

SILICON VALLEY CHEMIST

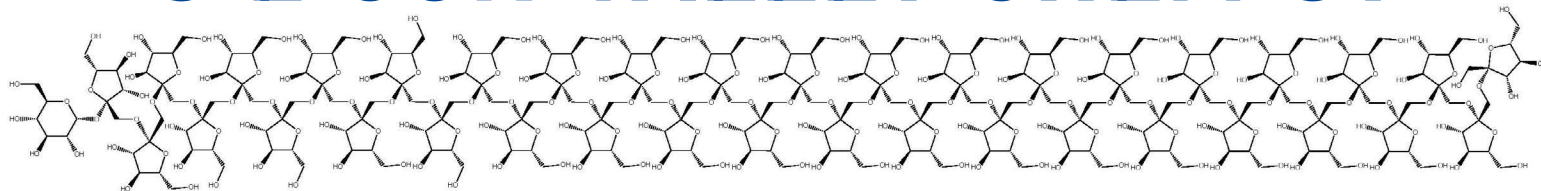


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Chemical Conundrums in the Movies

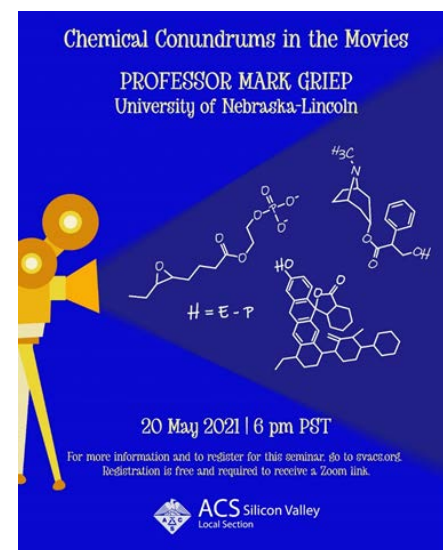
Dr. Mark Griep, University of Nebraska-Lincoln

Sponsored by ACS Silicon Valley Section

May 20, 2021 from 6 -7pm, Online via Zoom, Free, [Registration required](#) | [Download flyer](#)

Chemistry professor [Mark Griep](#) at the University of Nebraska-Lincoln has devoted his teaching career to finding ways to engage people in learning more chemistry. Inspired by "Clambake," an Elvis Presley movie that featured a fast-drying, super-hard varnish called GOOP, Griep began offering "Chemistry in the Movies" presentations to middle school and high school students in 2002. These presentations include "Behind the Scenes of Bubbling Apparatus in the Movies" and "Everything I Know about Chemistry, I learned at the Movies." Join us as he talks about "Chemical Conundrums in the Movies." It is about solving the most difficult chemical puzzles that he found in movies.

The [Griep Research Group](#) page includes Movies & Chemistry, Music & Chemistry, plus more!



Chemical Conundrums in the Movies
PROFESSOR MARK GRIEP
University of Nebraska-Lincoln

20 May 2021 | 6 pm PST

For more information and to register for this seminar, go to [svacs.org](#).
Registration is free and required to receive a Zoom link.

ACS Silicon Valley
Local Section

Chair's Message

Jigisha Shah



It is hard to deny that pop culture has a huge influence on society and informs how people try to make sense of the world. Christopher Frayling, the British educationalist and writer, analyzed over 1000 films in Great Britain made between 1930 and 1980. In his book, *Mad, Bad and Dangerous?: The Scientist and the Cinema*, he noted that almost 30% of the films he analyzed had an evil character with features typical of a mad scientist. In contrast, only 1% of the scientists in these films were depicted in heroic roles! More recently, sci-fi films have undergone a subtle but crucial shift in their narratives about scientists. Scientists are being cast as virtuous heroes instead of lunatics bent on revenge or using science as a weapon of destruction. As portrayals of scientists became more positive from the 1990s forward, so

has the public's faith in scientists. [Join us on 20 May 2021](#) to hear more about this sociological shift as Professor Mark Griep talks to us about the chemical conundrums in movies!

Fashions worn by people in society offer another unique insight into culture and history. It is impossible to remove fashion from popular culture. Lately, I have been noticing a ton of articles in C&E News about sustainable fabrics, and rightly so. The fashion industry is one of the biggest polluters on our planet. The average consumer throws away about 30 kilograms of clothing per year. Globally, textile waste adds up to 13 million tons each year. 85% of all textiles go to landfill each year, whereas 95% could be reused or recycled. Less than 30% of our clothes are donated, but the world is still swimming in second-hand clothes. The US exports more than a billion pounds (453.6 million kilograms) of used clothing each year. This rate of producing new clothes and discarding them is just unhealthy for the planet. Clothes dumped on landfills take decades to degrade and continue to emit greenhouse gases. Scientists are

exploring greener fabrics that are biodegradable and innovative ways to make dyeing these fabrics more eco friendly, leading to a range of cleaner production strategies, as well as new and emerging textile technologies. Two of our upcoming talks will describe these advances in greater detail. In collaboration with the Golden Gate Polymer Forum, on June 9, we will host Dr. David Breslauer, the founder and chief scientific officer of [Bolt Threads](#), for a talk about green fabrics they are creating. You will recognize Bolt from their well-publicized work on spider silk expressed in yeast cells and a leather-like material from mycelium, the root structure of mushrooms. Interestingly, Dr. Breslauer also acts as an advisor to Huue, the source of our second textile talk. On August 19, Dr. Tammy Hsu, the co-founder and CSO of [Huue](#), will tell us about engineered microbes that reduce the use of carcinogens in textile dyes. I look forward to seeing you all at these two exciting talks!

In April, we kicked off our pilot mentorship program, Paving the Path, for community college

continued on next page

Chair's Message, continued from front page

students looking to transfer to four-year university programs. We have a remarkable and eager group of mentors and mentees. I would like to give a huge shout out to Avni Gandhi, Jane Frommer, and Madalyn Radlauer for all their hard work in organizing this promising program.

Do you know any children who gravitate toward science, who love mixing ingredients to see the results, or who love figuring out how

things work? Have them join us at our **Pop-Up Chemistry event**. This month, we kick-off our Citizen Science Project. Kids will get to take home a kit with all supplies to test the water quality in the watershed around them. Details can be found [here](#).

A big thank you to Sogol Teschler for leading a wonderful Earth Day event in partnership with Pam Evans and Natalie McClure. The kids enjoyed learning about the shrinking our carbon footprint

and insulating materials.

Last month, President Joe Biden proclaimed April 18 through April 24, 2021, as National Volunteer Week. I would like to take this opportunity to thank all my colleagues for tirelessly giving their time, their energy and their skills through ACS events. It's through your support and involvement that we're able to fulfill the SVACS vision of improving people's lives through the transforming power of chemistry.

UPCOMING EVENTS

- May 6** **Tackling Global Challenges – Plastic** ([Learn more](#))
Bob Powell, Founder & CEO, Brightmark; and Sean Weaver, Founder & President, Neo
Sponsored by Stanford's TomKat Center for Sustainable Energy
4-5:30pm, Online via Zoom, Free, [Registration required](#)
- May 6** **Molecular Dynamics Simulations of Clathrate Hydrates** ([Learn more](#))
Dr. Saman Alavi, Senior Chemist at Health Canada and Adjunct Professor, University of Ottawa
Sponsored by ACS California Section
5-6pm, Online via Zoom, Free, [Registration required](#)
- May 9-11** **ACS Northwest Regional Meeting (NORM): Peak Challenges, Oceans of Opportunity** ([Learn more](#))
Hosted by Western Washington University in Bellingham, WA and ACS Puget Sound Section
Online via Zoom, Free to students, Nominal charge to others, [Registration required](#)
- May 11** **Embracing & Advancing Inclusion & Equity Across the American Chemical Society with ACS President-Elect Angela Wilson** ([Learn more](#))
Angela K Wilson, ACS President-Elect and Professor, Michigan State University
5-6pm, Online via Zoom, Free, [Registration required](#)
- May 12** **Searching for Signs of Life and its Origin on Other Planets: Virtual Presentation Honoring 50/60/70 Year Members** ([Learn more](#))
Dr. Laurie Barge, Jet Propulsion Laboratory. Sponsored by the ACS Southern California Section.
7-9pm, Online via Zoom, Free, [Registration required](#)
- May 13** **Methane Production and Emissions in Trees and Forests**
Dr. Patrick Megonigal, Associate Director of Research Smithsonian Environmental Research Center
Sponsored by the Chemical Society of Washington, (ACS Section for the D.C. area)
9-10am, Online via Zoom, Free, [Registration required](#)
- May 13** **2021 State of the West Symposium: Energy & Water in the West** ([Learn more](#))
Sponsored by Stanford's Institute for Economic Policy Research (SIEPR), Hoover Institution, and the Bill Lane Center
10am-Noon, Online via Zoom, Free, [Registration required](#)
- May 13** **Natural products as probes of the pain pathway: From physiology to atomic structure** ([Learn more](#))
Professor David Julius, University of California at Berkeley
Sponsored by Stanford's Wu Tsai Neurosciences Institute
Noon-1pm, Online via Zoom, Free, [Join webinar](#)
- May 13** **A Close Examination at the Training and Academic Hiring of Women in STEM Fields** ([Learn more](#))
Valerie J. Kuck, Lucent Technologies Bell Laboratories (ret.)
Sponsored by the ACS San Diego Section
6-7:30pm, Online via Zoom, Free, [Registration required](#)
- May 15** **From Water To Human Dynamics: Taking A Non-Traditional Path To Make Chemistry More Inclusive** ([Learn more](#))
Dr. Chrissy Stachl, Director of Education, Outreach, and Diversity at the National Science Foundation Center for Genetically Encoded Materials (C-GEM)
Sponsored by the ACS California Section
10:30am-Noon, Online via Zoom, Free, [Registration required](#)
- May 18** **Full Spectrum: The Science of Color and Modern Human Perception** ([Learn more](#))
Adam Rogers, Deputy Editor of Wired, and author
Sponsored by the Long Now Foundation
5-6:30pm, Live stream on [YouTube](#), Free, no RSVP required
- May 18-19** **Chemical Ventures Virtual Conference 2021** ([Learn more](#))
Sponsored by American Institute of Chemical Engineers (AIChE), the American Chemical Society (ACS), the National Council of Entrepreneurial Tech Transfer (NCET2), and the Delaware Innovation Space
8am-2pm, Online via Zoom, Free, [Registration required](#)
- May 19** **The Thing about Alchemy . . . Secrets, Mixtures, and Discerning the Alchemical in the Potter's Art** ([Learn more](#))
Bruce Moran, Science History Institute Fellow
Sponsored by the Science History Institute
2:30-4:30pm, Online via Zoom, Free, [Registration required](#)
- May 19** **Liquid Crystal Elastomers for a Dissipative Spinal Disc Replacement Device**
Dr. Ross Volpe, Principal Scientist, Impressio Tech
Sponsored by the Golden Gate Polymer Forum
6:30-7:30pm, Online via Zoom, \$5 donation/Free, [Registration required](#)
- May 20** **Chemical Conundrums in the Movies**
Dr. Mark Griep, University of Nebraska-Lincoln
[Sponsored by the ACS Silicon Valley Section](#)
6-7pm, Online via Zoom, Free, [Registration required](#) | [Download flyer](#)
- May 20-21** **The Applied Arts of Alchemy: Virtual Symposium** ([Learn more](#))
Sponsored by the Science History Institute
8am-3pm, Online via Zoom, \$25, [Registration required](#)

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UPCOMING EVENTS (continued)

- May 21 NSF Funding During the COVID-19 Pandemic**
Emanuel Waddell, Department of Chemistry University of Alabama in Huntsville; National Science Foundation, Directorate for Education and Human Resources, Division of Human Resource Development. Sponsored by the Chemical Society of Washington, (ACS Section for the D.C. area)
9-10am, Online via Zoom, Free, [Registration required](#)
- May 21 Talking Sci-Pop ([Learn more](#))**
Professor Raychelle Burks, Department of Chemistry, American University
Sponsored by the ACS Chicago Section
5-7pm, Online via Zoom, Free, [Registration required](#)
- May 25 Future Prospects And Opportunities For Chemistry With H.N. Cheng ACS President 2021 ([Learn more](#))**
H. N. Cheng, ACS President and U.S.D.A.
Sponsored by ACS California Section and Southeastern Louisiana University
3-5pm, Online via Zoom, Free, [Registration required](#)
- June 5 ACS CHAS Workshop: Empowering Academic Researchers to Strengthen Safety Culture ([Learn more](#))**
Sponsored by ACS Division of Chemical Health and Safety (CHAS)
11am-3pm, Online via Zoom, \$25/participant, [Registration required](#)
- June 6-9 ACS Great Lakes Regional Meeting 2021: Elevating the Importance of Diversity ([Learn more](#))**
Hosted by the ACS Minnesota Local Section
Online via Zoom, \$30, [Registration required](#)
- June 9 Bolt Threads: From Recombinant Silk to Mycelium Leather**
Dr. David Breslauer, Chief Scientific Officer and Co-Founder of Bolt
Sponsored by the Golden Gate Polymer Forum and the ACS Silicon Valley Section
6:30-7:30pm, Online via Zoom, \$5 donation/free, [Registration required](#)
- June 9-11 ACS Middle Atlantic Regional Meeting (MARM) 2021: Driving Innovation ([Learn more](#))**
Co-hosted by the University of Delaware and the ACS Delaware Section
Online via Zoom, Cost varies, [Registration required](#)
- June 14-18 25th Annual Green Chemistry & Engineering Conference: Virtual Conference ([Learn more](#))**
Sponsored by the ACS Green Chemistry Institute
Online via Zoom, \$25 Students, \$75 General, [Registration required](#)
- June 17 A Muggle's Guide to Harry Potter's Chemistry**
Dr. Rebecca La, University of Nebraska-Lincoln
Sponsored by the ACS Silicon Valley Section
6-7pm, Online via Zoom, Free, [Registration required](#)
- August 19 How One Company is Making Blue Jeans 'Green'**
Dr. Tammy Hsu, Chief Scientific Officer and co-founder of Huue
Sponsored by the ACS Silicon Valley Section
7-8pm, Online via Zoom, Free, [Registration required](#)

SVACS Awards at the 2021 Santa Clara Valley Science and Engineering Fair

by Susan Oldham-Fritts

The 62nd annual Santa Clara Valley Science and Engineering Fair, the Synopsys Championship (www.science-fair.org), was held virtually due to COVID-19 precautions. As our regional competition, it showcased and celebrated our local 6th-12th graders' extracurricular science projects, made even more challenging this year due to limited or no access to school facilities. It will be these students who become our future scientists, engineers, technologists, and mathematicians. Whether or not they were selected for the SVACS awards, other organizations' special awards, or the Synopsys Championship's category awards or grand prize awards, they are all winners. Kudos to the science fair's Board of Directors for a nearly seamless virtual judging experience.

This year, our five-member SVACS special award team judged two awards on Thursday, March 11: the Dave Parker Award for excellence in middle school chemistry and our traditional section award (limited to high school students this time). Dr. Howard Peters and Dr. David Shull judged for the former award, and Dr. Natalie

McClure, Dr. Owen Gooding, and Susan Oldham-Fritts judged for the latter. Of all the incredible 157 chemistry and chemistry-related projects at the fair, we selected the following winners:

SVACS Awards, High School

First Place Award (tie) - \$350 each:

- Olivia Colace**, 12th grade
Strategies for treating late-stage Lyme disease; Synthesizing derivatives of telomere resolvase inhibitors
- Thomas Lilygren**, 12th grade
Constructing a hafnium-based metal-organic framework to remove trivalent arsenic compounds from water

Second Place - \$200

- Keela Zambre**, 12th grade
Synthesis of curcumin-polyethylene glycol-valine prodrug to improve bioavailability in Alzheimer's disease treatments

Honorable Mention - \$100

- Vaishnavi Kunapuli**, 9th grade
Indoor Carbon Dioxide Pollution Reduction Through Organic and Economical Paint Using

Mine Waste



Dave Parker Award, Middle School

First Place Award (tie) - \$125 each:

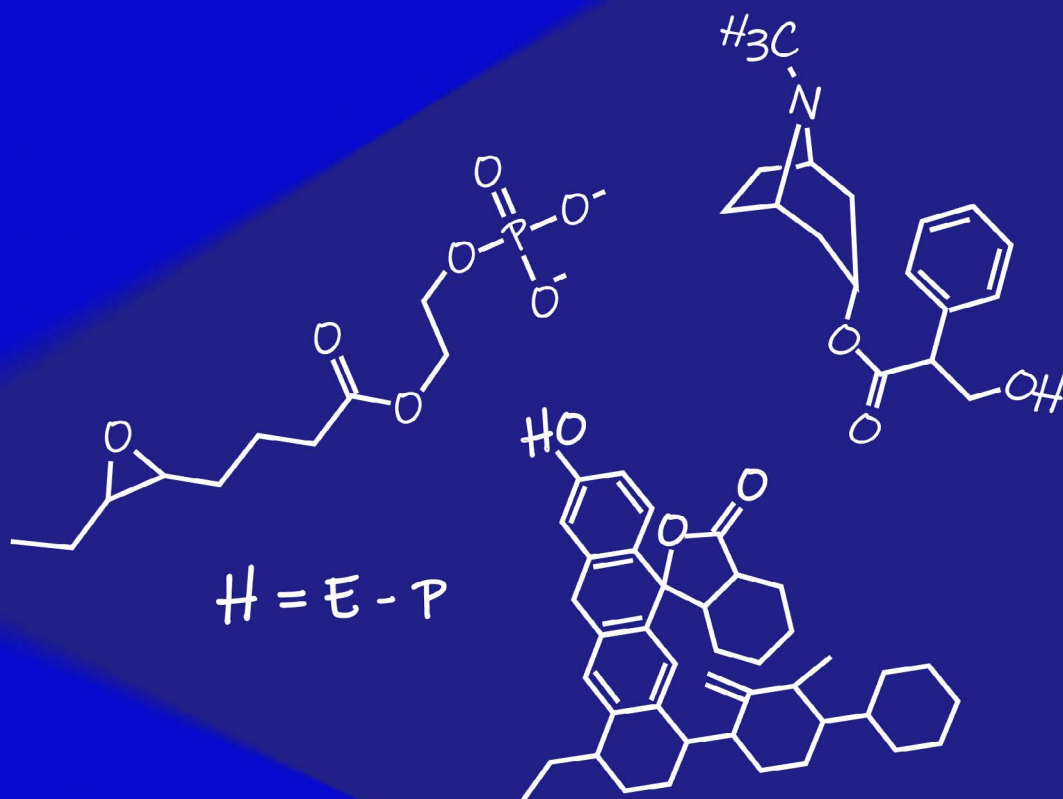
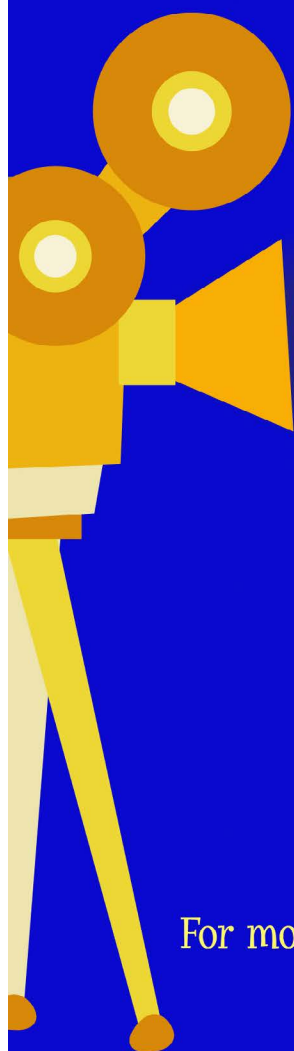
- Atharva Manjunath**, 6th grade
Investigating the Inhibitory Effect of Trigonella foenum-graecum on Carbohydrate Digestive Enzymes
- Viraj Padey**, 7th grade
Investigating the Photoluminescence Signature of Graphene Quantum Dots in the Conservation of Endangered Species



We thank the many SVACS members for volunteering their time and expertise as category, grand prize, and other special award judges. Additionally, we extend our thanks to Dr. Aart de Ges, chairman and CEO of Synopsys, and Kate Houston of the Synopsys Outreach Foundation for their continuing and generous support of local science students and their teachers. Science fairs don't happen without these committed students, teachers, judges, organizers and sponsors.

Chemical Conundrums in the Movies

PROFESSOR MARK GRIEP
University of Nebraska-Lincoln



20 May 2021 | 6 pm PST

For more information and to register for this seminar, go to svacs.org.
Registration is free and required to receive a Zoom link.



ACS Silicon Valley
Local Section

Teaching Opportunities for Partners in Science (TOPS) of Santa Clara Valley: Resource for Science Teachers

By Joseph A. Castellano, Ph.D.

TOPS of Santa Clara Valley is a volunteer organization dedicated to the enhancement of science, engineering, technology, and mathematics education at the K through 12 levels.



As a retired scientist, I worked for fourteen years as the Vice Coordinator and volunteer helping teachers in science classrooms as part of a program now called Teaching Opportunities for Partners in Science (TOPS) of Santa Clara Valley. TOPS' volunteers perform experiments and demonstrations one or two days per week in the classroom working with students. Volunteers often spend additional time preparing material in advance.

A major goal of the TOPS program is to encourage students to choose a career in science. Another is to have the students become

knowledgeable about how science applies to most of life's endeavors. Volunteers strive to relate the scientific principles they teach to the work of others in various occupations. It is important that students understand how much "science" people need to know to do their jobs safely and successfully.

Unfortunately, because of the COVID-19 pandemic, the program has been in hiatus since the closing of schools during 2020. Nevertheless, there are resources available for science teachers on the TOPS website, www.topsofscv.org.

The website provides access to 46 PDF files

with laboratory procedures and 40 PowerPoint presentations covering various topics in physics and chemistry. In addition, there is a link to 24 videos on [YouTube](https://www.youtube.com).

TOPS of Santa Clara Valley was formed as a not-for-profit joint venture with the Institute of Electrical and Electronics Engineers (IEEE). The Santa Clara County Office of Education is also a strong supporter of TOPS.

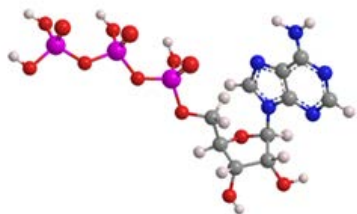
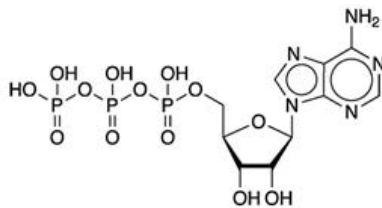
Joseph A. Castellano, Ph.D.

ACS 60-year Emeritus Member and Bubble Grant Committee Chairman

E-mail: drjcast@aol.com

CHEMISTRY Quiz

I'm your cells' main energy source.
What molecule am I?



Answer



The ACS Northwest Regional Meeting (NORM) for 2021 will be held virtually on May 9-11, 2021.

The program for NORM 2021 includes technical symposia, poster sessions, workshops, and an exposition.

Thanks to generous sponsors, student registration for NORM 2021 will be FREE and only a nominal registration fee will be charged for other attendees.

NORM 2021 has been organized by Western Washington University in Bellingham, WA, and hosted by ACS Puget Sound Section.

[View the Program and Register now!](#)

Councilor's Report: March 2021 Spring meeting (Virtual)

by Natalie McClure

The Spring 2021 ACS Council meeting was held on March 24 as a virtual meeting. Several topics on the agenda are discussed in greater detail below, including the selection of the Council nominees for ACS 2022 President-Elect, a petition to harmonize committee structures, changes in ACS membership categories (as of 2022), an update to the ACS strategic plan, and a review of the ACS financial status.

The Spring 2021 National Meeting was held virtually, with a live portion April 5-16 followed by 2 weeks of on-demand access to posted talks. There were 120 live scientific sessions per day; sessions had live Q&A and attendees could see a list of all in attendance in the 'room'. Over 8,700 abstracts were accepted. Plans for the Fall National Meeting (August 22-26) are currently under consideration by the ACS Board of Directors. A decision about an in-person, hybrid or virtual meeting format is expected within the next few weeks.

Nominations for President-Elect

The Committee on Nominations and Elections presented 4 candidate nominees for 2022 President-Elect. As required by ACS by-laws, the candidates for ACS President-Elect alternate year-by-year between academic and industrial candidates with 2022 being a year for an industry candidate. Four candidates were presented to Council: Gerard Baillely, Anne Gaffney, Judith Giordan, and John Warner. Each candidate had an opportunity to address the Council, first in a town hall meeting that preceded the Council meeting and then in presenting their election platform. Following a vote by the Council, Judith C. Giordan (Managing director of ecosVC) and John C. Warner (Founder of Warner Babcock Institute for Green Chemistry, SVP of chemistry Zymergen) were announced as the two candidates for President-Elect in the Fall National election, plus any additional candidates nominated by the petition process. John Warner was the 2016 recipient of the SVACS Harry and Carol Mosher Award. Judith Giordan is a past recipient of the Garvan-Olin Award and of the Henry F. Whalen Jr. Award for Excellence in Business Development.

President-Elect, 2022*

Nominee	1 st Round	2 nd Round	3 rd Round
Gerard Baillely	63	73	-
Anne M. Gaffney	50	-	-
*Judith C. Giordan	174	187	212
*John C. Warner	128	155	175

**415 valid electronic ballots were cast, with 208 being the majority. The results of the first preference vote totals are shown in the 1st round column. No nominee attained a majority. Following the procedures approved by Council, second-preference voters were distributed in two subsequent rounds. Those marked with an asterisk (*) were declared elected as candidates.*



Candidates for 2022 ACS President-Elect Judith C. Giordan and John C. Warner

The committee on Nominations and Elections is always looking for input into qualified individuals for President-Elect and Directors. Please send any suggestions to nomelect@acs.org.

Committee Structure and Term

The ACS has numerous committees with differing terms and term limits. Some committee memberships require that the committee member be a councilor. At the Council meeting, it was agreed that all committees be designated as "Society committees" with a three-year term of service and a two-term maximum. The requirement for committee members to be councilors was eliminated, except for the Council Policy Committee (CPC), the Nominations and Elections Committee, and the Committee on Committees (ConC). These changes will be implemented in 2022 and will be phased in to assure continuity on the committees.

There will be some funding available for non-councilors to attend committee meetings. If you are interested in serving on a National committee, please fill out the committee preference sheet at <https://www.yellowbook.acs.org>. Be sure to provide a short summary of your qualifications and interest in the committee. If you have not served on an ACS committee or held an elected office in your local section and/or division, contact secretary@acs.org to request a Yellow Book database record be created for you. All committee applications are due by July 1 (including re-application for current committee assignments).

Updates to the ACS Strategic Plan

The ACS Board of Directors approved extensive changes to the ACS Strategic Plan last December. Equity was added to the ACS Core Values, which now include Diversity, Equity, Inclusion and Respect. The Vision and Mission statements were modified to make clear that these statements include all people.

A fifth Strategic Goal was added 'To Embrace and to Advance Inclusion in Chemistry' to make clear that the commitment to Diversity, Equity, Inclusion and Respect was at the same level as our long-standing four strategic goals.

2022 Membership Schedule

A new membership schedule was approved at Council. This new approach for 2022 will result in reduced dues for Regular members and creates two new categories. The regular membership dues will drop by \$15 from \$175/year to \$160/year. The new membership categories with somewhat reduced benefits (shown in the table below) are (1) Contributing Member (annual dues of \$80) and (2) Community Associates (no annual dues). There are discounted student memberships for undergraduates (\$25) and graduate students (\$55). Emeritus status for members with over 35 years of ACS membership and over 70 years of age will be free. Retired members (35+ years of ACS membership, and retired) will pay \$80. A lot of interest has been expressed in the Community Associate category created by the membership committee to increase ACS membership even under pessimistic scenarios. This member would not be eligible for governance positions but would be encouraged to be involved in ACS activities, and would receive an online "essential" copy of C&EN. (See table next page)

Budget and Finance Committee Report

In 2020, ACS generated a net from operations of \$61 million, which was almost \$20 million higher than the budget. Total revenues were \$618.4 million, increasing 3.9% or \$23.1 million over 2019. Expenses for the year were \$557.4 million, virtually even with the prior year and almost 5 percent below budget. This result was attributable to strong revenue performance

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Proposed 2022	Community Associate \$0	Contributing Member \$80	Regular Member* \$160
SciFinder and Publications Benefits (and Discounts)			✓
ACS Meeting, Education, and Workshop Discounts			✓
Webinars Archive Unlimited Access			✓
Career & Leadership (Consulting, Salary Calc, Workshops)		✓	✓
Local Section Affiliation	On Own	✓	✓
Ability to Join a Technical Division	On Own	✓	✓
Eligible for Individual ACS Grants and Fellowships		✓	✓
Ability to Vote, Volunteer for Governance Positions, Accrue Years of Service		✓	✓
Eligible for Member Insurance		✓	✓
C&EN	✓Essential Digital	✓Digital	✓Digital or Print
ACS Network Community, Newsletters, Live Webinars, and other Content	✓	✓	✓
Make Your Voice Count for Chemistry & Advocacy	✓	✓	✓

from the Society's Information Services units (i.e., CAS and ACS Publications) and a combination of COVID-19 related impacts on, and careful management of, expenses across the ACS.

The Society's 2020 Net from Operations totaled \$130.5 million and included Information Services and Investments. The Society's financial

position strengthened considerably in 2020, with Unrestricted Net Assets, or reserves, increasing by 35 percent to \$553 million on December 31. The increase was primarily the result of the \$61 million net from operations, and growth of the Society's investments totaling \$66 million.



ACS Boss Talk in the Industry Matters Newsletter Interviews Bonnie Charpentier



Published weekly on Thursdays, the *Industry Matters Newsletter* features information, insights, and advice to help you thrive in the challenging world of industry. One of the features in this newsletter is "ACS Boss Talk," a column that contains insights and advice from a senior executive in the chemical industry.

"In the April 29th issue, "ACS Boss Talk" featured Bonnie Charpentier, Senior VP of Regulatory and Compliance at Cytokinetics, Inc., who forecasts how clinical trials may change in the wake of the pandemic, argues for more federal R&D research spending, explains three critical career decisions, and (sort of) answers a question about her favorite ACS national meeting site." [Read the article](#)

Coronavirus variants: What You Need to Know Nature Video



[Watch the video](#)

"As the global COVID-19 pandemic continues - viral variants have become the latest concern.

But variants are complicated. Each one is made up of a collection of mutations, all of which have the potential to change the SARS-CoV-2 virus in unexpected ways.

So, what do scientists mean when they talk about variants and what might this mean for the future of the pandemic?

Sign up for the *Nature Briefing*: An essential round-up of science news, opinion and analysis, free in your inbox every weekday."



Bolt Threads: From recombinant silk to mycelium leather

David Breslauer, Ph.D., Chief Scientific Officer and Co-Founder

June 9, 2021; 6:30 pm

Abstract

Bolt Threads is a material solutions company. Taking nature as our inspiration, we invent and scale cutting-edge materials that put us on a path towards a more sustainable future. Bolt was founded on technology to produce recombinant spider silk fibers for apparel Microsilk(TM), and has since broadened its product portfolio to include Mylo(TM), a mycelium-based leather alternative, and bsilk(TM), a spider silk protein based personal care ingredient. This seminar will explore the history and evolution of Bolt and its material offerings, as well as other opportunities to use nature to recreate our current materials in a more sustainable way.

Background

David Breslauer leads technology innovation at Bolt, creating and incubating biomaterials for improved consumer products. His passion for



biomaterials began with graduate research on spider silk during his Bioengineering Ph.D. at UC Berkeley and UCSF in 2010. He earned a B.S. in Bioengineering from UC San Diego in 2005.

This virtual seminar is jointly sponsored by the Golden Gate Polymer Forum (GGPF) and the Silicon Valley ACS.

Registration is required for the Zoom link.

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 a number of 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 October. Plan to be at our annual beer & wine tasting and awards picnic each July on the Stanford campus. The local section is a volunteer organization. Attend an event, volunteer to help, and get to know your local fellow chemists. Welcome!

Please note: in-person events have been suspended during the pandemic but we are meeting virtually. The offer for a free dinner meeting stands for new members once we start getting together in person again.

NEW ACS MEMBERS

Bijay Tilak Bhattarai
Ginger Brown
Colleen Carey
Chern Chuang
Timothy J. Church
Kyle Disselkoe
Abdullah Fazil
Paul A. Gibbons
Alissa Guarnaccia
Patricia Johnson
Brian Kelley
Kristine Klimovica

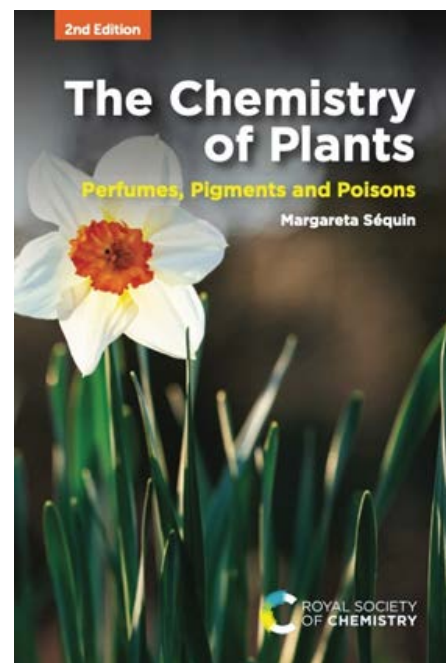
Jessica Lee
Yihong Li
Yuanzhe Liang
Ira Lim
Aaron Lindenberg
Christian L. Morales
Mario Motta
Stephan Pellissier
Scott D. Power
Cameron Pye
Shin Saito
Ram P. Singhal

Alexander C. Su
Christopher Takacs
Janet Tran
Belinda L. Tsao Nivaggiol
Hannah Wayment-Steele
Quan Xin
Gunes Yakaboylu
Raghuvara Bharadwaj
Yendluri
Yuebiao Zhou

Chemistry of Plants Book

"From Plant Scents to Perfumes" was presented by Dr. Margareta Séquin as our SVACS November 2020 program to a receptive and enthusiastic audience. She described the complex mixtures of volatile organic compounds that compose scents from flowers, fruits, leaves and tree bark. From a chemist's perspective, it was satisfying to learn the structures of naturally occurring and synthetic compounds that contribute to the fragrances of products in our daily lives.

Good news! Earlier this year Dr. Séquin's new book, *The Chemistry of Plants – Perfumes, Pigments and Poisons (2nd edition)*, was published.



"Why are some plants so important to humans? The chemistry of the plants has a lot to do with it!

The plant world offers a fascinating way to explore basic chemistry concepts. The spectacular variety of colors, fragrances and other characteristics of plants are driven by the seemingly subtle differences in the structures and properties of organic compounds. Well-known flowers, like daffodils and narcissus, are examples of plants that provide ample perfumes, pigments, and poisons as part of their intricate and fascinating chemistry.

The Chemistry of Plants addresses a wide range of audiences, from those with little chemistry knowledge to those seeking to understand complex plant compounds. It can be used as a text to introduce organic chemistry through plants, as well as a reference for more advanced readers."

Worth Knowing About Molecular editors: bridging the gap from drawing tools to searching tools

By Stephen Boyer, PhD

A **molecule editor** is a computer program for creating and modifying chemical structures. While these editors are available in different levels of complexity, they all support reading and writing at least one file format or **line notation** that renders the molecular structure machine-readable. Machine-readable formats facilitate loading molecules into increasingly popular machine-learning and computer-curation programs. Example formats are **molfile**, **simplified molecular input line entry specification** (SMILES), and **International Chemical Identifiers** (InChIs).

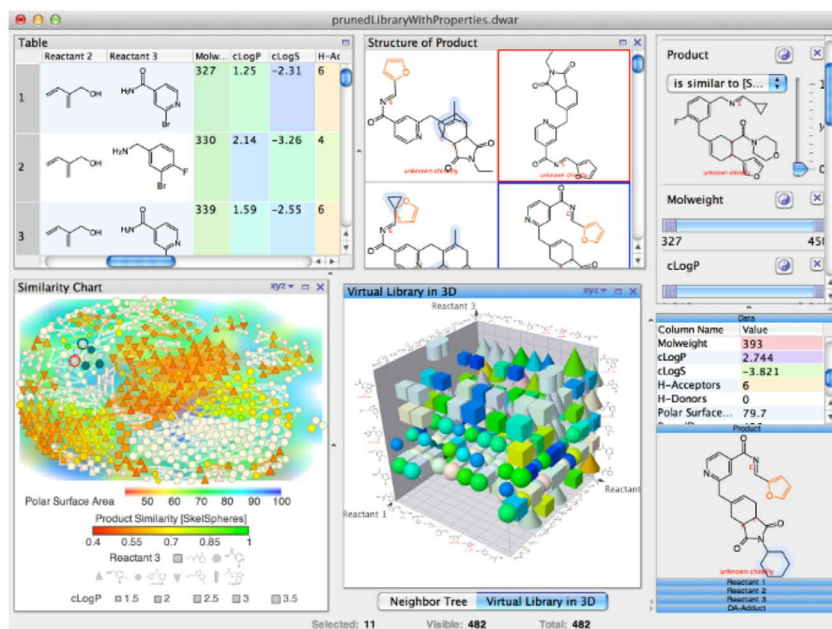
Even if you are not active in cheminformatics, modeling or computation, molecular editors offer a gateway into valuable information about molecules that you 'hand-draw' onto the molecular editor's drawing page. Yes, your chicken-scratching can now unlock a wealth of scientific information, transforming your chemical drawings into chemical knowledge to make science more accessible.

Molecular editors have evolved to address the increasing complexities of chemical & bio informatics. Two popular commercial molecular editors are **ChemDraw** (Perkin Elmer) and **Marvin Sketch** (ChemAxon). Among their many features are name-to-structure and structure-to-name capability, conversion of chemical structures into machine-readable formats such as SMILES, molfiles, InChIs, InChIKeys, and access to libraries of molecular properties. They can even generate spectra of your chosen compound.

Several now provide direct access to powerful search capabilities in the scientific and published information indexed by Google and accessed via Google Scholar and Google Patents. This integration results in an immediate view of patents, publications and prior art related to structures of interest. In addition to searching for an exact structure match, the Google chemical search engine performs substructure and similarity searches.

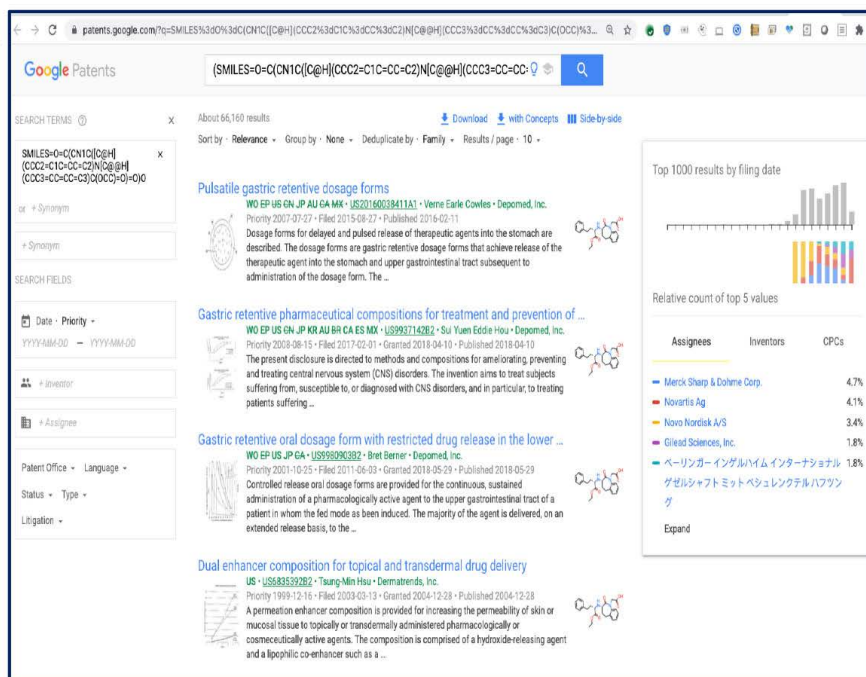
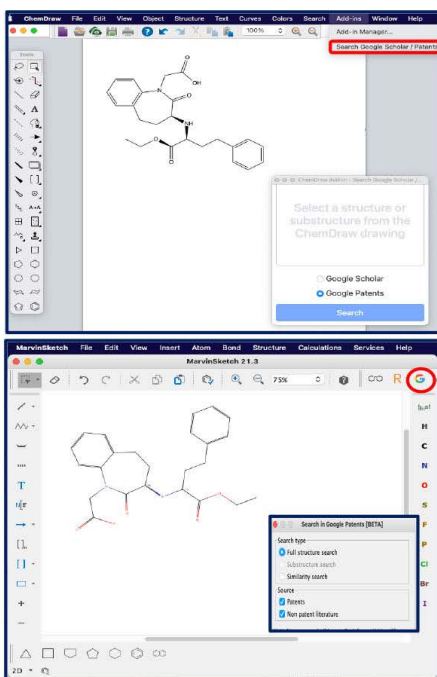
An example of the flow from molecular editors to chemical search:

In addition to the two commercial products mentioned above, the open-source cheminformatics software DataWarrior also integrated seamless access from their data views to Google Scholar, Patents and Books. Clicking a selected molecule on a DataWarrior page (example screen below) now directly links to the results of a Google chemical search.



My **July 2020 Worth Knowing About** column briefly introduced DataWarrior. In a future column I'll demonstrate DataWarrior's outstanding capabilities, including its interface to Google chemical search.

A list of molecular editors can be found in **Wikipedia**, albeit outdated. Missing from this list is yet another deserving consideration, **ChemDoodle**. Of course, there is always the **Pocket Chemist - Organic Chemistry Stencil** for drawing your molecules on paper with a Blackwing pencil while browsing the **Genius Lab Gear website**.



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Date: Wednesday, May 5, 2021 @ 11am-Noon PT
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Scientific Espionage, Open Exchange, and American Competitiveness



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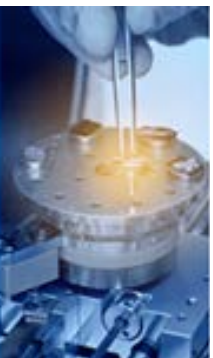
Date: Wednesday, May 12, 2021 @ 2-3pm ET
Speaker: Peter Eckes, BASF / Gayle Schueller, 3M / Bob Maughon, SABIC
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Date: Wednesday, May 19, 2021 @ 6-7 IST (8:30am ET)
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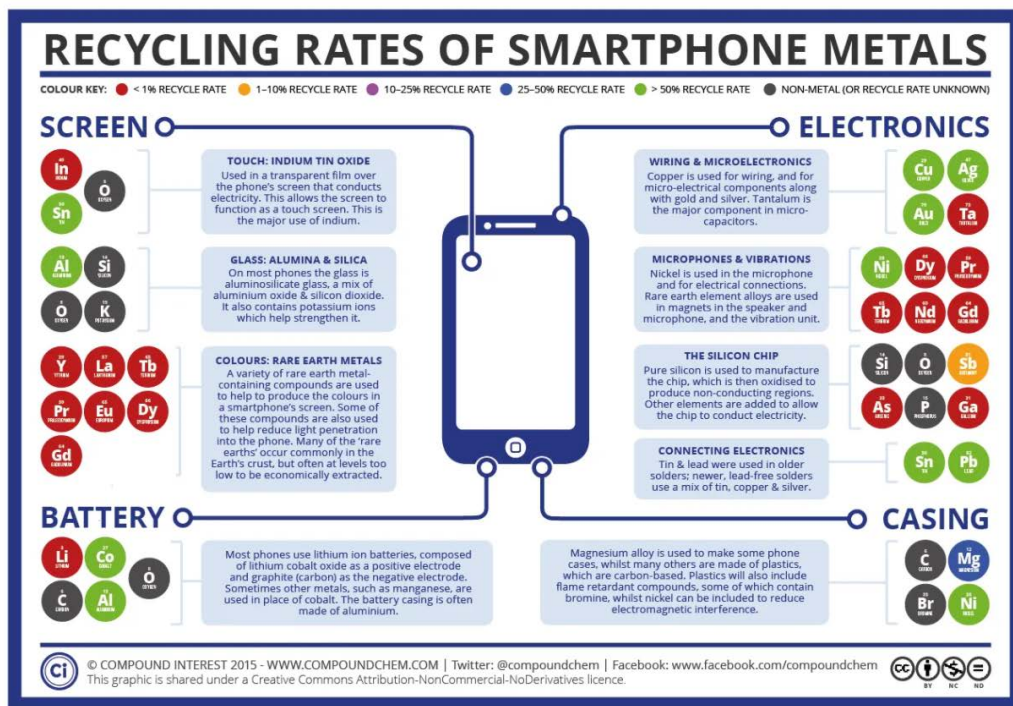


Date: Thursday, May 13, 2021 @ 2-3pm ET
Speakers: Tilak Chandra, University of Wisconsin-Madison / Katie Kruszynski, University of Wisconsin-Madison / Markus Schaufele, Northwestern University
Moderator: Ralph Stuart, Keene State College
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Date: Thursday, May 20, 2021 @ 2-3:30pm ET
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Click [here](#) to enlarge image. Also see [The Periodic Table's Endangered Elements](#).

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