April meeting, continued from front page

Carbon Digital Light SynthesisTM (DLSTM) technology to address product needs across a wide range of industries. He co-invented

Carbon's dual-cure materials platform, which has led to the subsequent development of a broad range of high-performance materials, including rigid and flexible polyurethanes, polyurethane elastomers, high-temperature cyanate ester and epoxy-based resins, dental resins, and silicone-based materials. Previously, he was Senior Director of Research at Diagnostics for All, and co-founder and Director of R&D at Liquidia Technologies. Dr. Rolland holds a B.S. in chemistry from Virginia Tech and a Ph.D. in chemistry from UNC Chapel Hill. A named inventor on over 25 issued patents and over 40 pending patents, Dr. Rolland has received numerous awards recognizing his achievements, including the American Chemical Society (ACS) 2014 Kathryn C. Hach Award for Entrepreneurial Success. In 2019 he was named the recipient of the prestigious ACS POLY Young Industrial Polymer Scientist Award.

Connect with Chemists

An early morning chat with fellow chemists **Thursday, Mar. 19th, 2020, at 7-8 am** Coupa Café, 538 Ramona Street, Palo Alto Contact Ean Warren (ewarren@scvacs.org) for more information or ask for ACS at Coupa.

Welcome to the Silicon Valley Section of ACS

Each month, the section receives a spreadsheet from national ACS with the names of members new to our section. The members are either new to ACS, have transferred in from other areas, or are the newest members -- students. To welcome you to the section and get to know you, the Executive Committee offers new members a free dinner! To encourage you to attend a monthly section seminar meeting, we would like you to be our guest. When you register, make certain to mention that you are a new member and you and a friend will be our guests. The seminar meetings are held at a number of local venues. If you are unable to attend in the evening, perhaps you would join us for an outreach event, like judging a science fair, proctoring the Chemistry Olympiad or participating in a National Chemistry Week event in October. Then, there is our annual beer & wine tasting and awards picnic in July. The local section is a volunteer organization. Please attend an event, volunteer to help and get to know your local fellow chemists. Welcome!

New SVACS Members

Dr. Deb Bharadwaj Dr. Wangjun Cui Susan Darling Laura Dassama Julia Dayton Dr. Polly Fordyce Mr. James Gamlen Dr. Timothy Gould Shengchun Guo Dr. Russell D. Haynes Aditya Hindupur Mr. Timothy F. Hom Jingli Hu Dr. Zhushou Luo Riki McDaniel Dr. Gilles Muller Ellen Parker Dr. Stanley Qi Dr. Spencer Robbins Dr. Corinne M. Sadlowski Elizabeth Sendil Kelly Sullivan Dr. Doris Tang Dr. Jacob Timmerman Debra A. Timmers Stephen Van Wyck William Gura Walls III Mark Ware Dr. Katherine Paige Weber David Wright Qiaoyin Wu Dr. Yan Xia

2020 Abraham Ottenberg Service Award Call for Nominations: Silicon Valley Section

The Ottenberg Award is presented annually to a member of our local section for outstanding service to the section. Previous recipients are not eligible to receive it again.

Nominations should include the nominee's biography, a description of the service(s) for which the member is nominated, and a evaluation of the service to be recognized by the award. Nominations are not retained for subsequent years but re-nominations are accepted for consideration.



Ihab Darwish 2017 Ottenberg Service Awardee Please send your nomination before June 1, 2020, to:

Peter Rusch, Chair Ottenberg Award Selection Committee Silicon Valley Section American Chemical Society P.O. Box 395 Palo Alto, CA 94302-0395 E-mail: PFRusch@aol.com Fax: 650-961-8120

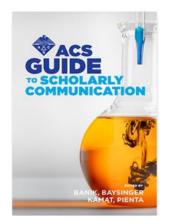


PDB101: Molecule of the Month: Coronavirus Proteases

Coronavirus proteases are attractive targets for the design of antiviral drugs.

101 RCSB

ACS Guide to Scholarly Communication



ACS Guide to Scholarly Communication; Banik, G. M., Baysinger, G., Kamat, P. V., Pienta, N.J., Eds.; American Chemical Society, 2020. DOI: https://doi.org/10.1021/acsguide

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Richard Zare Talk Picture Album



Richard Neil Zare. "I gave a presentation on my course at the Silicon Valley Chapter of the American Chemical Society. I loved the shirt Joe Evans was wearing." Facebook, February 21, 2020. https://www.facebook.com/richard.zare (accessed February 23, 2020).



Dick Zare talking about "Chemistry in the Kitchen: Promoting Appreciation of Chemistry and Science" at the ACS Silicon Valley Dinner Meeting held on February 19, 2020 at Michael's at Shoreline in Mountain View, California. It was a great talk that included an edible treat for attendees. Source: Personal photo taken by George Lechner.



Stanford Chemistry. "Dick Zare and Richard Phan in the Chemistry in the Kitchen cooking lab making pasta from scratch!" @StanfordUChem, Twitter, February 19, 2020. https://twitter.com/StanfordUChem (accessed February 23, 2020).



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SILICON VALLEY SECTION 2020 Section Officers

Matt Greaney 510-410-0195 Chair greaney19@gmail.com Chair-Elect Jigisha Shah 315-289-5115 jssheth@syr.edu 650-725-1039 Past-Chair Grace Baysinger graceb@stanford.edu Laura Yeager 626-826-3145 laura.yeager123@gmail.com Secretary 650-624-1389 Treasurer Ihab Darwish darwishis@yahoo.com

Councilors

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Alternate Councilors

2019-2021	Sogol Teschler	408-896-2367
2019-2021	Laura Yeager	626-826-3145
2020-2022	Todd Eberspacher	650-723-2505
2020-2022	Avni Gandhi	626-831-8230
2020-2022	Heddie Nichols	310-435-2133
2020-2020	Howard Peters	650-447-3027
2020-2020	Peter Rusch	650-961-8120

Newsletter

Editor	Kevin Greenman	408-634-2309
Assoc. Ed	Partha P. Bera	650-604-2028

ChemPloyment Abstracts

Director Liang Cao liang.cao@aol.com

pfrusch@aol.com

editor@scvacs.org

partha.pb@gmail.com

sgyahyazadeh@gmail.com

laura.yeager123@gmail.com

eberspacher@stanford.edu

avni.caltech@gmail.com

hnichols105@gmail.com

Peters4pa@sbcglobal.net

FUTURE EVENTS

	<i>Spring ACS National Meeting & Expo</i> Philadelphia, PA	Mar 22-26
om	Annual Stauffer Lectureship Prof. Jacqueline Barton Stanford Chemistry Dept. https://tinyurl.com/25thlectureship	Mar 31
	Dr. Jason Robards VP of Materials, Carbon 3D Carbon's Digital Light Synthesis Platform Michael's at Shoreline, Mountain View, CA	Apr 7
	Monterey Bay Aquarium Institute visit South Bay subsection sgerhardt41@gmail.com	Late Apr, TBD
	Meeting w/ Golden Gate Polymer Forum Michael's at Shoreline, Mountain view, CA	Jun, TBD
	Annual Picnic, Awards, & Winetasting Stanford Chemistry Dept.	Jul 11

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