

SILICON VALLEY CHEMIST

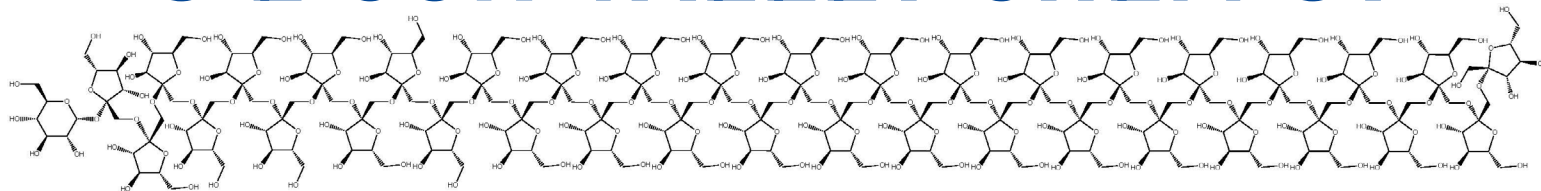


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SVACS Wins the ChemLuminary Award for Outstanding Sustainability Activity

at the ACS Chicago National Meeting, August 2022



One of the best ways to encourage sustainable use of water is by making our youth aware that small changes can have a big impact on

our water supply. The SVACS youth water project was designed to engage kids in observing their surroundings' impact on the quality of water. They also learned the history of water in the bay area and the role of government in determining policies that affect our water.

The SVACS youth water project had several goals:

- **promote** awareness about water quality and the importance of maintaining the quality of water through a citizen science program
- **provide** simple STEM experiments to students especially during COVID times. Testing water quality outdoors with guidance from ACS members and teachers with assistance from parents, students learned important chemistry



concepts like salinity, pH, etc. The packet of directions discussed how each water quality parameter is important for water quality and the organisms living in these waters.

- **collect** data and map the quality of water in our watershed. The data was made publicly available for all to access.
- **inspire** action to preserve the quality of water through citizen monitoring to reduce and prevent water pollution and recover lost beneficial uses.

The program took place in two steps. We rolled out 30 individual kits that were distributed to middle school students by the Redwood City Library. We then had a Zoom event together with the California ACS section and the Redwood City Library. The library hosted a kit opening event where we guided 5 – 8th graders in conducting their water quality experiments, including a girl scout troop (pictured). The event was a big success! We also rolled out 10 classroom sized kits with enough material for 30 students each.

The students enjoyed the sessions. One student exclaimed, 'I can do this as a career!' The experiments were designed by ACS volunteers, assisted by 10 undergraduate students from San Jose State University who helped make videos and instructional materials attractive and accessible to middle school students.

The main audience was middle school kids (9 through 12). However, in addressing the

Chair's Message

Stephanie Benight



With Summer winding down, your Program Committee is hard at work putting together some exciting events with the aim to resume gathering in person! Stay tuned for more details.

Looking forward we have the Bay Area Chemistry Symposium (BACS) taking place November 10th. The ACS Western Regional Meeting is also coming up in Las Vegas October 19th - 22nd.

Several members of our Executive Committee attended the ACS National Meeting that took place in Chicago at the end of August. Your Chair-

Elect, Natalie McClure, Linda Brunaeur and Jane Frommer, Councilors, were there in person to accept our Section's **ChemLuminary Award** for "Outstanding Sustainability Activities". Jigisha Shah who played a leading role in creating and running the water quality program for our local youth that led to this award was there in spirit! The program is described in greater detail in this newsletter. Thank you, Natalie, Jane, and Jigisha, and congrats again to those who create and participate in programs that garner attention and reward from National ACS.

In other SVACS activity to support local science education, the application deadline is approaching for the **BUBBLE Grant** – our program to support K-12 teachers with classroom science equipment. Please share this notice with classroom teachers in your circle of friends, neighbors, and colleagues.

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ChemLuminary Award, continued from previous page

youth, scientists, teachers and college students were involved as well. We shared the project and got advice from the Rotary Nature Center (Lake Merritt). We recruited a group of students from San Jose State University who helped create the video and enhance our technical document. Teachers from around the Bay area were contacted and received classroom-sized kits to perform the experiments with the classrooms. In an on-going SVACS partnership with Redwood City, the library has been a repository of the water testing kits used by the active citizen science group at the library.



We love to do SCIENCE!

Thank you Redwood City Library and ACS!

Overall, the SVACS water quality project involved a wide cross section of the community through hands-on activity to promote awareness about water quality and the importance of maintaining quality of

water, citizen by citizen.



Chair's Message, continued from previous page

We were saddened by the loss of our long-time member, Carol Mosher. She was a major force in our local scientific and public outreach for over 60 years. Carol served as an active member, Chair, and Councilor of the ACS Santa Clara Valley (now Silicon Valley) Local Section. Over 40 years ago our Local Section of the ACS created the **Harry and Carol Mosher Award** to honor the couple, recognizing their many achievements and contributions. It remains one of the few nationally recognized ACS awards named to honor the work and life of an amazing woman chemist.

As always, should you have any feedback or questions, please don't hesitate to reach out to me at chair@siliconvalleyacs.org.

ACS SPRING 2023: Crossroads of Chemistry

Indianapolis, Indiana

In-Person and Hybrid, March 26-30, 2023



ACS Spring 2023 abstracts are now open. Abstract timeline:

- August 15, 2022: Abstract submission opens
- October 17, 2022: Abstract submission closes
- December 2022: Presenters receive acceptance notices

[Learn more and submit an abstract](#)

White House OSTP Memo on Ensuring Free, Immediate, and Equitable Access to Federally Funded Research



Below is an excerpt of a **fact sheet** published by SPARC, a non-profit advocacy organization that supports systems for research and education that are open by default and equitable by design.

"On August 25, 2022, the White House Office of Science & Technology Policy (OSTP) issued a memorandum on **Ensuring Free, Immediate, and Equitable Access to Federally Funded Research** that will make taxpayer-funded research immediately available for the public to freely access and fully use. This new guidance calls on all federal agencies to generate policies that eliminate the current 12-month waiting period for access to the outputs of federally funded research, including articles and data. Specifically, the new policy guidance:

- Makes taxpayer-funded research publications available immediately, at no cost to the public.
- Makes taxpayer-funded research more useful and valuable.
- Improves scientific research integrity.
- Increases public trust in taxpayer-funded research.
- Promotes equity in the research enterprise.
- Extends the scope and reach of current policy.
- Provides ample time for policy updates to be implemented.
- Builds on 15 years of steady progress
- Aligns with UNESCO's recent Recommendation on Open Science

[Learn more about this policy and open access.](#)

CALENDAR OF EVENTS

- September 2022 -

Sep 8 Helping Scientists Stay Safe through the Chemistry Safety Library Webinar

Sponsored by Pistoia Alliance and CAS
7-8am, Online via Zoom, Free, [Registration required](#)

Sep 8 From Wood Pulp to a Candidate Medicine: Green Manufacturing Technologies Enable Production of Nembtabrutinib

Ben Turnbull and Mike Di Maso, Associate Principal Scientists, Merck
Sponsored by ACS Webinars and ACS Green Chemistry Pharmaceutical Roundtable
11-Noon, Online via Zoom, Free, [Registration required](#)

Sep 8 ACS Silicon Valley Executive Committee Meeting

7:30-9:00pm, Online via Zoom, Free, Contact [Chair](#) to attend as a guest

Sep 9 International Chemical Biology Society West Coast Symposium: Advancing Chemical Biology Through Industry & Academia Collaboration

Keynote speaker: Prof. Carolyn Bertozzi, Stanford University
213 E. Grand Parade, South San Francisco, \$100,
[Registration required](#)

Sep 10 Moving the Needle: Key interventions can increase diversity, equity, and inclusion in STEM

Malika Jeffries-El, Assoc. Dean Graduate School in Arts & Sciences, Assoc. Prof. Dept. Chemistry & Div. Materials Science, Boston University
Sponsored by the ACS CA Section Women's Chemists Committee (WCC)
10:30am-Noon, Online via Zoom, Free, [Registration required](#)

Sep 13 ACS Chemical Biology Young Investigators Webinar

Session 1, 7-8:30am, Speakers: F. Ifthiha Mohideen, Concordia University; Frédéric Friscourt, Université de Bordeaux; Samira Musah, Duke University; Jeremy Baskin, Cornell University; Sloan Devlin, Harvard Medical School

Session 2, 5-6:30pm, Speakers: Mia Huang, Scripps Research; Xiao Wang, MIT; Ellen Sletten, UCLA; Kabirul Islam, University of Pittsburgh; Shixian Lin, Zhejiang University.

Sponsored by ACS Publications
Online via Zoom, Free, [Learn more and register](#)

Sep 14 Catalyze the Vote! 2023 ACS President-Elect Candidates

Prof. Mary K. Carroll, Union College and Prof. Rigoberto Hernandez, Johns Hopkins University
Sponsored by ACS Webinars and ACS Younger Chemists Committee
2-3pm, Online via Zoom, Free, [Registration required](#)

Sep 15 Addressing Sustainability Challenges with Earth Abundant Metal Catalysis

Prof. Paul Chirik, Princeton University & Editor-in-Chief, Organometallics
Sponsored by ACS Webinars, ACS Office of Sustainable Development, and Organometallics
11am-Noon, Online via Zoom, Free, [Registration required](#)

Sep 15 The 32nd First Annual Ig Nobel Ceremony 2022 (View recording of 31st Ceremony)

Sponsored by Improbable Research
3-4:30pm, Online via Zoom, Free, [Learn more](#)

Sep 18-21 Advances in Polyolefins

3-day workshop, Rohnert Park, CA
Sponsored by ACS Division of Polymer Chemistry,
[Registration required](#)

Sep 19-21 C&EN's virtual Talented 12 Symposium, in 4 parts

Keynote speakers: Prof. Zhenan Bao, Stanford University; Prof. Ben L. Feringa, University of Groningen and Nobel Laureate
Sponsored by Chemical & Engineering News, Online via Zoom, Free,
[Learn more and register](#)

Part 1: Sept. 19, 9:30-11:30am

Part 2: Sept. 20, 9:30am-10:45am

Part 3: Sept. 20, Noon-3:30pm

Part 4: Sept. 21, 6:30-8:30am.

Sep 21 ACS on Campus: Peer Review Week (Peer Review & Research Integrity)

Professor Marc Hillmyer, Editor-in-Chief, Macromolecules
Sponsored by ACS Publications
6-7am, Online via Zoom, Free, [Registration required](#)

Sep 21 More than One Route to Inclusion: How Different Demographic Groups Confront Global Underrepresentation

Prof. Isai T. Urasa, Director of the Water Resources Research Laboratory, Hampton University; Asst. Prof. Hooi Ling Lee, Universiti Sains, Malaysia; Kabrena Rodda, Senior Scientist, Pacific Northwest National Lab; Prof. Ingrid Montes, University of Puerto Rico, Rio Piedras Campus

Sponsored by ACS Webinars, ACS Office of Diversity, Equity, Inclusion & Respect; ACS Committee on International Activities
8-9am, Online via Zoom, Free, [Registration required](#)

Sep 21 Nanotechnology Research in CAS SciFinder-n Webinar

Sponsored by CAS
Offered at 1am, 7am, and 1pm. Online via Zoom, Free,
[Registration required](#)

Sep 22 Tightly-Bound Polymers

Prof. Frank Blum, Department of Chemistry, Oklahoma State University
Sponsored by the Golden Gate Polymer Forum
6:30-7:30pm, Online via Zoom, Free/\$5 donation, [Registration required](#)
(Registration deadline: September 21st at 1pm)

Sep 28 Los Increíbles Líquidos Iónicos: Síntesis y Caracterización

Prof. Clarissa P. Frizzo, Universidade Federal de Santa Maria and Prof. Ingrid Montes, Universidad de Puerto Rico, Recinto de Río Piedras
Sponsored by ACS Webinars, Sociedad Química de Mexico, and C&EN en Español
11am-Noon, Online via Zoom, Free, [Registration required](#)

- October 2022 & Beyond -

Oct 19-22 ACS Western Regional Meeting 2022: Empower the Chemist for a Better Tomorrow

Sponsored by the ACS Southern Nevada Local Section
Flamingo Hotel & Convention Center, Las Vegas, Nevada,
[Registration required](#)

Nov 2 & 4 Polymers for Medical Applications: An Overview of Polymeric Families and How They are Used to Treat and Diagnose Disease (2-Day Live Virtual Short Course)

Dr. Subbu Venkatraman
Sponsored by the Golden Gate Polymer Forum
Registration information on page 7 of this newsletter

Nov 10 3rd Bay Area Chemistry Symposium (BACS)

Sponsored by the ACS California and ACS Silicon Valley Sections plus Merck, Genentech, Gilead, Novartis. Maze, AbbVie, and Cytokinetics
Pauley Ballroom, UC-Berkeley, 8am-5pm
More details will be posted:
<https://www.bayareachemistrysymposium.com/>

Helping Scientists Stay Safe through the Chemistry Safety Library Webinar

September 8th at 7am



This webinar co-hosted by The Pistoia Alliance and CAS will engage a panel of experts to highlight how scientists and research organizations can reduce the risk of adverse chemical safety events in their labs using the Chemical Safety Library, an open-access platform for searching and sharing hazardous reaction information crowd-sourced from scientists in academic, industry, and government labs around the world.

Learn more about:

- The value of crowdsourcing to improve chemical lab safety globally
- What the Chemical Safety Library contains
- How you can use and contribute to the Chemical Safety Library
- Building a safety-focused culture in your lab

[Learn more and register](#)

Call for nominations EPA's 2023 Green Chemistry Challenge Awards



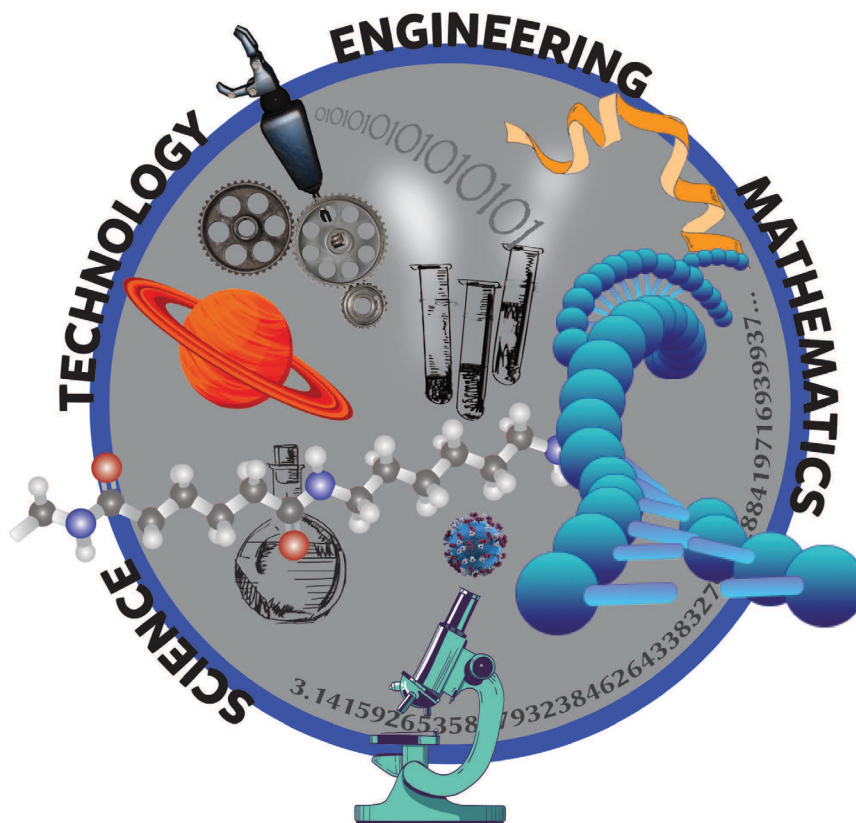
"The American Chemical Society (ACS), in partnership with the U.S. Environmental Protection Agency (EPA), announces the call for nominations for the **2023 Green Chemistry Challenge Awards** to recognize businesses, individuals, academic institutions and nonprofits



K-12 Science Educators - get a BUBBLE Grant for your classroom.

The SVACS BUBBLE Grant supports

K-12 teachers with funds to facilitate teaching science.



For submission guidelines and project description go to <http://www.siliconvalleyacs.org/awards-funding/bubble-grant>

Submission deadline is 01 November 2022.



for innovative green chemistry solutions and products.

Applications are due to EPA by Dec. 9, 2022.

A webinar will be held on Wednesday, Sept. 28, 2022, at 2 p.m. ET to educate stakeholders on the Green Chemistry Challenge Awards and the nomination process. [Register here for the webinar.](#)

The **ACS Green Chemistry Institute** will convene an independent panel of technical experts to formally judge the nominations and make recommendations to EPA for the 2023 winners."

[Read the full press release](#) (ACS Press Release, August 1, 2022)



Councilor's Report from the Fall 2022 ACS Chicago National Meeting

Contributed by Madalyn Radlauer

At each semiannual ACS national meeting, the ACS Council convenes to hear reports from ACS leadership and multiple ACS committees. Your SVACS and division Councilors represent you at this national Council meeting by voting on points of action, electing new committee members, and narrowing candidate lists for various Board positions. Councilors also contribute to public discussion of points of business by taking the mic and sharing their thoughts. Council meetings take place in a large ballroom at the national meetings and are accompanied by off-line discus-

sion between councilors. Since COVID, the option has been added to attend and vote at the Council meeting virtually. I attended the Fall meeting last month in Chicago virtually, missing the conversations, networking, whispered commentary, and overall value of in-person community with Councilors from around the world.

Among the talking points raised at Council was the search for a new CEO of ACS. If you have someone in mind for the job, reach out to an ACS Board member. I would also like to draw attention to the "Council Special Discussion" which focused

on the future of ACS. We hope that you as our members and readers will take these questions to heart and share your ideas with us. We will take your comments forward to ACS national leadership as well as address them locally in creating opportunities and events meaningful to you all here in Silicon Valley.

Council Special Discussion

ACS President Wilson led a discussion on "ACS for the Future." She sought Councilor input on initiatives, programs and events that would benefit ACS members and the ACS at large. Three specific questions were posed to Councilors for their input:

- What can be accomplished to enhance the ACS experience?
- Why (or how) do you think it would make a difference?
- Who would be tasked with leading this effort (e.g., a local section, committee, division, or other)?

Councilors' input from the meeting will be provided to the relevant Society units in the next several weeks.

Selected highlights from committee reports and key actions

Elections were carried out for new members of the Council Policy Committee (CPC), the Committee on Committees (ConC) and the Committee on Nominations and Elections (N&E).

Councilors were reminded of the new online committee preference form that was open over the summer to solicit names of individuals interested in serving on ACS Society Committees.

Registration Statistics

ACS Fall 2022 Chicago Meeting Registration (as of 8/22/2022)

Total registration	11,360
In-Person	9,169
Virtual	2,191
International	2,425
First-timer attendees	4,174

Fall National Meeting Attendance since 2011 for Comparison (note that SF is really popular)

2011: Denver, CO	10,076
2012: Philadelphia, PA	13,251
2013: Indianapolis, IN	10,840
2014: San Francisco, CA	15,761
2015: Boston, MA	13,888
2016: Philadelphia, PA	12,800
2017: Washington, DC	12,904
2018: Boston, MA	14,235
2019: San Diego	12,409
2020: No meeting was held	
2021: Atlanta, GA: (1,895 hybrid; 6,310 virtual)	8,205
2022: Chicago, IL: (final count: 9,355 in-person; 2,264 virtual)	11,619

Western Regional Meeting-2022

American Chemical Society

October 19 – 22, 2022

Flamingo Hotel & Casino Convention Center, Las Vegas, NV

EMPOWER CHEMISTS FOR A BETTER TOMORROW



Invited Speakers

- Opening Keynote, Dr. Judith Giordan, ACS President-Elect
- Special Presentation, Dr. Joseph Wang, UCSD
- Closing Keynote, Dr. Stephen Leffler Buchwald, MIT

Technical Sessions

- Air, water, and soil Pollution
- Biochemistry of COVID and other Infectious Diseases
- Inorganic and Materials Chemistry
- Preparing K-12 Students for a Future in STEM
- Biotechnology & Biomedicine

Symposia

- Nuclear Forensics and Medicine
- Greenhouse Gases / Water Contamination and Treatment
- Quantum Science
- Cannabis Science
- Organic Chemistry / Organometallics / Polymer Chemistry
- Electrochemical Energy Storage

Exposition Area

- Selected Vendors
- Interactive Poster Display and Contests
- Latest Analytical Instrumentation and Data Acquisition Tools

Opportunities

- Mentoring and Networking
- Sci-Social Mixers
- Planned Local Tours of Scientific Interests
- World Class Entertainment & Fine Dining

Contact: Dr. Rampur Viswanath r.viswanath@yahoo.com

Places of Interest

University of Nevada, Las Vegas



Zion National Park



Hoover Dam



Red Rock Canyon



Atomic Testing Museum



Paving the Path A Mentoring Program for Community College Transfer Students

Calling all community college chemistry and chem-affiliated students
and community college graduates to serve as mentors
October 2022 – March 2023

Silicon Valley ACS designed Paving the Path to support community college students majoring in chemistry and related fields planning to transfer to 4-year universities

- 1-on-1 mentoring
- Group forums on applications, financial aid, course guidance
- This 2-part program is free and requires a time commitment of about 1-2 hours per week during both parts.
 - Part 1: Applying to Transfer, mid-October 2022 - early-December 2022
 - Part 2: Maximizing the Transfer Experience, February 2023 - March 2023
- Application deadline: October 11, 2022.

Questions about joining as a mentor or mentee? Reach out to us at ptp@svacs.org
Ready to apply? Mentors click [here](#) Mentees click [here](#)



Paving the Path
Silicon Valley American Chemical Society



Polymers for Medical Applications

A 2-Day Live Virtual Short Course by Dr. Subbu Venkatraman

November 2 and November 4, 2022, 7:30AM – 6:00PM

Sponsored by the **Golden Gate Polymer Forum**, presented via Zoom

This is a two-day overview of polymeric families and their use to treat and diagnose disease in medicine, drug delivery, and medical devices. Topics include:

- medical devices functionally dependent on polymer performance
- polymers designed for specific medical applications, e.g., biomimetic polymers
- evaluating the merits of synthetic polymers over naturally derived polymers for implants
- modifying polymers to enable biodegradable and biostable coatings on devices

Registration required

\$200 early registration ends Saturday, September 10, 5PM Pacific time

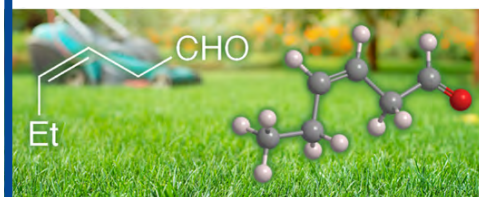
\$250 regular registration ends Saturday, October 22, 5PM Pacific time

\$300 late registration, if still available, ends Sunday, October 30, 5PM Pacific time

CHEMISTRY

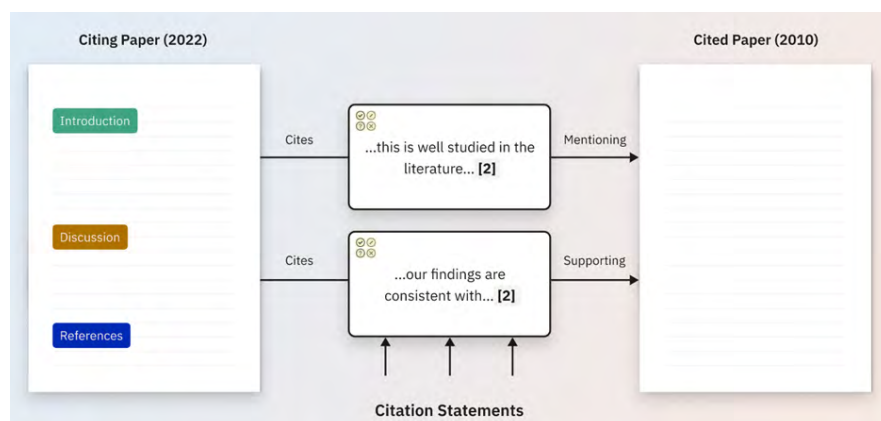
Quiz

You smell me when you mow your lawn. What molecule am I?



Answer

ACS Publications and scite Partner on the Development of Smart Citations



"scite, an award-winning tool that helps students and researchers discover and understand research findings more efficiently through Smart Citations, has partnered with the American Chemical Society (ACS) to enhance the citation experience for its globally diverse readership.

Pioneered by scite, Smart Citations go beyond traditional citations by showing citation state-

ments—the in-text sentences where references are used—the section they appear in the citing articles, and a classification indicating if the paper provides supporting or contrasting evidence to the cited claim from the referenced work. Smart Citations have been developed using sophisticated machine learning models that extract and analyze citation statements from full-text articles

at scale. This information helps researchers quickly and easily see how and why an article has been cited and engaged with in subsequent research, providing a more nuanced and richer source of information than a simple citation count and list of cited articles without context.

To date, scite has partnered with over two dozen major publishers, analyzing and indexing over 1.1B citation statements extracted from more than 31M full-text articles. Smart Citations will be added to ACS articles, adding to the already 3M articles that display Smart Citations from other publishers like Wiley, The Royal Society, and The National Academy of Sciences.

In addition to enhancing the viewing experience for readers of ACS' portfolio of journals, this partnership will also help ensure researchers are citing reliable work. ACS will pilot the scite Reference Check, a service that helps authors, editors, and peer reviewers validate that they are citing reliable studies. The Reference both identifies if references in manuscripts under submission cite a retracted study as well as shows how others have cited the work; ultimately, the service indicates if there is supporting or contrasting evidence to the references being used."

Above is an excerpt of a [press release](#) published by scite on August 2, 2022.

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 in order to get to know you, the Executive Committee offers new members a free dinner at a monthly section seminar meeting, once we return to meeting in person! When you register for the event, 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 several local venues. We hope you will also join us for an outreach event, like judging a science fair, proctoring the Chemistry Olympiad, or participating in a National Chemistry Week event in the autumn. The local section is a volunteer organization. Attend an event, volunteer to help, and get to know your local fellow chemists. Welcome!

NEW ACS MEMBERS

Eric John Alexy
Hayden Anderson
Maggie Braunreuther
John Bukry
Eda Canales
Tim Carroll
Donald Andrew Chaisson
Rebecca Chan
Michael Cole
Chaodi Dai
Derek Dalton
Laura Dassama
Jocelyn Davies
Shyam Deo
Arundhati P. Deshmukh
Amani Ebrahim
Grisha Etkin
Alexander Giovannitti
David Gray

Nadine Humphrey
Yue Jiang
Alby John Joseph
Diane Kim
Eirik Fadum Kjonstad
Cate Levey
Lingyin Li
Yuzhang Li
Alandra Marie Lopez
Rachel Mardjuki
JoAnne Markle
Kamini Mehta
Alec Millner
Jocelyn Nardo
Bang T. Nhan
Kellan Passow
Julie C. Paz
Dayanne Rolim Carvalho
Stephen Rudisill

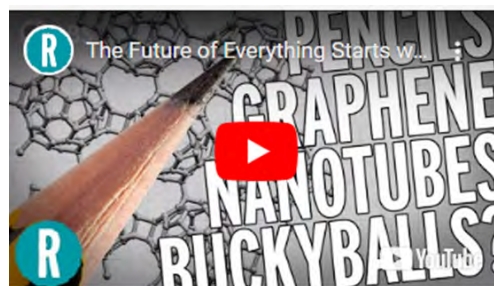
Roi Rutenberg
Adedayo Sanni
Arunkumar K. Sharma
Jeffrey Smyth
Raju Subramanian
Valentino Sudaryo
Shuai Wang
Janice L. Wee
Kirsten Winther
Yan Xia
Victoria Yan
Hongfeng Yin
Jason Robert Zbieg
Wen Zhang
Boxuan Zhao
Shiji Zhao
Xiangwei Zhu

Reactions: Chemistry Science Videos

Uncover the Chemistry in Everyday Life



Are Wine & Food Pairings All Nonsense?
[Watch video](#)




The Future of Everything Starts with Pencil Lead.
[Watch video](#)

Open Educational Resources: Textbooks

The Mason OER Metafinder (MOM)

Real-time federated search for OER content

[What's an OER?](#) | [About the OER Metafinder](#)

 Full Record

Title

Author

Date Range

From To

All Categories

OER-Specific Sites

- [AMSER - Applied Math and Science Education Repository](#)
- [BC Campus: Open Ed](#)
- [Directory of Open Access Books \(DOAB\)](#)
- [LibreTexts](#)
- [Merlot.Org](#)
- [MIT OpenCourseware](#)
- [OAOpen.org](#)
- [OASIS](#)
- [OER Commons](#)
- [OERs at Internet Archive](#)
- [Open Michigan](#)
- [Open Textbook Library](#)
- [OpenStax CNX](#)
- [Teaching Commons](#)

Deeper Search

- [American Memory \(Library of Congress\)](#)
- [Digital Public Library of America](#)
- [HathiTrust - Full View](#)
- [JSTOR Open Access books](#)
- [Library of Congress](#)
- [Open Research Library](#)
- [Project Gutenberg](#)
- [The New York Public Library Digital Collections](#)
- [World Digital Library](#)



Search multiple open access resource sites at one time using *MOM*

The George Mason University Libraries developed the Mason OER Metafinder or MOM, the first tool of its kind that can search 21 quality sources for OER simultaneously.

Coming Fall 2023: John McMurry's *Organic Chemistry*, 10th edition, will be free from OpenStax. See news article about this best-selling textbook becoming openly accessible from InsideHigherEd. FYI, a [textbook map of McMurry's Organic Chemistry](#) textbook is available on LibreTexts.

Below are selected open educational collections for chemists:

[Chemistry Library in LibreTexts](#)

Hosted by UC-Davis, Living Library is a principal hub of the LibreTexts project, which is a multi-institutional collaborative venture to develop the next generation of open-access texts to improve postsecondary education at all levels of higher learning. The LibreTexts approach is highly collaborative where an Open Access textbook environment is under constant revision by

students, faculty, and outside experts to supplant conventional paper-based books.

[MERLOT](#)

First developed in 1997 by the California State Universities, the MERLOT system provides access to curated online learning and support materials and content creation tools, led by an international community of educators, learners, and researchers. View the [Chemistry](#) collection of materials.

[OpenStax's Science textbooks](#)

Part of Rice University, OpenStax's mission is to improve educational access and learning for everyone. We do this by publishing openly licensed books, developing and improving research-based courseware, establishing partnerships with educational resource companies, and more.

[Open Textbook Library > Chemistry](#)

Launched in 2012 by the University of Minnesota, Open textbooks are licensed by authors and publishers to be freely used and adapted. Download, edit and distribute them at no cost. Now offering 1082 open textbooks, the Open Textbook Library is supported by the [Open](#)

[Education Network.](#)

[Books by Caltech authors](#) (selected titles below):

- Bertini, Ivano and Gray, Harry B. and Lippard, Stephen J. and Valentine, Joan Selverstone (1994) [Bioinorganic Chemistry](#). University Science Books, Mill Valley, CA. ISBN 0-935702-57-1.
- Gray, Harry B. (1994) [Chemical Bonds: An Introduction to Atomic and Molecular Structure](#). University Science Books, Mill Valley, CA. ISBN 9781600490125.
- Roberts, John D. and Caserio, Marjorie C. (1977) [Basic Principles of Organic Chemistry](#), second edition. W. A. Benjamin, Inc., Menlo Park, CA. ISBN 0-8053-8329-8.
- Roberts, John D. and Stewart, Ross and Caserio, Marjorie C. (1971) [Organic Chemistry: Methane to Macromolecules](#). W. A. Benjamin, Inc., New York, NY. ISBN 0-8053-8332-8.
- Roberts, John D. (1959) [Nuclear Magnetic Resonance: Applications to Organic Chemistry](#). McGraw-Hill Series in Advanced Chemistry. McGraw-Hill Book Company, Inc.



Expanding the Diversity & Inclusion Cover Art Series

ACS Publications will be considering artwork submissions on a rolling basis until September 30, 2022, and plans to compile and re-promote all published covers in an end of year collection.

ACS journals are soliciting authors who are underrepresented in the chemistry community—most notably those who identify as BIPOC, LGBTQ, first generation, and those with disabilities—to submit their cover art.

Please consider contributing to this initiative at an ACS journal of your choosing, helping to amplify the visibility of underrepresented chemists in our communities. [Learn more](#)



New CCDC Engagement Grants to Inspire the Next Generation of Scientists



“New initiative to create resources and increase engagement in crystallography and structural science.

- New grants to create crystallography and structural science outreach resources and activities.
- Grants cover costs to produce resources or activities that will increase schools and public engagement in crystallography and structural science.

The Cambridge Crystallographic Data Centre (CCDC) announced new Engagement Grants in their latest initiative to advance structural science for the public benefit.

Structural science and crystallography play vital roles in the world around us, but few outside the field get to hear about it. This area of science deals with the study of materials in their solid state, including their interactions, stability, and properties. Scientists in this field discover and develop new semiconductors, pharmaceuticals, batteries, catalysts and more. Choosing this field offers great opportunities to have a meaningful impact on scientific development and our everyday lives.”

[Learn more](#)

In the News: Interesting and Cool Science

[Bio-based Polymers: A Green Alternative to Traditional Plastics](#) (CAS Whitepaper, 2022)

[The chemical secrets behind vanilla's allure](#) (ACS Press Release, August 24, 2022)

[Completing the micronutrient picture for plant-based milk alternatives](#) (ACS Press Release, August 24, 2022)

[Deep dive into the science of batteries](#) (Stanford News, August 11, 2022)

[Detecting nanoplastics in the air](#) (ACS Press Release, August 23, 2022)

[Diamond capsules could aid materials discovery](#) (Stanford Earth Matters magazine, August 17, 2022)

[Enhancing the effect of protein-based COVID-19 vaccines](#) (ACS Press Release, August 31, 2022)

[Exploring quantum electron highways with laser light](#) (SLAC News, August 18, 2022)

[Food allergies can be reversed in mice by targeting the microbiome](#) (ACS Press Release, August 21, 2022)

[“Forever chemicals” may not be as hard to break down as thought](#) (C&EN, August 24, 2022)

[How do you take a better image of atom clouds? Mirrors – lots of mirrors](#) (SLAC News, August 19, 2022)

[Multiple sclerosis drug works in a surprising way](#) (ACS Press Release, August 10, 2022)

[New ‘lab on a chip’ may accelerate carbon storage efforts](#) (Stanford Earth Matters magazine, August 2, 2022)

[New research uncovers the internal structure of spider silk](#) (NSF Research News, August 22, 2022)

[New Stanford research reveals the chemical underpinnings of how benign water can transform into harsh hydrogen peroxide](#) (Stanford News, August 1, 2022)

[SLAC researchers scan 600-year-old documents for clues about first printing presses](#) (Palo Alto Online, August 13, 2022)

[Sponge-like electrodes inspired by sugar cubes could improve medical monitoring](#) (ACS Press Release, August 4, 2022)

[Stanford Medicine magazine explores the molecules within us](#) (Stanford Medicine, ScopeBlog, August 3, 2022)

[Super-fast electric car charging, with a tailor-made touch](#) (ACS Press Release, August 22, 2022)

[Your next wooden chair could arrive flat, then dry into a 3D shape \(video\)](#) (ACS Press Release, August 23, 2022)

TATTOO CHEMISTRY: COLOURANTS AND CONCERNS

WHAT PIGMENTS ARE USED?

Historically, various ground up minerals were used as tattoo pigments to achieve different colours.

WHAT ARE THE HEALTH CONCERNS?

The majority of health complications arising from tattoos relate to infection or allergic reaction when getting one. However, tattoo inks are largely unregulated, and there are also concerns surrounding some compounds in them.

WHAT'S IN TATTOO INK?

Tattoo ink has two key components: carriers and colourants. The carrier acts as a solvent for the colourant and transports it to the dermis. Usually, the carrier is ethanol or distilled water, though other substances including isopropyl alcohol and glycerin can also be used.

WHAT PIGMENTS ARE USED?

In the present day, over 80% of tattoo colourants are organic (carbon-based) compounds. Of these, 60% are from a family of compounds known as azo dyes.

AZO DYE - GENERAL STRUCTURE

$R-N=N-R'$

R and R' represent varying parts of the molecule.

Other families of organic dyes are also used, giving varying ranges of colour. A selection are shown below. It is common for tattoo inks to contain multiple colourants.

Azo dyes

- Red, orange, yellow

Phthalocyanine dyes

- Blue to green

Anthraquinone dyes

- Red to blue

Xanthene dyes

- Yellow to violet

Diketopyrrolopyrrole dyes

- Red to orange

Quinacridone dyes

- Red to violet

BENZO[*a*]PYRENE

A polycyclic aromatic hydrocarbon (PAH) and carcinogen which is found in some black tattoo inks.

BENZISOTHIAZOLONE

An antiseptic in some ink formulations which can cause skin irritation.

FORMALDEHYDE

A preservative found in some tattoo inks which is classified as a carcinogen.

Some pigments used in tattoos break down into compounds with known health concerns. For example, some azo dye pigments can be broken down by bacteria or UV light to form potentially cancer-causing primary aromatic amines.

AZO DYE → **PRIMARY AROMATIC AMINE**

In spite of the health concerns, a causative link between tattoos and cancer has not been established.

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Learn more: [Exposing what's in tattoo ink](#) (ACS Press Release, August 24, 2022)

2022 Section Officers

Chair	Stephanie Benight	206-604-3163	sbenight@gmail.com
Chair-Elect	Natalie McClure	650-906-7831	nmclure@drugregulatoryaffairs.com
Past-Chair	Jigisha Shah	315-289-5115	jssheth@syr.edu
Secretary	Laura Yeager	626-826-3145	laura.yeager123@gmail.com
Treasurer	Ihab Darwish	650-624-1389	darwishis@yahoo.com

Councilors

2020-2022	Matt Greaney	510-410-0195	greaney19@gmail.com
2020-2022	Madalyn Radlauer	408-924-5482	madalyn.radlauer@sjsu.edu
2021-2023	Grace Baysinger	408-410-6105	gracebaysinger@gmail.com
2021-2023	Natalie McClure	650-906-7831	nmclure@drugregulatoryaffairs.com
2022-2024	Linda Brunauer	408-554-6947	lbrunauer@scu.edu
2022-2024	Jane Frommer	408-927-2225	jane@collabra.net
2022-2024	Sally Peters	650-447-3027	sallybrownpeters@gmail.com

Alternate Councilors

2020-2022	Todd Eberspacher	650-723-2505	eberspacher@stanford.edu
2020-2022	Avni Gandhi	626-831-8230	avni.caltech@gmail.com
2020-2022	Heddie Nichols	310-435-2133	hnichols105@gmail.com
2021-2023	Howard Peters	650-447-3027	Peters4pa@sbcglobal.net
2021-2023	Dipti Shingnapurkar	408-242-0674	doc.dipti@yahoo.com
2022-2024	Megan Brophy	503-407-1133	brophymegan@fhda.edu
2022-2024	Anais Nguyen	415-828-6941	anaisn@fastmail.com

Newsletter

Editor	Grace Baysinger	408-410-6105	gracebaysinger@gmail.com
Assoc. Editor	Jane Frommer	408-927-2225	jane@collabra.net



ACS Local Section
Silicon Valley

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

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