

SILICON VALLEY CHEMIST

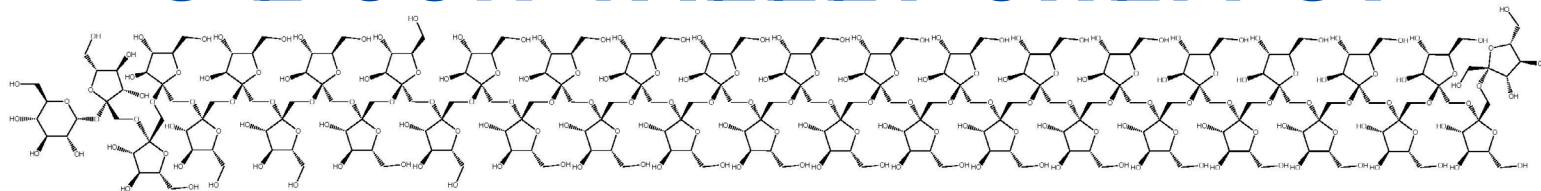


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Chair's Message

Natalie McClure



Each year our section presents the Harry and Carol Mosher Award to recognize a chemist for their contributions and outstanding work in chemistry, for advancing chemistry as a profession, and for service to ACS. The 2022 award will be presented to Professor Richard "Dick" Zare of Stanford University on February 24. Professor Zare is eminently qualified for this award. As can

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Mosher Award Reception and Lecture for Stanford Professor Richard Zare

Join us for this event to celebrate the presentation of the 2022 Harry and Carol Mosher Award to Professor Dick Zare!



ACS
Silicon Valley

2022 HARRY & CAROL MOSHER AWARD

PROFESSOR RICHARD ZARE
Stanford University



Friday, 24 February 2023
5:30 pm Reception
7 pm Mosher Lecture

In person at SAPP Center, Stanford
Free parking on campus after 4PM

\$20 adults, \$10 students, cash only
Registration required (SVACS.org)

Download and share this flyer

DATE: February 24, 2023

TIME: 5:30-7:00pm Wine, hors d'oeuvres, and networking reception
7:00-8:00pm Mosher lecture and award presentation

LOCATION: Stanford University, Sapp Center for Science Teaching and Learning, 376 Lomita Drive (free parking after 4pm). View on [Stanford map \(shows visitor parking\)](#) and on [Google Maps](#)

COST: \$20 regular/\$10 students (cash-only, pay at the door). Photo ID required to drink wine.

Registration required. (Registration deadline: February 16 at midnight)

For more information about Professor Zare's winning the Mosher Award, see the [accompanying article](#)

Mosher Award Lecture

Recalling Adventures in the Stanford Chemistry Department

Abstract:

I have been a member of the Stanford Chemistry Department for over 40 years, serving six years as its chair (2006 - 2011). During this time, I have witnessed some amazing changes, and I want to take this opportunity to tell you some stories about what it has been like, stories about teaching, stories about research, and stories of what it was like to be chair. I am reminded of the opening sentence of Charles Dickens' *A Tale of Two Cities*: "It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of Light, it was the season of Darkness, it was the spring of hope, it was the winter of despair, we had everything before us, we had nothing before us, we were all going direct to Heaven, we were all going direct the other way—in short, the period was so far like the present period, that some of its noisiest authorities insisted on its being received, for good or for evil, in the superlative degree of comparison only." Hopefully, my presentation will not emulate this sentence in length or in extremes, but I do hope to provide some insight to what it was like to be here at Stanford during this period that saw the Stanford Chemistry Department grow so much in strength.



Bio:

"A pioneer in the use of lasers to study chemical reactions at the molecular level, Marguerite Blake Wilbur Professor Richard N. Zare pursues diverse theoretical and experimental interests in physical chemistry and nanoscale chemical analysis. The Zare lab has made a broad impact in analytical chemistry with development of laser-induced fluorescence to study reaction dynamics, and seminal contributions to understanding molecular collision processes. The group continues to invent tools and measurement techniques to study phenomena from reaction in microdroplets to drug delivery.

Born in 1939 in Cleveland, Ohio, Richard Zare trained in physical and analytical chemistry at Harvard University (B.A. 1961, Ph.D. 1964). His doctoral study under Professor Dudley Herschbach explored photodissociation dynamics. After faculty positions spanning chemistry at the Massachusetts Institute of Technology, chemistry, physics and astrophysics at the University of Colorado, and chemistry at Columbia University, he joined the Stanford

chemistry faculty in 1977. He has taught an introductory chemistry class every year since then. As a Howard Hughes Medical Institute Professor since 2006, Professor Zare has also developed a course introducing undergraduates to hands-on interdisciplinary research, combining physics and biology to explore how living systems use molecular interactions with light for vision, photosynthesis and more. Professor Zare has helped to guide scientific policy as chairman of several national and international science boards. His dedication to research and teaching has been recognized in many awards, including the National Medal of Science, the Wolf Prize in Chemistry, and the Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring. Among other honors, Professor Zare is a member of the National Academy of Sciences, the American Academy of Arts and Sciences, and the American Philosophical Society. He has also received 11 honorary doctorates.

Current research in the Zare lab explores

wide-ranging questions in physical and analytical chemistry, from the study of elementary chemical reactions to chemical analysis of extraterrestrial materials. The major focus of these efforts is chemical analysis on the nanoscale. The team has devised tools and techniques to examine molecules in extremely tiny volumes – the volumes characteristic of what is found in heterogeneous structures in mineral samples or in the contents of cells and subcellular compartments. Group members have also made contributions to the chemical analysis of liquid samples separated using a capillary format by electrophoresis or electrochromatography. Some "firsts" include the use of cavity ring-down spectroscopy to analyze trace species in solution, development of detectors for capillary electrophoresis based on the techniques of laser-induced fluorescence, and CCD imaging, and the use of mass spectrometric imaging of tissue samples by means of desorption electrospray ionization."

Visit the Zare lab website to learn more:
<https://web.stanford.edu/group/Zarelab/>



Chair's Message, continued from previous page

be seen from his biographic statement provided elsewhere in this newsletter, he has had a long career as an innovative chemist and as a mentor for many younger chemists. Professor Zare's technical contributions have been recognized by many organizations including the Wolf Prize (2005), the Priestley Medal (2010), and most recently, the 2023 Benjamin Franklin Medal in Chemistry for fundamental studies of the dynamics of chemical reactions, including the development of techniques to observe molecules as they react.

Professor Zare will give a short presentation of his experiences as a chemist, focusing on the changes he has seen over the years as a Professor of Chemistry at Stanford. His talk will be preceded by a networking reception. We have decided to offer "heavy hors d'oeuvres" instead of dinner, following the tradition established by ACS at the National meetings. The rising cost of events that include full dinners puts them out of reach for many attendees, even with ACS subsidies and using Stanford facilities. Please join us for this fun and interesting evening. Registrations are required and can be made using the Eventbrite link provided in this newsletter.

The Silicon Valley ACS local section gives a number of additional awards each year. The Harry

and Carol Mosher Award, established in 1980, is our most prestigious. It is named for the late Drs. Harry S. Mosher of Stanford University and Carol W. Mosher of SRI International, charter members and long-time supporters of the ACS and this section as well as celebrated organic chemists. The award consists of an engraved plaque and a check for \$2000.

The other awards given by the section are:

- **The Radding Award** which recognizes leadership, service, and significant contributions to industrial, applied, or academic chemistry, and to ACS at the local, regional, and national levels
- **The Ottenberg Award** which recognizes outstanding service to the Silicon Valley section
- **The Teacher-Scholar Award** which recognizes excellence in teaching and mentoring at a community college.

The various awards and the nomination requirements are outlined on our website (<https://www.siliconvalleyacs.org/awards-funding/>). Please review them and consider nominating your colleagues. This is one of the best mechanisms we have to reward and celebrate those who work so hard to advance chemistry as a profession and the ACS.

CALENDAR OF EVENTS <https://www.siliconvalleyacs.org/events/>

- February 2023 -

- Feb 2** **Catalyzing Change: Using Your Chemistry Expertise to Advise Policymakers**
Sponsored by ACS Webinars, ACS Student & Postdoctoral Scholars Development Office, and ACS Office of Government Affairs
11am-Noon, Online via Zoom, Free, [Registration required](#)
- Feb 2** **Silicon Valley ACS Executive Committee Meeting**
7:30-9:00pm, Online via Zoom, Free. Contact [Chair](#) to attend as a guest.
- Feb 8** **Breaking Barriers: Women in Green and Sustainable Chemistry**
Sponsored by ACS Webinars and ACS Green Chemistry Institute
11am-Noon, Online via Zoom, Free, [Registration required](#)
- Feb 9** **10 More Tips for Publishing in ACS Journals**
Sponsored by ACS Webinars, ACS on Campus, and ACS Publications
11am-Noon, Online via Zoom, Free, [Registration required](#)
- Feb 14** **Breaking Barriers in Science - IUPAC Global Women's Breakfast (#GWB2023)**
Sponsored by the International Union of Pure and Applied Chemistry
[Learn more](#)
- Feb 15** **No More Hidden Figures: Being Seen, Heard, and Influencing Chemistry as Black Women**
Sponsored by ACS Webinars and ACS Office of Diversity, Equity, Inclusion & Respect
11am-Noon, Online via Zoom, Free, [Registration required](#)
- Feb 15** **CAS SciFinder-n Live: What's New and Upcoming**
11am-Noon, Online via Zoom, Free, [Registration required](#)
- Feb 16** **Crossroads of Chemistry: Decisions, Opportunities and Finding your Path**
Sponsored by ACS Webinars and ACS Committee on Science
11am-Noon, Online via Zoom, Free, [Registration required](#)
- Feb 16** **Bacteriophages in Human Health and Disease**
Paul Bollyky, MD, PhD
Sponsored by Café Scientifique Silicon Valley
5:00-6:30pm, Online via Zoom, Free, [Registration required](#)
- Feb 16** **Persistent Micelle Templates for Single-Variable Series of Porous Nanomaterials**
Prof. Morgan Stefic, Chemistry and Biochemistry Dept., University of South Carolina
Sponsored by the Golden Gate Polymer Forum (GGPF)
6:30 PM Online via Zoom, [Registration required](#) (Registration deadline: Feb. 15 at 1pm)
- Feb 17** **What is a Chemical? Innovation in Chemical Descriptions**
Sponsored by International Union of Pure and Applied Chemistry (IUPAC)
8:00am-9:30am, Online via Zoom, Free, [Registration required](#) ([Learn more](#))
- Feb 24** **Mosher Award Winner Richard Zare Reception and Lecture**
Sponsored by Silicon Valley ACS
5:30-7pm Wine, hors d'oeuvres, and networking, 7pm-8pm lecture and award presentation. Stanford University Sapp Center for Science Teaching and Learning, 376 Lomita Drive (free parking after 4pm). View on [Stanford map \(shows visitor parking\)](#). View on [Google Maps](#)
\$20 regular, \$10 students (Cash-only, pay at the door). Photo ID required to drink wine. [Registration required](#). Registration deadline: Feb. 16 at noon.
- Feb 25** **Nonlinear Career Path: A New Normal and a Fun One**
Atefeh Taheri, Chevron and 2023 Chair for Cal ACS
Sponsored by California ACS Section Women Chemists Committee
10:30am-noon, Online via Zoom, Free, [Registration required](#)

- March 2023 and Beyond -

- Mar 1** **Left, Right or Straight Ahead? Making Smarter Decisions**
Sponsored by ACS Webinars and ACS Women Chemists Committee
11am-Noon, Online via Zoom, Free, [Registration required](#)
- Mar 16** **Bay Area Psychedelic Science Symposium**
Sponsored by Stanford University Wu Tsai Neurosciences Institute
9am-5pm, Stanford Neurosciences Building E241, Free, [Registration required](#)
- Mar 26-30** **ACS Spring National Meeting 2023, In-Person & Virtual**
Indianapolis, IN. [Learn more and register.](#)
- Apr 28** **21st Annual Bunnett Symposium**
UC Santa Cruz Department of Chemistry and Biochemistry
Featured lecturer Dr. John Warner, co-founder of the field of Green Chemistry
4pm. [Learn more](#)
- July 28-30** **Postdoc to Faculty Workshop**
Sponsored by ACS
Held in Chicago, Illinois ([Learn more and register](#))

Franklin Institute Medal 2023 Winners

The Franklin Institute Awards

“Now in its 199th year, *The Franklin Institute Awards* pay tribute to our namesake and America’s first citizen scientist, Benjamin Franklin, by honoring the greatest minds in science, engineering, and industry. Our newest laureates have made us safer, smarter, healthier, and more connected. Their work helps us understand the world around us, from the fastest chemical reactions to geologic time. They are mentors and role models for the next generation of trailblazers. They are creating a better future for us all.”



[Watch the video](#)

Call for nominations

Community College Teacher-Scholar Award

Deadline: March 1, 2023

The Silicon Valley ACS Teacher-Scholar Award honors community college faculty who demonstrate excellence in teaching, mentoring and scholarship or who make impactful contributions to their communities through outstanding leadership and service.

The annual SVACS Teacher-Scholar Award spotlights the impactful contribution that California community colleges make to furthering the future of chemistry by supporting our next generation of scientists. Almost 51 percent of graduates of the California State University system and 29 percent of the University of California system transferred from a California community college. The majority of these students come from economically disadvantaged backgrounds, for whom effective instruction is essential.

Initiated in 2008, the SVACS Teacher-Scholar Award was the first to offer an award specifically to community college science educators. The rarity of an award in this category and the abundance of qualified candidates catalyzed our expanding eligibility beyond our immediate region to include chemistry faculty from any of the 116 California community colleges. We are soliciting nominations through March 1, 2023 and encourage all readers to identify and nominate worthy community college faculty.

Further information can be found on the [SVACS Teacher-Scholar Award page](#).

The Franklin Institute Awards Class of 2023



[Visit the website](#)

Richard N. Zare, Ph.D. is the 2023 Benjamin Franklin Medal winner in Chemistry for fundamental studies of the dynamics of chemical reactions, including the development of techniques to observe molecules as they react.

International Chemistry Olympiad

Each year, high school students around the world compete in the *International Chemistry Olympiad*. This summer the competition will be held in Zurich and the US will send a team of 4 students. The rigorous selection process for US team members consists of multiple steps and the students are selected from across the country. The students in our Silicon Valley ACS section benefit from excellent schools and a vibrant science local community. And they are very smart! In past years, one or two students from our SVACS region have advanced to the Olympiad Study Camp and even to the International Chemistry Olympiad competition.



MARCH

Local Chemistry Olympiad Exams

The first step in USNCO, held each March. High school students can participate by contacting their ACS Local Section Coordinator. Coordinators choose nominees for the National Exam based on results of the local competition.



APRIL

National Chemistry Olympiad Exams

A three-part exam administered to more than 1,000 students each April. National Exams are often hosted by ACS Local Sections at local universities and colleges.



JUNE

Study Camp

The 20 top-scoring students from the National Exam spend two weeks at a Study Camp in June to undergo rigorous training. Based on their performance, four students are chosen to represent the U.S. at the International Chemistry Olympiad.

In the Silicon Valley section, the local exam will be given in 15 local high schools and an online option will be offered for all students who wish to participate. About 400 students in the Silicon Valley area are expected to take the local qualifying exam.

The National Exam consists of 3 different exams: a multiple choice exam, a problem solving exam and a laboratory practical. 1000 students across the US will take the National Exam and the top 20 students will be selected for the Study Camp.

Any high school student who is interested in taking the local exam should contact Natalie McClure (nmclure@drugregulatoryaffairs.com) to register for the local qualifying exam.

If any of you would like to challenge yourself, try taking the 2022 exam. The students who progress from the qualifying exam to the National Exam typically score over 90% on this qualifying exam. <https://www.acs.org/content/dam/acsorg/education/students/highschool/olympiad/pastexams/2022-usnco-local-exam.pdf>



Foothill College Science Learning Institute Summer Internship Program

The Science Learning Institute (SLI) at Foothill College is seeking internship placements for students in STEM disciplines for summer work-based learning and research experiences.

Program Overview

Foothill College is one of 116 California community colleges, located in Los Altos Hills. Foothill enrolls 16,000 students from nearby communities and beyond. The Science Learning Institute (SLI) seeks to advance equity in STEM at Foothill College in our surrounding communities by supporting students from underrepresented groups in STEM to pursue their academic and career goals.

Options

- Micro-Internship – best for a discrete research/ workplace project for a student who commits 6 – 7 hours per week for 9 or 10 weeks.
- STEM Internship – best for a workplace with a larger-scale project or set of responsibilities for a student who commits 15 – 20 hours per week for 9 or 10 weeks.

Mentor/ host applications must be submitted by Monday, 2/27/23 (rolling applications will be accepted before the deadline). SLI staff will reach out for short conversations to review expectations and to confirm interest. Students are then recruited and matches will be finalized by early May.

For more information, read this [program overview](#). **Apply now!** If you have questions, please contact Dr. Sophia Kim, SLI Director, at kimsophia@fhda.edu.



ACS Essentials of Lab Safety for Organic Chemistry

Help students gain a deeper understanding of laboratory hazards as they enter the organic chemistry lab.

“ACS Essentials of Lab Safety for Organic Chemistry is a 2-hour on-demand course that exposes students to a deeper understanding of general concepts in chemical safety before they perform experiments in the organic laboratory. It uses an inquiry-based teaching method and the RAMP framework : Recognize hazards, Assess risks, Minimize risks, and Prepare for emergencies. The course builds on what students learn from their general chemistry courses to prepare for the increased hazards in the organic chemistry lab. Explore the course outline or browse the other lab safety courses in the series.”

Get evaluator access for 30 days

ACS Scholars Program Accepting Applications



Deadline: March 1, 2023

“The *American Chemical Society (ACS) Scholars Program* awards renewable scholarships to undergraduate students from historically underrepresented groups who are majoring in chemistry-related disciplines and intending to pursue chemistry-related careers. Selected recipients are awarded up to \$5,000 per academic year. To date, more than 4,000 students have received funding from the ACS Scholars Program.

In addition to providing financial support, the ACS Scholars Program pairs students with academic and professional mentors, provides access to internship experiences and offers conference travel awards. *Scholarship applications will be accepted online at the ACS Scholars Program website through March 1, 2023, for the 2023-24 academic year.* There you can also find eligibility requirements, application advice and a webinar recording with important tips. For additional information, please send an email to scholars@acs.org.

Watch [this short video](#) to meet just a few of the thousands of ACS Scholars alumni who credit the program for helping them launch successful careers. The ACS Scholars Program is made possible by generous contributions from many corporations, foundations and individuals.”

Source: [ACS News Release, January 17, 2023](#)

Local Science Fairs in 2023

by Susan Hines

While chocolates and flowers are high on many people’s Valentine list, how a gift that keeps on 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 fully in person this year! The following science fairs need category awards judges, especially in the areas of botany, biology, chemistry, microbiology, and behavioral science. Other than the South Valley Science and Engineering Fair and Sciencepalooza!, all of them are qualifiers for Broadcom Masters, the California State Science Fair, and the International Science and Engineering Fair, ISEF.

Please contact me at svsefmgr@gmail.com to join our special award team of dedicated chemists for March 10, 2023 Synopsys Championship and/or the South Valley Science and Engineering Fair on May 4, 2023.

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

- San Mateo County Office of Education STEM Fair, March 4, 2023, virtual format, visit [website](#)
- Synopsys Championship: March 9-10, 2023, visit [website](#)
- Santa Cruz County STEAM Expo: March 11, 2023, visit [website](#)
- Golden Gate STEM Fair: March 13, 2023, hybrid format, visit [website](#)
- Alameda County Science and Engineering Fair: March 25, 2023, visit [website](#)
- Sciencepalooza!*: April 22, 2023, visit [website](#)
- South Valley Science and Engineering Fair*: May 4, 2023, visit [website](#)

*Many students at this competition are first time science fair participants and particularly benefit from your enthusiasm for science.

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 new members to the section, the Executive Committee offers new members a free dinner at a monthly SVACS seminar meeting. Come join us at our in-person dinner meetings! To register as our guest for an in-person dinner event, contact us directly to receive complimentary admission for you and a friend.

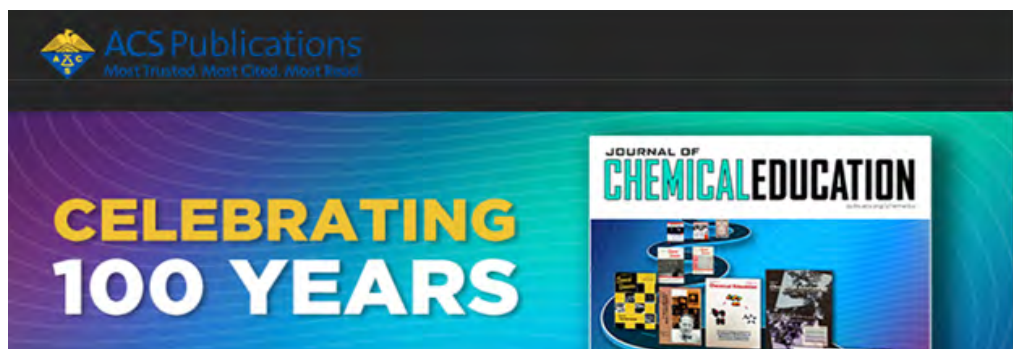
We hope you will also join us for an outreach event, like judging a science fair, proctoring the high school Chemistry Olympiad, or participating in a National Chemistry Week hands-on experiment event. The local section is a volunteer organization. Attend an event, volunteer to help, and get to know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

NEW ACS MEMBERS

Sarju Adhikari
Asia S. Anderson
Matteo Anicetti
Turna Barua
Denzil Bernard
Sarah Bolton
Nathan D. Burrows
Austen Casey
Michael Clarkson
Michael Euan Dalziel
Inna Diordieva
Brian Ferrer
Yuchong Gao
Angel Tonatiuh Garcia-Esparza
Leland Bruce Gee Jr
Yelena Gorlin
Fariah Haque
Anna Clare Krieger
Nadzeya Kukhta

Jordan K. Lampert
Hope Lee
Kathleen Lee
Jose L. Leighton Jr
Aaron Li
Irene Lim
Xiangping Lin
Pavan Kumar Mantravadi
Michelle Miranda
Adam Michael Murray
Anantha Venkataraman Nagarajan
Amit Nagarkar
Shyamal Nath
Lisa Oh
Mikiko Okumura
Carina S. Peritore
Elisa Pieri
Robert Pratt II

Michael Pun
Zhi Qiao
Weihua Qing
Angel L. Ramos
Olivia Sargent
Samaneh Sharifi Golru
Neha Sharma
Robyn Ann Snow
Lixin Sun
Brandon Taoka
Jack Tinsley
Lindong Weng
David James Wright
Qj Xiao
Yeyue Xiong
Jiansong Xu
Junghwa Yoo
Xuhao Zhou



"2023 marks the 100th volume of the *Journal of Chemical Education*. Since its founding, the *Journal of Chemical Education* has been recognized for its global influence on teaching and learning chemistry. The cover illustrates the long road from the first issue in 1924 to the present.

Over many years, the journal has served as a key source for curated works about the teaching and learning of chemistry – and these activities

continue apace as the 100th volume is reached. They have provided stability and also innovated and helped others innovate whenever change was needed. An editorial by current & past Editors-in-Chief introduces this milestone year for the journal. Read the anniversary issue celebrating 100 years of publication of the *Journal of Chemical Education*."

[Read the issue](#)



Inclusive Graduate Education Network Funding Opportunities

Deadline: March 15th, 2023, at 11:59 PM EDT



IGEN, the American Chemical Society (ACS), American Geophysical Union (AGU), and American Physical Society (APS) are partnering with higher education institutions to increase the number of physical science graduate degrees earned by Black, Latinx, American Indian, Pacific Islander, Alaskan Native and Native Hawaiian students who are U.S. citizens or permanent residents (some programs might consider students who are part of the DACA program).

Bridge Programs invite promising senior undergraduates and bachelor degree recipients in the physical sciences (astronomy, chemical engineering, chemistry, geoscience, physics, or closely related fields) to participate in one-to-two year transitional graduate programs or traditional graduate programs. Some transition programs are post-baccalaureate programs that provide research experience, advanced coursework, mentoring, and coaching to prepare a graduate

school application while others are direct entry to traditional graduate programs.

This application system will collect data necessary to be considered for graduate Bridge Programs that partner with IGEN, ACS, AGU, and APS. Learn additional details about eligibility and explore resources to help you complete the application at the [IGEN Bridge Program webpage](#).

Submit your portion of the application by March 15, 2023, allowing time for your recommendations to be submitted before the Review begins on March 22, 2023.

If you have any questions while you are completing your application content, please do not hesitate to contact IGEN's Bridge Program Application Support Team at BridgeApp@igenetwork.org. If you encounter technical difficulties with the application platform, please contact support@piestar.com.



Applications Invited for CSA Trust Grants for 2023

Deadline: April 14, 2023

The Chemical Structure Association (CSA) Trust is an internationally recognized organization established to promote the critical importance of chemical information to advances in chemical research. In support of its charter, the Trust has created a unique Grant Program and is now inviting the submission of grant applications for 2023.

Purpose of the Grants:

The Grant Program has been created to provide funding for the career development of young researchers who have demonstrated excellence in their education, research or development activities that are related to the systems and methods used to store, process and retrieve information about chemical structures, reactions and compounds. One or more Grants will be awarded annually up to a total combined maximum of ten thousand U.S. dollars (\$10,000). Grantees have the option of payments being made in U.S. dollars or in British Pounds equivalent to the U.S. dollar amount. Grants are awarded for specific purposes, and within one year each grantee is required to submit a brief written report detailing how the grant funds were allocated. Grantees are also requested to recognize the support of the Trust in any paper or presentation that is given because of that support.

Deadline for Applications:

Application deadline for 2023 Grant applications is April 14, 2023. Successful applicants will be notified no later than May 22, 2023.

View [full information](#) about applying for a CSA Trust Grant.

View [recent awardees](#) of CSA Trust Grants.

February is Black History Month African Americans in the Chemical Sciences

The achievements of African Americans who overcame great odds to pioneer important discoveries and developments in history are featured in several recent publications, *African American chemists: academia, industry, and social entrepreneurship* and *African American women chemists in the modern era*.

African American chemists: academia, industry, and social entrepreneurship by Sibrina Collins “highlights the contributions African Americans in the chemical sciences have made, despite racial and gender barriers. Their

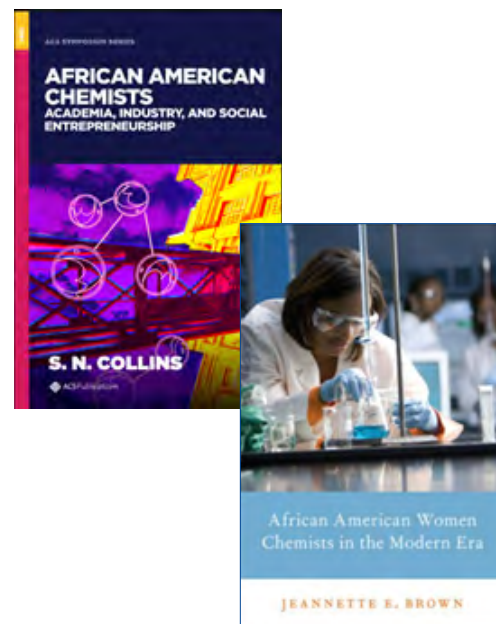
contributions are often overlooked in media, textbooks, and, consequently, the classroom. By highlighting biographical narratives of African American chemists, this work serves as a tool to address diversity, equity, and inclusion in the classroom and beyond, providing the next generation of chemists diverse examples of success.”

<https://doi.org/10.1021/bk-2021-1381>


African American women chemists in the modern era by Jeannette Brown “focuses on contemporary women who have benefited

from the Civil Rights Act and are now working as chemists or chemical engineers. This book was produced by taking the oral history of women who are leaders in their field and telling the world how they succeeded. They inspire women and minorities to pursue careers in the sciences, as evidenced by the successful career paths of the women that came before them.”

<https://doi.org/10.1093/oso/9780190615178.001.0001>

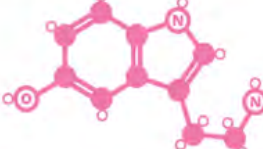


HAPPY VALENTINE'S DAY!




DOPAMINE

Levels of dopamine in the brain increase when you're in love, giving feelings of pleasure. People repeat behaviours that lead to dopamine release.



SEROTONIN

Studies have shown serotonin levels to be lower in people who are in love. They suggest these lower levels can lead to anxiety and obsession.



ADRENALINE

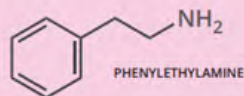
Adrenaline, along with noradrenaline, is produced in stressful or exciting situations. It increases heart rate, and contributes to the thrill of being in love.

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

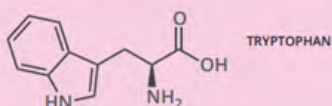
THE CHEMISTRY OF CHOCOLATE

IS CHOCOLATE AN APHRODISIAC?

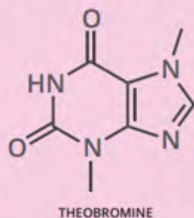


Phenylethylamine occurs naturally in the brain, and is often referred to as 'the love drug' due to its ability to produce feelings of well-being and contentment. It is also present in significant concentrations in chocolate, but since it is broken down after ingestion, it has been ruled out as causing a significant aphrodisiac effect.

Tryptophan is a chemical in the brain linked to the production of serotonin, the neurotransmitter that produces feelings of elation. It is present in chocolate, but only in small quantities, and it is unlikely that it causes any aphrodisiac effect.



WHY IS CHOCOLATE TOXIC TO DOGS?



Theobromine is a mild stimulant, similar in effect to caffeine, found in chocolate. This compound is harmless to humans at the levels found in chocolate - a fatal dose would require eating tens of kilograms of milk chocolate!

In cats & dogs, theobromine has a much more potent effect; small doses can lead to vomiting & diarrhoea, whilst as little as 50g of dark chocolate could kill a small dog.

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

More resources describing contributions by African Americans to the chemical sciences are on the ACS National website <https://www.acs.org/education/whatischemistry/african-americans-in-sciences.html>

Additional reading:

- [5 Black Chemists Who Made a Difference](#) (SVACS newsletter, February 2022, p. 5)
- [Celebrating February's Black History Month: A Brief List of Resources](#) (SVACS newsletter, February 2021, p. 4)
- [Celebrate Black History Month by Learning About the Achievements of Black Chemists](#) (ACS Axial, February 1, 2022).
- [C&EN's Trailblazers: We have been here all along](#) (C&EN, February 22, 2021)
- [Black chemists you should know about](#) (C&EN, February 27, 2019)
- [Catalyzing Chemists – African Americans in the Chemical Sciences](#) (Library of Congress, *Inside Adams Blog*, February 8, 2021)
- [The missing colours of chemistry](#) (Menon, B.R.K. The missing colours of chemistry. *Nat. Chem.* **13**, 101–106 (2021). <https://doi.org/10.1038/s41557-020-00632-8>)
- [Black History Month: Chemists' Powerful Stories & the Sociologist Who Studied Them](#) (*Absolutely Maybe PLOS Blog*, February 29, 2020)

Interesting and Cool Science in the News

2021 Graduate Enrollment in Science, Engineering, and Health Fields at All-Time High as Postdocs Continue to Decline (InfoBrief from NSF's National Center for Science and Engineering Statistics, January 17, 2023). View the data: **Survey of Graduate Students and Postdoctorates in Science and Engineering: Fall 2021**

ACS Publications announces open access initiative for primarily undergraduate institutions (ACS News Release, January 20, 2023)

Another step toward an insulin tablet (ACS News Release, January 9, 2023)

Are Household Contaminants Affecting Our Pets? (ACS Axial, January 24, 2023)

Beyond Beer—The Preventative Power of Hops (ACS Axial, January 18, 2023)

Black-sheep immune cells activated to eliminate tumors in laboratory mice (Stanford Medicine News, January 26, 2023)

ChatGPT is fun, but not an author (Science Magazine news, January 26, 2023)

ChatGPT listed as author on research papers: many scientists disapprove (Nature news, January 18, 2023). Also see: **Tools such as ChatGPT threaten transparent science; here are our ground rules for their use** (Nature editorial, January 24, 2023)

A Consumer Reports for AI Services (Stanford University Human-Centered Artificial Intelligence, January 9, 2023)

Electronic bridge allows rapid energy sharing between semiconductors (SLAC News, January 4, 2023)

Farewell to 'forever' – Destroying PFAS by grinding it up with a new additive (ACS News Release, January 23, 2023)

Hand washing fabrics reduces microplastic release compared with machine washing (ACS News Release, January 12, 2023)

How the Flu Moves (ACS Axial, January 25, 2023)

How habanero peppers respond to stress (ACS News Release, January 19, 2023)

How proteins on influenza viruses tilt, 'breathe' (video) (ACS News Release, January 25, 2023)

Innovation in sustainable fertilizer production (CAS Insights, January 27, 2023)

Keeping Surfaces Free of Snow and Ice (ACS Axial, January 6, 2023)

Lab Director Chi-Chang Kao reflects on the past decade as SLAC celebrates 60th anniversary (SLAC News, December 15, 2022)

Microplastics: tackling the invisible enemy (CAS Insights, January 13, 2023)

Nasal injections could treat long-term COVID-19-related smell loss (Stanford Medicine News, January 9, 2023)

New mosquito repellents that work better than DEET (ACS News Release, January 24, 2023)

The Next Steps for Wearable Devices (ACS Axial, January 27, 2023)

Phasing Out PFAS in Consumer Products (ACS Axial, January 17, 2023)

Preventing vehicle crashes by learning from insects (ACS News Release, January 17, 2023)

The rebirth of psychedelic medicine (Stanford University, Wu Tsai Neurosciences Institute, January 9, 2023)

Recent advances toward lowering carbon footprints (ACS News Release, January 9, 2023)

Stanford Medicine researchers measure thousands of molecules from a single drop of

blood (Stanford Medicine News, January 19, 2023)

Stanford Medicine scientists pinpoint COVID-19 virus's entry and exit ports inside our noses (Stanford Medicine News, January 5, 2023)

Stress hormone affects male, female mouse hearts differently (Futurity, January 23, 2023)

Top emerging trends in synthetic organic chemistry (CAS Insights, December 27, 2023)

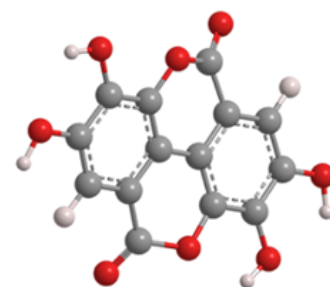
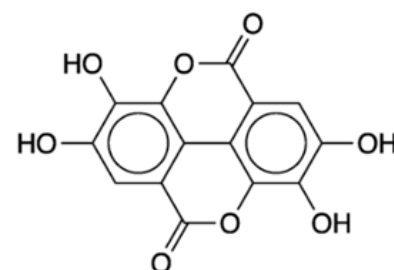
Toddlers Go Out of Their Way to Help Dogs (Futurity, January 20, 2023)

Top scientific breakthroughs and emerging trends from 2022 (CAS Insights, January 3, 2023)

CHEMISTRY

Quiz

Eating foods rich in me might reduce harmful gut bacteria. What molecule am I?



Answer



Exploring Different Kinds of Ice (video)

“There are somewhere between 20 and 74,963 forms of ice because water can do all kinds of weird stuff when it freezes. So far, scientists have experimentally determined the crystal structures for 19 types of ice. Or maybe 20, depending on who you ask. In this video, we’re going to charge through as many as we can in 10 minutes or so.” (Reactions Chemistry Science Video: Uncover the Chemistry in Everyday Life)

[Watch video](#)

What links litmus paper and lichens?

What is litmus and how is it made?

The litmus dye used in litmus paper is extracted from lichens. The compound orcein, obtained from some lichens, can be converted into dyes known as orcein by reaction with ammonia and oxygen. The same conversion, with the addition of calcium hydroxide, potassium carbonate and calcium sulfate produces litmus dye.

How does litmus work as an indicator?

The chromophore (colour-changing part of a molecule) of the litmus dye is 7-hydroxyphenoxazine. In acidic solutions, this structure gains a proton (hydrogen ion) and turns red. In alkaline solutions, the structure loses a proton and turns blue.

7-hydroxyphenoxazine chromophore

Orcein dyes

Litmus dye

Orcinol

Main polymeric component of litmus dye

Red Litmus (pH < 5)

Blue Litmus (pH > 8)

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