

# SILICON VALLEY CHEMIST



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## SVACS Welcomes You Back to In-person Dinner Meetings

### Nematode Pheromone Extracts as Boosters for Controlling Agricultural Pests in the Soil

Fatma Kaplan, PhD, CEO *Pheronym*

**Date:** Thursday, November 3, 2022.  
**Time:** 6pm Social Hour, 7pm Dinner, 8pm Seminar  
**Location:** Michael's at Shoreline, 2960 N. Shoreline Blvd., Mountain View, CA.  
 Seminar can be viewed online via Zoom.  
**Registration:** [Registration required](#)

#### Abstract:

Without pest control, farmers would lose 30-80% of their crops. Farmers have to control pests to feed the growing world population. Recently, Europe banned a huge number of pesticides, leaving farmers in need of eco-friendly pest control solutions. Farmers globally told us that they had limited tools for eco-friendly pest control. This is really close to my heart because my grandparents were farmers. I know how much pest control makes a difference in their harvest. During my postdoc, I discovered the first sex pheromone from a microscopic roundworm called a nematode. Pheromones are communication signals and have been used successfully to control insect pests above ground in the air. My



company, Pheronym, is developing pheromones to address the pest control problem. The pheromones we develop are water-soluble and can be used to control pests in the soil. We have two applications. First, we can use pheromones to influence beneficial nematodes that will feed on insect pests. Second, we can treat seeds with pheromones that will repel bad nematodes that attack plant roots. Since pheromones are effective at very low concentrations, our techniques have a very small footprint. Through our pheromones, we are creating a much-needed eco-friendly solution for farmers across the world.

#### Biography:

Dr. Fatma Kaplan is the co-founder and *CEO of Pheronym* and *Activate Berkeley Fellow & Berkeley Lab Affiliate Cyclotron Road Cohort 2021*. She is an entrepreneur and accomplished scientist with experience in both biology and chemistry. She has a Ph.D. in Plant Molecular and Cellular Biology and postdoctoral training in Natural Product Chemistry with a focus on isolating biologically active compounds. Dr. Kaplan discovered the first sex pheromone of the nematode *Caenorhabditis elegans* and published in *Nature* in 2008. Then she discovered that pheromones regulate other behaviors in both parasitic and beneficial nematodes. Dr. Kaplan conducted the *first agricultural biocontrol experiment in Space* at the International Space Station in 2020. She has very *high-impact*

## Chair's Message

Stephanie Benight

Happy Fall everyone! With Fall comes some exciting programming and events. The ACS Western Regional Meeting takes place this month in Las Vegas, October 19th – 22nd. The meeting spans many diverse topics in chemistry, with symposia on nuclear forensics and medicine, greenhouse gases, water contamination and treatment, quantum science, cannabis science, organic chemistry, polymer chemistry, and electrochemical energy storage. While the Call for



Abstracts is now closed, registration for the meeting remains open.

Locally, your very own SVACS Program Committee is hard at work putting together some exciting events with the aim to resume gathering in person! We have a hybrid event scheduled for November 3rd that includes a social hour, dinner, and talk at Michael's at Shoreline in Mountain View. It is also possible to attend the talk via Zoom.

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*Nematode Pheromone, continued from previous page*

**publications** and her dissertation was cited in **textbooks** within 5 years of publication. Dr. Kaplan worked as a scientist at NASA, the National Magnetic Field Laboratory and the US Department of Agriculture – Agricultural Research Service. Dr. Kaplan co-founded **Pheronym** to bring nematode pheromone technology to the market. Dr. Kaplan believes that nematode pheromone technology will provide effective, non-toxic pest control for farmers and gardeners.

*Chair's Message, continued from previous page*

See **this event page** for more details. Looking forward to November, the 3rd annual **Bay Area Chemistry Symposium** is taking place November 10, 2022. See the flyer and registration information in this month's newsletter.



National Chemistry Week (NCW) is October 16th – 21st! This year's theme is Fabulous Fibers: The Chemistry of Fabrics. **See our NCW events page** for local activities and for resources you can access from National ACS.

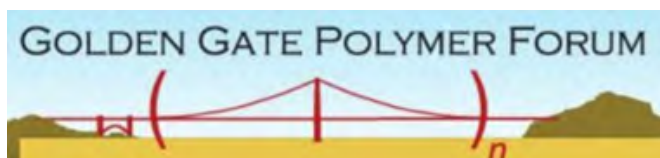


As always, should you have any feedback or questions, please don't hesitate to reach out to me at [chair@svacs.org](mailto:chair@svacs.org).

## National Chemistry Week 2022



**Learn more** about events and educational resources available from ACS.



## 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

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

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

## Silicon Valley ACS Teacher-Scholar Award Call for Nominations of Community College Educators

**Deadline: December 1, 2022**

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

Each year, the SVACS Teacher Scholar Award spotlights the incredible 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 comes from economically disadvantaged backgrounds, for whom effective instruction is most essential.

Initiated in 2008, the SVACS Teacher-Scholar Award of the Silicon Valley ACS section was the first to offer an award specifically to community college chemistry educators. Considering the

abundance of talent and rarity of this kind of award, we have now expanded the eligibility for this award beyond our immediate region to include chemistry faculty from any of the 116 California Community Colleges. We are soliciting nominations now through December 1 and encourage all readers to identify and nominate worthy community college faculty.

Further information can be found on our **SVACS Teacher-Scholar award page**.



# CALENDAR OF EVENTS

- October 2022 -

**Oct 5 Molecular Glues in Drug Discovery: Solutions that Stick for the Undruggable**

Philip Chamberlain, Co-Founder, President, and CEO of Neomorph;  
Dr. Benjamin Ebert, Chair, Medical Oncology, Dana-Farber Cancer  
Institute; Janet Sasso, Information Scientist at CAS

Sponsored by ACS Webinars and CAS

11am-Noon, Online via Zoom, Free, [Registration required](#)

**Oct 6 Navigating Questions About Reproductive Health When in the Lab**

Robin M. Izzo, Asst VP, Environmental Health and Safety, Princeton  
University; Dr. Rich Wittman, Clinical Assistant Professor of Medicine,  
Stanford Health Care; Katie McGeough, graduate student, Boston  
College School of Social Work

Sponsored by ACS Webinars, ACS Division of Chemical Health & Safety,  
ACS Committee on Chemical Safety

11am-Noon, Online via Zoom, Free, [Registration required](#)

**Oct 6 Charging Ahead: Batteries of the Future (SLAC Public Lecture)**

Prof. Yi Cui, SLAC, Stanford University

Sponsored by SLAC National Accelerator Laboratory

7:00-8:00pm, Hybrid event, Free, [Registration required](#) to attend in  
person (Panofsky Auditorium, SLAC) or watch live on [SLAC's  
YouTube page](#).

**Oct 13 Debunking Publishing Myths: 10 Tips for Publishing in ACS Journals**

Editor-in-Chief Thomas Holme, Journal of Chemical Education and  
Associate Editor Kelly Chibale, Journal of Medicinal Chemistry

Sponsored by ACS Webinars, ACS on Campus, and ACS Publications

11am-Noon, Online via Zoom, Free, [Registration required](#)

**Oct 13 ACS Silicon Valley Executive Committee Meeting**

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

**Oct 19 Step-by-Step Reaction Searching in CAS SciFinder-n Webinar**

Sponsored by CAS

Offered at 1am, 7am, and 1pm. Online via Zoom, Free,

[Registration required](#)

**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](#)

**Oct 20 Creating Psychedelic Analogs to Treat Neuropsychiatric Disease**

Prof. David Olson, Department of Chemistry, Department of  
Biochemistry & Molecular Medicine, UC Davis

Sponsored by ACS Webinars, ACS Publications, ACS Division of  
Medicinal Chemistry, and American Association of  
Pharmaceutical Scientists

11am-Noon, Online via Zoom, Free, [Registration required](#)

**Oct 27 Addressing Sustainability Challenges with Earth Abundant Metal Catalysis**

Paul Chirik, Edward S. Sanford Professor, Princeton University and  
Editor-in-Chief, Organometallics

Sponsored by ACS Webinars, ACS Office of Sustainable Development,  
Organometallics

11am-Noon, Online via Zoom, Free, [Registration required](#)

**Oct 27 Microporous and Degradable Polymers for a Sustainable Future**

Prof. Yan Xia, Department of Chemistry, Stanford University

Sponsored by the Golden Gate Polymer Forum (GGPF)

6:30-7:30pm, Online via Zoom, Free/\$5 donation, [Registration required](#)  
(Registration deadline: October 26th at 1pm)

- November 2022 & Beyond -

**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, Innovations Manager, UC San Diego

Sponsored by the Golden Gate Polymer Forum (GGPF)

Online via Zoom; regular registration \$250 (ends Oct 22 at 5pm);

late registration, if space is still available, \$300 (ends Oct 30 at 5pm)

[Learn more and register](#)

**Nov 3 Pheromone Extracts Control Soil Agricultural Pests**

Dr. Fatma Kaplan, CEO Pheronym

Sponsored by Silicon Valley ACS

6pm Social Hour, 7pm Dinner, 8pm Seminar

In-person and hybrid event: Michael's at Shoreline, 2960 N. Shoreline  
Blvd., Mountain View

For more details and required registration, see the article in this  
newsletter and the [SVACS webpage](#).

**Nov 10 3rd Annual 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, 2495 Bancroft Way Berkeley, CA

8am-5pm, [Learn more and register](#)

# BACS



BAY AREA CHEMISTRY SYMPOSIUM  
connecting industry + academia

an ACS  
sponsored  
event



Please join us for

The 3<sup>rd</sup> annual **Bay Area Chemistry Symposium**, an ACS sponsored symposium for Synthesis and Design in Medicinal & Process Chemistry



WHEN  
WHERE  
SUBMIT

Thursday, November 10<sup>th</sup>, 2022  
Pauley Ballroom, UC Berkeley  
Abstracts by Friday, Sept 30<sup>th</sup>

This symposium, unique in the Bay, will provide an ideal forum for students, postdocs, and industrial chemists to meet and exchange ideas covering themes in chemical biology, synthesis, and computational chemistry. The 2022 symposium will feature keynote seminars from leading local academics & industrial chemists, as well as short talks from students, postdocs, and industry researchers. A lively poster session promises a much-anticipated return to networking with local chemists through this opportunity to learn about cutting-edge chemistry across the Bay Area's outstanding institutions. Visit our website for more details!

## OUR 2022 KEYNOTE ACADEMIC SPEAKERS



Prof. Tom Maimone  
UC Berkeley



Prof. Annaliese Franz  
UC Davis



Prof. Ian Seiple  
UCSF

The BACS is generously  
supported by our

## INDUSTRY SPONSORS



For more information on sponsorship & registration, visit: [bayareachemistrysymposium.com](http://bayareachemistrysymposium.com)

# 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](mailto:r.viswanath@yahoo.com)

## Places of Interest

### University of Nevada, Las Vegas



### Zion National Park



### Hoover Dam



### Red Rock Canyon



### Atomic Testing Museum



# 2022 Election of SVACS Officers, Councilors, Alternate Councilors for 2023

Voting Period: October 21 to November 14, 2022

SVACS members will receive an email notification to cast their votes online. To help you be more informed when you receive this notification, a sample ballot is shown below. Biographies and candidate statements will be posted by October 15th on the [Silicon Valley Section's website](#).

Affiliate members may not participate in the election. Student members may vote and sign petitions, but they may not run for office.

#### How to petition to be on the ballot:

Prior to October 15, 2022 any member or affiliate of the Section may, in writing or from the floor at a meeting to conduct governance business, nominate additional candidates for office, provided that the candidates are members of the Section, and the nomination is seconded by another member or affiliate. Nominations shall

be equally valid as those from the Nomination Committee. All candidates nominated shall have indicated willingness to serve if elected. Written petitions can be sent to the Chair of the Nominations Committee, Natalie McClure, [nmclure@drugregulatoryaffairs.com](mailto:nmclure@drugregulatoryaffairs.com). You may also contact Natalie with questions.

A petition must include the following: name of the proposed candidate, the proposed position, and the name and ACS membership numbers for both the candidate and the person who is seconding the nomination. All petitions must be submitted by October 14, 2022, to the SVACS Secretary.

#### — Sample Ballot —

**Chair-Elect** (3-year commitment, will be Chair-elect 2023, Chair in 2024, and Immediate Past Chair in 2025) VOTE for ONE (1)

- Todd Eberspacher
- Write-in \_\_\_\_\_

#### Secretary (2-year term)

- Megan Tichy
- Write-in \_\_\_\_\_

#### Councilor (2 open positions for 3-year terms) VOTE for TWO (2)

- Madalyn Radlauer
- Ihab Darwish
- Write-in \_\_\_\_\_

#### Alternate Councilor (3 open positions: the three candidates with the most votes will fill the 3-year terms) VOTE for THREE (3)

- Amanda Nelson
- Kristin Schmidt
- Laura Yeager
- Tim Erdmann
- Write-in \_\_\_\_\_

## Paving the Path

Easing the transition from community college to a four-year university  
October 2022 - March 2023

Calling ...

*all students in chemistry and chemistry-related fields to be mentees*

&

*all community college graduates to serve as mentors*

The **Silicon Valley Section of the American Chemical Society** is sponsoring **Paving the Path** to support local community college students as they transfer to 4-year universities. Participants will receive:

- One-on-one mentoring from successful transfer students
  - Help with the transfer application
- Group forums on financial aid and course selection

This 2-part program is free and requires a time commitment of about 1-2 hours/week during both parts:

Part 1: Applying to Transfer, mid-October 2022 to early-December 2022

Part 2: Maximizing the Transfer Experience, February 2023 to March 2023

Application deadline: **October 11, 2022**

Questions about joining as a mentor or mentee? Reach out to us at [ptp@svacs.org](mailto:ptp@svacs.org)

Interested? **Mentors** ■ **Mentees** ■



**Paving the Path**  
Silicon Valley American Chemical Society

## In the News: Interesting and Cool Science

**Algorithm targets tumor's weakness to treat cancer** (Futurity, September 30, 2022)

**Bio-based Polymers: A Green Alternative to Traditional Plastics** (CAS Insights, September 22, 2022)

**Biosensor detects brain tumors with less than a drop of blood** (ACS Press Release, September 28, 2022)

**Celebrating with green, eye-catching sparklers** (video) (ACS Press Release, September 21, 2022)

**COVID-19 drives new research into smell loss** (ACS Press Release, September 28, 2022)

**Engineering an enzyme against antibiotic-resistant anthrax** (ACS Press Release, September 14, 2022)

**EV charging needs changing. Here's why.** (Stanford Engineering, September 23, 2022)

**Helping people breathe easy** (ACS Axial, September 20, 2022)

**Hot Topics in Chemistry: The Big Talking Points of the Summer** (ACS Axial, September 1, 2022)

**How old is that fingerprint?** (ACS Press Release, September 21, 2022)

**How to tell if that plastic bottle or bag has recycled material in it** (ACS Press Release, September 22, 2022)

**Large, tasty popcorn kernels with infrared cooking** (ACS Press Release, September 6, 2022)

**Mini Virtual Issues from Macromolecules** (ACS Axial, August 23, 2022)

**Molecular makeover makes wimpy antibody a SARS-CoV-2 tackler** (Scope, September 8, 2022)

**Nanoplastics can disrupt human liver, lung cells' processes in lab experiments** (ACS Press Release, September 15, 2022)

**New wearable device measures the changing size of tumors below the skin** (Stanford News, September 16, 2022)

**PFAS: A Look at Alternatives and Environmental Pollution** (ACS Axial, September 9, 2022)

**The rise of AI drug development technology** (CAS Insights, September 26, 2022)

**SARS-CoV-2 infects fat tissue, creates inflammatory storm cloud** (Stanford Medicine News, September 22, 2022)

**SARS-CoV-2 mimics could accelerate vaccine research, make it safer** (ACS Press Release, September 21, 2022)

**SARS-CoV-2 protein caught severing critical immunity pathway** (SLAC News, September 8, 2022)

**Shining light on why plastics turn yellow** (ACS Press Release, September 6, 2022)

**Sifting through cellular recycling centers** (Stanford News, September 21, 2022)

**Skin biopsy tech could offer super-fast results** (Futurity, September 30, 2022)

**Space Food for Artemis Has Real-World Applications** (CAS Insights, September 14, 2022)

**Stanford researchers construct most complex, complete synthetic microbiome** (Stanford News, September 6, 2022)

**Teaching Soft Skills Can Help Women Stay in Science and Tech Jobs** (Insights by Stanford Business, September 6, 2022)

**Tiny, caterpillar-like soft robot folds, rolls, grabs and degrades** (video) (ACS Press Release, September 14, 2022)

**Training a skilled technical workforce** (ACS Press Release, September 14, 2022)

**What makes the 'Appalachian truffle' taste and smell delicious** (ACS Press Release, September 8, 2022)

**White Teeth Without the Toothbrush** (ACS Axial, August 29, 2022)

**Wildfire smoke exposure hurts learning outcomes** (Stanford News, September 29, 2022)

**Wildfire smoke unraveling decades of air quality gains** (Stanford News, September 22, 2022)

**Your medical implant or food wrapper could someday be made of CBD** (ACS Press Release, September 28, 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 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 November 3rd dinner meeting! More details are available in this newsletter. 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.

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 October. 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

Sabrina Barata

Paul Beroza

Sophia Bessa

Harrison Besser

Marcel Beulen

Sean P. Brown

Carlos Cabrera

John Chan

Eugene L. Piatnitski Chekler

Zhi Cheng

Nathan Collins

Yi Cui

Gerald Gendall Fuller

Carlos Garcia Guerrero

Melia Hernandez

Xiaojun Huang

Mark Hurst

Richard A. Johnson

Christian Kim

Alexander Y. Kots

Siegfried S. Leung

Mike E. Lizarzaburu

Amanda Nelson

Marta Porwit

Gustavo Rios

Vidushi Sharma

Megan Shelby

Swarna Shikha

James Spudich

Ravi Srinivasan

Atsushi Takeshima

Julian A. Vigil

Bruce Wilcox

Yilei Wu

Feng Zhang

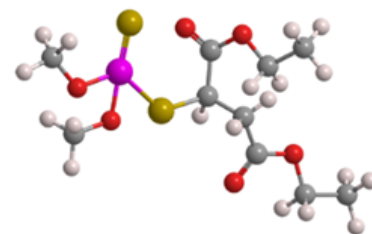
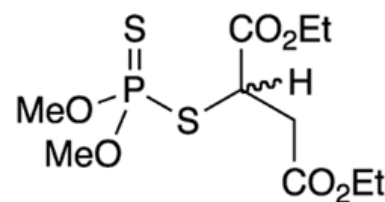
Marija Zoric

Dmitry Yu Zubarev

CHEMISTRY

# Quiz

I'm a 70-year-old pesticide.  
What molecule am I?



Answer

# Noteworthy News in Publishing and Innovation

**Announcing the launch of ACS Publications' Data Availability Statement pilot** (ACS Axial, September 14, 2022)

**ChemRxiv celebrates its fifth anniversary** (ACS Axial, August 18, 2022)

**Clarivate reveals Citation Laureates 2022** (Research Information, September 21, 2022)

**Digitization projects at Stanford Hopkins Marine Station library give researchers insight into the history of Monterey Bay** (Stanford Report, September 19, 2022)

**Finding patterns of success across 50 years of innovation** (Scope, Stanford Medicine, September 19, 2022)

**Historic Chemical Landmark designation for**

**HIV treatment that dramatically reduced AIDS deaths** (ACS Press Release, September 30, 2022)

**How ACS creates and supports trust in research: Part 1, Part 2, Part 3, Part 4, Part 5** (ACS Axial, September 19-23, 2022)

**Kodak and consumer photography earn Historic Chemical Landmark designation** (ACS Press Release, September 27, 2022)

**Menlo Park is home to the world's largest digital camera** (InMenlo, September 30, 2022)

**New 3D printing method designed by Stanford engineers promises faster printing with multiple materials** (Stanford News, September 28, 2022)

**NLM Collaborates with Publishers to Make Monkeypox-related Literature Immediately Accessible** (National Library of Medicine News, September 8, 2022)

**The Oligopoly's Shift to Open Access. How For-Profit Publishers Benefit from Article Processing Charges** (Zenodo, September 7, 2022)

**Publisher Blocks Access to Ebooks, Scrambling Fall Courses** (InsideHigherEd, September 28, 2022)

**Transforming together: 2022 ACS Publications journal metrics** (ACS Axial, July 7, 2022)

**Who'll Pay for Public Access to Federally Funded Research?** (InsideHigherEd, September 12, 2022)

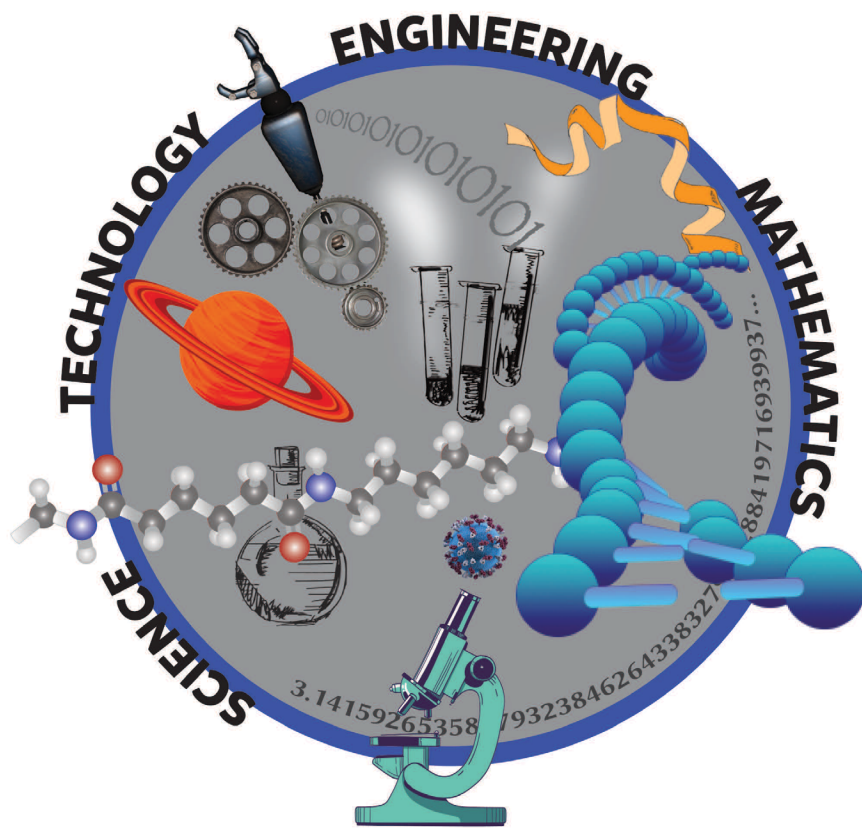


**ACS**  
Silicon Valley

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.**

## The Chemistry of Fires at the Wildland-Urban Interface

Published in 2022, this Consensus Study Report is available for free from the National Academies of Sciences, Engineering, and Medicine



“Wildfires in America are becoming larger, more frequent, and more destructive, driven by climate change and existing land management practices. Many of these fires occur at the wildland-urban interface (WUI), areas where development and wildland areas overlap and which are increasingly at risk of devastating fires as communities continue to expand into previously undeveloped areas. Unlike conventional wildfires, WUI fires are driven in part by burning of homes, cars, and other human-made structures, and in part by burning vegetation. The interaction of these two types of fires can lead to public health effects that are unique to WUI fires.”

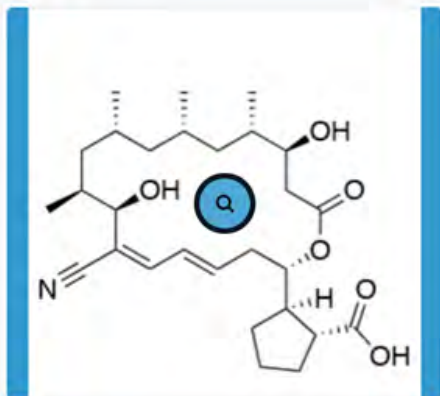
**Learn more:** view report highlights, interactive overview of report, download PDF, read online, or pre-order paperback.



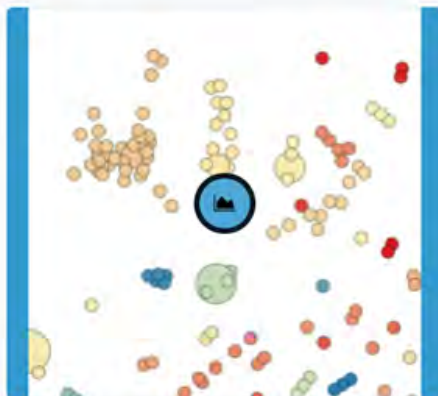
# The Natural Products Atlas

<https://www.npatlas.org/>

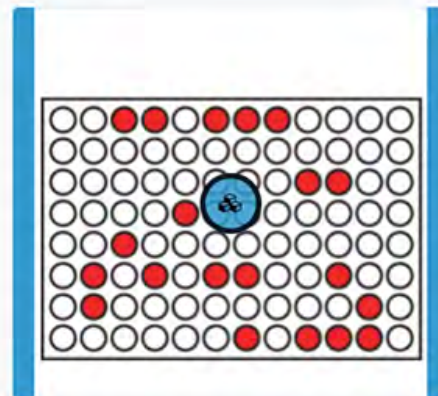
SEARCH



EXPLORE



DISCOVER



- **Coverage:** The Natural Products Atlas provides open access coverage of bacterial and fungal natural products, giving researchers the power to visualize the chemical diversity of the natural world.
- **Molecular Discovery:** Use the Natural Products Atlas to identify known molecules, explore structural series diversity, and place new discoveries in the context of existing scaffolds.
- **Networked Viewpoint:** The Natural Products Atlas provides unique tools for exploring natural products chemical space, offering perspective on the position that any molecule occupies.



## ACS Spring 2023 National Meeting Crossroads of Chemistry

March 26-30, 2023 Indianapolis, Indiana & Hybrid



The ACS Spring 2023 national meeting abstract submission window is now open. Abstract timeline:

- October 17, 2022: Abstract submission deadline
- December 2022: Presenters receive acceptance notices

[Learn more and submit an abstract](#)

## Why does salt change the taste of everything?

Reactions - Uncover the Chemistry in Everyday Life



"If your coffee is too bitter, add a pinch of salt. If your salad isn't sour enough, add a pinch of salt. If your beer is too bitter, add a pinch of salt. Salt has the seemingly magical ability to enhance good flavors and dampen bad ones. How does it do that???" [Learn more and watch video](#)

## Job Opportunity: Events Planner for Stanford Chemistry Department

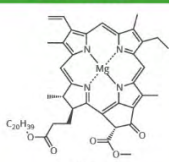


Join the Chemistry Department! We are looking for an Events Planner 1 to provide operational and administrative support to the Communications & Outreach team. A full-time position, the Events Planner 1 should be highly motivated, enthusiastic, well-organized, and able to work independently. This is an exciting and innovative opportunity to elevate high-impact events (hybrid) to support faculty and students in the department. [Learn more and apply](#)

# THE CHEMISTRY OF AUTUMN LEAF COLOURS



**CHLOROPHYLL**

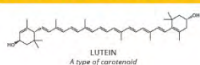


**CHLOROPHYLL A**  
A type of chlorin

Chlorophyll gives plant leaves their green colour. Plants require warm temperatures and sunlight to produce chlorophyll. In autumn, the amount produced begins to decrease, and existing chlorophyll is slowly broken down, diminishing the green colour of the leaves.

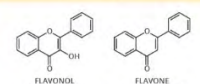


**CAROTENOIDS & FLAVONOIDS**



**LUTEIN**  
A type of carotenoid

Carotenoids and flavonoid pigments are always present in leaves, but as chlorophyll is broken down in the autumn their colours come to the fore. Xanthophylls, a subclass of carotenoids, are responsible for the yellow of autumn leaves. One of the major xanthophylls, lutein, is also the compound that contributes towards the yellow colour of egg yolks.

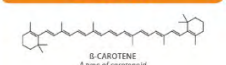


**FLAVONOL**  
(general structure)

**FLAVONE**  
(general structure)



**CAROTENOIDS**



**β-CAROTENE**  
A type of carotenoid

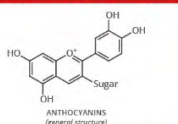
Carotenoids also contribute orange colours. Beta-carotene is one of the most common carotenoids in plants, and absorbs green and blue light strongly, reflecting red and yellow light and causing its orange appearance. It is also responsible for the orange colouration of carrots. Carotenoids in leaves start degrading at the same time as chlorophyll, but they do so at a much slower rate: some fallen leaves can still contain measurable amounts.



**VIOLAXANTHIN**  
A type of carotenoid

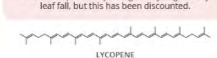


**ANTHOCYANINS & CAROTENOIDS**



**ANTHOCYANIN**  
(general structure)

Anthocyanin synthesis is kick-started by the onset of autumn. As sugar concentration in the leaves increases, sunlight initiates anthocyanin production. The purpose they serve isn't clear: it is suggested that they may play a light-protective role. It was previously thought they might delay leaf fall, but this has been discounted.



**LYCOPENE**  
A type of carotenoid



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