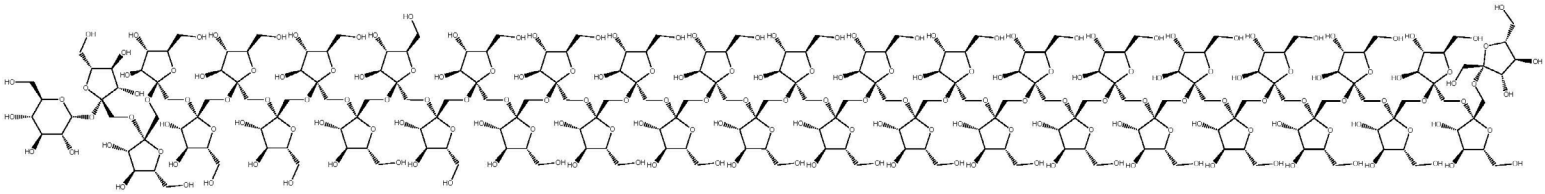
ACS Local Section
Silicon Valley

MARCH 2022
VOLUME 44 NO. 3

# SILICON VALLEY CHEMIST



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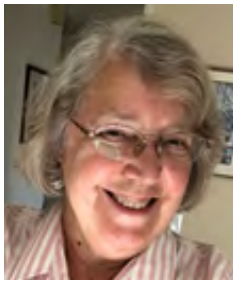
## Chair's Message

**Natalie McClure**



Hello Fellow Chemists,

Welcome to March Madness. Just like the basketball tournaments, March is a very busy month for the ACS and the Silicon Valley section. The big event of the month is of course the ACS Spring National meeting in San Diego. But closer to home, our local ACS section has an exciting series of activities lined up. This includes the annual ***Mosher Award*** ceremony held on

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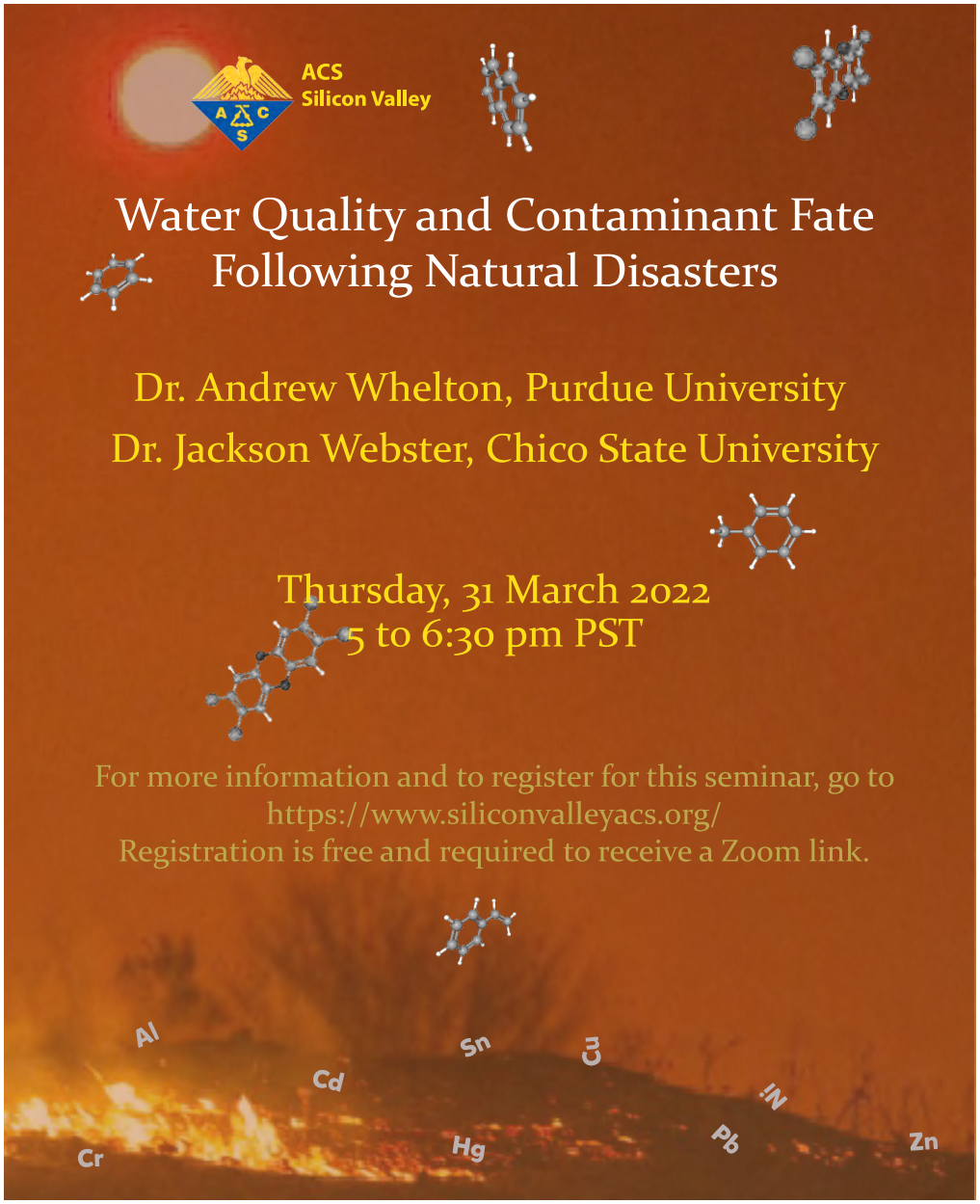



***click here to download and share flyer*** ***register to receive Zoom link***

***Abstract:***

The Camp Fire is the deadliest and ***most destructive wildfire*** in California's history. The fire killed 88 people according to recent estimates, consumed 18,000 homes and other structures, and burned down the entire town of Paradise. Firefighters contained the conflagration only after it rained during Thanksgiving week. But when the weather shifted, not everyone felt at ease. The storm not only tamped down the fire, it also began the process of flushing a mixture of toxic chemicals into the region's creeks and rivers. Extensive drinking water system damage and chemical

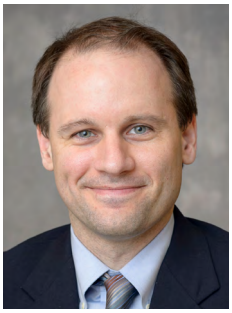
*continued on next page*

*Water Quality, continued from front page*

contamination were uncovered in the burn area. The fire rendered large and small water systems and private wells broken and chemically tainted. Scientists and ecotoxicologists have worked hard to understand and resolve the extent of water contamination with ongoing testing and solutions. According to national climate assessments, California's wildfire season now threatens to stretch year-round. More regions in the US are likely to see fires as a result of climate change. One of the major findings from recent fires is that people living in the burn area lacked much needed building water safety guidance.

Join us as Dr. Andrew Whelton and Dr. Jackson Webster, leading environmental engineers, enlighten us about water quality and contaminant fate following natural disasters and how science and data aid health departments, federal agencies and homeowners to respond to such natural disasters.

***Biography:***



***Andrew Whelton, Ph.D***. is a Purdue University professor of civil, environmental, and ecological engineering whose work focuses at the intersection of public health, infrastructure, and the environment. He earned a Ph.D. in Civil Engineering from Virginia Tech. Professor Whelton is internationally recognized for water infrastructure disaster response and recovery.

In recent years, he has been called into disasters such as the Freedom Industries Chemical Spill, Camp Fire, Marshall Fire, and Lytton BC Fires, among others. His teams have positively changed how governments, water utilities, nonprofit organizations, health departments, and legislatures support communities before and after disasters. His websites (***www.PlumbingSafety.org***; ***www.CIPPSafety.org***) further make their discoveries accessible to communities of interest.

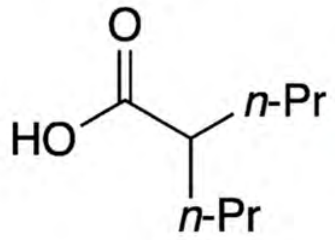
In 2015, the U.S. National Science Foundation created a "Science Nation" ***video*** to highlight his team's work benefiting U.S. public safety and welfare.

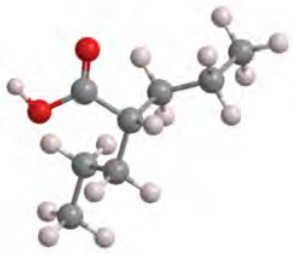
***Dr. Jackson Webster*** is an Associate Professor of civil engineering at California State University, Chico, who studies the effects of wildfire on water quality. He received his Ph.D. in Civil Engineering from the University of Colorado, Boulder.

Dr. Webster's research has primarily focused on remobilization of mercury from soil during wildfire and the subsequent geochemical cycling in burned watersheds across the western US. Following the Camp Fire (2018), he expanded his post-wildfire research to examine watershed contamination from urban burning. Dr. Webster led a year-long monitoring study of storm water runoff from the town of Paradise, CA, to assess the effects of widespread urban burning on the local watersheds. Since the Camp Fire, his inquiry into the subject of post-fire water quality has continued with multiple studies on large wildland-urban interface (WUI) fires including the North Complex (Plumas County, CA, 2020), LNU lightning complex (Napa and Sonoma Counties, CA, 2020) and, most recently, the Marshal Fire (Boulder County, CO, 2021) where he has engaged with state and local stakeholders to provide guidance on post-fire storm water management and water quality concerns.

## CHEMISTRY Quiz

I was around for a long time before my greatest value was discovered. What molecule am I?



**Answer**

*Chair's Message, continued from front page*

March 3. Professor Resa Kelly gave an intriguing presentation on her SJSU research which explored the use of animated simulations of reactions to illustrate the not-so-simple reaction of NaOH and HCl. If you missed this presentation, you can see the neutralization animation as well as other animations on ***Dr. Kelly's YouTube channel***.

Continuing in March, we have the ***Synopsys Championship Science Fair on March 10***. Our section provides judges and presents awards to outstanding chemistry projects at the senior high and junior high school levels. Our newest SVACS awards, the ***David Parker Science Fair Awards***, recognize promising middle school students. I am constantly amazed by the knowledge and excitement our students bring to the science fair. It certainly puts the projects I recall doing to shame!

San Jose State University hosts the ***Science Palooza STEM fair on May 14***. Judges are needed, so please reach out to the contacts on the Science Palooza website if you would like to see what our younger generation can do and encourage them to do more!

We have resumed some of our annual in-person chemistry outreach activity. For ***Chemists Celebrate Earth Week*** we will host an event at the Redwood City Library on March 12. Also on March 12 we are joining a new organization's first STEM event, the ***Pacific Islanders Encouraging Fun Engineering Science & Technology Festival***. Again volunteers are needed and very welcome to come help enhance our younger generation's involvement in chemistry and science.

Lastly, the ***Chemistry Olympiad*** activity is starting. During March, students from 17 local high schools take the initial qualifying exam. We then nominate our section's 13 top-scoring students to progress to the National Exam. This year, we will once again offer students the experience of the in-person laboratory practical exam.

As is described elsewhere in the newsletter, we are hosting another evening seminar in March, on the Water Quality and Contaminant Fate Following Natural Disasters by Profs. Webster and Whelton. They will present their work on the impact of the fires that have devastated California in recent years. While this seminar will be held as a Zoom teleconference, we are working to bring our meetings to at least a hybrid format for future events.

It's good news that we are restarting in-person some of the activities we have enjoyed together in past years, appreciating the fellowship of our members and the community more than ever.

# American Chemical Society Releases 2022 Public Policy Agenda

"The American Chemical Society (ACS) looks forward to continued collaboration between the 117th Congress and the Biden administration as the U.S. seeks economic growth, innovative solutions to global challenges, and equitable access to education and workforce opportunities in 2022.

ACS has long supported policies central to sustainability, equity, and innovation in the chemistry enterprise. While progress has been made over the past year on several priorities, ACS continues to advocate for robust funding of scientific research; investments in historically underrepresented groups, sustainable chemistry and climate change mitigation; and pursuit of domestic and global policies guided by peer-reviewed science and supported by international scientific exchange. A prompt, bipartisan appropriations process, guided by stakeholder communities, ensures critical programs serve the American public where investments are most needed."

***Read full text of this ACS Press Release*** (published February 1, 2022).

For more information on ACS public policy priorities and advocacy, visit ***www.acs.org/advocacy***

## CALENDAR OF EVENTS

### - March 2022 -

***Mar 3*** **2021 Mosher Award Presentation: Exploring the Use of Models and Animations to Teach Chemical Principles**
Professor Resa Kelly, San Jose State University
Sponsored by the ACS Silicon Valley Section
7-8:30pm, Online via Zoom, Free, ***Learn more***

***Mar 7*** **Women in Data Science (WiDS) Worldwide Conference**
Sponsored by Institute for Computational & Mathematical Engineering, Stanford Data Science
8am-6pm, live streaming portions online, ***Learn more***

***Mar 8*** **Launch Point: The Hidden Key to Taking Your Career to the Next Level**
Katherine Lee, Pfizer and Kathryn McHugh, McLean Hospital and Harvard Medical School
Sponsored by ACS Webinars
11am-Noon PT, Online via Zoom, Free, ***Registration Required***

***Mar 10*** **Vaccinating the World: Understanding ESRI's Contribution to the Global COVID Response**
Dr. Este Geraghty, Environmental Systems Research Institute (ESRI)
Sponsored by ACS Webinars in partnership with the Science History Institute
10-11am, Online via Zoom, Free, ***Registration Required***

***Mar 20*** **Empowering Academic Researchers to Strengthen Safety Culture (ACS CHAS Workshop)**
Rachel Wiley, University of Memphis and Omar Leon Ruiz, UCLA
Sponsored by the ACS Division of Chemical Health and Safety (CHAS)
10am-2pm PT, Online via Zoom, $25, ***Registration Required***

***Mar 20-24*** **ACS Spring National Meeting 2022 (In-Person & Virtual)**
San Diego, California
***Learn more and register***

***Mar 25*** **Leveraging Science-Driven Research with Entrepreneurial Vim – Key Gaps & Essential Toolkit**
Dr. Noeen Malik, Stanford School of Medicine; CEO & Founder, Scientudio Inc.; Founder, Endorse Hope; Executive Director of Public Affairs, GIANT (with WHO-United Nations)
Sponsored by the ACS California Section, Women Chemists Committee
Noon-1pm, Online via Zoom, Free, ***Registration Required***

***Mar 29*** **Chocolate Chemistry**
Cordelia Running, Purdue University and Matt Hartings, American University
Sponsored by ACS Webinars in partnership with the Science History Institute
10-11am, Online via Zoom, Free, ***Registration Required***

***Mar 29*** **Advanced Materials for Flexible & Stretchable Electronics: Consumer Devices, Bio-Medical, Automotive, and Cleantech**
Dr. Ajay A. Virkar, CTO and Co-Founder of C3Nano
Sponsored by the Golden Gate Polymer Forum (GGPF)
6-7pm, Online via Zoom, Free/$5 donation, ***Registration Required***

***Mar 31*** **Pharma Night: Panel & Networking**
Dr. Diane Carerra, Bolt Biosciences; Dr. Astrid Parsons, Gilead Sciences; Dr. Naomi Rajapaksa, Interline Therapeutics; Dr. Lauren Holder, Novartis; Dr. Meghan Baker, Merck
Sponsored by EWOC (Empowering Women in Organic Chemistry), Northern California Chapter
4-5:15pm, Online via Zoom, Free, ***Registration Required***

***Mar 31*** **Water Quality and Contaminant Fate Following Natural Disasters**
Dr. Andrew Whelton, Purdue University & Dr. Jackson Webster, Chico State University
Sponsored by the ACS Silicon Valley Section
5-6:30 pm, Online via Zoom, Free, ***Registration Required***

### - April 2022 & Beyond -

***Apr 12*** **Science Professionals: Explore a Career in Teaching**
Panel presentation by Encorps STEM Teachers Program
Sponsored by the ACS Silicon Valley Section
7-8pm, Online via Zoom, Free, ***Registration Required***

***Apr 20*** **Protein-based Bioplastics for Sustainable Additive Manufacturing**
Prof. Alshakim Nelson
University of Washington Chemistry Department
Sponsored by the Golden Gate Polymer Forum (GGPF)
6-7pm, Online via Zoom, Free/$5 donation, ***Registration Required***

***May 18*** **The Flavor Equation**
Nik Sharma
Sponsored by the ACS Silicon Valley Section
7-8pm, Online via Zoom, Free, ***Registration Required***

***Jun 6-8*** **The 26th Annual Green Chemistry & Engineering Conference**
Sponsored by the ACS Green Chemistry Institute
Held in Reston, Virginia and Online (fully hybrid meeting for speakers and attendees)
***Learn more*** (Early registration March 15-April 30)

***Jun 26-30*** **47th National Organic Chemistry Symposium**
Sponsored by the ACS Organic Chemistry Division
La Jolla Marriott, California. ***Learn more***

# Local Science Fairs in 2022

## CATEGORY JUDGES NEEDED

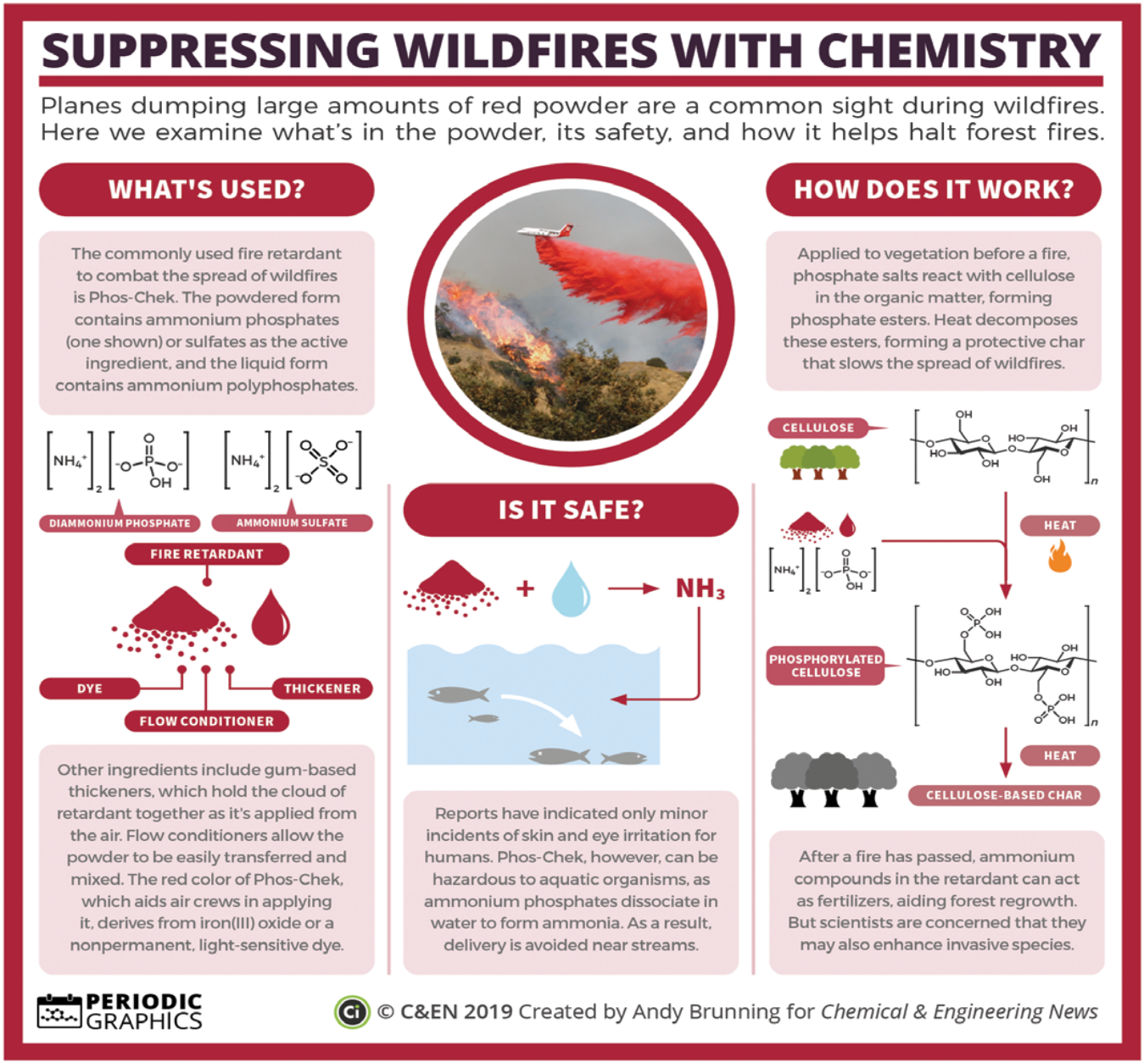
**by Susan Hines**

The SVACS Synopsys Championship special chemistry award judging teams are full, thanks to generous volunteers. **But category awards judges are desperately needed for all of our local county science fairs in many disciplines.** This month still has great opportunities to help guarantee success in these qualifiers for student advancement to the International Science and Engineering Fair, ISEF. The cost to judge in a science fair is minimal - a day of your time. The return is maximal - encouraging middle and high school students to participate in the world of science, technology, engineering, and math, STEM. With all of the fairs on the list below (except San Mateo's and Santa Cruz's) being virtual due to the pandemic, it's easy to be a category judge at one or more fairs, all from the convenience of your computer. Since these science fairs need category awards judges in not just chemistry but also in the areas of botany, biology, microbiology, and behavioral science, please spread the word so all of our participating youth have the opportunity to interact with professionals in these fields.

*Sciencepalooza!* takes place in May as San Jose East Side Union High School District's fair is neither a county fair nor an ISEF qualifier. Many students at this ESUHSD competition are first time science fair participants. See the Chair's Message this month for more info.

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

- **Golden Gate STEM Fair**: **March 7-12, 2022**, virtual format, email *ggstemfairad@gmail.com* for volunteer request
- **Synopsys Championship: March 9-10, 2022**, virtual format, click ***here*** for more info
- **Santa Cruz County Science and Engineering Fair**: **March 14-19, 2022**, combination virtual project review and in-person judging at the Santa Cruz County Fairgrounds, click ***here*** for more info
- **Monterey County Science & Engineering Fair: March 5-19, 2022**, virtual format, click ***here*** for more info
- **San Mateo STEM Fair: March 15, 2022**, in person review and judging at the San Mateo County Event Center, Fiesta Hall, click ***here*** for more info
- **Alameda County Science and Engineering Fair: March 26, 2022**, virtual format, click ***here*** for more info
- **Sciencepalooza! Virtual Fair and Expo**: **May 7, 2022**, click ***here*** for more info




***Learn more about "Suppressing Wildfires With Chemistry"***

Empowering Women in Organic Chemistry [EWOC]

EWOC
Northern California

# PHARMA NIGHT

## VIRTUAL PANEL & NETWORKING

Description :

Join us for a panel showcasing the ins and outs of organic chemistry in industry! Focusing on jobs in Medicinal, Discovery Process, and Process Chemistry

Thursday, March 31st, 2022

4:00 PM - 5:15 PM PST

Virtual

Panelists

**Dr. Diane Carerra**

Process Chemistry
Bolt Biosciences

**Dr. Astrid Parsons**

Process Chemistry
Gilead Sciences

**Dr. Naomi Rajapaksa**

Medicinal Chemistry
Interline Therapeutics

**Dr. Lauren Holder**

Medicinal Chemistry
Novartis

**Dr. Meghan Baker**

Discovery Process
Merck

**Stay connected with us!**

@EWOCNorCal

EWOCNorCal

NorCalEWOC@ewochem.org

**Register now at :**

https://www.eventbrite.com/e/ewoc-norcal-industry-night-panel-networking-tickets-266435364347

**Join our listserv!**

https://forms.gle/J2yP2LQuGYuwjJwY8

# Shirley B. Radding Award

**Call for Nominations Deadline: May 1, 2022**

This ***award*** was established in 1994 by our ACS local Section to recognize demonstrated, dedicated, unselfish leadership, service and significant contributions, over a sustained period of time, to industrial, academic, or applied chemistry and to the American Chemical Society at local, regional and national levels. The award is named for Shirley B. Radding, who was a charter member and long-time supporter of this Section. It currently consists of an engraved plaque and a check for $1000.

The annual award recipient is selected on the following criteria:

- Member of the American Chemical Society for more than 20 years
- Demonstrated dedicated and unselfish service to ACS members over a sustained period of time
- Provided leadership through elected and appointed ACS positions at local, regional and national levels
- Made significant contributions to industrial, academic, or applied chemistry

Please submit nomination dossier with CV and two letters of recommendation by May 1, 2022 to

Heddie Nichols, Chair, Radding Award Committee
Silicon Valley Section, American Chemical Society
P.O. Box 395, Palo Alto, CA 94302-0395
Email: ***hnichols105@gmail.com***

Past recipients:

| | | |
|---|---|---|
| 1994 Shirley B. Radding | 1995 Agnes Ann Green | 1996 John C. "Jack" Riley |
| 1997 Howard M. Peters | 1998 Alan C. Nixon | 1999 Valerie J. Kuck |
| 2000 Halley A. Merrell | 2001 Norman A. LeBel | 2002 Paul H. L. Walter |
| 2003 Jean'ne M. Shreeve | 2004 Maureen Chan | 2005 Glenn Fuller |
| 2006 Janan Hayes | 2007 Merle Eiss | 2008 Dorothy Phillips |
| 2009 Bryan Balazs | 2010 Herb Silber | 2011 Carol A. Duane |
| 2012 Bonnie A. Charpentier | 2013 Mamie W. Moy | 2014 Lee H. Latimer |
| 2015 Connie Murphy | 2016 Sally Peters | 2017 Gary D. Christian |
| 2018 Peter Rusch | 2019 Mary Virginia Orna | 2020 Thomas R. Beattie |
| 2021 Natalie McClure | | |

# Welcome to the Silicon Valley Section of ACS

Each month, the section receives a spreadsheet from national ACS with the names of members new to our section. The members are either new to ACS, have transferred in from other areas, or are the newest members -- students. To welcome you to the section and get to know you, the Executive Committee offers new members a free dinner at a monthly section seminar meeting, once we return to meeting in person! When you register for the event, make certain to mention that you are a new member and you and a friend will be our guests. The seminar meetings are held at several local venues. We hope you will also join us for an outreach event, like judging a science fair, proctoring the Chemistry Olympiad, or participating in a National Chemistry Week event in the autumn. The local section is a volunteer organization. Attend an event, volunteer to help, and get to know your local fellow chemists. Welcome!

## NEW ACS MEMBERS

Rishi Agarwal
Danielle L. Aubele
Shruti Badhwar
Anjali Bardhan
Kilala Barnes
Katherine Benway
Sophia Bouzid
Jackie Bretschneider
Rachelle Copeland
Vinicius Wilian Cruzeiro
James P. Davidson
Anne Flintgruber
Miss Olivia Francis Goethe
Dan Haas
Spencer Hahn
Kerensa Hardesty
Shivali Hiremath
Jwwad Javed
Bryan Kelleher
Hannah Claire Korslund
Julius Kusuma
Nikifar Lazouski
Jennifer Lee
Michele Leibundgut
Jason Gustaf Lewis
Lesheng Li
Kirby Ken-Hsuan Liao
Meishen Liu
Siavash Mashayekh
Hirohito Ogasawara
Chelsea Price
Satish G. Puppali
Jeromy James Rech
Olivia Saouaf
Nikka Sekelj
Sunil Subhashchandra Shah
Lan Shen
Christopher James Swank
Santosh Talreja
David Tang
Napoleon Tercero
Ravindra B. Upasani
Rakesh Vekariya
Vipulan Vigneswaran
John Wenger
Thomas Wolf
Yongneng Wu
Priscilla L. Yang
Nan Zhang

**Call for Nominations**

# 2022 Abraham Ottenberg Service Award Silicon Valley ACS Section

The ***Ottenberg Award*** is presented annually to a member of our local section for outstanding service to the section.

Nominations should include the nominee's biography, description of the service(s) for which the member is nominated, and a discussion or evaluation of the service to be recognized by the award.

Nominations are not retained for subsequent years but re-nominations are accepted for consideration. Previous recipients are not eligible to receive it again.

Please send your nomination before June 1, 2022, by e-mail to ***PFRusch@aol.com***, by fax (650-961-8120) or by postal mail to:

Chair, Ottenberg Award Selection Committee
Silicon Valley Section
American Chemical Society
P.O. Box 395, Palo Alto, CA 94302-0395

# 2022 International IP Index


"The U.S. Chamber of Commerce's Global Innovation Policy Center (GIPC) today revealed its ***2022 International IP Index***, "Compete for Tomorrow," which is now in its tenth edition. ***Last year***, the report focused on the role of effective intellectual property (IP) frameworks in helping economies to combat and recover from the COVID-19 pandemic and identified several emerging economies that had made significant improvements. This year, the report analyzes ten years of data, which reveals that the global IP environment has steadily improved overall, including in the last two years of turmoil, and that emerging economies are particularly making a conscious decision to bolster their IP regimes."

***Read article*** (published in IPWatchdog, February 24, 2022)

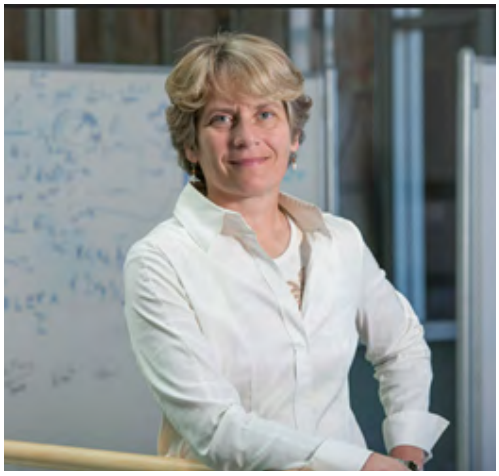
# Stanford's Carolyn Bertozzi Awarded Wolf Prize in Chemistry

'Stanford chemistry Professor ***Carolyn Bertozzi*** has been jointly awarded the 2022 ***Wolf Prize*** in Chemistry for creating a new biochemical field of study and contributing to the understanding of the glycocalyx, a network of cellular molecules important to health and disease.

Awarded since 1978, the Wolf Prize is an international award given by the Wolf Foundation. It recognizes "outstanding scientists and artists from around the world [...] for achievements in the interest of mankind and friendly relations among peoples." Categories of the prize include medicine, agriculture, mathematics, chemistry, physics, painting and sculpting, music, and architecture. The prize in each field consists of a certificate and a monetary award of $100,000.

"Carolyn Bertozzi is a unique figure in chemical science who works at the interface with biology. Her work defines chemical biology as a field," said Steven Boxer, the Camille Dreyfus Professor of Chemistry and chair of the Department of Chemistry. "Her insights into the many roles of sugars on cell surfaces and the development of methods to modify them have transformed our understanding of cell biology. These insights are leading directly to novel therapeutic opportunities."

The prize in chemistry for 2022 was awarded to three scientists – Bonnie L. Bassler, Bertozzi and Benjamin F. Cravatt III, BA, BS '92 – for their work contributing to understanding how cells use chemistry to communicate, and for developing methods to examine the biological molecules used in the communication process.



*Carolyn Bertozzi (Image credit: L.A. Cicero)*

"The three of us who share the prize this year share a passion for chemical biology, an important frontier in the chemical sciences that the Wolf Foundation has recognized with this award," said Bertozzi, the Anne T. and Robert M. Bass Professor in the School of Humanities and Sciences and the Baker Family Director of ***Stanford ChEM-H***.

Bertozzi founded the field of biorthogonal chemistry, a term that refers to the chemical reactions scientists can perform within cells or organisms without interfering with the normal functions of the living things.

Using the methodologies she and others created, Bertozzi made great strides in understanding the glycocalyx, a dense network of sugar-coated molecules found on the surface of almost every cell, and its role in human health. "Her pioneering work has opened up basic drug discovery and therapeutic targets associated with cancer, inflammation, bacterial infection, tuberculosis and most recently COVID-19," the Wolf Foundation said in a statement.

Bertozzi has been a professor at Stanford since 2015 and was among the first faculty in ChEM-H. She has also been a Howard Hughes Medical Institute investigator since 2000.

"Anyone who has had the pleasure to listen to a talk by Carolyn comes away inspired – she is easily the best speaker I have heard, even on the most complex aspects of glycobiology," said Boxer. "And her role as a mentor, acknowledged this same week with the ***AAAS Lifetime Mentor Award***, is equally important and will impact the careers and diversity of the next generation of young scientists."

The Wolf Prize presentation will take place at a special ceremony in Israel's Parliament, in Jerusalem.

"I am deeply honored to join the list of Wolf Prize recipients, many of whom are my scientific heroes and role models," said Bertozzi.'

Please note: This is a ***reprint of an article*** published in the *Stanford Report* on February 8, 2022.

Also see related article: ***Life is Sweet*** (*Stanford Magazine* article published February 15, 2022). Carolyn Bertozzi wanted to see and work with the sugars that coat our cells, so she created a whole new approach to chemistry. That was just the beginning.

**REGISTER NOW AND APPLY FOR TRAVEL AWARDS!**

47th National Organic Chemistry Symposium

NOS 2022

American Chemical Society Division of Organic Chemistry

June 26-June 30, 2022

San Diego Marriott La Jolla, CA

Registration for the 2022 National Organic Chemistry Symposium (#NOS2022) is now open! The 47th NOS will be held Sunday, June 26 to Thursday June 30, 2022, at the La Jolla Marriott in Southern California. The NOS is the premier event sponsored by the ACS Division of Organic Chemistry to highlight recent advances in organic chemistry.

For more information, see: ***https://NationalOrganicSymposium.org***.

# Bioorthogonal Chemistry

**A Review of Its Diverse Applications in Science and Medicine**


"For unique insights into an emerging field of science, this CAS white paper presents different types of bioorthogonal reactions, applications, and trends found in the CAS Content Collection™. Bioorthogonal chemistry allows for a deeper understanding of the structure and function of our biologic systems, and highlights how drug development, delivery and imaging applications could be optimized in the future." ***Download the white paper***.

# Zhenan Bao is Awarded the VinFuture Prize for Female Innovators

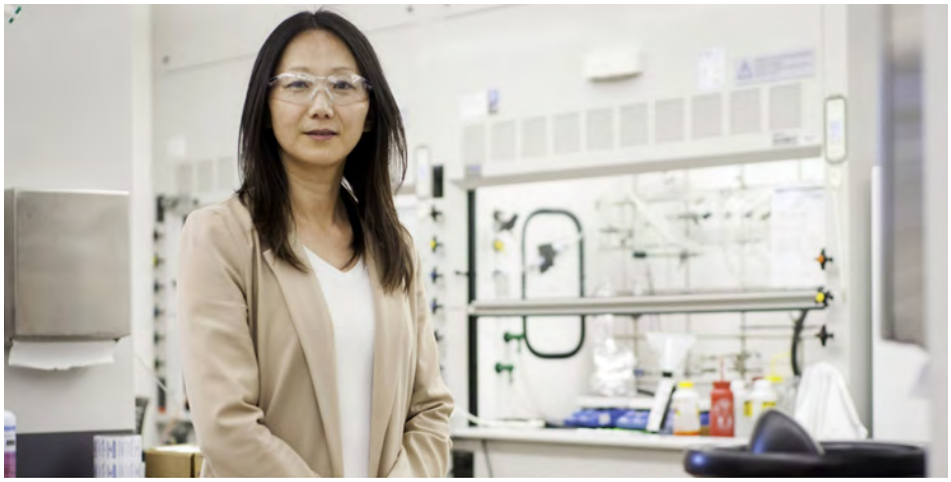


*Image credit: Zhenan Bao, the K. K. Lee Professor in the Stanford School of Engineering and Chair of the Department of Chemical Engineering | Photo by Kathleen Hinkel*

"The chair of the Stanford School of Engineering's Dept of Chemical Engineering received the award for her innovations in bio-interfacing wearable health monitoring devices.

The inaugural VinFuture Prize has selected Zhenan Bao, the K. K. Lee Professor in the School of Engineering and chair of the Department of Chemical Engineering, the winner of its Female Innovator award, a $500,000 prize dedicated to an outstanding female researcher or innovator.

Bao was awarded this prize for scientific advancements from her pioneering work on the development of skin-inspired electronics and their applications to a range of medical and energy applications. She has developed a wide range of novel molecular design concepts for organic electronic materials and fabrication methods.

Her creation of novel organic materials with skin-like functions, such as stretchability, self-healing and biodegradability, is changing ways human will interact with electronics. They allow electronics to seamlessly interface with human body. Bao invented the skin-like "BodyNet," a soft, integrated, wireless tag that include sensors, screens and smart devices that can be attached or implanted into the human body. These include intracranial pressure monitors, blood flow monitors and the means to track body movements.

The VinFuture Prize is supported by the VinFuture Foundation, an independent nonprofit established by Phạm Nhật Vượng, founder and chairman of Vingroup Corporate, and his wife, Phạm Thu Hương, to create meaningful change in the everyday lives of millions by recognizing and rewarding transformative innovation in sci-tech."

Source: ***Reprinted news article posted on Stanford's Chemical Engineering website*** (January 21, 2022).

See also:

- ***Zhenan Bao's Stanford Profile page***
- ***Wearable Electronics Initiative***
- ***VinFuture Prize Laureate: Professor Zhenan Bao – Female Innovators 2021***

Zhenan Bao was the featured speaker at the annual joint ACS Silicon Valley and Golden Gate Polymer Forum event in ***June 2019.***


# ChemRxiv now accepts reviews

Authors using ChemRxiv can submit their research findings for rapid posting on the web and sharing with scientists and colleagues before formal peer review. We're pleased to announce that now authors can send preprints of review articles to ChemRxiv! In this phase of expanding our scope, ChemRxiv will now accept reviews that provide well-sourced context for previous research from multiple sources. ChemRxiv will still not accept short format letters/commentaries/opinions or purely hypothetical works. For more information, please see our submission FAQs or contact us at curator@chemrxiv.org.

To support this change, you will now be asked to select a Content Type during submission, choosing from "working paper" (for any preprint containing new research results) or "review."

***Submit your reviews today!***

This article was reprinted from ChemRxiv updates published on February 28, 2022.

# Lithium-Ion Battery Recycling

**A Review of the Current Methods and Global Developments**


"Today, only 5% of the world's lithium-ion batteries are thought to be recycled across the globe, with dramatic environmental and financial implications for the projected 8 million tons of waste. While the challenges of recycling will range from financial, to policy-making, this white paper dives deep into the scientific challenges and the emerging research landscape around this huge opportunity." ***Download CAS white paper*** (published January 18, 2022).

Related article:

- ***First realistic portraits of squishy layer that's key to battery performance*** (SLAC news, January 6, 2022). Cryo-EM snapshots of the solid-electrolyte interphase, or SEI, reveal its natural swollen state and offer a new approach to lithium-metal battery design.

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The ***National Academies Press (NAP)*** publishes the reports of the National Academies of Sciences, Engineering, and Medicine. NAP publishes more than 200 books a year on a wide range of topics in science, engineering, and medicine, providing authoritative, independently-researched information on important matters in science and health policy. They offer more than 8,500 titles in PDF format. Almost all of these PDFs can be downloaded for free.


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Read ***full text*** (published in Stanford Earth Matters Magazine, February 25, 2022)

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***Watch video and view sources***

National Academies of Sciences, Engineering, and Medicine. 2022. *Biodiversity at Risk: Today's Choices Matter*. Washington, DC: The National Academies Press.
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***https://doi.org/10.17226/26391***

National Academies of Sciences, Engineering, and Medicine. 2022. *Frameworks for Protecting Workers and the Public from Inhalation Hazards*. Washington, DC: The National Academies Press.
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***https://doi.org/10.17226/26342***

National Academies of Sciences, Engineering, and Medicine. 2021. *Reckoning with the U.S. Role in Global Ocean Plastic Waste*. Washington, DC: The National Academies Press.
***https://doi.org/10.17226/26132***

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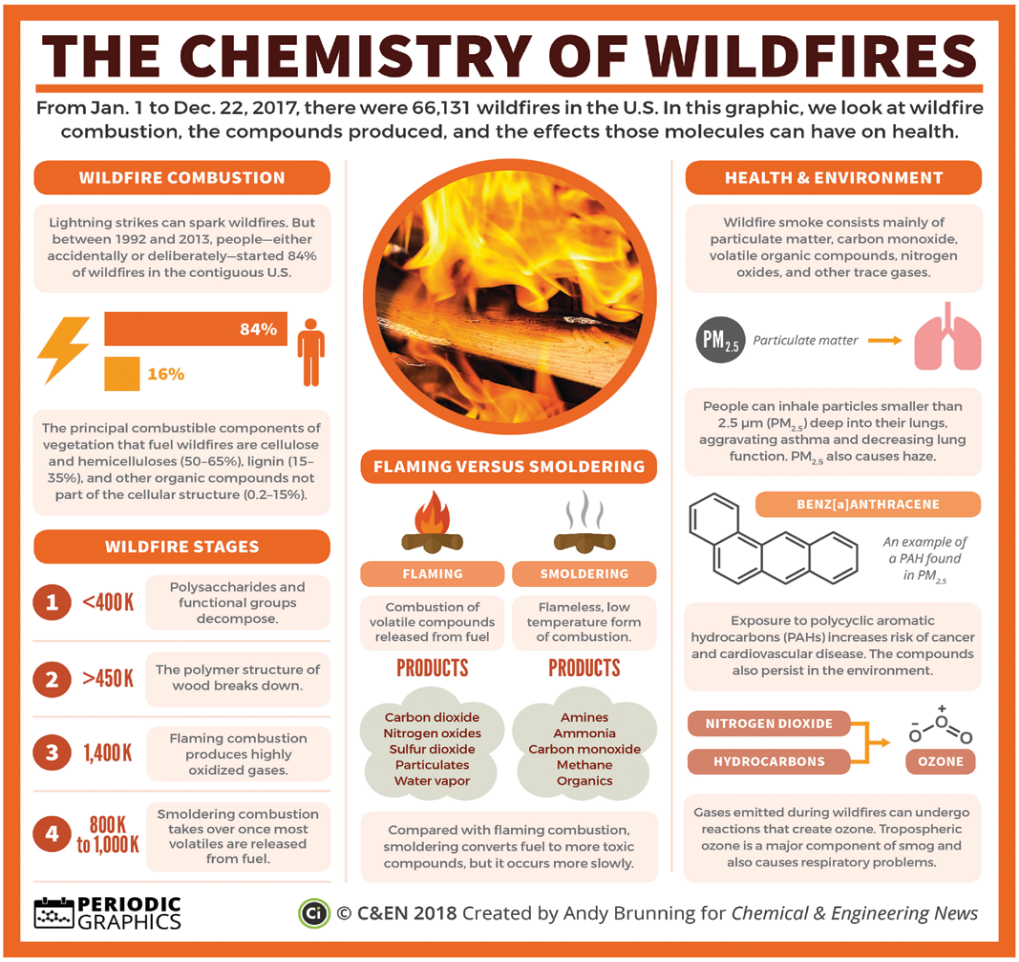
***https://doi.org/10.17226/26215***

National Academies of Sciences, Engineering, and Medicine and National Academy of Medicine. 2022. *Vaccine Research and Development to Advance Pandemic and Seasonal Influenza Preparedness and Response: Lessons from COVID-19*. Washington, DC: The National Academies Press.
***https://doi.org/10.17226/2628***

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