

Silicon Valley Chemist

Silicon Valley Section

American Chemical Society

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APRIL 2019 NEWSLETTER TOPICS

- Reminder: SVACS April Dinner Meeting
- Connect with Chemists
- Chair's Message
- Melody Esfandiari Outstanding Lecturer Award at SJSU
- SVACS Monterey Bay Event on March 8, 2019
- Sidney Harris' Cartoon
- Chemistry Quiz
- Local Science Fairs in 2019
- C&EN's Talented 12 for 2019
- Call for Nominations Abraham Ottenberg Service Award
- New SVACS Members
- Where in the world is Dr. Aurora Quicksilver?
- 2019 CCEW Illustrated Poem Contest

Connect with Chemists

An early morning chat with fellow chemists

Thursday, April 18, 2019, 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.

Chair's Message

Grace Baysinger



Greetings and Happy Spring! Topics I would like to focus on in this message include April Silicon Valley (SV) events, ACS chemical safety resources, IYPT

2019, Plan S for open access to publications, three reports of potential interest, and volunteer or be more active in the ACS SV Section.

REMINDER

SVACS April Dinner Meeting

REMINDER

ACS Community and Priorities for 2019 A Conversation with ACS President

Dr. Bonnie Charpentier

Abstract

The over-arching theme for the ACS presidential year of 2019 is collaboration. In keeping with that theme, this presentation is meant to be an interactive discussion of ACS priorities and programs. The presentation will include an introduction to ACS Presidential areas of focus for 2019, including Advocacy for chemistry and science education, safety and the environment, and plans for the International Year of the Periodic Table of Chemical Elements (IYPT). Ideas for collaborations across ACS, and with other societies in this country and internationally will be explored for the benefit of our members, and for the world. The input, ideas, and suggestions from section members will be solicited.

Biography

Bonnie Charpentier is President of the American Chemical Society. She previously served on the ACS Board of Directors, including as the Chair of the Board. She has served



and chaired a variety of Society committees and task forces at national levels, as well as being active in local sections, divisions and regional meetings. At the local level, she has been instrumental in establishing chemistry workshops for teachers, workshops on interviewing skills for students, and an

outreach program for hands-on chemistry with children in homeless shelters.

She is currently Senior Vice President of Regulatory and Compliance at Cytokinetics,

continued on next page

SVACS April Dinner Meeting

Date: Thursday, April 18, 2019

Time: 6:00 -7:00 pm social hour
 7:00 -8:00 pm dinner
 8:00 -9:00 pm discussion

Speaker: Dr. Bonnie Charpentier
A Conversation with ACS President: The ACS Community and Priorities for 2019

Location: *Basque Cultural Center*
 599 Railroad Avenue
 South San Francisco, CA

Cost: \$30 regular members
 \$15 students
 Breast of Chicken Chasseur,
 Salmon with Champagne Sauce,
 or Vegetarian

Reservations: 650-477-3027
<https://www.brownpapertickets.com/event/4066056>

Reservations should be made by April 12. Watch the web site for more information.

April SV events: On April 18th, we are very pleased that there will be an opportunity to have "*A Conversation with ACS*

President, Bonnie Charpentier: the ACS Community and Priorities for 2019."

Co-sponsored by the Silicon Valley and California Sections, this event will be held at the Basque Cultural Center in South San Francisco. There will also be an *outreach event* in April at the Martin Luther King Library in San Jose for Chemists to Celebrate Earth Week. This year's CCEW theme is "*Take Note: The Chemistry of Paper.*" The ACS International Chemistry Olympiad

continued on next page

April Dinner Meeting, continued from front page

Inc., in South San Francisco, California, a company dedicated to the discovery and development of novel small molecule therapeutics that modulate muscle function. In that role she is responsible for Regulatory, Quality and Drug Safety Departments. Prior to Cytokinetics, Bonnie worked in drug research and development at other companies,

including Syntex and Roche, and as an analytical chemist at the Procter and Gamble Co. She holds a B.S. degree in anthropology and a Ph.D. in Plant Physiology.

In her ACS work, Bonnie has emphasized the importance of communicating the value of chemistry through public outreach and education. She is a strong advocate for high quality services for members including

career services and continuing education. She supports ACS programs that focus on expanding ACS's legislative advocacy through member involvement, and on increasing effective collaboration between industry and academia, and between ACS and other professional societies. She is passionate about the importance of public service, and about turning molecules into medicines.

Chair's Message, continued from front page

National Exam is scheduled for April 27th at Santa Clara University. If you didn't attend the ACS Spring National Meeting in Orlando, check out the [Kavli Lecture Series Archive](#) which includes speakers from 2016 to present.

ACS chemical safety resources: [ACS' Chemical and Laboratory Safety](#) page advocates for the safe practice of chemistry across disciplines, at every age, and in every organization. In March 2019, the ACS Committee on Chemical Safety published [Key Chemical Safety Education Resources](#). These resources cover different chemical use scenarios, primarily in teaching and research laboratories. This list is provided as a service to the chemistry safety education community. There is also an [ACS Chemical Safety You Tube Channel](#) that currently has eight videos.

IYPT 2019: To help mark the [International Year of the Periodic Table](#) (IYPT 2019), I wanted to share two publications with you.

- Mendeléeff, D. [Mendeleyev, Dmitry]. Principles of chemistry. 2nd English ed. translated from the Russian 6th ed.; Lawson, T. A., Ed.; Kamensky, G., Translator; Collier: New York, 1902. 4 Vols. Full-text access provided by Google Books: [Pt. 1](#), [Pt. 2](#), [Pt. 3](#), [Pt. 4](#) (accessed 23 March 2019) (Digitized from a print copy at Stanford's Lane Medical Library. See [catalog record](#).)
- Karol, P. J. The Periodic Table of the Elements: A Review of the Future. In Elements old and new: discoveries, developments, challenges, and environmental implications. Benvenuto, M. A., Williamson, T. C., Eds.; ACS symposium series 1263; American Chemical Society: Washington, DC, 2017; pp 41-66. DOI: 10.1021/bk-2017-1263.ch002 (The author of this chapter is a member of the ACS Silicon Valley Section. The Stanford Libraries have purchased the online version which is available to walk-in visitors. See [catalog record](#).)

Melody Esfandiari Outstanding Lecturer Award at SJSU



Congratulations to Dr. Melody Esfandiari (last year's SVACS Chair) for being awarded San José State University's 2019 Outstanding Lecturer! Every year, SJSU honors achievement in teaching, scholarship, and service to the university. Dr. Esfandiari is a Lecturer in the Department of Chemistry who has done excellent work in all three. As an instructor, she shows strong commitment to her students' success and has taught over 3,500 students since 2012. She runs a summer internship program where underrepresented students learn to work in a research lab. Recently, she played an important role in organizing "No Belles" at SJSU, an ACS event that highlighted women's roles in science. We are very proud of Melody Esfandiari, and we congratulate her on the outstanding work she has done and the honor she has received.

Plan S for open access to publications: [Coalition S](#) wants to make full and immediate open access a reality. In case you haven't seen it, I wanted to share ACS's response to Plan S. "ACS supports the aspirations of Plan S to enable open access to research literature, however, Plan S's range and number of tenets, including its impractical timetable for execution, present shortcomings that must be remedied for the plan to be practical. Our response is framed to provide constructive recommendations to enable Coalition S funders to achieve full and immediate open access in a sustainable and effective manner." For more details about ACS's response to Plan S, please see: [Announcement on ACS Axial](#) and [ACS's Plan S Response](#), written by James Milne, Ph.D.

[The Plan S footprint: Implications for the Scholarly Publishing Landscape](#), a new report from the Institute for Scientific Information, examines recent patterns of publications funded by Plan S supporters, exploring potential impacts on funders, subjects, countries, publishers, and journals. It provides an unbiased and data-driven background analysis to inform the debate around a potentially transformative change in research policy and raises several questions for consideration

by funders, publishers and institutions when exploring possible ways to implement Plan S.

Three reports of potential interest:

- American Academy of Arts and Sciences. [Encountering Science in America](#); Public Face of America project; Cambridge, MA, 2019.
- American Academy of Arts and Sciences. [Perceptions of Science in America](#); Public Face of America project; Cambridge, MA, 2018.
- Educause. [Horizon Report Preview: 2019 Higher Education](#). Louisville, CO, 2019. Provides summaries of upcoming trends, challenges, and important developments in educational technology.

Please contact us: Let us know how we are doing or if you would like to become more involved in the ACS Silicon Valley Section activities. A volunteer organization, we have jobs that are large and small. Please fill out this [contact us](#) form or send me an email message.

Many thanks for being a member of ACS!

Grace Baysinger
ACS Fellow 2017

graceb@stanford.edu
<https://profiles.stanford.edu/grace-baysinger>

SVACS Monterey Bay – Wines and Winemaking Merging Chemistry Fundamentals and Sensory Evaluation

The Monterey Bay ACS drew an enthusiastic crowd for an evening of animated networking, gourmet food, and an engaging presentation on March 8, 2019, at Cabrillo College. The evening marked the seventh of our biannual ACS gatherings of science-interested people in the Monterey Bay area. In 2016, the *Monterey Bay subsection of the Silicon Valley ACS was created* to support chemistry activity in Santa Cruz, Monterey, and San Benito Counties. With the area's five colleges and universities, and extensive interest across chemistry disciplines, especially agriculture and marine science, ACS activity has been welcomed. Students, in particular, are being introduced to the benefits of belonging to a professional community that shares their interest in science.

On March 8, UCSC Professor Phil Crews drew us in with Wines and Winemaking – Merging Chemistry Fundamentals and Sensory Evaluation. Yes, it was a wine-tasting with a first-class sommelier, then a lot more. In addition to copious molecular graphics, we learned about the use of NMR on unopened bottles of wine to determine acetic acid levels; a bactericidal role of tannins (polyphenols) from seeds, stems, and skins; and that the tears of wine near the top of a glass of wine are a consequence of the lower surface tension of alcohol than water. We were introduced to Frankenwines – the product of classic wine blending techniques and a synthetic chemistry

lab. It was not these replicas that we tasted; instead, we were led on a tour of molecular essences from Crews' Pelican Ranch Winery's White Zinfandel, Rosé Zinfandel, Pinotage, and other varieties, served by the accomplished students of Cabrillo's Culinary Arts and Hospitality Management Program.

By starting in this first 2019 Monterey Bay ACS event, Professor Crews joined the past three years' *legacy of inspirational speakers* from Moss Landing Marine Labs, the Naval Postgraduate School, Cal State Monterey Bay, Hopkins Marine Station, and the USDA. Topics have included the Cycling of Mercury from Sea to Land, Batteries and Beer, and Functional Nanomaterials. In a departure from the traditional dinner-lecture format, ACS Monterey Bay sponsored last October's performance at UCSC of No Belles – the legends of women scientists who have and have not received the Nobel Prize.

Monterey Bay ACS events are open to all ACS members and to the public. The next event is planned for September 2019.



Cabrillo College Sesnon House

Contact us to suggest future topics, speakers, and locations, or to volunteer.

We gratefully acknowledge generous support of Monterey Bay ACS activity from NanoAndMore of Watsonville, and welcome sponsorship by local industry.



SVACS Organizers and Speaker (L to R): George Lechner, Sarah Gerhardt, Jane Frommer, Phil Crews (speaker), Matt Greaney

Sidney Harris' Cartoon



"A LEADING COSMETICS COMPANY BELIEVES OUR DRILLING MUD WOULD MAKE AN EXCELLENT SKIN-CARE PRODUCT."

joke is that skin care products, like many products people use every day, are all mixtures of chemicals, and the perception of their safety or toxicity may have more to do with how they are marketed than their actual chemical composition.

— Shana Sturla, ETH Zürich

[Sturla is Editor-in-Chief of the ACS journal Chemical Research in Toxicology]

Drilling muds are viscous fluids of chemical mixtures used in geotechnical drilling to flush boreholes, carry debris to the surface, lubricate drills and related functions — the humor is that this sounds pretty much like a process, on a very different scale, that cosmetics users would like to achieve with pores in their skin! It is funny in part because of the absurdity of using an engineering-scale chemical mixture as a personal care product. But perhaps the real

Chemistry Quiz

This widespread food coloring comes from the seed coat of the achiote tree (*Bixa orellana*). The yellow to orange color comes from the carotenoid pigments bixin and norbixin. What is the name of this colorant, and in what foods is it commonly used?

The answer will appear in next month's newsletter.

Last Month's Chemistry Quiz

This protein is the most abundant in mammals. In humans, over 90% occurs as the triple-helix "Type I" form.

Collagen

Local Science Fairs in 2019

by Susan Oldham-Fritts

The 60th annual Santa Clara Valley Science and Engineering Fair, the Synopsys Championship (www.science-fair.org), was held Thursday, March 14, at the San Jose McEnery Convention Center. As our regional competition, it showcased and celebrated 1087 local 6th-12th grade students who will become our future scientists, engineers, technologists, and mathematicians. While these students were supported by their parents, teachers/mentors, and schools, they performed and presented independent research that exceed the bounds of their normal classroom studies. So, whether or not they were selected for the SVACS awards or to represent Santa Clara County at the California State or International Science and Engineering Fairs, they are all winners.

The SVACS special award team of Dr. Malati Raghunath, Dr. Owen Gooding, Dr. Phil Enriquez, George Lechner, David Shull, and I judged 215 incredible projects to select our three section awards:

\$500 First Place Award:

Alexander Guh-Siesel, 11th grade, Los Altos

High School, for *A Method for Treating Celiac Disease: Synthesis of Small Molecule Inhibitors of the HLA-DQ2 Receptor*

\$300 Second Place Award:

Myung Suh Choi, 9th grade, Monte Vista High School, for *Comparing the Photoprotection Capabilities of the Phytochemical Anthocyanin to Oxybenzone in Commercial Sunscreen*

\$200 Third Place Award:

Aditi Ghalsasi, 11th grade, Harker School-Upper Campus, for *A Novel Approach to Creating Ideal 3D-Printable Polymers via Functionalization of PCL*

The students will receive their prizes on April 7 at the Heritage Theater in Campbell.

We'd also like to thank the many SVACS members that were category, grand prize, and other special award judges for volunteering their time and expertise. Additionally, we extend our thanks to Dr. Aart de Gues, chairman and CEO of Synopsys, and Katherine Naszradi and Heidi Black of the Synopsys Outreach Foundation for their continuing and generous support of local science students

and their teachers. Science fairs don't happen without these committed students, teachers, and sponsors.



C&EN's Talented 12 for 2019

Submit Nominations by April 15th

Nominations are now open for "Talented 12," C&EN's annual feature that highlights a dozen brilliant young scientists who are shaping the future of chemistry. Talented 12 is an excellent launch pad for early-career researchers to attract students and postdocs, enhance their grant applications, and generally raise their profile within the scientific community. Do you know an outstanding young researcher that should be featured on C&EN's list? Submit their name at cenm.ag/t12nom by April 15th for consideration in our 2019 class.

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 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

Victor Edward Althouse
Dr. Michal Bajdich
Joshua Borrajo
Gregory Breyta
Jason Allen Brown
Adithi Chandrasekhara
Claire Victoria Crowther
Dr. Samuel Drew
Dr. Maria T. Dulay
Alana Elop
Kira Fahy
Ryan Ferdowsian

Gillian Gadbois
Dr. Ryan John Gilliam
Michelle Huang
Kun-Che Kao
Dr. Jonathan Lefman
David Mackanic
Osman Mamun
Dr. Jose Martinez
Dr. Jan Meisner
Julia Minitti
Tobias Morawietz
Khalid Quraishi

Leslie Ann Radosevich
Dr. Nicolas Per Dane Sawaya
John Schwalbe
Matthew Skaley
Usha Subramanya
Dr. Rex W. Watkins
Dr. Timothy R. Welch
Karl Wessendorf-Rodriguez
Ian D. Wetherbee
Chi Yuen Kelvin Wong
Dr. Taiyin Yang
Jing Ye

Call for Nominations Abraham Ottenberg Service Award

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

Please send your nomination before June 15, 2019 by e-mail to PFRusch@aol.com, by fax (650-961-8120) or by postal mail to:

Chair, Ottenberg Award Selection Committee
Silicon Valley Section
American Chemical Society
P. O. Box 395
Palo Alto, CA 94302-0395

Where in the world is Dr. Aurora Quicksilver?

by Natalie McClure

That was the challenge faced by several groups of undergraduate students from Santa Clara University and San Jose State University in the last few weeks. Dr. Aurora Quicksilver is a fictional university professor whose plight formed the basis of an “escape room” challenger for the college students. Building on the popular phenomenon of puzzle-based escape rooms, we created a scenario where teams of 4-6 students would have to solve chemistry-based puzzles to open locked boxes, solve riddles and read secret messages to determine where Dr. Quicksilver is and what research project

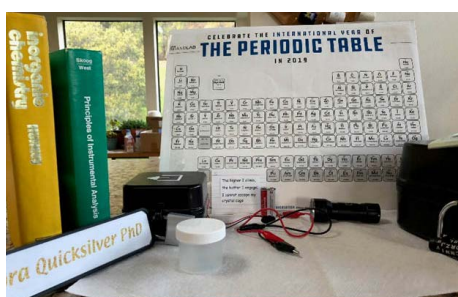
might have taken her there.

On March 9, five teams of students from Santa Clara University Chemistry Club, under the direction of Dr. Linda Brunauer, were the first teams to solve the puzzles. All teams were successful and finished the challenges within the allotted 50 minutes. On March 12, an additional five teams from San Jose State also completed the challenges. Everyone enjoyed the challenges and there is already enthusiasm to create a new puzzle scenario.

This project was initially prompted by an article in C&E News (May 7, 2018) describing a chemistry professor who created an elaborate set of escape room puzzles as part the final exam for his chemistry course. A group of Silicon Valley section chemists, Natalie McClure, Jigisha Shah and Madalyn Radlauer, thought it sounded like fun and we created this novel new chemistry outreach project. This was funded by a grant from the Senior Chemist Committee for local sections that wish to sponsor an event

or activity that will increase the engagement of senior members and encourage innovative activities that will benefit the local community, schools, or legislative government.

Please contact Natalie McClure if you would like to try your luck with the puzzles of the escape room at your organization, or school.



Dr. Quicksilver's office



Success—Santa Clara University!



Success—San Jose State!



2019 CCEW Illustrated Poem Contest Take Note: The Chemistry of Paper

SVACS is sponsoring an illustrated poem contest for students in Kindergarten through 12th grade.

Contest Deadline: April 26, 2019

Prize: \$25 Visa Gift Certificate and a chance to compete in the National Contest!

Contact: Dr. Elizabeth Migicovsky at elizabeth.migicovsky@sjsu.edu

The Winner of the Silicon Valley Local Section's Illustrated Poem Contest will advance to the National Illustrated Poem Contest for a chance to be featured on the ACS website and to win prizes!

Write and illustrate a poem using the CCEW theme, “Take Note: The Chemistry of Paper.” Your poem must be **no more** than 40 words and in the following styles to be considered: **HAIKU, LIMERICK, ODE, ABC POEM, FREE VERSE, END RHYME, BLANK VERSE**

Possible topics related to Paper

Chemistry include: Bioplastics, Cellulose, Fiber, Lignin, Plastic, Polymer, Pulp, Slurry

Entries will be judged based upon:

Artistic Merit - use of color, quality of drawing, design & layout

Poem Message - fun, motivational, inspiring about yearly theme

Originality/Creativity - unique, clever and/or creative design

Neatness - free of spelling and grammatical errors

Contest Rules:

- Poems must conform to a particular style. No poem may be longer than 40 words.
- The topic of the poem and the illustration must be related to the yearly CCEW theme.
- All entries must be original works without aid from others. Each poem must be sub-

mitted and illustrated on an unlined sheet of paper (of any type) not larger than 11” x 14”. The illustration must be created by hand using crayons, watercolors, other types of paint, colored pencils, or markers. The text of the poem should be easy to read and may be printed with a computer before the hand-drawn illustration is added, or the poem may be written on lined paper which is cut out and pasted onto the unlined paper with the illustration.

- Only one entry per student will be accepted.
- All entries must include an entry form.
- All illustrated poems and/or digital representations of the poems become the property of the American Chemical Society.
- Acceptance of prizes constitutes consent to use winners' names, likenesses, and entries for editorial, advertising, and publicity purposes.



SILICON VALLEY SECTION
AMERICAN CHEMICAL SOCIETY
P.O. Box 395, Palo Alto, CA 94302

HAPPY
EASTER

To receive an email when our newsletter
is published on our web site, sign up at:

<http://svacs.org>

SILICON VALLEY SECTION

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2019-2021	Jane Frommer	408-927-2225	jane@collabra.net
2019-2021	Sally Peters	650-447-3027	sallybrownpeters@gmail.com

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2019-2021	Laura Yeager	626-826-3145	laura.yeager123@gmail.com
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Newsletter

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ChemPloyment Abstracts

Director:	Liang Cao	liang.cao@aol.com
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FUTURE EVENTS

- Apr 18** ACS Community and Priorities for 2019
Dr. Bonnie Charpentier
Basque Cultural Center, South San Francisco
http://svacs.org/?tribe_events
- Apr 19** *Imaging the Molecular World of Life*
Dr. Xiaowei Zhuang, Harvard University
Braun Geology Corner, Stanford University
- Apr 22** *Stanford Drug Discovery Symposium*
Stanford Medicine: Paul Berg Hall
- Apr 27** ACS International Chemistry Olympiad
National Exam
Santa Clara University
sallybrownpeters@gmail.com
- Jun 27** SVACS and Golden Gate Polymer Forum
2019 joint meeting
Professor Zhenan Bao, Stanford University
Skin-Inspired Electronics
Michael's at Shoreline, Mountain View CA
www.ggpf.org
- Jul 13** SVACS Annual Wine Tasting and Awards
Picnic
Stanford University Chemistry Dept.
Click on links for more information or
see this newsletter at <http://svacs.org>