

SILICON VALLEY CHEMIST



TABLE OF CONTENTS

SVACS 2023 in Review	1, 2
Chair's Message	1, 2
The 2023 SVACS Harry & Carol Mosher Award	3
Election Results for 2024 SVACS ExComm	3
Judges Needed for Local Science Fairs in 2024	4
Upcoming Events	4
Report: 2023 Bay Area Chemistry Symposium	5
New Members	6
Clarivate's List of 2023 Highly Cited Researchers	6
PubChem 2023 Update	6
New LinkedIn Learning Benefit for ACS Premium Members	7
Apply for 2024 CAS Future Leaders Program	7
2023 EDUCAUSE Horizon Reports	7, 8
SVACS Middle School Student Takes 1st Place in ACS NCW Poetry+Art Contest	8
SVACS BUBBLE Grant 2023 Winner	9
US National High School Olympiad: Key Dates	9
Silicon Valley ACS Section Launches Hub on the New ACS Network	9
2023 ACS Presidential Lab Safety Teams Summit	10
Free Digital Access to Illustrated Encyclopedia from 1860	10
Interesting & Cool Science in the News	11, 12
Reaction Videos: Yule Log for Nerds and Vanadium Flow Batteries	12
Celebrating Scientists with Disabilities	12, 13

Chair's Message

Natalie McClure



This is my last Chair's message for 2023. In January, I will hand over the Chair position to Todd Eberspacher and I am delighted to welcome Amanda Nelson to her

Image Credit: Created by Eefei Chen

continued on next page

new role as Chair Elect. I am confident that our section is in good hands.

For the second year in a row, we have a National winner for the National Chemistry Week

(NCW) poetry contest. The ACS poetry contests are run twice per year - once for the NCW and once for Chemists Celebrate Earth Week (CCEW).

continued on next page

SVACS 2023 in Review

When	What	SVACS newsletter coverage	Read more
February	<ul style="list-style-type: none"> • <i>Mosher Award presented to Stanford Professor Dick Zare</i> 	<i>February 2023</i>	<i>Photos & write-up</i>
March	<ul style="list-style-type: none"> • <i>Synopsys Championship Science Fair SVACS Awards</i> • <i>Kid Makers: Pop Up Chemistry</i> • <i>Pacific Islanders Encouraging Fun, Engineering, Science & Technology</i> 	<i>March 2023</i> <i>April 2023</i>	<i>Science Fair Awards</i>
April	<ul style="list-style-type: none"> • <i>Silicon Valley & Puget Sound joint ACS seminar</i> • <i>Paving the Path Career Panel: Community College Student to Successful Scientist</i> • <i>High School Chemistry Olympiad National Exam</i> • <i>Chemists Celebrate Earth Week Illustrated Poem Contest</i> 	<i>March 2023</i> <i>April 2023</i> <i>May 2023</i> <i>May 2023</i>	<i>Curating Worldwide Scientific Data</i> <i>Photos & write-up</i> <i>Illustrated Poems</i>
May	<ul style="list-style-type: none"> • <i>Kid Makers: Pop Up Chemistry for Middle School Scientists</i> • <i>Community College Teacher-Scholar Award</i> 	<i>May 2023</i>	<i>Photos</i>
June	<ul style="list-style-type: none"> • <i>Silicon Valley ACS & Golden Gate Polymer Forum Annual Joint Seminar</i> • <i>Kid Makers: Pop Up Chemistry for Middle School Scientists</i> 	<i>June 2023</i>	<i>Light, Materials & Interfaces: Continuous Liquid Interface 3D Printing</i>
July	<ul style="list-style-type: none"> • <i>Annual ACS Silicon Valley Picnic and Awards</i> • <i>The 2023 Ottenberg Award to Matt Greaney</i> • <i>Kid Makers: Pop Up Chemistry for Middle School Scientists</i> 	<i>July 2023</i> <i>August 2023</i>	<i>Photos</i>
August	<ul style="list-style-type: none"> • <i>ACS National Meeting in San Francisco</i> • <i>Kids Zone: Hands on Chemistry for Kids</i> 	<i>August 2023</i>	<i>Photos, Poster Session</i>
October	<ul style="list-style-type: none"> • <i>The Chemistry of Wine at the UC Santa Cruz Arboretum</i> • <i>National Chemistry Week, Salinas Community Science Center, Salinas</i> • <i>National Chemistry Week, Ronald McDonald House</i> • <i>National Chemistry Week, Martin Luther King Jr. Library</i> • <i>National Chemistry Week Illustrated Poem Contest</i> • <i>Kid Makers: Pop Up Chemistry for Middle School Scientists</i> 	<i>September 2023</i> <i>Chair's Message, Nov 2023</i> <i>Chair's Message, Nov 2023</i> <i>Chair's Message, Nov 2023</i> <i>Chair's Message, Nov 2023</i>	<i>Photos</i> <i>The Healing Power of Chemistry</i>
November	<ul style="list-style-type: none"> • <i>Bay Area Chemistry Symposium</i> 	<i>December 2023</i>	
December	<ul style="list-style-type: none"> • <i>Kid Makers: Pop Up Chemistry for Middle School Scientists</i> 		

Chair's Message, continued from front page

This year, 29 local sections contributed illustrated poetry entries from 66 young scientist/artists. National ACS presents awards to first and second place in four grade groups: K-2, 3-5, 6-8 and 9-12. Shreya K, a student at Harker Academy in San Jose, was awarded first place in the 6-8 grade category. You can see her winning entry in this newsletter. All the winning poems are posted on the [ACS website](#). In addition to a prize given by our section for winning in our local competition, first place at the National level wins a cash prize of \$300. If your young scientist/artists want to start composing now, the theme for the 2024 CCEW will be "Get a charge out of chemistry" which should spark lots of ideas for creative poems. Check out the December 18 issue of C&EN to see pictures from NCW events across the country and hopefully a few pictures from our section's NCW events.

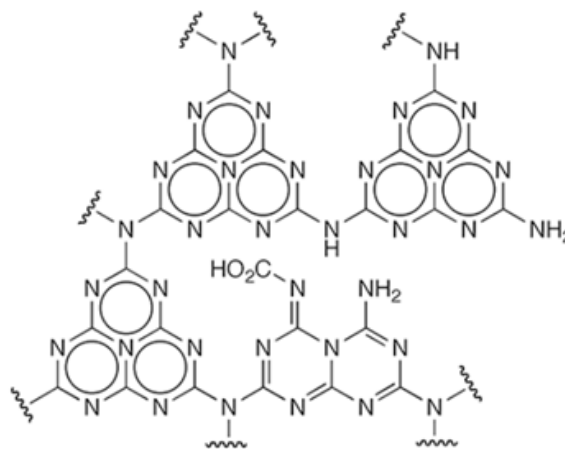
We have completed the elections for the 2024 Executive Committee, with results reported in an article in this newsletter. Congratulations to all those who were elected to serve our section. We are a volunteer organization and it takes a village (or at least a community) to keep the section active and vibrant. We have some exciting things planned for next year, starting with the Mosher award in January, described in this newsletter. Although I am passing the baton, I hope to see or hear from you at many of our events.

Respectfully submitted,
Natalie McClure

CHEMISTRY

Quiz

I'm a newer material with multiple applications in chemistry.
What molecule am I?



Answer

The 2023 SVACS Harry & Carol Mosher Award

Save the Date! Join us on Thursday, January 25th to Celebrate

Initiated in 1980, the Silicon Valley ACS *Harry and Carol Mosher Award* recognizes individuals who advance the chemistry profession, make impactful scientific contributions, and support ACS in their outreach efforts to share chemistry with the general public. The award includes an ACS engraved plaque, a \$2,000 honorarium, and a Mosher Lecture event.

The 2023 Mosher Award recipients are **Dr. Bruce Maryanoff** and **Dr. Cynthia Maryanoff**. SVACS will honor the Maryanoffs on Thursday, January 25, 2024, 5:30-8:00pm, at Stanford University. Save the date until registration details get posted on the [Silicon Valley ACS website](#).

- 2023 Mosher Lecture Abstracts -

Adventures in Drug Discovery: TOPAMAX® (Topiramate) for Treating Epilepsy and Migraine

Bruce E. Maryanoff

formerly at Johnson & Johnson Pharmaceutical Research & Development, Spring House, PA 19477

During my 35-year career in the pharmaceutical industry (Johnson & Johnson) as a drug hunter, I have encountered many therapeutic targets and many clinical candidates. Under the old drug discovery paradigm of phenotypic assessment, I discovered TOPAMAX (topiramate), a billion-dollar drug for treating epilepsy and migraine headache. Its mechanisms of action are diverse, but still not fully understood. Phenotypic assessment mainly involves pharmacological and cellular methodology, an approach disfavored in the 21st century, given the wealth of information about receptor and enzyme molecular targets that has emerged, especially since the sequencing of the human genome. Nevertheless, phenotypic assessment still can have a valuable role to play for certain unmet medical needs.

Why Hawaii? Kona Coffee!

Cynthia Maryanoff

Co-CEO and CTO at Absolute Palate®, Holicong, PA 18928

In 2015, Bruce and Cyndie Maryanoff established Absolute Palate® LLC (www.absolute-palate.com) as a coffee business on the Big Island of Hawaii. Thus, their long-standing passion for exceptional coffees and love of Hawaii were merged. A special interest in premium, single-estate 100% Kona coffee led them to purchase two coffee farms in the iconic Kona Coffee Belt, which provide coffee fruit that is hand-picked, processed into green beans, and custom-roasted in small batches with a fluidized-bed air roaster. They assembled a laboratory for on-site decaffeination, thereby extracting green beans with supercritical carbon dioxide to furnish a flavorful 100% Kona decaf coffee (Absolute Decaf). Cyndie will discuss this coffee project and the organic chemistry that contributes to coffee's special aroma and flavor.

- Brief Biographical Information -



Dr. Bruce Maryanoff



Dr. Cynthia Maryanoff

Bruce Maryanoff received a BS and PhD at the Drexel Institute of Technology in Philadelphia and was a postdoctoral fellow at Princeton. He then embarked on a decades-long career in research and management with Johnson & Johnson. He is currently a Visiting Investigator at the Scripps Research Institute in La Jolla, CA. [View biography](#)

Cynthia Maryanoff received a BS at Drexel University and a PhD at Princeton University. She performed postdoctoral research at Princeton. She joined Johnson & Johnson for a long career in research and management. She is currently a Foundation Distinguished Professor at the Baruch S. Blumberg Institute in Doylestown PA. [View biography](#)

Both Maryanoffs have extensive experience in drug discovery and management in the pharmaceutical industry. They are long-term active participants and supporters of ACS activities. They are founders of the [Maryanoff Scholars](#) - an annual program to assist undergraduate chemistry students in research in chemistry at Drexel University. The Maryanoffs also founded [Absolute Palate LLC](#), a coffee company specializing in single-estate 100% Kona coffee, with two coffee farms in Hawaii.



Election Results for 2024 SVACS ExComm

Many thanks to the members who supported the Silicon Valley ACS by voting for its 2024 leadership team, the ExComm (Executive Committee). Your participation as members is appreciated. Voting was open from 12:01am, November 15, 2023, to 11:59pm, November 29, 2023. Total voters for the ballot: 183. This represents 8.8% of 2,069 eligible voting members.

We thank all the candidates who ran for office and look forward to an exciting and eventful 2024.

We thank all the candidates who ran for office and look forward to an exciting and eventful 2024. Please consider ways to participate and

to support the ACS, the Silicon Valley Local Section, and the various committees that help us accomplish our [Strategic Plan](#).

Election Results

Chair-elect (3-year commitment: Chair-elect in 2024, Chair in 2025, Immediate Past Chair in 2026):

Votes	Name	%
178	Amanda Nelson	99.40%
1	Write-in	0.60%

Treasurer (2-year term, 2024-2025) (176 voters indicated a choice on this ballot; vote for 1):

Votes	Name	%
176	Ihab Darwish	100%
0	Write-in	0.00%

Councilor (2 open positions for 3-year terms, 2024-2026) (181 voters indicated a choice on this ballot; vote for 2):

Votes	Name	%
174	Natalie McClure	96.10%
170	Grace Baysinger	93.90%
1	Write-in A	0.60%
0	Write-in B	0.00%

Alternate Councilors (1 open position for 3-year term, 2024-2026) (179 voters indicated a choice on this ballot; vote for 1):

Votes	Name	%
99	Howard Peters	55.30%
78	Karan Dikshit	43.60%
2	Write-ins	1.10%

CALENDAR OF EVENTS

<https://www.siliconvalleyacs.org/events/>

- December 2023 -

- Dec 9** **Kid Makers: Pop Up Hands-on Chemistry for Middle School Scientists**
Sponsored by ACS Silicon Valley and Redwood City Public Library (RCPL)
2:00-2:30pm, RCPL Downtown Location, 1044 Middlefield Road,
Redwood City, Free, [Learn more](#)
- Dec 13** **Breaking Down the Mechanics of Polymers: From Networks to Viscoelasticity**
Sponsored by ACS Webinars and ACS Division of Polymeric Materials:
Science & Engineering (PMSE)
11am-Noon, Online via Zoom, Free, [Registration required](#)
- Dec 13** **Know the Crystallization Pathway During Processing: Crystallization of Nylons Using Fast Scanning Calorimetry and Beyond**
Xiaoshi Zhang, PhD, Plastics Engineering Technology, Penn State University Behrend
Sponsored by the Golden Gate Polymer Forum (GGPF)
6pm, Online via Zoom, Free/\$5 Donation; [Registration Details](#)
- Dec 14** **Silicon Valley ACS Executive Committee Meeting**
7:00-9:00pm, Online via Zoom, Free. To attend as a guest, please contact the [Chair](#)
- Dec 17** **Dr. Robert Huw Morgan: Holiday Organ Concert**
Sponsored by Stanford Department of Music and Stanford Office for Religious & Spiritual Life
1:30-3:00pm, Stanford Memorial Church, 450 Jane Stanford Way, Building. 500, Stanford, CA 94305, Free, Open to the Public, [Learn more](#)



- January 2024 and Beyond -

- Jan 25** **Mosher Award Reception and Lecture**
Sponsored by Silicon Valley ACS
5:30-8:00pm, Stanford University
Registration details to be posted on the [Silicon Valley ACS website](#)

Judges Needed for Local Science Fairs in 2024

by Susan Hines



December is known by many as the season of giving. How about encouraging middle and high school students to participate in the world of STEM – science, engineering, math, and science? It takes just one day of your time to judge at a local science fair – and all but two (Golden Gate and San Mateo STEM Fairs) are in person. The following science fairs need category awards judges, especially in the areas of botany, biology, chemistry, microbiology, and behavioral science. All of them are qualifiers for the California State Science Fair and either the Broadcom Masters (middle schoolers) or the International Science and Engineering Fair, ISEF (high schoolers).

To join our SVACS special award team of dedicated chemists at the Synopsis Championship on March 14, 2024, reach out to us at svseidr@gmail.com

No matter which fair(s) you choose, please volunteer now!

- **Santa Cruz County STEAM Expo: March 9, 2024**, Santa Cruz County Fairgrounds <https://santacruzcoe.org/educational-services/curriculum-instruction/programs-services/academic-competitions/steamexpo/>
- **San Mateo County Office of Education STEM Fair, March 9, 2024**, virtual format <https://stemfair.net>
- **Synopsis Championship, Santa Clara County: March 14, 2024**, San Jose Convention Center <https://science-fair.org/judges-3/category-judges/judging-registration/>
- **Alameda County Science and Engineering Fair: March 16, 2024**, Chabot College, Hayward Campus <https://www.acsef.org/judges>
- **Golden Gate STEM Fair: March 18, 2024**, virtual format <https://wp.ggstemfair.org>





Report on the 2023 Bay Area Chemistry Symposium

Written by C. Gluchowski for the December issue of the *Vortex*, the California ACS Section newsletter. Reprinted with permission for the Silicon Valley ACS Section newsletter, the *Silicon Valley Chemist*.

The award-winning Bay Area Chemistry Symposium (BACS) was held this year on November 3rd, 2023, at Robertson Auditorium on the UC San Francisco Mission Bay Campus. The weather was warm, the sun was shining, and the science and networking opportunities were delightful!

This event, organized by the California and Silicon Valley ACS sections, and financially supported by established and start-up local industry sponsors, has grown significantly in the 4 years that it has been held. This year it brought together over 250 participants at all career stages from undergraduates to distinguished scientists to hear about new discoveries in chemistry and biochemistry coming from academic and industrial labs throughout the SF Bay area and beyond.

The tag line for the symposium – connecting industry + academia – certainly was fulfilled at this event. The symposium featured an eclectic mix of oral presentations from distinguished faculty such as Professors Kevan Shokat, UCSF and Carrie Partch, UCSC as well as talks from industrial scientists such as Michael O’Keefe from Gilead and Joseph Young from Novartis. In addition, 40 posters were presented by young scientists from all over the SF Bay area.

With the weather at a balmy 72 degrees and sunny in downtown San Francisco, it was a beautiful day to mingle outside during coffee breaks and lunch. Blankets were provided for picnicking on the Koret Quad outside the auditorium. The symposium was capped off by a reception and poster session followed by presentation of awards for the outstanding posters. Each of the winners received a gift card. The following individuals won poster awards:

- 1st place: Di Gu, UC Berkeley, Wenjun Zhang Lab, “Discovery and biosynthesis of Salivabactin, a new antibiotic from oral bacteria”
- 2nd place: Logan Bartholomew, UC Berkeley, Richmond Sarpong Lab, “14N to 15N Isotopic Exchange of Nitrogen Heteroaromatics through

- Skeletal Editing”
- 3rd place: Clifford Leung, University of San Francisco, Herman Nikolayevskiy Lab, “Development and Mechanistic Analysis of Covalent Inhibitors Against Sortase A. Activity in *Staphylococcus aureus* Bacteria”

Speaking of awards, at the National ACS meeting held in San Francisco in August this year, the BACS and the California Section were recognized at the ChemLuminary event with the Outstanding Continuing Public Relations or

Communications Program of a Local Section Award!

Special thanks to Caleb Karmel, Maze Therapeutics and Professor Ian Seiple, UCSF, co-chairs for the 2023 BACS, the rest of the organizing committee and particularly Julie Mason, CalACS for her support. Check out the BACS website <https://www.bayareachemistrysymposium.com/> for updates on plans for the 2024 BACS!



BACS participants enjoying lunch al fresco. Photo by Natalie McClure, Silicon Valley ACS Section



Eager audience of BACS participants awaiting the next talk. Photo by Natalie McClure



Professor Carrie Partch, UCSC, dazzling the audience with her presentation on molecular clocks and circadian rhythms. Photo by Charles Gluchowski, California Section

Welcome to the Silicon Valley Section of ACS



Each month, our Silicon Valley local ACS 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. As a welcoming gesture, the SVACS Executive Committee offers new members free attendance at a catered SVACS event. Come join us at our in-person gatherings! To register as our guest for a catered event, [contact us](#) directly to receive complimentary admission for you and a friend.

We hope you will also join us for an outreach event, like judging a science fair, proctoring the high school Chemistry Olympiad or participating in a National Chemistry Week hands-on experiment event. The local section is a volunteer organization. Attend an event, volunteer to help, and get to know your local fellow chemists.

New SVACS Members for November 2023

Caroline Broude	Bedelia Law	Benjamin Peters	Yi Wang
Karen Leigh Butler	Renhe Li	Anitha Ravikrishnan	Yuchen Wang
Evan Carlson	Wanru Li	Kadin Riggs	Nipuna Weerasinghe
William Carpenter	Lixin Lu	Tyler Roberts	Pengkun Xia
Maria Caryotakis	Jack Lubbs	Antonio Romero	Xiaojing Xia
Leah Filardi	Eran Lustig	Susmita Sarkar	Raymond Yu
Austin Kizzie	Srivatsan Mohana Rangan	Laura Shigemoto	Xizi Zhang
Megan Klein	Riya Nigudkar	Casper Vroemen	Jiyun Zhu
Maria Korshunova	Sai Prathima Parvathaneni	Luwen Wan	Kuixin Zhu

Clarivate's List of 2023 Highly Cited Researchers



"Highly Cited Researchers have demonstrated significant and broad influence in their field(s) of research.

Each researcher selected has authored multiple Highly Cited Papers™ which rank in the top 1% by citations for their field(s) and publication year in the Web of Science™ over the past decade. However, citation activity is not the sole selection indicator. A preliminary list based on citation activity is then refined using qualitative analysis and expert judgement.

Of the world's population of scientists and social scientists, Highly Cited Researchers™ are 1 in 1,000. There are 7,125 Highly Cited Researcher designations in 2023."

[Learn more and see the list of 2023 recipients](#)

PubChem 2023 Update

The screenshot shows the PubChem website interface. At the top, it features the NIH National Library of Medicine logo and the text 'National Center for Biotechnology Information'. Below this is the 'PubChem' logo and navigation links for 'About', 'Docs', 'Submit', and 'Contact'. The main heading is 'Explore Chemistry' with the tagline 'Quickly find chemical information from authoritative sources'. A search bar is present with a magnifying glass icon. Below the search bar, there are several search suggestions: 'covid-19', 'aspirin', 'EGFR', 'C9H8O4', '57-27-2', 'C1=CC=C(C=C1)C=O', and 'InChI=1S/C3H6O/C1=3234/h1-243'. There are also radio buttons for 'Use Entrez', 'PubChem', 'PubMed', and 'BioRxiv'. At the bottom, there are four icons with labels: 'Draw Structure', 'Upload ID List', 'Browse Data', and 'Periodic Table'.

Abstract: PubChem (<https://pubchem.ncbi.nlm.nih.gov>) is a popular chemical information resource that serves a wide range of use cases. In the past two years, a number of changes were made to PubChem. Data from more than

120 data sources was added to PubChem. Some major highlights include: the integration of Google Patents data into PubChem, which greatly expanded the coverage of the PubChem Patent data collection; the creation of the Cell Line

and Taxonomy data collections, which provide quick and easy access to chemical information for a given cell line and taxon, respectively; and the update of the bioassay data model. In addition, new functionalities were added to the PubChem programmatic access protocols, PUG-REST and PUG-View, including support for target-centric data download for a given protein, gene, pathway, cell line, and taxon and the addition of the 'standardize' option to PUG-REST, which returns the standardized form of an input chemical structure. A significant update was also made to PubChemRDF. The present paper provides an overview of these changes.

Read the full-text: Sunghwan Kim, Jie Chen, Tiejun Cheng, Asta Gindulyte, Jia He, Siqian He, Qingliang Li, Benjamin A Shoemaker, Paul A Thiessen, Bo Yu, Leonid Zaslavsky, Jian Zhang, Evan E Bolton, PubChem 2023 update, *Nucleic Acids Research*, Volume 51, Issue D1, 6 January 2023, Pages D1373–D1380, <https://doi.org/10.1093/nar/gkac956>



New LinkedIn Learning Benefit for ACS Premium Members



Unlock access to thousands of expert-led, creative, business and technology courses to help you achieve your personal and professional goals.

ACS Members at the Premium level of membership now have access to LinkedIn Learning, an on-demand, online learning platform that offers thousands of online courses on a variety of topics. LinkedIn Learning provides the opportunity to gain valuable new skills at your own pace.

Contact linkedinlearning@acs.org to get started.

APPLY FOR THE 2024 CAS FUTURE LEADERS PROGRAM

Join a group of exceptional Ph.D. students and postdoctoral scholars from around the world to take the next steps in your leadership journey. [Learn how to apply](#) and submit your application for the 2024 CAS Future Leaders program by **Sunday, January 28, 2024**.

Why you should apply

- **Advance your career and make meaningful impacts in science:** The CAS Future Leaders program supports the growth of science leadership among early-career scientists. Since 2010, the program has awarded Ph.D. students and postdoctoral scholars opportunities to learn leadership skills, engage in scientific discourse, and connect with peer scientists and innovators from around the world.
- **Learn:** Get exclusive leadership training from industry experts and learn how CAS connects the world's scientific knowledge.
- **Engage:** Share your latest discoveries to advance scientific knowledge at the American Chemical Society fall meeting.
- **Connections:** Network to make meaningful connections with peer scientists and innovators from around the world.

2024 Program Benefits

Expense-paid trip to ACS CAS Headquarters in Columbus, Ohio

August 12-17, 2024

Expense-paid trip to ACS Fall 2024 National Meeting in Denver, Colorado

August 18-22, 2024

\$1,000 USD

3-year **ACS membership**

Profile featured in C&EN (see the **2018**, **2019**, **2022**, and **2023** articles)

Complimentary registration for the ACS meeting

Opportunity to present your research at the ACS meeting

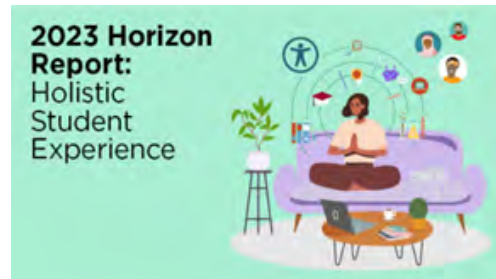
Complimentary registration for an ACS Professional and Leadership Development course at the ACS meeting

Lifetime membership in the CAS Future Leaders Alumni Community

2023 EDUCAUSE Horizon Reports

"EDUCAUSE Horizon Reports profile key trends and emerging technologies and practices shaping the future of higher education and envisions a number of scenarios and implications for that future. They are based on the perspectives and expertise of a global panel of leaders from across the higher education landscape."

2023 EDUCAUSE Horizon Report
Holistic Student Experience Edition



"This report profiles the trends and key technologies and practices shaping the future of the holistic student experience and envisions a number of scenarios for that future. It is based on the perspectives and expertise of a global panel of leaders from across the higher education landscape."

2023 EDUCAUSE Horizon Action Plan:
Generative AI



"In 2023, generative AI emerged as the most rapidly adopted technology in history. All members of the higher education community, from students to administrators, are trying to determine what impact generative AI tools can, will, and should have on life, learning, and work. To make matters more complex, there is no consensus about how or even whether generative AI should play a role in the future of higher education.

Building on the trends, technologies, and practices described in the **2023 EDUCAUSE Horizon Report: Teaching and Learning Edition**, the report panel crafted its vision of the future along with practical actions that individuals, units and departments, and groups of collaborators can take to make this future a reality."

continued on next page

continued from previous page

2023 EDUCAUSE Horizon Report Teaching and Learning Edition



“This report profiles key trends and emerging technologies and practices shaping the future of teaching and learning and envisions a number of scenarios and implications for that future. It is based on the perspectives and expertise of a global panel of leaders from across the higher education landscape.”



2023 EDUCAUSE Horizon Action Plan: Data Governance



Data processes play a foundational role in just about every professional discipline, and data stakeholders all over the world are grappling with modernizing and optimizing data governance policies and practices. In this rapidly evolving landscape, what challenges will higher education face, and how will we rise to meet those challenges? How can we leverage our individual and collective expertise to create innovative and durable data governance solutions?

Approaching these questions with a spirit of hope and optimism, a panel of higher education data and analytics experts from a range of institution types assembled to describe an optimized future of data governance, focusing on a 10-year timescale. Building on the trends, technologies, and practices described in the **2022 Horizon Report: Data and Analytics Edition**, the panel crafted its vision of the future along with practical action items the data and analytics community can employ to make this future data management planning a reality.

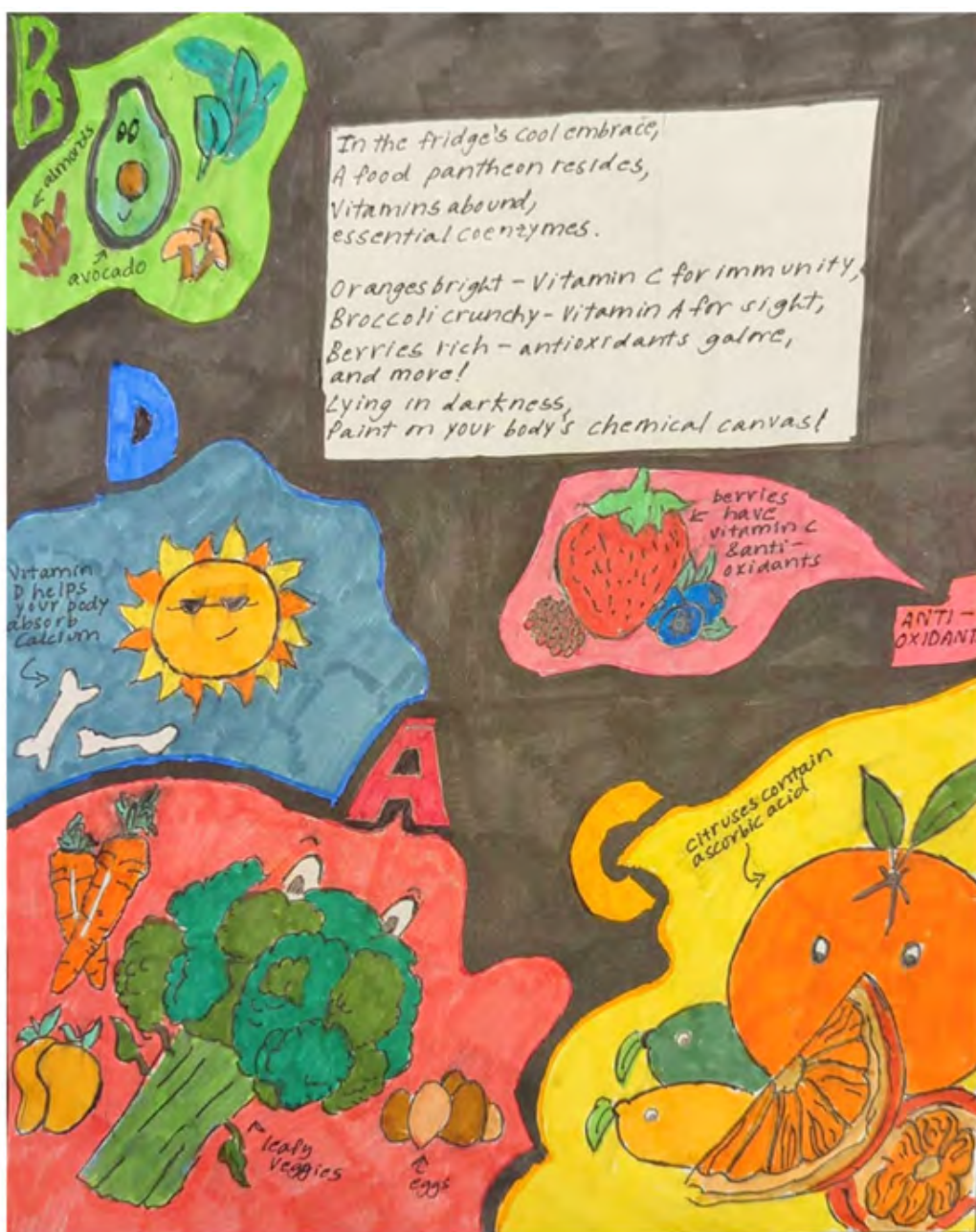


Shreyas K. of The Harker School in San Jose wins First Prize in the Middle School category of the ACS National competition with this outstanding poetry artwork

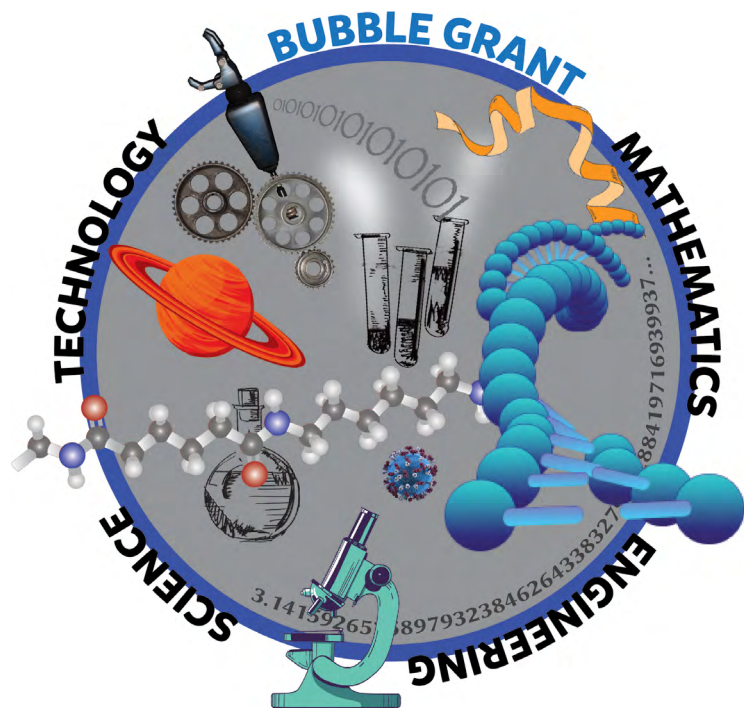
“As part of National Chemistry Week (NCW) 2023, students from grades K-12 were invited to share their interpretation of this year’s theme, “The Healing Power of Chemistry”, in the form of illustrated poems. Winners qualified for the national contest via their ACS local sections. At the national level, first- and second-place prizes were awarded in four categories. Thank you to all schools and local sections that participated!” See their amazing submissions here: [NCW Illustrated Poem Contest Winners](#)

1st Place, Grades 6-8

Shreyas K., Silicon Valley Local Section



SVACS BUBBLE Grant 2023 Winner

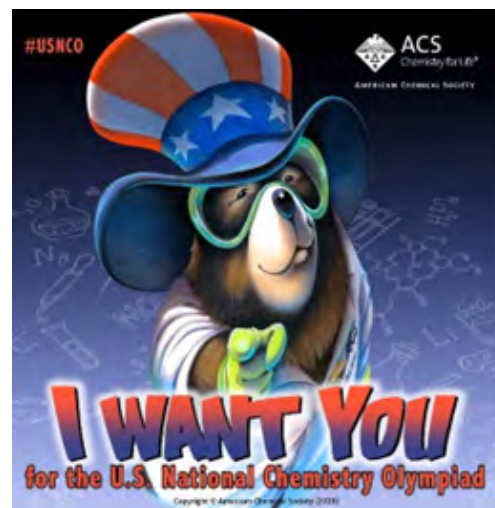


The Silicon Valley ACS supports local science teachers with an annual **BUBBLE Grant** of up to \$1,000 to acquire teaching equipment in their classrooms.

The winner of the 2023 Bubble Grant Award is the **Salinas Community Science Workshop**. Their **STEAM Gxrls Workshop** offers curated activities spanning math, engineering, physics, chemistry, electronics, environment, and biology. It is dedicated to providing underserved kids with the tools, time, and inspiration to explore with their natural curiosity by supporting the local school districts. The grant will be used to acquire science-related equipment like nature journals and binoculars, to cover transportation expenses for bi-annual field trips, and to enhance the overall laboratory experience in the chemistry classroom of El Sausal Middle School.

The BUBBLE Grant is awarded annually. Encourage your K-12 teaching colleagues to **apply!**

U.S. National High School Olympiad Key Dates



The **U.S. National Chemistry Olympiad (USNCO)** program is a multi-tiered chemistry competition for high school students. ACS has sponsored the program since 1984.

Key Dates:

January 19, 2024	Student Registration Closes Registration Form
March 1-24, 2024	Local Exam
April 13-21, 2024	National Exam
June 2-14, 2024	Study Camp
July 22-31, 2024	International Chemistry Olympiad

Silicon Valley ACS Section Launches Hub on the New ACS Network

ACS Chemistry for Life[®] | ACS NETWORK Chemistry Community Online | ACS HUB | COMPONENT GROUPS | GOVERNANCE | RESOURCES | SCIENCE | SPECIAL INTEREST | SIGN IN

Silicon Valley Local Section

This group hub | Search all content

ACS Community > Component Groups > Local Sections > Silicon Valley Local Section

SILICON VALLEY LOCAL SECTION

Building and sustaining connections through chemistry in the Silicon Valley Region, we are a large Local Section with about 2,000 members and about 1,000 Community Associates from five counties in California: San Mateo, Santa Clara, Santa Cruz, San Benito, and Monterey.

Check out and join **our new group hub!** No login is required to view content. Information currently posted in our hub includes issues of our newsletter from 1999 to present; links to our website and social media accounts; and the Silicon Valley ACS Strategic Plan - 2023 Update. Future plans include adding links to our sponsored events. Please **contact us** to share feedback or if you are interested in volunteering to help add content to our hub.

2023 ACS Presidential Laboratory Safety Teams Summit



postdoctoral associates that play a pivotal role in promoting a strong safety culture within their respective laboratories, departments, and institutions. Over 40 attendees, including graduate students, instructors, members of industry, and ACS staff, participated in presentations, panels, and group discussions to explore new partnerships and avenues for sustaining LSTs. Four goals are included in the [Executive Summary Report](#):

1. Define what an LST is and the benefits of having one
2. Identify what LSTs need to start and thrive
3. Define the partnerships LSTs can have, and why they benefit both partners
4. Enable LSTs to prepare scientists for industrial safety standards

LSTs emerged as an academic grassroots movement in 2012 as a way for university students to take independent initiative to evaluate safety concerns within their departments and institutions and offer solutions to address these issues. LSTs operate with the backing and support of department heads, safety professionals, and advocates. The American Chemical Society (ACS) is committed to its core value of safety and continuously promoting the safe practice of chemistry throughout the chemistry enterprise."

- Read the [2023 ACS Presidential Laboratory Safety Teams Summit Report | Executive Summary](#)
- Please complete [this form](#) to request a copy of the Final Report
- [Explore the new LST Directory & learn about student-led Lab Safety Teams](#)
- [Learn more about ACS Safety Summits](#)

"Building upon the [2022 ACS Chemical Safety Summit's](#) recommendation to establish more connections between academia and industry, the Office of Safety Programs hosted the [first ACS Presidential Lab Safety Teams \(LSTs\) Summit](#) on October 5-7, 2023.

Laboratory Safety Teams (LSTs) are communities of graduate students and

Free Digital Access to Illustrated Encyclopedia from 1860



Portrait of Lavoisier and Apparatus Used for the Formation of Acetic Acid

Published in 1860, Muspratt's encyclopedia includes many illustrations. This encyclopedia was digitized by the Science History Institute (SHI) (scanned copies are also available in the Hathi Trust, Google Books, and the Internet Archive). The SHI's copy and website lets users browse thumbnail images for each page, enlarge a single

page, or download a whole volume. See SHI's descriptions and links to the full text below.

- Muspratt, Sheridan. *Chemistry, Theoretical, Practical, and Analytical, as Applied and Relating to the Arts and Manufactures*. Glasgow, Scotland: William Mackenzie, 1860. Vols. 1-2.

- Volume 1: <https://digital.sciencehistory.org/works/g00ak0n>
- Volume 2: <https://digital.sciencehistory.org/works/ysz6nva>

"This two-volume encyclopedia seeks to provide a comprehensive exposition of the state of chemical manufactures at the turn of the 19th century. Written by James Sheridan Muspratt (1821-1871), an Irish-born research chemist and son of James Muspratt (1793-1886), an infamous industrial chemical manufacturer in the UK between 1825 and 1850, *Chemistry, Theoretical, Practical, and Analytical* is regarded as Muspratt's magnum opus. Digitized content includes front matter and illustrations, including thirty full-page engraved portraits of prominent chemists of the period."

The copy of the 1860 Muspratt's encyclopedia in the Hathi Trust repository lacked the portraits of the prominent chemists originally included in the publication. Grace Baysinger, then Stanford Chemistry & Chemical Engineering Librarian, received special funds from the Stanford Libraries to create high resolution scans of the 27 chemists available in Stanford's copy of this work. Each signed portrait can be viewed online or downloaded. <https://searchworks.stanford.edu/view/1121588>

Interesting and Cool Science in the News

Advancements Make Laser-Based Imaging Simpler and Three-Dimensional (Caltech news, December 1, 2023)

Age-Old Chemistry: The Mona Lisa (ACS Axial, December 4, 2023)

Antibiotic adjuvant designed to subvert bacterial defence mechanisms (Chemistry World, December 4, 2023)

As seasons change, so does the guidance around antibiotics: Here's what you need to know now (Scope blog, Stanford Medicine, November 17, 2023)

Astronomers stunned by six-planet system frozen in time (Science news, November 29, 2023)

Atomic-level structures show how accuracy is maintained in protein synthesis (Nature Research Briefing, November 29, 2023)

Blasts to clear World War II munitions could contaminate the ocean (ACS Press Release, November 20, 2023)

Building blocks for life could have formed near new stars and planets (ACS Press Release, November 29, 2023)

Can pharma overcome obesity? (CAS Insights, November 10, 2023)

Carbon rings push limits of chemical theories (Nature news, November 29, 2023)

A Celebration of the Publication of the 100th Volume of Organic Syntheses (editorial) (Journal of the American Chemical Society, November 17, 2023) (open access)

Chemical & Engineering News announces 2023 list of 10 chemistry start-ups to watch (ACS News Release, November 13, 2023)

Chemists Tackle Formation of Natural Aerosols (Caltech news, November 16, 2023)

ChemRxiv Posts Its 20,000th Preprint (ACS Axial, October 30, 2023)

Decoding the Molecular Universe – Workshop Report (arXiv [q-bio.BM], November 19, 2023)

Device 'smells' seawater to discover, detect novel molecules (ACS Press Release, November 8, 2023)

Entanglement to the Rescue (Caltech news, November 28, 2023)

Feeling lonely? You're far from alone: Expert advice on how to get reconnected (Scope blog, Stanford Medicine, November 30, 2023)

Four uses for renewable feedstock in sustainable coatings (CAS Insights, November 28, 2023)

The future of computational imaging (Stanford Engineering news, October 27, 2023)

The future of ecohydrology (Stanford Engineering news, November 17, 2023)

Harold Hwang awarded 2024 McGroddy Prize for discovering exotic new materials (SLAC News, November 1, 2023)

How tiny hinges bend the infection-spreading spikes of a coronavirus (SLAC News, November 14, 2023)

Hydrogen needs cleaner production: Photocatalysis is the answer (CAS Insights, November 3, 2023)

Imaging Breakthroughs Provide Insight into the Dynamic Architectures of HIV Proteins (Caltech news, November 22, 2023)

'Indoor solar' to power the Internet of Things (ACS Press Release, November 9, 2023)

Interstellar ices could have been the nursery for building blocks of life

(Chemistry World, December 1, 2023)

The Joy Workout: Six research-backed moves to improve your mood (video, 8:29 minutes) (New York Times, May 24, 2022)

Making gluten-free, sorghum-based beers easier to brew and enjoy (ACS Press Release, November 2, 2023)

Making hydrogen from waste plastic could pay for itself (NSF Research News, November 14, 2023)

Materials-predicting AI from DeepMind could revolutionize electronics, batteries, and solar cells (Science news, November 29, 2023)

Maternal vaccination against COVID-19 lowered risk of preterm births, Stanford study finds (Stanford News, November 27, 2023)

Milestone for novel atomic clock (NSF Research News, November 14, 2023)

Mixing heat with hair styling products may be bad for your health (ACS Press Release, November 27, 2023)

Molecular movie captures DNA repair from start to finish (Chemistry World, December 1, 2023)

The moon is 40M years older than previously thought (NSF Research News, November 28, 2023)

Nanopore test could identify misfolded proteins in Alzheimer's and Parkinson's disease (Chemistry World, December 4, 2023)

New drug delivery system could reduce daily diabetes shots to just three a year (Stanford News, November 21, 2023)

New silicon-based protecting group removable with blue light (Chemistry World, November 29, 2023)

Not so silver lining: Microplastics found in clouds could affect the weather (ACS Press Release, November 15, 2023)

Novel bacterial proteins from seafloor shine light on climate and astrobiology (NSF Research News, November 16, 2023)

Plastic-eating bacteria turn waste into useful starting materials for other products (ACS Press Release, November 1, 2023)

Recent advances in tree nut research — walnuts, pecans and more (ACS Press Release, November 30, 2023)

The Remains of an Ancient Planet Lie Deep Within Earth (Caltech news, November 1, 2023)

Researchers aim to make cheaper fuel cells a reality (SLAC News, November 13, 2023)

Researchers develop promising approach to smaller, more powerful, safer electric vehicle batteries (NSF Research News, November 28, 2023)

Researchers show an old law still holds for quirky quantum materials (SLAC News, November 30, 2023)

Rigorous research practices improve scientific replication (Stanford School of Humanities and Sciences news, November 15, 2023)

Robotic chemistry lab joins forces with Google AI to predict then make new inorganic materials (Chemistry World, November 30, 2023)

Rubin Observatory will unlock fossil record of galaxy cluster evolution (SLAC News, December 4, 2023)

Seeing Deep Blood Flow with Sound and Laser Light (Caltech news, November 30, 2023)

Slippery toilet bowl treatment causes bacteria to slide right off (ACS Press Release, November 28, 2023)

continued on next page

continued from previous page

Solar Power at All Hours: Inside the Space Solar Power Project (Caltech news, October 16, 2023)

A step to prevent opioid overdose deaths with light-activated naloxone treatment (ACS Press Release, November 9, 2023)

Study reveals location of starfish's head (Stanford News, November 1, 2023)

Surveilling wetlands for infectious bird flu — and finding it (ACS Press Release, November 15, 2023)

Sustainable, plant-based menstrual pads could improve access to hygiene products (Stanford News, November 30, 2023)

Swapping blood for spit — for convenient at-home health monitoring (ACS Press Release, November 29, 2023)

Tiny bubbles could reveal immune cell secrets and improve treatments (NSF Research News, November 2, 2023)

Tiny robots made from human cells heal damaged tissue (Nature news, November 30, 2023)

Twin research indicates that a vegan diet improves cardiovascular health (Stanford Medicine news, November 30, 2023)

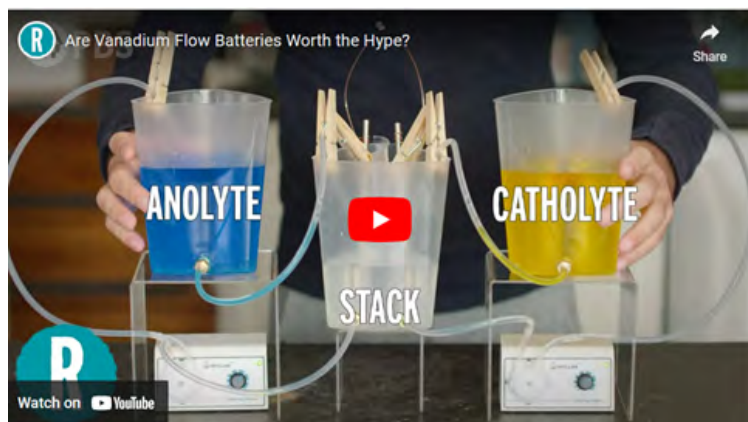
Ultrafast Lasers on Ultratiny Chips (Caltech news, November 9, 2023)

Ultrasound Enables Less-Invasive Brain-Machine Interfaces (Caltech news, November 30, 2023)

What does hope for climate change look like? (Stanford Woods Institute for the Environment news, November 30, 2023)

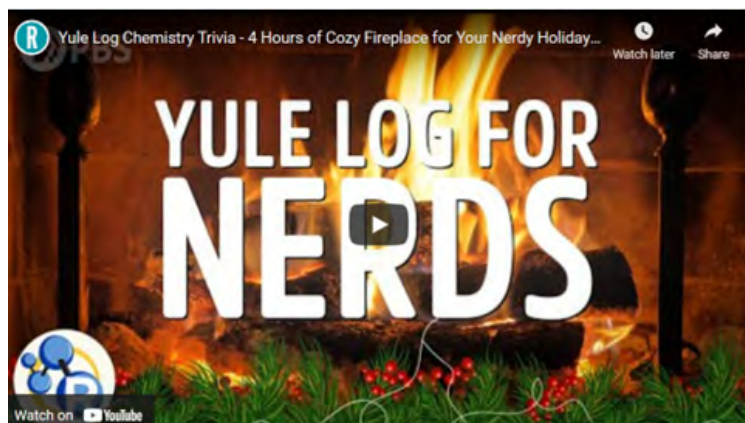
Reactions Videos – Yule Log for Nerds & Vanadium Flow Batteries

Produced by ACS, Reactions a web series about the chemistry that surrounds you every day.



[Watch Video on YouTube](#) | [Learn more](#)

“There’s a century-old battery technology that’s taking the grid-scale market by storm. Based on water, virtually fireproof, easy to recycle, and cheap at scale, flow batteries could be the wave of the future.”



[Watch Video on YouTube](#)

Yule Log Chemistry Trivia - 4 Hours of Cozy Fireplace for Your Nerdy Holiday Parties

“Ready to kick back and relax by the fire this holiday season? We’ve got you covered. Enjoy our chemistry-themed yule log trivia with a cup of hot cocoa at home, in the background at work, or at this year’s annual ugly sweater party.”

Celebrating Scientists with Disabilities



Shining a spotlight on disabled scientists (Chemistry World, November 7, 2023)

“As **Enable Science** launches a poster series to celebrate disabled scientists, founder Chantelle Minchin discusses the importance of representation.

continued on next page

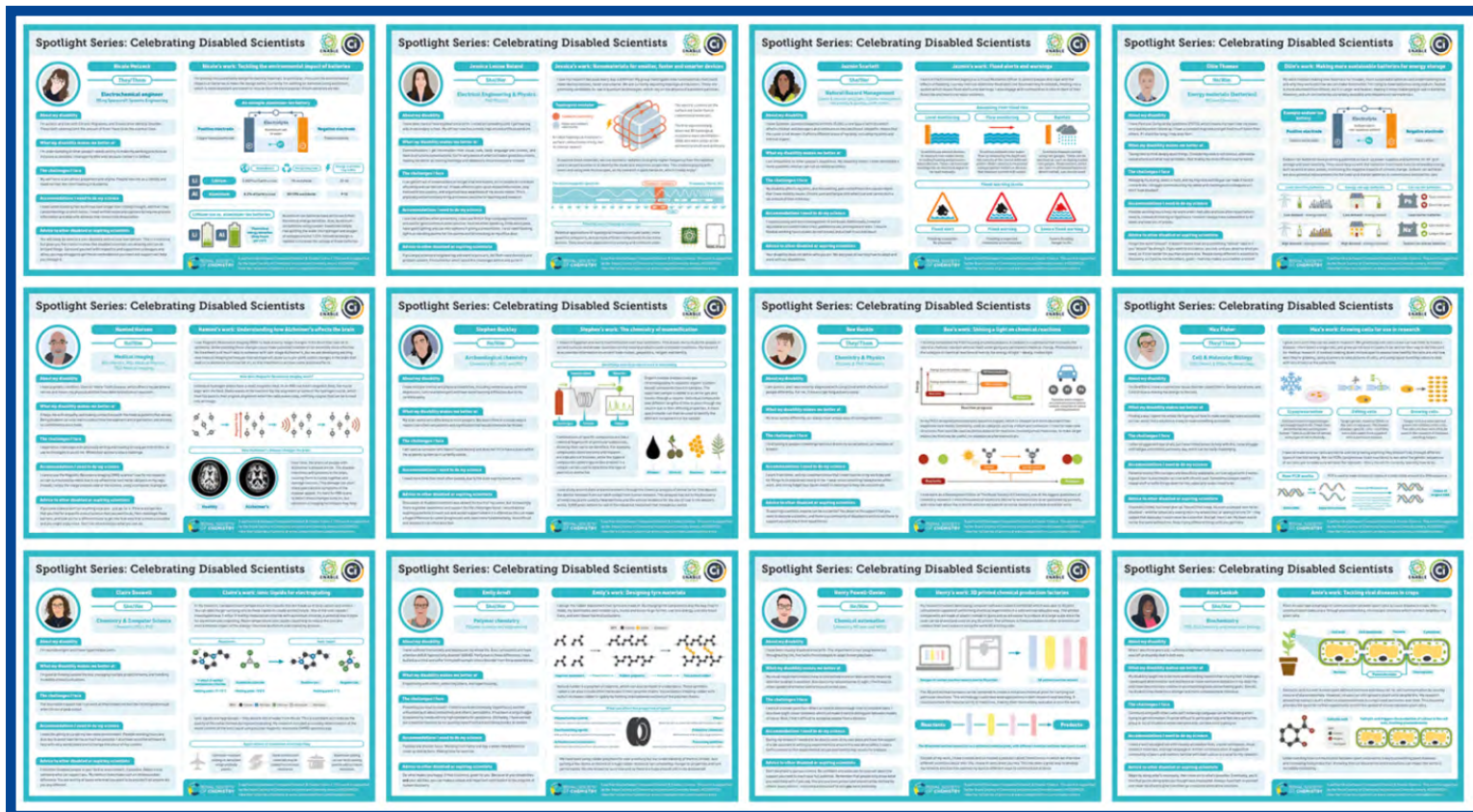
continued from previous page

Throughout my scientific career, I have encountered disability discrimination. I have been banned from mentioning my diagnosis, faced accusations of special treatment, and, at times, been excluded from the workplace altogether. I am not alone. There are many more stories like mine, which, perhaps, explains why disabled individuals are **almost twice as likely to be unemployed** as non-disabled individuals.” [Read the full text](#)

Spotlight Science: Celebrating disabled scientists (Compound Interest, posted November 6, 2023)

“Disabled scientists are still vastly underrepresented in the sciences. With Enable Science, and with the help of a grant from the Royal Society of Chemistry’s Inclusion and Diversity Fund, we’ve produced a series of twelve graphics highlighting the amazing science being done by disabled scientists across the UK. Each poster highlights some of the challenges and accommodations needed to do science alongside being disabled, but also the scientists’ contributions to science.

The Spotlight Series project is targeted at school children to demonstrate that it is possible to undertake a scientific career and be disabled. It is hoped that this will inspire more students to study and work in science, no matter what their background.”



[Download the posters](#) (Zip file)

Huge survey finds US\$10,000 pay gap for disabled scientists (Nature news, November 28, 2023)

“People with disabilities make up about 10% of the workforce in science, technology, engineering, and mathematics in the United States. Scientists and engineers with long-term disabilities earn, on average, US\$10,580 less per year than their non-disabled peers, finds a massive survey of people with PhDs in science, technology, engineering, and mathematics (STEM) in the United States.”



Diversity and STEM: Women, Minorities, and Persons with Disabilities 2023 (National Center for Science and Engineering Statistics (NCSES), Directorate for Social, Behavioral and Economic Sciences, National Science Foundation. Report: NSF 23-315, January 30, 2023.) [View Executive Summary](#) | [View Graphical Highlights of Key Findings](#) | [Press Release](#)

“A diverse workforce provides the potential for innovation by leveraging different backgrounds, experiences, and points of view. Innovation and creativity, along with technical skills relying on expertise in science, technology, engineering, and mathematics (STEM), contribute to a robust STEM enterprise. Furthermore, STEM workers have higher median earnings and lower rates of unemployment compared with non-STEM workers. This report provides high-level insights from multiple data sources into the diversity of the STEM workforce in the United States.”

ACS Committee on Chemists with Disabilities

Mission: “The committee will promote educational and professional opportunities in the chemical sciences and in fields requiring knowledge of chemistry for persons with disabilities. The committee will champion the capabilities of those persons to educators, employers, and peers.”

The chemistry of ginger and gingerbread



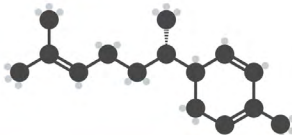
Ginger's flavour, aroma and pungency

Ginger's flavour is influenced by a number of compounds. The pungency of fresh ginger comes from gingerol, which activates heat receptors on the tongue, while zingerone also contributes to the flavour.

KEY: ● Carbon ● Oxygen ● Hydrogen

Zingerone

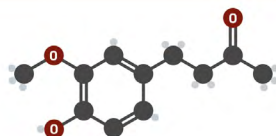
Makes up to 30% of ginger essential oil



Cooking ginger, for example when making gingerbread, breaks down gingerols into the compound zingerone. Zingerone is less pungent, and a significant contributor to ginger's flavour. Another class of compounds formed during cooking are the shogaols, which also contribute to flavour and pungency.

Zingerone

Produced by reverse aldol reaction of gingerol



Potential health benefits of ginger

A number of the compounds in ginger are bioactive. Shogaol has a strong anti-coughing effect, whilst gingerol has anti-inflammatory & analgesic properties. Studies have also suggested that gingerol inhibits production of new blood vessels, which may make it useful in the treatment of tumours. Other studies have found that ginger is more effective than a placebo for treating nausea during pregnancy and chemotherapy.



Shogaol

Produced when ginger is dried/cooked

Gingerol

Active constituent of fresh ginger

www.compoundchem.com

© Andy Brunning/Compound Interest 2023 | Creative Commons Attribution-NonCommercial-NoDerivatives licence. Gingerbread photo: Licensed from Adobe Stock, © Pro-stock Studio.



[Enlarge image](#) | [View associated article](#)



ACS Local Section
Silicon Valley

P.O. Box 395, Palo Alto, CA 94302

Contact us: <https://www.siliconvalleyacs.org/about/contact/>

Website: <https://www.siliconvalleyacs.org/>

Sign up: [Newsletter](#)



[facebook.com/SiValleyACS](https://www.facebook.com/SiValleyACS)

[@SiValleyACS](https://twitter.com/SiValleyACS)

Useful ACS Links

[About](#) | [News](#) | [Social Tools](#)

[Future National Meetings](#)

[Upcoming Events](#) | [Webinars](#)

[C&EN Jobs](#) | [Career Resources](#)

[Membership](#) | [Member Benefits](#)

[Funding & Awards](#)

[Governance](#) | [Advocacy](#)

[Ethical & Professional Guidelines](#)

[Publications](#) | [C&EN](#) | [CAS](#)

[Communities](#) | [Green Chemistry](#)

[Local Sections](#) | [Outreach](#)

[Students and Educators](#)

[ACS Institute](#) | [Center for Lab Safety](#)

[Diversity, Equity, Inclusion & Respect](#)

[Volunteer](#) | [Donate](#)

Silicon Valley ACS Executive Committee

2023 Section Officers	Chair	Natalie McClure	Secretary	Megan Tichy
	Chair-Elect	Todd Eberspacher	Treasurer	Ihab Darwish
	Past-Chair (interim)	Peter Rusch		
Councilors	2021-2023	Grace Baysinger	2022-2024	Sally Peters
	2021-2023	Natalie McClure	2023-2025	Ihab Darwish
	2022-2024	Linda Brunauer	2023-2025	Madalyn Radlauer
	2022-2024	Jane Frommer		
Alternate Councilors	2021-2023	Howard Peters	2023-2025	Amanda Nelson
	2021-2023	Dipti Shingnapurkar	2023-2025	Kristin Schmidt
	2022-2024	Megan Brophy	2023-2025	Laura Yeager
	2022-2024	Anais Nguyen		
Newsletter	Editor	Grace Baysinger	Assoc. Editor	Jane Frommer

The Silicon Valley Section of the American Chemical Society is the copyright owner of all material published in The Silicon Valley Chemist. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without advance permission in writing from the editor, particularly for commercial purposes. Authorization to photocopy items for limited internal or personal use, or the limited internal or personal use of specific clients, is granted by the Executive Committee of the Silicon Valley Section of the American Chemical Society.