THE VORTEX

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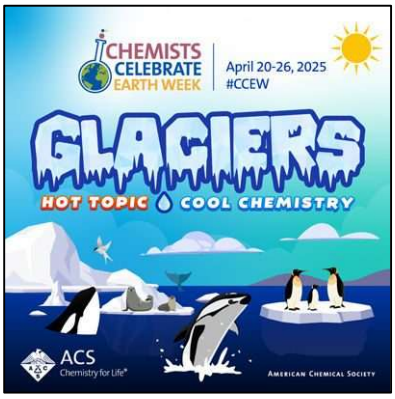

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MAGAZINE OF THE CALIFORNIA SECTION, AMERICAN CHEMICAL SOCIETY

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Cover Image Credits:

Upper right - Chemists Celebrate Earth Week Poster – Event poster
Center - Headshot Natalie McClure
Lower left - Snip of the C&EN Issue in March – https://cen.acs.org/magazine/all-issue.html
Lower right - Your're Fired – snip from https://www.snopes.com/fact-check/trump-fired-the-apprentice/

No Cost Job Listings

The California Section of the American Chemical Society would like to offer employers the opportunity to list job openings for chemists, chemical engineers and those in allied areas in our online publication, The VORTEX. We will list each opening for one month at no cost. Please limit the description of the job opening to about 500 words and submit them to the Editor of The VORTEX at Donald.maclean.acs@gmail.com.

Cal ACS Chair's Message

Alex Madonik

Your Councilors and other members of ACS national committees traveled to San Diego for the Spring meeting, and you can read our reports in this issue of the Vortex.

I don't have much to add here, except to suggest that you take a look at the 2025 version of the ACS Strategic Plan: https://www.acs.org/about/strategicplan.html

One change you'll notice is the phrase "inclusion and belonging" that is used to describe our professional community. We were assured by Wayne Jones, Chair of the ACS Board of Directors, that the goal is to stay true to our values.

One highlight of the San Diego meeting was presenting a poster featuring our 2024 activities at Sci-Mix, where we participated in the Local Section Showcase:

Student groups from UC Berkeley and Napa Valley College posed for photos with our poster, and we connected with leaders from other District VI sections. I hope to reprise this poster in Washington, DC at the ChemLuminary Awards in August.

Looking ahead, we hope you'll join us as we take hands-on science to two major festivals in April:

Saturday, April 12th, 2025 (10 a.m. – 5 p.m.) – Tri-Valley Innovation Fair – Pleasanton

Saturday, April 26th, 2025 (10 a.m. – 4 p.m.) – Earth Day Celebration – Martinez

Please check out the Cal ACS web calendar for more details.

Upcoming Events

- **Topic**: 2025 Chemistry Olympiad National Exam
  Date: Sat. April 5, 2025
  Time: NA (by invitation and qualification exam)
  Location: Las Positas College (Livermore)
  Section Lead: Eileen Nottoli
  Cost: NA

- **Topic**: Tri-Valley Innovation Fair
  Date: Sat. April 12, 2025
  Time: 10:00 am – 5:00 pm
  Location: Alameda County Fair Grounds (Pleasanton)
  Section Lead: Charles Gluchowski
  Cost: $15

- **Topic**: Expanding Your Horizons Sonoma County
  STEM For 7th and 8th grade girls, boys welcome
  Date: Sat. April 12, 2025
  Time: 8:30 am – 2:00 pm
  Location: Sonoma State University (Rohnert Park)
  Register: http://www.eyh-soco.org/2025/about.html
  Section Lead: Elaine Yamaguchi
  Cost: suggested donation $20

- **Topic:** Celebrate Earth Day with Cal ACS at the John Muir Historical Site
  Date: April 26, 2025
  Time: 10:00 am – 4:00 pm
  Location: John Muir Historical Site, 4202 Alhambra Ave, Martinez CA 94553
  Contact Person: Sheila Kanodia at calacsearthweek@gmail.com
  Cost: Free

- **Topic:** From the Laboratory to the Market Place: The Development of a New Drug
  Date: Saturday May 10, 2025
  Time: 10:30 am
  Location: Zoom
  Contact Person: Elain Yamaguchi at eyamaguchi08@gmail.com
  Cost: Free

2025 CCEW Illustrated Poem Contest

Glaciers: Hot Topic, Cool Chemistry!

The California Local Section of the American Chemical Society (ACS) is sponsoring an illustrated poem contest for students in kindergarten through 12th grade.

Contest Deadline: April 20th, 2025

Prizes: 1st prize in each category is a $25 gift certificate

Contact: Sushila Kanodia at calacsearthweek@gmail.com

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

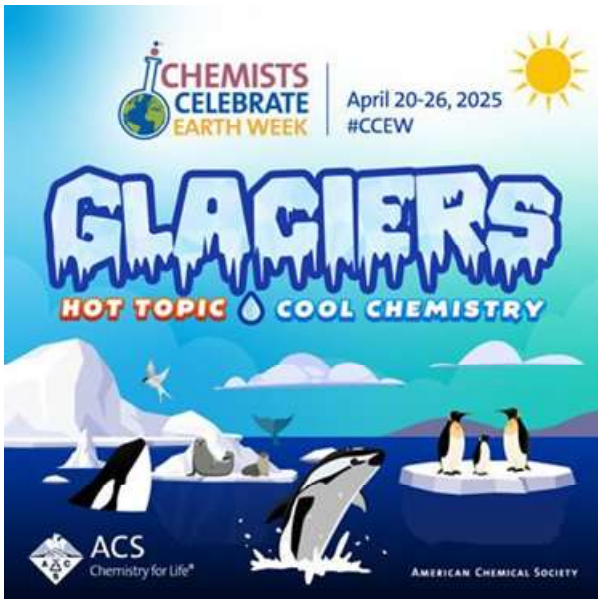
Write and illustrate a poem using the CCEW theme, **"Hot Topic, Cool Chemistry!"**

Your poem must be **no more** than 40 words and in the following styles to be considered:

HAIKU - LIMERICK - ODE - ABC POEM - FREE VERSE - END RHYME - BLANK VERSE

Possible topics related to the glacier theme include:

- Climate
- Drill
- Prism
- Ice Core
- Preservation
- Reservoir
- Fossil Fuels
- Drought

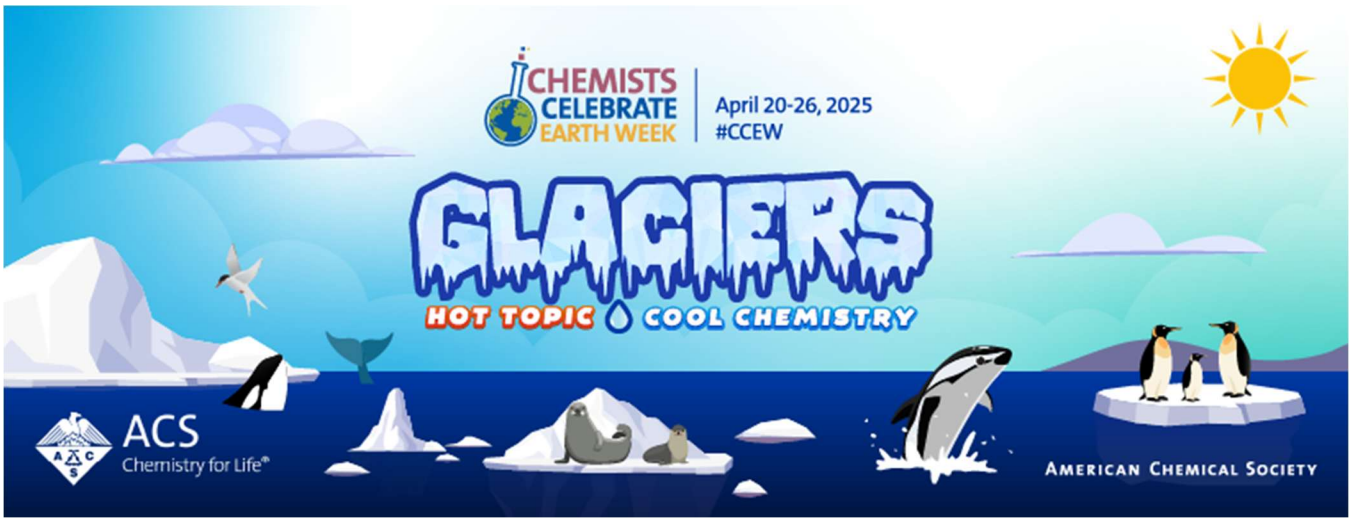


Entries will be judged based upon:

- Artistic Merit - use of color, quality of drawing, design, and layout
- Poem Message - fun, motivational and inspiring about the yearly theme
- Originality Creativity - unique, clever, and/or creative design
- Neatness - free of spelling and grammatical errors

Contest Rules

- All poems must be no more than 40 words, and in one of the following styles to be considered: Haiku, Limerick, Ode, ABC poem, Free verse, End rhyme, and Blank verse.
- Entries are judged based upon relevance to and incorporation of the CCEW theme, word choice and imagery, colorful artwork, adherence to poem style, originality and creativity, and overall presentation.
- All entries must be original works without aid from others. Poems may be submitted by hand on an unlined sheet of paper not larger than 11" by 14" or scanned and sent via email. Illustrations may be created using crayons, watercolors, other types of paint, colored pencils, or markers. The illustration may also be electronically created by using a digital painting and drawing app on a computer, tablet, or mobile device.
- The text of the poem should be easy-to-read and may be typed before the hand-drawn or digital illustration is added, or the poem may be written on lined paper, which is cut out and pasted onto the unlined paper with the illustration.
- No clipart or unoriginal images can be used.
- Only one entry per student will be accepted; all entries must include an entry form.
- If the illustration is created using a digital painting or drawing app, the name of the program must be included on the entry form (No AI).
- Acceptance of prizes constitutes consent to use winners' first name and last initial, along with the name of the ACS Local Section, on the ACS web pages and, in the magazine, Chemical & Engineering News



Celebrate Earth Day with the California Section at the John Muir National Historic Site in Martinez, CA. It is a free community event as Chemists Celebrate Earth Week to mark the importance of chemistry in everyday life! The event is an opportunity to learn about this year's CCEW theme,

Glaciers: Hot topics, Cool Chemistry, with exciting hands-on activities based on the theme.

Event Details:

- **Date:** Saturday, April 26th, 2025
- **Time:** 10:00 AM - 4:00 PM
- **Location:** John Muir National Historic Site, 4202 Alhambra Ave, Martinez, CA 94553

The event presents a fantastic opportunity for volunteering for Earth Day celebration at John Muir National Historic Site

The CA section is seeking enthusiastic students/chemists with an interest in **science, and environmental stewardship** to join us as volunteers for this special occasion. We are looking for **15 volunteers** to assist with various activities throughout the day. Volunteers will be engaged in hands-on activities, helping with interactive science demonstrations, and supporting environmental education efforts related to our theme for 2025 Glaciers: Hot Topic, Cool Chemistry. Volunteers can choose shifts ranging from **2 to 4 hours** and can pick a time that fits your schedule throughout the day from 10:00 AM to 4:00 PM.
This is a fantastic opportunity to gain **practical experience** in science and environmental education while celebrating Earth Day at a **historic national site**. Whether you're passionate about science, the environment, or simply looking to give back to the community, we'd love to have you on board!
To volunteer, please **sign up** by sending email to Sheila Kanodia or Alex Madonik at calacsearthweek@gmail.com] by April 14th.

For more information please visit https://calacs.org/outreach/earth-week/

Let's work together to make Earth Day 2025 a memorable and impactful experience for all!
Looking forward to seeing you there! 🌍

California Section
American Chemical Society

Women CHEMISTS Committee

All are welcome
Saturday, May 10, 2025

Title

From the Laboratory to the Market Place: The Development of a New Drug

Time
10:30 – 11:00 am
Chatting

11:00 am
Talk and Discussion

Reservation
Please visit the CalACS website www.calacs.org to register for this meeting or use Brown Paper Tickets.

RSVP here!

Please register before Thursday, May 8, 2025, 12 noon. Your email address is needed to send the ZOOM link, which will be shared with attendees on or before the day of the event via Brown Paper Tickets.

Cost
Free!

About the Speaker

Natalie McClure, PhD

Natalie McClure is a regulatory affairs consultant with extensive experience in drug development, regulatory affairs and quality assurance. She obtained a BS in Chemistry from the University of Michigan in 1974 followed by a PhD in Organic Chemistry from Stanford University in 1979. She started her career at Syntex Research, working in the process development laboratories on new synthetic approaches to prostaglandin and large-scale peptide synthesis and then changed career direction to drug regulatory affairs. Over the past 40 years, she has worked at several different companies, big and small, as an individual contributor and executive, and helped get over 6 drugs approved for marketing. She has filed more than 50 INDs (Investigational New Drugs), orphan drug applications and conducted many pre-IND meetings with the FDA. Natalie is an instructor at St Mary's University and the UC Berkeley Extension program offering several courses in drug development and regulatory affairs. Natalie is also very active in the American Chemical Society serving as chair and councilor of the Silicon Valley local section.

Abstract

Drug development requires a delicate balance between innovation, efficacy, safety, and regulatory compliance. This talk will explore the multifaceted process of bringing a new drug from the laboratory to the market, focusing on the critical role of regulatory affairs in ensuring patient safety and product quality. We will examine the key stages of drug development, including pre-clinical studies, clinical trials, and risk-benefit analysis. We will also discuss how to interpret the package insert. We will discuss how drug developers can work with the FDA to bring the new drug to the market.

Questions?

Please contact Elaine Yamaguchi at eyamaguchi08@gmail.com

Editor Note:
C&EN Issues Continual Shrinkage Notice and the Move to Electronic Only

In the 70's there was a term "stagflation" combining the worst of two economic phenomena, stagnation and inflation. In the 80's the make it bigger phenomena with "do you want fries with that?" and supersizing were the rage. Journals became more common with more contributors doing review articles that in the past would not pass the review standard. Around 2008 we saw ice cream containers going from ½ gallon (2 quarts) to 1.5 quarts. Then during Covid the term, "shrinkflation" really came into the lexicon. We are all familiar with shrinkflation with candy bars, chips, and ice cream. Well magazines are also going through shrinkage at a time when writing is easier and the switch to electronic format has cut costs. C&EN has notified me (via March 17th email from Nick Ishmael-Perkins) that the weekly print magazine will become a monthly print magazine starting in August 2025. This trend of spreading out the print issues is quite common. A lot of magazines, newsletters, and books have gone digital only and, if you are lucky, you get a newsletter, or magazine with higher fees or some type of membership restructure. One of our newsletter editors has indicated that the Bay Area used to have 3 sections of tech writers, which now has just 1 section, and it is on life support. What happened?

What is interesting is that during my time as a book editor and contributor in the mid-teens, the electronic version cost more to produce than the print version. The reason was that the print version was made first then had to be converted to the web format (i.e., ACS Reagent Chemicals, 11th edition, 2016). Today that cost idiosyncrasy is not the case as the electronic version is the first version produced and more and more the only version produced. USP (United States Pharmacopeia) went electronic with a concurrent electronic and print versions with the print version taking priority over the electronic version (last physical printing in 2020 being the official version). Today the electronic version is the official document version with 2 yearly electronic supplement issues. The print version is still available as the yearly first issue only (May), but it is treated as the informational-only version if there is a documentation conflict with the electronic version. You can still buy the yearly print version, but not with the 2 supplements.[1]

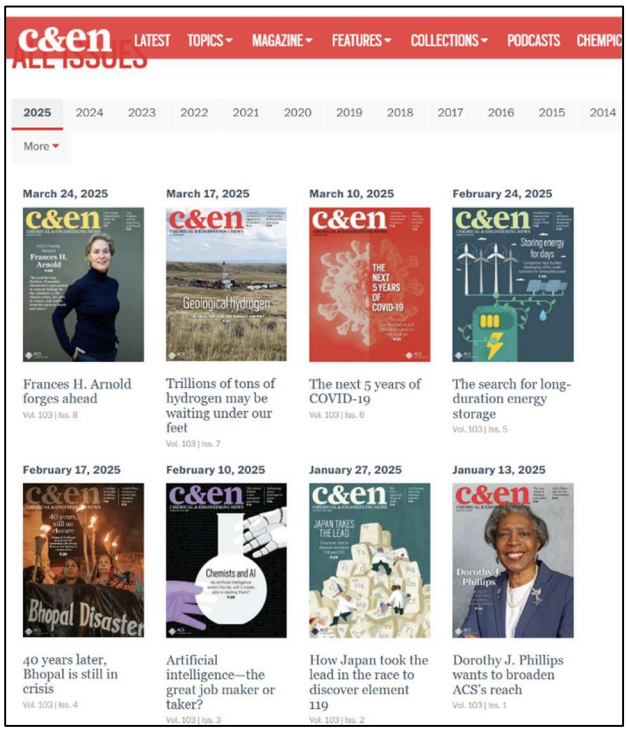


Figure 1. Snip and Clip for the 2025 Chemistry and Engineering News Issues. Source: https://cen.acs.org/magazine/all-issue.html

In 2026 the European Pharmacopoeia (Pharm Eur) will go strictly electronic. There is a print version available, but that is for those of us who are expert committee members and want something on our bookshelves with our name somewhere in it indicating we have contributed to the issue.

How does this connect to the Vortex? The Vortex has gone through changes just as the section has. In 2016 each issue of The Vortex cost about $3000 to print and to bulk mail. Through most of The Vortex life, the production and shipping cost was offset by advertisements. Prior to my takeover, advertisement disappeared with the traditional local chemistry jobs fading

away and, of course, electronic webpages. In 2020 we went mostly digital with a small number of hard copies for advertisers and old folks wanting the print version. The cost was about $950 per issue for printing and regular postage for the few that went out in the mail. The Vortex went 100% digital in 2022 when I took over. Digital issues save a lot on postage and printing costs and it makes the newsletter more size and content flexible. Another item to note is the content contributors loss through attrition, even though writing has become so much easier to do. It is much harder to get a non-biased topic writer today than in the past. In searching for an image to use for this issue's cover I ran into a comment about CEN editorial changes that will focus more on ACS events and less on industrial events.[2] What is funny is this is what occurred with another organization that I belonged to. This is a complaint members who leave the society have, indicating the society has become less focused on industry workers and more on WOKE and self-promotion, whether it is for a company service or product, for selective coverage on issues that matter to some, and less on technical topics.

It is not just The Vortex that has faced this cost and contributor issues. I belonged to another organization who dealt with this by taking a monthly issue and turning it into quarterly issue. The usual contributors disappeared. They then went completely digital which for me made reading the issue less likely as it was buried in my email rather than something on my table to read ad lib. There was a call for content editors which I joined. This allowed for a small monthly digital issue. What I noticed was that there was an uneven topic contribution, focusing on AI and topics based on company publicity. Calling for content editors was a temporary fix as the editors dropped out. That organization then raised dues and provided even less original material, relying on commercial vendors for articles and webinars. I dropped out.

The Vortex has two of us who are willing to work to make contributions beyond an event we are leading. We have made changes but are having a difficult time keeping content fresh and diverse enough.

Have you noticed that C&EN is now sporadic (not the five issues for March 2025)? February had 3, January had 2, December had 2, and November had 3 issues (See Figure 1). I thought the post was screwing with me.

References:

1. United States Pharmacopeia 2020 (USP 43) Online - Web of Pharma, https://www.webofpharma.com/2021/11/united-states-pharmacopeia-online.html
2. Jamie Durrani, Community voices concerns over American Chemical Society magazine, https://www.chemistryworld.com/news/community-voices-concerns-over-american-chemical-society-magazine/4016716.article, 20 December 2022.

Donald Maclean, editor The Vortex newsletter.

Layoffs Dominate News – Tale of Two Cities

Donald MacLean

Three big events since the summer are: egg prices are up, Trump is back, and layoffs keep coming. Prior to the summer break, I wrote a local section membership status update showing a 6 - 10% decline per year since 2019. Up to 2019, our membership numbers were almost flat at 3500 members. At the end of my summary, I put in a request for comments on why people were dropping out. One thing that struck me was the request for a local layoffs list. I was hesitant at first as layoffs are viewed negatively. I decided to list companies with their mission, and the public reason for their layoffs via the Warn Act database and local media. The WARN (Worker Adjustment and Retraining Notification) Act does not apply to full-time federal and state employees. The news media has focused on the federal probational employees losing their jobs by email notification. Probational period might be 3 months or 6 months, but what is interesting is the definition of federal probational employee is anyone who started a position and those who were promoted within the last 2 years.

What is the WARN Act?

The Worker Adjustment and Retraining Notification (WARN) Act helps ensure advance notice in cases of qualified plant closings and mass layoffs. For California, a federal and a state version (enacted in 1988 and 2002, respectively) exist. Not every state has their own WARN Act. There are a lot of details. In brief,

Employees protected by the WARN Act include:

1. Employer Size and Employee Status
   a. Federal WARN: employers with 100 or more employees, not counting those who have worked fewer than six months in the last twelve-month work period, or those who work an average of less than 20 hours a week. [1]
   b. California WARN: employers with 75 or more employees, and if 50 or more employees are affected. [2]
2. Employee
   a. managers, supervisors, hourly wage, and salaried workers.

Employees unprotected by the WARN Act include:

1. Workers participating in strike actions or workers who have been locked out in a labor dispute;
2. Workers employed on temporary projects or the work facilities of the business who clearly understand the temporary nature of the work when hired;
3. Business partners, consultants, and contract employees assigned to the closing business, but who have a separate employment relationship with another, second employer and who are paid by that other, second employer, and those business partners, consultants, and contract employees who are self-employed; and
4. Regular federal, state, local, and federally recognized Indian tribal government employees. Unsure if this applies to the California WARN Act.

There is a 60 Day Advanced notice requirement if the employer and employee qualify in the above description with exceptions:

1. Faltering company
2. Unforeseeable business circumstances
3. Natural disasters
4. Bankruptcy

One thing to note here is that WARN only applies to medium and large employers. So many startups will never be covered by WARN Act.

Sources where information can be located

Sources for layoffs include Chemistry and Engineering News (C&EN), but C&EN notes worldwide business news rather than our local area. The local newspaper does focus on layoffs, as well as the internet. The one problem with the internet as the news source is that it can have a delay when the event happens and when it is posted. The newspaper tends to focus on big name employers and those that are WARN databases. Some of these used to be high flying Biotech companies like Bayer (Berkeley), Genentech (SF, Vacaville), BioMarin (Novato, San Rafael, Brisbane), and Sangamo Therapeutics (Richmond, Brisbane). Other well-known WARN Notices include: Athletics Investment Group LLC (the Oakland A's, July 2024), Vintage Wine Group (Napa, July 2024), Intel Corporation (Oct 2024), Amy's Kitchen (Petaluma, Santa Rosa, Oct 2024), Bio-Rad (Feb 2025), Charles Shaw wine, known as "Two Buck Chuck" (Ceres, Feb 2025).

Individual Areas

Tables 1 to 3 list the Biotech companies with layoffs and their stated reasons from Q1 2025 going back to Q3 2024. Table 4 lists selected local companies that did not have layoffs in that period, and or had multiple layoffs within the last 3 years. Take the reason with a grain of salt, as no company is going to say mismanagement, product recall, or cannot sell the product that they developed or manufactured. I noted that there are no seasonal reasons that you would see with agriculture, and sport seasons. One thing to note is that there was a big push with gene and cell therapy in the last 10 years. Q1 2025 has seen a disproportionate number of gene and cell therapy layoffs. A good chuck of the layoffs involving the Wild West gold rush into those two areas that saw major surprises in disappointing sales, insurance reimbursement, cost of goods (COG), and some cases, safety. Locally BioMarin's gene therapy product for FVIII hemophilia has been a financial drain, and the same target is also responsible for Bayer's layoffs.

Table 1A. First Quarter (March) 2025 Biotech Layoffs in the California, Silicon Valley, and Sacramento Sections.

Month	Company (Location) Workforce (Number) affected Product / Idea / Mission Reason provided
Mar	Nkarta, Inc (S SF) 34% of workforce (53 employees) Develop cell therapies based on Natural Killer Cells Divert funding to its lead candidate
	Vaxart, Inc. (S SF) 10% workforce (Est 11) Oral vaccines Stop COVID-19 vaccine pill trial
	Cargo Therapeutics, Inc (San Mateo) 90% of workforce (Follow-up to Jan) Cell therapy Suspending development of its allogeneic platform and dropping development line
	Sutro Biopharma, Inc (S SF and San Carlos) 50% of workforce (65 employees) Clinical stage drug discovery, development, and manufacturing with ADC (Antibody Drug Conjugates). Deprioritize mAb product one product for another in development
	Gilead (Foster City) 7% of workforce (104 employees) Kite Pharma CAR-T (Chimeric Antigen Receptor T-Cell therapy) Restructure
	ALX Oncology (Richmond) 30% of workforce (had 89 employees) more trials of CD47 blocker Redirect finances
	BMS (Redwood City) (57 employees) Tumor microenvironment Close site and move to Brisbane

Table 1B First Quarter 2025 (Jan and Feb) Biotech Layoffs in the California, Silicon Valley, and Sacramento Sections. [3]	
Month	Company (Location) Workforce (Number) affected Product / Idea / Mission Reason provided
Feb	Spotlight Therapeutics (Hayward) (32 employees) CRISPR-based Closed - Low preclinical transcription
	Encoded Therapeutics (S SF) 29% of workforce Gene therapy To fund a trial
	Third Harmonic Bio, Inc (SF) 50% of workforce (about 25 of 51 people employed) KIT inhibition of mast cells Reevaluate, Drug safety?
	Frontier Medicines (S SF) unknown Proteome to small-molecule interventions against undruggable targets Refocuses resources
	Bio-Rad (Hercules) 5% workforce (> 100 employees) Supplies and equipment Financial losses
Jan	Cargo Therapeutics, Inc (San Mateo) 50% workforce Cell therapy Weak durability and serious side effects (See Mar 2025 bankruptcy)
	Allakos Inc (San Carlos) 75% workforce (had total 131 employees?) Therapeutic antibodies Antibody clinical trial failures
	IGM Biosciences, Inc (Mountain View) 73% workforce (144 employees) Antibody for rheumatoid arthritis and lupus Halting antibody studies
	CytomX Therapeutics, Inc (S SF) 40% of workforce (45 employees) ADC (antibody-drug conjugate) for cancer treatment Conserve cash.
	Scribe Therapeutics (Alameda) 20% of workforce CRISPR Refocus resources

Table 2. Fourth Quarter 2024 Biotech Layoffs in the California, Silicon Valley, and Sacramento Sections. [4, 5]	
Month	Company (Location) Workforce (Number) affected Product / Idea / Mission Reason provided
Dec	AmplifyBio (S SF) Preclinical contract research organization and manufacturing service provider Closing the R & D site
	Vincerx Pharma, Inc (Palo Alto) (43 employees as of Dec 2023) Hematologic and solid tumors Acquired then reverses merger
Nov	23andMe (S SF 31 employes and SJ 122 employees) Personal genomics Discontinuing new therapies [bankruptcy Mar 2025]
	Kronos Bio, Inc (San Mateo) 83% of workforce of 62 employees Novel therapies for cancer and autoimmune diseases Discontinue clinical-stage compound
	Alector, Inc (South SF) 17% of workforce (41 employees) Therapeutics for Neurodegenerative Disease Phase 2 drug failure

Table 3. Third Quarter 2024 Biotech Layoffs in the California, Silicon Valley, and Sacramento Sections.	
Month	Company (Location) Workforce (Number) affected Product / Idea / Mission Reason provided
Sep + Aug	Astellas Gene Therapies, Inc (S SF) 10 + 7 employees Gene Therapies Wind down manufacturing facility
Aug	Cepheid (Sunnyvale + Fremont) 626 + 11 employees Manufactures molecular diagnostic tests Consolidate manufacturing activities
	FibroGen, Inc (SF) 75% of workforce (127 employees) Delivery cancer treatments Mothball last product
	Genentech, Inc (S SF) 250 + 93 employees Move manufacturing to other locations
	Lykos Therapeutics (San Jose) 75% of workforce (75 employees) Psychedelics to catalyze therapeutic approaches Publication retraction
	AN2 Therapeutics, Inc (Menlo Park) 50% of workforce (20 employees) Boron Chemistry Disappointing phase trial
	Vir Biotechnology, Inc (SF) 25% of workforce (140 employees) AI and antibody design Phasing out programs in influenza, Covid-19 and T-cell based viral vector
July 2024	Caribou Biosciences, Inc (Berkeley) 12% of workforce (21 employees) allogeneic (or off-the-shelf) CAR-T cell therapy Discontinued preclinical development of allogeneic CAR-NK therapies

Table 4. Other High Profile Biotech Layoffs in the California, Silicon Valley, and Sacramento Sections before Q3 2024.	
Month	Company (Location) Workforce (Number) affected Product / Idea / Mission Reason provided
Jan 2023	Bayer (Berkeley) (55 employees) FVIII protein, Antibody, Cell therapy 1. Second and third generation product competition 2. Monsanto's Round Up liability
Jan 2023 Nov 2023	Sangamo Therapeutics, Inc (Richmond / Brisbane) 27% workforce (120 employees) + 40% workforce (162 employees) Genomics and Cell Therapy Partnership disbanded
Aug 22, 23, 24	BioMarin Inc (San Rafael / Brisbane, May 2024, Aug 2023)175 and 225 employees Genomics medicine Product market approved, sales not meeting expectations

Changes in how things operate create unforeseen issues:

Table 5 has some non-biotech examples. The biggest threat to the local economy was the financial banks failures. The federal FDIC stepped in to guarantee full deposit amounts, beyond the stated $250,000 limit to prevent a regional recession.

I recommend reading how local community colleges are funded. Most community colleges in financial trouble are in high income areas. This is not what one would expect.

The AI revolution has turned on Chegg's business operations. Chegg is now suing Goggle and depends on Goggle search engine to direct searchers to Chegg.

The once high-flying solar panel industry has taken a hit with a new net metering tariff forced onto homeowners by PUC effective April 15, 2023. The net metering tariff has reduced solar panels demand. As a matter of fact, too much solar electricity production under the old scheme is responsible for new tariff rates.

Legalized Marijuana has not been kind to the businesses that jumped into the Wild West medical / recreational marijuana business. Many are complaining about the high taxes, and lack of banking services. There are also jobs that deal with testing marijuana and setting specifications that are in jeopardy as the illegal trade has benefited from the legalization without providing the financial windfall support to government coffers, and gives unfair advantage to those that skirt the law.

Table 5. Other High Profile Non-Biotech Layoffs or other Issues in the California, Silicon Valley, and Sacramento Sections.	
Area	Company (location) Workforce (Number) affected Product / Idea / Mission Reason provided
Financial	Silicon Valley Bank (Santa Clara, Mar 2023) Banking for Start-ups Causality of anti-inflationary policy, bank run.
	First Republic Bank (San Francisco, Mar 2023) Banking for Start-ups Causality of anti-inflationary policy
Education	Sonoma State University (Rohnert Park, ongoing) $24 million financial shortfall – numbers not stated for the sciences, but physics and geology majors eliminated with geology department eliminated. 38 % decline in attendance since 2015. [13, 14]
	Local Community colleges – unknown number. State Funding criteria focus on student family income, number of Pell Grant recipients, and ethnicity as a formula to funding amount. [15, 16]
	Chegg (Santa Clara, Nov 2024) 23% of workforce (440 employees) AI-driven study assistance for students AI competition [17]
Government	Federal Employees – to be determined.
Energy	Universal Hydrogen (Hawthorne, June 2024) Aircraft Fuel Failed to secure funding.
	Cuberg (San Leandro, August 2024?) Lithium Metal Battery R & D
	SunPower Corporation (Richmond, July 2024, bankruptcy Sep 2024) - (290 layoffs) Solar High debt with interest rates and net metering changes in California.
	Chevron (San Ramon, Aug 2024) (600 employees) Oil Refinery Layoffs with headquarters move to Houston
Food	SCiFi Foods (San Leandro, June 2024) Meat from plant-based materials, Cost of goods and public acceptance
	Wildbrine (Santa Rosa, Nov 2024) 100% of workforce (137 employees) Vegan option Plant closure
Instrument	Lyncean Technologies, Inc (Fremont) (20 employees) Develop a compact X-ray source, spin-off from the SLAC National Accelerator Laboratory and Stanford University
Cannabis	Various Marijuana products Taxes, robbery, burglary, regulation, too much competition, especially illegal sourced.

References:

1. Wikipedia: https://en.wikipedia.org/wiki/Worker_Adjustment_and_Retraining_Notification_Act_of_1988
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Review of the WCC 2025 Winter Meeting
"DNA-Mineral Interactions at the Molecular Level"
Presented By Dr. Karina Sand
By: Janet Schunk

Introduction

On Saturday, 08 Feb 2025, the California Women's Chemist Committee (WCC) gathered online for their first meeting of 2025. Our guest speaker was Karina Krarup Sand, PhD, an Associate Professor at the Globe Institute, Faculty of Health and Medical Sciences, at the University of Copenhagen. Yes, that is right . . . our speaker was presenting from Denmark, a nine hour time difference from California. Dr Sand's work embodies a unique integration of geochemistry, microbiology, and evolutionary biology. She is doing pioneering work by studying the parameters of bio-mineral interactions at the molecular level that look at DNA preservation in sediments and how these sediments can hold gene archives of bacteria. Her work explores how mineral surfaces link sedimentary processes to bacterial evolution, as well as providing explanations for observed dissemination of antibiotic resistance genes in our environment.

One of my first questions when Elaine Yamaguchi, co-leader of WCC, asked me to write up our meeting, was where/how did Elaine find our speaker, who would be presenting from Denmark? Well, Elaine did answer that question without being asked at the start of the meeting. It happened that an article in C&EN (C&EN, 2024, 102(14) pp. 26-27, May 6, 2024) caught Elaine's attention, *C&EN talks with Karina Sand, Molecular biogeochemist*. There were several points in the article that caught Elaine's attention: 1) Dr. Sand was collaborating with a group of scientists in Greenland who were studying the biome of Greenland; 2) Dr. Sand's group was able to sequence the DNA found and it turned out to be two million years old!; 3) Dr. Sand's group also was looking at antibiotic resistance evolution through DNA interaction with mineral surfaces; and 4) Surface interactions (tribology) was what Elaine worked on when she was employed at Chevron. So, Elaine sent Dr. Sand an email asking if she would be interested in presenting her work at one of our WCC meetings. Dr. Sand responded she would, and here we are.

The title of Dr. Sand's talk was, *DNA-mineral interactions at the molecular level: Implications for bacterial evolution and ecological inference*.

Summary of Presentation

This review will highlight a few key points from Dr. Sand's presentation. I do encourage you to view Dr. Sand's complete talk on the WCC YouTube channel, where you can see graphs, charts, and SEM photos to get a better sense of her team's studies and findings. Here is the link to the recording of the presentation. https://tinyurl.com/yc4s67e5

Concept of Horizontal Gene Transfer (HGT):

We typically think of Tree of Life, where gene transfer is vertical, passed down from one generation to the next. In Horizontal Gene Transfer, the DNA of one organism is left behind on a surface where another organism comes along to pick up and acquire that trait without either organism dying or reproducing to pass along the trait.

Thus, DNA is able to be preserved on mineral surfaces, and these minerals are transported through the sedimentary pathway of aqueous solutions. If one was to examine the top 10 cm of the ocean floor, one would find that there is 0.5 giga-tons of extracellular sediment. It is this concept, bacterial evolution occurring through HGT, that has directed Dr. Sand's research for the last 8+ years.

HGT also supports the propagation of antibiotic resistance genes, in which bacteria will incorporate those genes that they find beneficial to their survival. More about this to follow.

A Bit About DNA-Mineral Interaction:

The DNA on a mineral surface is not static, but rather is similar to Brownian motion.

The structure and elements of the minerals – calcite ($CaCO_3$), quartz (SiO_2), hematite (Fe_2O_3), goethite (α-FeO(OH)) -- define the surface properties and charges by which the DNA backbone, which is negatively charged at pH greater than 2, interacts with the mineral surfaces and edges. For example, in a pH environment of 5 to 8, silicates will be negatively charged, and carbonates and oxides will be positively charged. In a negatively charged environment, a cation bridge will be needed between negatively charged DNA and negatively charged mineral.

Questions that Dr. Sand's group is exploring are which minerals stabilize DNA and why. Factors that go into the stabilization are: 1) composition, 2) surface charge, 3) surface structure, 4) surface area, and 5) active sites of the mineral. Current studies are occurring with 'clean' minerals, meaning, their test environment is not yet representative of the natural environment, where there would be contributions from adsorbed organics.

Studying Biodiversity between Sedimentary Layers:

By studying the extracellular DNA (exDNA) in the various sedimentary layers, we can make ecological inferences.

Looking at the mineralogy makeup of the ocean floor, the majority of the deposits are quartz (SiO_2), followed by feldspar ($KAlSi_3O_8$ – $NaAlSi_3O_8$ – $CaAl_2Si_2O_8$), then clay (7%)(See editor notes), diopside ($MgCaSi_2O_6$), and tremolite ($Ca_2(Mg_{5.0\text{-}4.5}Fe^{2+}_{0.0\text{-}0.5})Si_8O_{22}(OH)_2$). However, even though clay only accounts for 7% of the sedimentary layer of the ocean floor, clay adsorbs much more DNA than the other layers. Thus, there is still a lot of DNA left behind in these layers, requiring adjustment to extraction protocols in order to recover eDNA from these other sedimentary layers.

Dr. Sand suggests that other areas the exDNA community should pay attention to besides sampling and extraction procedures are: 1) lithologies, 2) interfacial geochemistry, 3) dispositional environments, and 4) sediment provenance.

A Bit about Bacterial Evolution:

A question that needs to be asked is, 'do mineral surface properties play a role for transformation frequencies?' The answer is Yes. Minerals with a high number of active sites and favorable electrostatics show a lower rate of transfer.

Negatively charged minerals are quicker to incorporate DNA. Thus, modern microbes can incorporate ancient DNA. Therefore, gene transfer is occurring across the scale of time and space.

Key conclusion points of bacterial evolution:

- There are large amounts of DNA associated with sediments.
- It is easy to incorporate fragmented DNA into a genome, due to HGT.
- Mixing of modern microbes and ancient DNA can represent a pathway for gene transfer across a scale of time and space, unrivaled by any other avenues.
- Mineral-facilitated HGT provides a mechanism for rapid adaptations.
- Facilitators of evolutionary innovation include interfacial geochemical and sedimentologic processes.

But the biggest take away of bacterial evolution is that all it takes is one transformation event to occur, then followed by the fast process of cell division and cell sharing to amplify a new trait that is needed for survival.

Implications to Antibiotic Resistance:

How to apply this information to the study of antibiotic-resistance? Studies were conducted to look at the propagation of antibiotic-resistant genes (ARg). First, the group looked at gene transformation rates in the presence of various minerals. When no minerals were present, only DNA, the outcome was a high degree of gene transformation in the presence of antibiotics, as compared to no antibiotics being present. This showed that the presence of antibiotics is a gene trait driver.

Next, the group conducted cell death studies. They realized in order to compare cell death outcomes to the outcomes from the prior transformation studies, they needed to take into account both the surface area and charge density of the minerals, rather than just the mass of the minerals added since smaller size minerals will have increased surface area. What they found was that positively charged minerals had more surface area and more charges, which resulted in lower transformation frequencies. Meaning, the bacteria struggled to continue functioning.

Lastly, they looked at the amplification efficiency of the antibiotic-resistant gene with the various minerals when in the presence of antibiotics for 3 hours and 24 hours vs. the presence of no antibiotics for the same time periods (i.e. 3-hours, 24-hours). What they found was that there was more amplification of the antibiotic-resistant gene after 24 hours in the presence of antibiotics, except for quartz.

What do these studies tell us? Based on the discovery of HGT, the propagation of antibiotic-resistant genes (ARg) has the following implications, especially after being in the presence of antibiotics for 24 hours:

- ARg can survive on mineral surfaces.
- Any surface can allow for genetic transformation.
- Any surface can allow biofilm formation, despite initial cell death.
- Amplification is accelerated on surfaces with a killing effect.
- Transformation and amplification are reduced when there is no antibiotic pressure (present).

Bottom line to mitigate antibiotic resistance is to stop adding antibiotic resistant genes and antibiotics to our ecosystems.

Reference to C&EN article: https://pubs.acs.org/doi/full/10.1021/cen-10214-feature3#

Editor Notes:

I added the chemical formula for minerals. The statement with the clay materials absorb eDNA brings a question. Why? The DNA (as the nucleotide) has a phosphate backbone. Phosphate binds with calcium and magnesium strongly. This negates the need for a cation bridge between DNA and the negative sediment. Interestingly the vast majority contain calcium or magnesium, unlike non clays mineral mentioned.

Talc - $Mg_3Si_4O_{10}(OH)_2$

Pyrophyllite - $Al_2Si_4O_{10}(OH)_2$

Kaolinite - $Al_2Si_2O_5(OH)_4$

Vermiculite - $(Mg,Fe^{2+},Fe^{3+})_3[(Al,Si)_4O_{10}](OH)_2 \cdot 4H_2O$

Illite - $(K,H_3O)(Al,Mg,Fe)_2(Si,Al)_4O_{10}[(OH)_2,(H_2O)]$

Chlorites - $(Mg,Fe)_3(Si,Al)_4O_{10}(OH)_2 \cdot (Mg,Fe)_3(OH)_6$

Montmorillonite - $(Na,Ca)_{0.33}(Al,Mg)_2(Si_4O_{10})(OH)_2 \cdot nH_2O$

Cal ACS at the Fall ACS Meeting in San Diego

Compiled by Alex Madonik (Councilor and 2025 Section Chair)

Seven of the eight Cal ACS Councilors attended this meeting in person, along with several other members of the Executive Committee including former ACS President Marinda Wu. Councilor Mariana Alves is traveling with her family but planned to attend the Council meeting virtually. As always, San Diego offered great weather, excellent dining options, and many opportunities for sightseeing. Let me add that we have open positions for Alternate Councilor right now, and I encourage anyone who might be interested in serving as a Councilor/Alternate Councilor to contact me or Michael Cheng so that we can include you on our next election ballot in the fall.

This report contains key items from the official Councilor Talking Points, as well as personal reports from our Councilors and other representatives on their activities in San Diego. Note that Cal ACS is committed to fully reimbursing reasonable travel expenses for Councilors and other members of National ACS committees. ACS National in turn reimburses the Section for Councilor travel at a fixed rate ($2000 per councilor); travel by non-Councilor committee members is reimbursed at a lower rate.

Councilor Talking Points: Summary of Governance Issues and Actions

The Council meeting opened with a tribute to the late Attila Pavlath, former ACS President (2001) and former California Section Chair (1978, 1995, 2006)

Actions of the Council

Election Results:

Candidates for President-Elect, 2026 [note that this year's candidates feature industrial experience]:

The Committee on Nominations and Elections (N&E) presented to the Council the following *nominees* for selection as *candidates* for President-Elect, 2026:

- **Christina Bodurow (Indiana Section; retired from Eli Lilly)**
- **Dawn Mason (North Carolina Section; North Carolina State University, Assistant Vice Chancellor, Partnerships, 2024-present; Eastman Chemical Company, Director, Corporate Innovation Excellence, 2024)**
- **Sheila Murphy (Division of Cellulose and Renewable Materials; Jacksonville Section; Retired, Ashland Specialty Ingredients)**
- **John Warner (Northeastern Section; Technology Greenhouse, LLC, President and CEO)**

By electronic ballot, the Council selected **Christina Bodurow and Dawn Mason as candidates for 2026 President-Elect.** These two candidates will join any additional candidates selected via petitions to stand for election in the fall 2025 national election.

[Note: The four candidates participated in a Townhall meeting hosted by N&E on Sunday afternoon, which I missed; they had two minutes each to introduce themselves at the Council Meeting. A word to anyone preparing for a job interview: first impressions matter, and Christina and Dawn nailed it. I've known and admired Sheila and John for years, but there was no question in my mind that Dawn and Christina made the strongest presentations.]

Candidates for Directors-at-Large

The Committee on Nominations and Elections announced the selection of the following candidates for **Director-at-Large** for the 2026-2028 term: **Anna Cavinato, Donna Friedman, Malika Jeffries-EL, and Will Lynch.** The election of two Directors-at-Large from among these four candidates and any selected via petition will be conducted in the fall. Ballots will be distributed to the Council in the fall.

[Note: The California Section is part of District VI, currently represented on the ACS Board of Directors by Jeanette Van Emon; her term continues through 2026]

Other Council Actions:

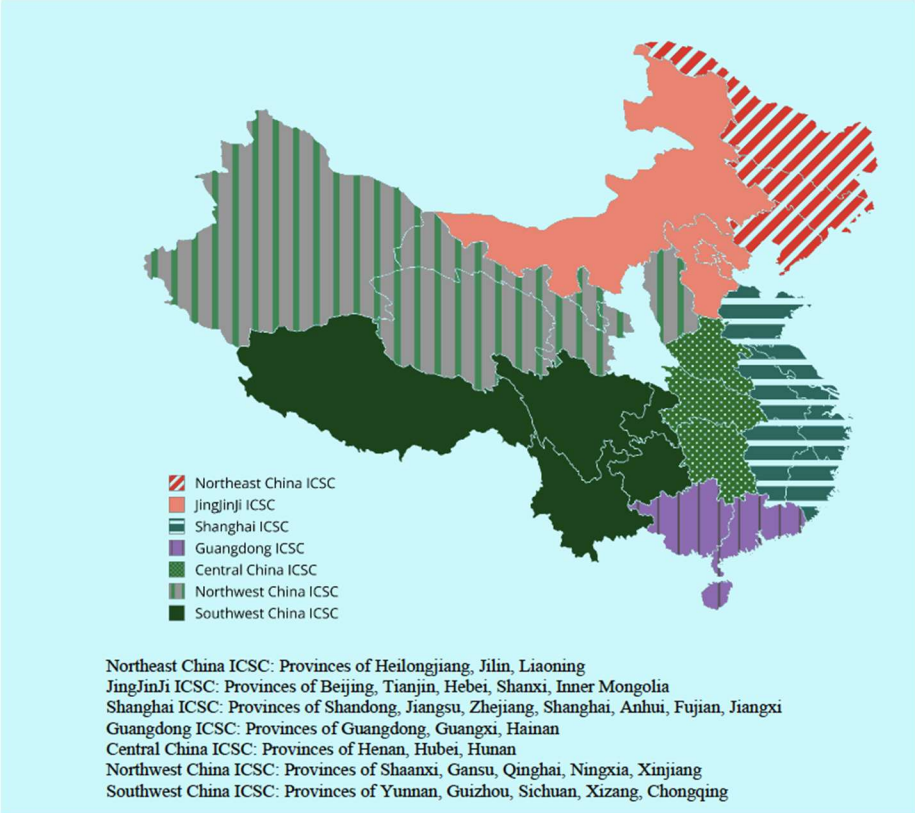
Highlights from Committee Reports and Key Actions

- The Committee on Committees (ConC) will be bringing some proposed actions and changes before Council this fall based on the data from the external review conducted by the outside consultant McKinley Advisors. As reported last fall, ConC formed a small working group to look at forming a committee to support and recognize LGBTQ+ chemistry professionals and their allies. This working group met on November 15-16 in Washington, DC and drafted a proposed mission, vision, and charter for the establishment of the Committee on the Advancement of LGBTQ+ Chemists (CALC).

[Note: Formal action on the establishment of CALC will occur at the Fall Council meeting, but this item was discussed at length, following its introduction by ACS Immediate-Past-President Judy Giordan. Some speakers complained of “silos” while the ConC Chair (Brian Mathes) sees each ACS community as a “pillar” of strength. Cal ACS Councilor Fanny Frausto had the last word, speaking from her own experience as a Hispanic lesbian and former undocumented immigrant.]

- On the recommendation of the Committee on Committees (ConC), Council voted [Yes 405 (99.26%) / No 3 (0.74%)] to continue the Committee on Chemical Technical Professionals and, subject to the concurrence of the ACS Board of Directors, the Committees on Budget & Finance, Education, International Activities, and Patents and Related Matters.
- On the recommendation of ConC, and with the concurrence of the Council Policy Committee (CPC), Council voted [Yes 403 (99.26%) / No 3 (0.74%)] to amend the duties of the Committee on Patents and Related Matters (CPRM) and change its name to the Committee on Intellectual Property (CIP), subject to the concurrence of the ACS Board of Directors. This change reflects the committee’s mission and vision statements, which refer to “intellectual property” generally rather than elevating patents above other forms of intellectual property.
- ConC announced the opening of the committee preference form to all ACS members began on March 3 and will run through July 3. Councilors interested in serving on an ACS Committee in 2026 should go to CMTE.acs.org to complete their preferences.
- On the recommendation of the Committee on Nominations and Elections (N&E), and with the concurrence of the CPC, Council voted [Yes 374 (95.90%) / No 16 (4.10%)] in favor of increasing the number of Councilors on N&E to 19, subject to the concurrence of the ACS Board of Directors. These additional committee members will support the increased workload from the addition of six Zone Councilor slates to N&E’s duties.

- On the recommendation of the Committee on International Activities (IAC), Council voted to approve the creation of new International Chemical Sciences Chapters in Ghana [Yes 383 (96.96%) / No 12 (3.04%)], Ecuador [Yes 389 (97.98%) / No 8 (2.02%)], and Northeast China [Yes 357 (89.70%) / No 41 (10.30%)], subject to the concurrence of the ACS Board of Directors.



  [Note: There was some passionate discussion about approving the Northeast China Chapter as the seventh International Chapter in China, and the question of approving the three new International Chapters was divided into three separate votes after a motion from the floor. Concerns about the PRC's human rights record were balanced with the desire to build relations with Chinese scientists.]

- On the recommendation of the Committee on Local Section Activities (LSAC), Council voted [Yes 372 (97.13%) / No 11 (2.87%)] to dissolve the Penn/Ohio Border Local Section. This takes effect on January 1, 2026, and members are being contacted about joining neighboring sections.
- On the recommendation of the Committee on Membership Affairs (MAC), Council voted [Yes 359 (95.48%) / No 17 (4.52%)] to approve the 2026 Schedule of Dues and Benefits, subject to the concurrence of the ACS Board of Directors.
- The Committee on Constitution and Bylaws (C&B) reported the certification of 21 unit bylaws since the fall 2024 meeting. They include 14 Local Sections, three Divisions, and four International Chemical Sciences Chapters.
- The Committee on Economic and Professional Affairs (CEPA) reported on the state of the evolving employment landscape for the chemistry enterprise. ACS Careers programs have seen continued growth and remain a valuable resource for members experiencing career transitions. The updated Professional Employment Guidelines will be up for action at the fall Council meeting. Councilors are encouraged to reach out to CEPA@acs.org for more information on the draft guidelines.
- The Committee on Education (SOCED) reported on their continued efforts to advance chemistry education for all. The ACS Policy Statement on Science Education is

currently under revision and the revised *ACS Guidelines and Recommendations for Teaching Middle and High School Chemistry* will be available soon for the upcoming academic year.

Actions of the Board of Directors - Executive Session

The ACS Board of Directors met in Executive Session on March 21-22, 2025, in San Diego, CA. The Board considered several key strategic issues and responded with numerous actions. The meeting opened with a reflection on Inclusion and Belonging.

Board Actions

Upon the recommendation of the Editor Search Committee, the Board voted to approve the appointment of an Editor-in-Chief of the journal ACS Earth and Space Chemistry. The appointment will be announced after the individual has been notified and appropriate arrangements for their service have been made.

Upon recommendation of the Society Committee on Publications, the Board voted to approve the reappointment of several ACS journal editors. The reappointments will be announced after the individuals have been notified and appropriate arrangements for their continued service have been made.

Upon recommendation of the Board Committee on Professional and Member Relations, the Board voted to approve a screened list of nominees for the 2026 Award for Volunteer Service to the ACS.

Upon recommendation of the Board Committee on Professional and Member Relations, the Board voted to approve a screened list of nominees for the 2026 Priestley Medal. The Board received an extensive briefing and approved several recommendations from the Committee on Executive Compensation. The compensation of the Society's executive staff continues to be reviewed regularly by the Board.

The Board approved minutes from the Board Executive Session on December 6-7, 2024, and ratified interim Board actions to approve member appointments for the Board Committee on Executive Compensation for the 2025-2027 term.

Board Discussions

The Board Chair, Wayne Jones, facilitated a discussion about opportunities to increase efficiency and agility and modernize Board operations while ensuring the Society's long-term strategic success. The discussion focused on an ongoing review of the Board's standing committee structure. He also provided an opportunity for the Board to discuss themes emerging from feedback Board members have received from the ACS member community.

The CEO, Albert Horvath, facilitated a strategic discussion with the Board on a new approach to increase ACS impact through philanthropy.

Reports

The CEO, Albert Horvath, and his staff, reported on organizational updates, financials and audit result, the 150th anniversary of ACS, rebranding efforts, talent management and other ACS activities. He shared the strong performance of ACS in 2024 and growth across many areas. He highlighted:

- Strengthening and deepening engagement with our global community
- Holding virtual annual member gathering, allowing our global members from Southeast Asia, the Middle East, Africa, and Latin America to connect and learn about ACS activities, member benefits, region specific programs, and career-related sessions

- Increasing the global reach of our ACS journals across all key regions by 24 percent as compared the prior year
- Publishing through our more than 90 journals, over 74,000 peer reviewed articles, a 15 percent increase from 2023 - Delivering 346 million article downloads, up 13 percent over 2023.
- Releasing the CAS BioFinder platform, marking an expansion of CAS products into the life sciences sector

The presidential succession shared updates with the Board on their significant activities and initiatives on behalf of the Society and its members.

The Committee on Budget and Finance Chair, Natalie LaFranzo, reported on the strong financial position of the organization.

The Committee on Public Affairs and Public Relations Chair, Carolyn Ribes, provided an update on plans for the Board to visit with legislators in June to advocate for science.

The Committee on Strategic Planning Chair, Will Lynch, assembled a working group of directors to shape the June Board meeting strategic discussion topic.

The Committee on Professional and Member Relations Chair, Katherine Lee, brought recommendations forward to the Board.

The Governing Board for Publishing provided updates from the Presidents of ACS Publications and CAS, including the full launch of BioFinder in 2025.

Written reports were reviewed from the 2024 CEO Initiative Fund, General Counsel, Human Resources, Treasurer, and the Committees on Chemical Safety, Education, International Activities, Minority Affairs, Publications, Senior Chemists, Strategic Planning, and Women Chemists.

California Section Councilor Reports

Bryan Balazs (Councilor) - Membership Affairs Committee:

MAC met on Sunday March 23rd at the Spring National Meeting in San Diego, and we continued our analysis of the trends in membership, in particular the implications of low retention rates amongst certain demographic groups. While long-standing ACS members tend to renew their membership, the retention amongst younger members and those who have recently joined the ACS is not where we would like it to be. Currently, there are about 100,000 Members in the ACS, 2500 Society Affiliates, and over 130,000 Community Associates. Community Associates are those individuals who pay no dues and receive only a limited subset of ACS benefits, but this is nonetheless a rapidly growing category of individuals.

As part of my MAC responsibilities, I am the liaison to the Younger Chemists Committee (YCC) and the Divisional Activities Committee (DAC), and I attended part of their meetings to discuss trends in ACS membership and what they are experiencing with their constituent groups. One of my other responsibilities is the annual update to the Schedule of Dues and Benefits (SODB) for the upcoming 2026 year, and this was approved by Council with over 95% in support. The SODB lays out the annual dues structure for the upcoming year including all discounts for the various categories of membership (Student Member, Member, Affiliate, Community Associate) and the benefits associated with each of the three membership packages (Premium, Standard, and Basic).

Michael Cheng (Secretary) - Member of the Project SEED Committee:

1. There are 384 proposals, involving 520 students

2. Approximately 1200 applicants, in various stages of application completion

3. Eight new SEED sites

4. Finance seems ok

5. There is fund for SEED student travel to meetings (National)

    I asked if travel to regional meetings (such as WRM) can be covered, the answer is "yes". One need to draft fund request proposal and send to SEED office.

6. Ella Davis, ConC Liaison to SEED, reports the proposed formation of a new committee CALC (Committee on the Advancement of LGBTQ+ Chemist)

7. Ella Davis announces the "machinery" of Micro Projects – small short-term activities, soliciting ideas

    I asked if local sections can exploit it, the answer is "yes". The scope of these Micro Project can be, for example, "recruiting more industrial site for Project SEED". And Ella Davis can be a champion for this explicit activity.

8. Mentor award recipient decided

Michael Cheng analysis – after the meeting of the Council, there seems to be an emphasis on involving more industrial sites/members; perhaps we (Cal ACS SEED) can really exploit this, see item 7 above.

Sheila Kanodia (Councilor) – Member of the Society Committee on Ethics (ETHX):

Attended ACS Hosted Kids Zone Event - 22nd March 2025

On Saturday, the American Chemical Society (ACS) hosted the **Kids Zone** event at Logan Memorial Educational Campus, centered around the 2025 Chemist Celebrate Earth theme: **Glacier: Hot Topic, Cool Chemistry**. The event provided an engaging and educational experience for children and their families through hands-on science experiments and interactive activities.

1. **Snap, Crackle, Pop!**
   A comparison of candy crackles and glacier sizzles, demonstrating the chemistry behind the sounds we can hear.
2. **Ice Cores Count**
   Participants built model ice cores and counted their layers to reveal the secrets of ancient snow.
3. **Ice Melt Race**
   An experiment testing various melting methods to determine which poses the greatest threat to glaciers—cold vs. hot, still vs. flowing.
4. **Slime: A Model Glacier**
   Children created their own glacier slime and took it home as a reminder of the science behind glaciers.

5. **Glaciers on the Move**
   A fun obstacle course where participants observed how slime glided downhill, mimicking the movement of ice on a real glacier.
6. **Icy Lakes and Oceans**
   An exploration of whether ice water sinks or floats, explaining the fascinating science behind these properties.

Ethics Committee Meetings – March 23, 2025

The Ethics Committee held both closed and open meetings on **Sunday, March 23rd**. Due to the confidential nature of the closed meeting, only a broad overview is provided:

- **New ChemLuminary Awards for 2026** are currently in development.
- **Increased programming** for national and regional meetings was discussed, with member contributions for **PacificChem 2025** finalized.
- Preparations for the **20th Anniversary Celebration** are progressing.
- A **History of the Ethics Committee** has been created and is now available on the committee's website.
- **White Paper Development:** The discussion on the "Responsible Use of AI in the Chemical Sciences" is ongoing.

Open Session Overview:

1. **ETHX Committee Welcome:**
   - Visitors were welcomed, and the committee's vision was introduced.
   - **Chair Glenn Larkin** provided a brief overview of the **ETHX strategic plan** and the committee's engagement with the community, particularly focusing on professional conduct.
   - An update to the vision statement was discussed, with the term "enabling" being replaced by "empowering," resulting in the revised vision: **Empowering Trust, Honesty, and Integrity for Chemistry and Society (ETHICS)**.
   - Long-term goals related to the use of AI in chemistry were shared, including the development of guidelines for the **Ethical Use of AI in Chemistry**.
2. **Committee Introductions and Updates:**
   - Introductions were made by committee members and visitors, who shared their interest in the meeting and their involvement in other committees.
   - **Maureen** discussed the ongoing work by ETHX to update and expand the case studies materials in collaboration with SocEd.
   - **Jodi** (on behalf of SocEd) provided an update on the promotion of case studies and resources being disseminated by SocEd.
3. **Strategic Plans and Programming:**
   - The committee is working to transition ETHX from a non-programming body to a programming committee, with the goal to start programming in **Spring 2026**, in conjunction with the 20th anniversary celebration.

- Feedback indicated that divisions typically handle programming, and it was suggested that ETHX work with divisions to support and enhance programming efforts rather than pursuing independent programming.

4. **Reports from Other Committees:**
    - **CEPA** provided an update on its current activities and discussed ways ETHX can support their work.
    - **WCC** shared their goals, and ETHX expressed enthusiasm for collaboration and engagement with WCC.
    - **PROF** mentioned that it has six subdivisions, including an ethics subdivision, and would be open to co-sponsoring programming with ETHX to increase opportunities for both entities.

Additional Activities:

- I attended an invited reception with **2025 ACS President Dorothy Phillips** on Sunday, focusing on **Inclusion and Belonging**.
- Senior Chemist breakfast with seminar on microplastics on Tuesday
- I also participated in the **ACS Council Meeting** via Zoom.

Alex Madonik (Councilor) – Associate of the Committee on Meetings and Exhibitions (M&E):

On Saturday, March 22nd, I attended the meetings of the Committee on Meetings and Expositions (M&E) and of the Regional Meetings Subcommittee. As of 2025 , M&E will offer THREE ChemLuminary Awards for Regional Meetings: 1) outstanding meetings with fewer than 1000 attendees, 2) outstanding meetings with more than 1000 attendees, and 3) meetings with the most innovative programming. A total of seven meetings will be reviewed in the current award cycle (six 2024 regional meetings plus NERM 2023). ConC is looking for “microvolunteer” opportunities, and the Regional Meetings subcommittee suggests that volunteers be assigned to each Regional Meeting organizing committee to assist them in preparing their final report (the basis for ChemLuminary Award decisions). RM subcommittee representatives have been assigned as liaisons to each 2025 Regional Meeting; Andrew Coates will attend WRM 2025.

Everyone noticed the changes made by the Department of Meeting and Exposition Services (DMES) and their partners in the Future of Meetings task force at the San Diego meeting. I’ll also mention changes that were discussed at the M&E business meeting.

- Registration badges included an RFID “Smart Tag” that was used to count attendees at each session in the Convention Center and at the Marriott – the only venues used for technical programming. We were assured that these tags are inactive outside of the event areas.
- The Priestly Medal address by Frances Arnold was hosted by the Board of Directors as part of their open meeting on Sunday afternoon, immediately after the Townhall Meeting for the candidates for ACS President-Elect (which I missed). Board Chair Wayne Jones spoke about the ACS 2025 Strategic Plan (which was developed over the past year) and its restatement of ACS Core Values. With regard to our professional community, the key words are now “Inclusion and Belonging.” This meeting was so well-attended that the crowd overflowed the ballroom. It was

followed by the delightful ACS Connect reception on the Convention Center Terrace, where we enjoyed beer, wine, good food, good company, and fabulous views of San Diego Bay.

- For DMES, the focus is on reducing the meeting footprint by consolidating more sessions in one large venue for each meeting, a shift away from past meetings (including the Spring 2024 meeting) where multiple hotels were used to host technical sessions. The Spring meetings continue to program over 4.5 days, while the Fall meetings will be limited to 3.5 days.
- Upcoming meeting venues include Washington, DC; Atlanta, GA; Chicago, IL; New Orleans, LA, and then back to San Diego in the fall of 2027. Negotiations continue for venues through 2032.
- There is now a significant parallel Digital Meeting, purely on Zoom and taking place during evening and nighttime hours that are appropriate for attendees in Europe or Asia.
- Division Program Chairs are meeting regularly, with a focus on increasing the number of Digital Sessions; another goal is to increase joint programming for the in-person sessions.
- M&E is working with the Committee on Divisional Activities (DAC) to create a joint subcommittee that will focus on the meeting experience for presenters and attendees.
- I observed the new, digital poster technology in action – the presenter can expand any portion of the screen, and scroll through content easily. One presenter told me it was easier to create this digital poster than to create a conventional print poster, using online tools.
- The Mobile App interface has been streamlined for easier access to the program and user-selected content. It is searchable but I noticed that there's little information about the speakers.

I attended some exciting sessions on the use of AI in drug discovery and development, dramatically reducing the time required to find leads and optimize them. I also attended theme sessions on improving access to clean water and on the development of novel materials for direct capture of CO_2 from the air.

Michael Cheng assisted me in presenting the Cal ACS poster as part of the Local Section Showcase at Sci-Mix on Monday evening. Student groups from UC Berkeley and Napa Valley College posed for photos with our poster, and we connected with leaders from other District VI sections.

On Tuesday afternoon I was able to attend a symposium on community outreach organized by Professor Elvin Alemán of CSU Stanislaus, long-time sponsor of the Warriors Chemistry Club and supporter of CCEW and NCW activities at "Stan State." Yes, Turlock and Merced are part of the California Section! I joined other councilors for the District VI caucus (a preview of the Council meeting) and then moved on to the reception in honor of former ACS President Ann Nalley – where I watched the Kavli Innovations in Chemistry lecture on Zoom before joining the festivities.

Vanessa Marx (Councilor) - Member of Committee on Economic and Professional Affairs (CEPA), and Member-at-Large Division of Organic Chemistry (DOC):

1. CEPA met at the ACS Spring meeting and one of the key topics that was discussed was how to support our members impacted by layoffs in the federal workforce. Currently available programs include career consultants and career pathways workshops, including virtual office hours via the **ACS Careers Navigator™** (https://www.acs.org/careers.html). CEPA is otherwise currently working on additional support options which will be communicated in the near future. We were also privileged to have an update from ACS government affairs: members are encouraged to join **Act4Chemistry** (https://www.acs.org/policy/memberadvocacy/sign-up-form.html) and write your legislators to explain the impact federally funded science has on scientific questions and their local communities.
2. As part of the Division of Organic Chemistry, I co-chaired a symposium entitled "Biopharma 101: Transition to Industry" which featured 8 speakers from different companies that have recently started their careers in industry (<10 years). The speakers provided details on their respective career paths, and how they arrived at their current roles from where they first started as chemistry students. There was a panel discussion and networking session following the symposium, to ask more tailored questions and gain additional insight into various career pathways in the biopharmaceutical industry. This was well attended by undergraduate students, graduate students, and postdoctoral fellows. We intend to continue this symposium in the Spring of future ACS meetings.

Atefeh Taheri (Councilor) - Member of the Women Chemists Committee (WCC):

I had the pleasure of attending the ACS Spring 2025 Meeting in San Diego — a week full of meaningful conversations, strategic planning, and deepened connections across the chemistry community.

Councilor Participation:

I attended both the Council Caucus and the full Council Meeting, where I participated in all voting sessions. While many governance items were voted on, including the continuation and renaming of several committees, one key proposal — the formation of a new committee, CALC (Chemists Advancing LGBTQIA+ Chemists) — was discussed but not brought to a vote. I am looking forward to voting *yes* on this important initiative at the Fall 2025 meeting.

In parallel, I've been working with fellow California Section leaders to develop resources for members impacted by layoffs, budget cuts, and broader economic challenges. We're planning programs to connect volunteers with those seeking support in areas like résumé reviews, interview prep, informational interviews, referrals, and more — as well as in-person networking opportunities to foster community and growth.

Women Chemists Committee (WCC):

At WCC, I serve as liaison to the **Association for Women in Science (AWIS)** and **Corporation Associates**, and I'm the **Regional Meeting Coordinator** for WCC. I also helped facilitate discussions on strengthening our committee's role in supporting industrial chemists — an important focus given my own background in industry.

Our spring programming was vibrant and impactful. I participated in all WCC events. Each of these events reflected the energy, dedication, and diversity of thought that make WCC such a special part of ACS.

As a technical contributor in the **Energy & Fuels (ENFL)** Division, I also connected with ENFL members and am leading ENFL programming for the upcoming **Western Regional Meeting in San Jose** this October.

One memorable moment came during a luncheon hosted by the Committee on Minority Affairs, where a quote by the Dalai Lama stood out to me: *"If you can help others, do so; if you cannot, at least do no harm."* It resonated with ongoing conversations in our community about responsibility, equity, and the impact of our policies.

This meeting left me inspired and recharged — and I'm excited to keep building with our local section, WCC, and the broader ACS community.

Marinda Wu (former ACS President – 2013):

1) The Women Chemists Committee and Senior Chemists Committee co-sponsored a full day symposium "Honoring the Contributions of Ann Nalley: Amazing ACS Past President 2006, Champion, Ambassador, Mentor, Teacher and Role Model" on Tuesday, March 25, from 9am-4pm. It was followed by a wonderful "Just Cocktails" reception to honor Ann Nalley, open to all. Current ACS President Dorothy Phillips, along with six other Past Presidents including Bruce Bursten, Angela Wilson, Diane Schmidt, Bassam Shakhashiri, Joe Francisco, and me, all gave presentations to offer thanks and moving tributes to Ann for her help and impact on our own career journeys.

   Ann Nalley gave the last talk of the day on her life and "The Magnificent Journey." For more details, please see Chapter 21, "*The Magnificent Journey*" by Ann Nalley, pp. 223-235, ACS Symposium Series 1195, "Jobs, Collaborations, and Women Leaders of the Global Chemistry Enterprise," 2015.

2) The Chinese American Chemical Society (CACS) hosted another successful CACS Banquet at the spring National ACS Meeting in San Diego. Over 83 attendees pre-registered this time for the CACS Banquet through ACS, and more wanted to attend on site. Past ACS Presidents, ACS Board members, senior ACS staff, and ACS Councilors who are good friends of CACS attended, along with many students, faculty and professionals to enjoy a delicious 8-course Chinese Banquet. It included Peking Duck, whole fish and many other traditional dishes. An overview of recent CACS Activities at its four Local Chapters and the very active National Student Chapter was shared.

   After dinner, I moderated an informal Fireside Chat with Dr. David Wu, the recently elected and first international ACS Board member. It was a great way for all who attended to get to know David Wu better. Several employers had the opportunity to make announcements about job openings. The CACS Board Chair also conducted some fun raffles for guests to win various CACS souvenirs. Visit www.cacshq.org for more details.

3) CACS and ACS continue to work together. I, along with the CACS Board Chair, met with the Chair of IAC (International Activities Committee) and ACS staff to introduce a Distinguished Professor and Dean from Hong Kong (who is on the CACS Distinguished Advisory Board) to help re-energize the ACS International Chapter in Hong Kong. I was glad to help make this valuable connection for ACS.

Patrick Lee (Councilor) - Member of the Committee on Chemistry and Public Affairs:

I served on the subcommittee on the ACS fellows program. Some notes from our meeting are detailed below.

Applications & Selection for the ACS Fellows

- This year, there were 28 applicants: 18 women and 10 men.

Outreach & Support Resources for applicants who were not provided an offer

- Applicants and interested individuals were directed to additional professional development resources:
    - ACS webinars
    - ACT4Chemistry network
    - Advocacy workshops
    - ACS career services
    - Opportunities to serve on national-level ACS committees (not local sections, given the fellowship's broader focus)

ACS Fellows Reception Planning in DC

- Reception's main audience is internal-facing—a celebration of the fellows.
- Several ideas for event were exchanged, including events outside of ACS governance structure, as well as potential times and locations

Fellowship Visibility

- Member Lounge Events: Consider a 10-minute talk with giveaways (e.g., two periodic table blankets) to raise awareness.
- Video content:
    - Aim to create a short, high-quality clip that can be reused for multiple events.
    - Could tie into the 50-year anniversary of the fellowship.
    - Potential to highlight alternative career paths—tie-in with YCC panels

Summary from ACS Branding & Identity

- Current identity shaped by the collective experience—what people say about ACS when you're not in the room (Jeff Bezos quote).
- Rebranding effort set for 2026, aligning with ACS's 150th anniversary (founded 1876).
- Feedback from ~3,100 stakeholders suggests a preference for a more spelled-out and approachable identity.
- Considerations around differing public perceptions (e.g., American Chemical Society vs. American Cancer Society).

Committee Insights

- Dan (ConC Liaison) discussed microvolunteering opportunities.
- SWOT analyses have been conducted across ACS committees and shared for reflection and alignment.