

Silicon Valley Chemist

Silicon Valley Section

American Chemical Society

Volume 40 No. 3

MARCH 2018 NEWSLETTER TOPICS

- March Dinner Seminar: Bridging the Gap for Biotherapeutics Development
- Connect with Chemists
- Chair's Message
- Workshop for Teachers
- Chemistry Quiz
- SVACS Book Club Update
- Stanford Old Chem Building Becomes the Sapp Center
- Algorithmic Alchemy
- SVACS Logo Design Contest
- ACS National Council Meeting
- Industry Networking Reception
- Younger and Senior Chemists Home Beer Brewing Competition
- Local Science Fairs in 2018
- New SVACS Members

Connect with Chemists

An early morning chat with fellow chemists

Thursday, March 15, 2018, at 7 a.m.

Coupa Café, 538 Ramona Street, Palo Alto
Contact Ean Warren (ewarren@scvacs.org)
for more information or ask for Ean at Coupa.

SVACS March Dinner Seminar

Bridging the Gap for Biotherapeutics Development: Joining Automated Oligosaccharide to Automated Peptide Synthesis

Dr. Nicola Pohl, 2017 Harry and Carol Mosher Awardee

Abstract:

The carbohydrates attached to proteins/antibodies and peptides significantly alter the biological properties of the parent structure. Chemical synthesis of glycopeptides and glycoproteins to study systematic structure/function relationships, however, is challenging. This talk will discuss methods developed for solution-phase automated carbohydrate synthesis and current efforts to link the products of this synthesis platform with (9-fluorenylmethoxycarbonyl) Fmoc-based solid-phase peptide synthesis.



metabolic engineering at Stanford University, she joined the faculty at Iowa State University in the fall of 2000. She was a professor of chemistry and of chemical and biological engineering and held the Wilkinson Professor of Interdisciplinary Engineering

at Iowa State University before moving to Indiana University in summer 2012. She is

continued on next page

Biography:

Nicola Pohl, professor of chemistry and the Joan and Marvin Carmack Chair in Bioorganic Chemistry at Indiana University in Bloomington, received her B.A. degree from Harvard College in 1991 and her Ph.D. in chemistry from the University of Wisconsin-Madison in 1997. Following an NIH Postdoctoral Fellowship in the Department of Chemical Engineering doing

SVACS March Dinner Seminar

Date: Thursday, March 15, 2018

Time: 6:00 p.m. Social Hour
7:00 p.m. Dinner
8:00 p.m. Presentation

Speaker: Dr. Nicola Pohl
Indiana University
Bridging the Gap for Biotherapeutics Development

Location: Biltmore Hotel & Suites
2151 Laurelwood Blvd.
Santa Clara, CA 95054

Cost: \$30/regular, \$15/student
Grilled Salmon or Pasta Primavera

Registration: www.scvacs.org
Sally Peters
650-477-3027

Reservations should be made by March 11th stating your name, email address, company/school affiliation, number of people in party. Watch the web site for more registration information. If you are unable to honor your reservation, please cancel by Tuesday, March 13th.

Chair's Message

Melody Esfandiari



As we step into the month of March, we usher out the last days of winter and welcome the first day of spring on March 20th. Spring is associated with new life and a fresh start. If you have not made it to our monthly dinner meetings this year, this month's seminar will be a perfect time to join us. This month's meeting celebrates the recipient of the annual Mosher Award. This award has been sponsored by our section every year since 1980! I'm new to

this section, so I was intrigued to learn more about how this award came about. I was blown away by what I found. Harry and Carol Mosher were longtime supporters of the Silicon Valley ACS. They had key roles in establishing our local section, which was previously a subsection of the California chapter. Both husband and wife were organic chemists who moved to California in 1947. Harry

continued on next page

March Dinner Meeting, continued from front page

currently also a Fellow of the Radcliffe Institute of Advanced Study at Harvard and a Visiting Professor at MIT. She has served as on the executive committee of the Division of Biological Chemistry of the American Chemical Society, a member-at-large and Chair-Elect/Chair/Past-Chair ACS Carbohydrate Chemistry Division and is currently on the editorial advisory boards for the ACS journals Organic Letters and The Journal of Organic Chemistry. Her work has been recognized with a Cottrell Scholar Award (2003-2008), an NSF Career Award (2004-2009), a Sloan Foundation Fellowship (2005-2007), the Horace S. Isbell Award (2010) and Melville L. Wolfram Award (2018) from the ACS Division of Carbohydrate Chemistry, and the International Fluorous Technology Award (2017). Her research aims to understand and exploit the subtle differences amongst sugars in order to develop automated workflows to synthesize and analyze carbohydrates and incorporate them into biotherapeutics designs.

Workshop for Teachers

The annual Teach the Teachers Workshop, sponsored by Silicon Valley Section ACS with generous support from Gilead Sciences, Inc., will be held on Saturday, April 21, 2018 at Stanford. The theme for the workshop will follow the 2017 National Chemistry Week theme: Chemistry Rocks! The workshop is designed for elementary and middle school educators, and will feature several chemistry-related activities. Resources including a curriculum binder and all the materials needed to recreate the activities in the classroom will be provided free of charge to each educator who participates. If you know a 4th through 8th grade educator who would like to attend, please register at: <http://teachtbeteachersspring2018.bpt.me>. Registration is limited. Please register early and no later than April 7, 2018.

Volunteers are needed for this event. The opportunities and times are varied – come early (8:00 am) and help set up; help with registration (9:00 am); help with lunch set up and/or lunch takedown (12:30 – 2:00 pm); or help with the workshop take down (3:00 – 4:00 pm). If you have some time and would like to volunteer for this fun and worthwhile program or you have any questions regarding this workshop, please email us at TeachTheTeachersACS@gmail.com.

Chair's Message, continued from front page

joined the chemistry department at Stanford University while Carol accepted an appointment at Stanford Research Institute (which is now SRI International). Both were charter members and distinguished chemists. Harry Mosher is known for inventing the "Mosher reagent" (also known as Mosher's acid), which is used to measure the degree of left- or right-handedness in organic molecules. Carol is the author or co-author of 28 scientific papers and patents. Her research focused on the interaction of drugs with DNA, and with the synthesis of anticancer agents. The Mosheres were the first recipients of this award, which was established to recognize outstanding work in chemistry and service to ACS. On March 15th, the Silicon Valley ACS will host the 38th Mosher award and celebrate this year's recipient, Prof. Nicola Pohl, from Indiana University. We hope that you can join to hear Nicola's talk and to honor the Mosheres.

Going forward, I thought it would be entertaining to include a fun fact at the end of each chair's message. I always try to incorporate this into my lectures at San Jose State University to keep my students engaged (and make sure they return to the next lecture). I hope this serves a similar purpose here and incentivizes you to keep reading my message next month. This month's chemistry fun fact: one of the most common ingredients in many acne products and face washes is alpha-hydroxy acid (AHA). We may think that all modern products are discovered in a research lab, but sometimes chemists can learn from history too. In this instance, ancient Egyptian queens are known to have bathed in sour donkey milk, which we know today is very rich in AHA. Can you imagine how many donkeys were needed in order to provide enough milk for a queen's daily bath?

Chemistry Quiz

At standard temperature and pressure, what liquid has the highest density?

The answer will appear in next month's newsletter.

Last Month's Chemistry Quiz

What did English naturalist John Ray isolate in 1671 by the distillation of large numbers of ants?

Formic acid

SVACS Book Club Update

The next meeting of the SVACS Book Club has been rescheduled due to the April 14th 2018 March for Science. The book for discussion is: "The Poisoner's Handbook: Murder and the Birth of Forensic Medicine in the Jazz Age New York" by Deborah Blum.

This is a story of the development of Toxicology Forensics in New York City during the Prohibition years. The book is a quick read, although occasionally a little gruesome, as it deals with the causes of murders and deaths. The chemistry is mostly accurate but a little lightweight. The book contains some interesting stories of industrial radium poisoning; deliberate arsenic poisoning; and a lot of methanol poisoning, both deliberate and inadvertent.

Paperback copies are available at Kepler's (1010 El Camino Real, Menlo Park, <http://www.keplers.com>) or from Amazon.com.

Interested in joining the ACS Book Club? Add yourself to the email list (svacs-book-club+subscribe@googlegroups.com) or contact Ean Warren (ewarren@scvacs.org).

Stanford Old Chem Building Becomes the Sapp Center

In May, 2017, the Stanford Historical Society held a reception and a 1.5 hour program about the reopening of the renovated Old Stanford Chem Building as The Sapp Center. Dr. John Brauman, Stanford Professor Emeritus, provided a rich first-hand history of the Old Chem building, the Chemistry faculty and students. Video from the Stanford Historical Society is available at <https://chemistry.stanford.edu/events/stanford-chemistry-tradition-and-transition>

Additional Stanford Chemistry Department history from 1891 to 1976 written by Dr. Eric Hutchinson is found at http://web.stanford.edu/group/swain/history/hutchinson/html_index.html

More recent history from 1977 to 2000 was summarized by Dr. Harry Mosher: Buildings and Facilities: Stanford Chemistry Department History 1977-2000: Projects and hosted sites archive: Swain Library. It is found at <https://web.stanford.edu/group/swain/history/mosher/buildings.html>



Algorithmic Alchemy

By Alex Klevay

At the January dinner meeting of the SVACS, before an audience perhaps more closely acquainted with Bunsen than Boolean, Dr. Steve Boyer of IBM introduced cognitive chemistry to come in the era of machine learning and artificial intelligence.

Maybe Steve wears rose-tinted glasses when he says “in ten years there could be more chemists at Google than Pfizer.” No chemist can deny how quickly information technology is changing their field! Even the most savvy practitioners of IUPAC nomenclature couldn't draw the molecular structure of (2R,4S)-4-[4-Amino-5-(4-benzyloxy-phenyl)pyrrolo[2,3-d]pyrimidin-7-yl]-2-hydroxy-methylpyrrolidine-1-carboxylic acid tert-butyl ester faster than modern chemistry programs equipped with text analytics.

Computers could not always conduct this seemingly magical process of transformation. Now that they can, the chemist has more rapid access to information from sources like patents and text-based databases. With

algorithms capable of clarifying obfuscated data and generating reaction schemes, information retrieval is greatly accelerated.

If computers could tell the chemist how things are made, the most important thing becomes knowing what to make. For drug discovery, the chemist might identify which protein target to inhibit and ask a computer to predict which compounds to synthesize. Conversely, the computer could predict which other proteins the compound will interact with to cause side effects. Once the chemist decides what he or she wants a hypothetical philosopher's stone to do, the digital engines of prediction will suggest not only what it should be made of, but how to make it, even if it has never existed before.



SVACS Logo Design Contest

Your local ACS section recently changed its name from Santa Clara Valley ACS to Silicon Valley ACS, and we need a new logo to go along with this change! We invite any SVACS members and any local students to participate in our Logo Design Contest. The rules of the contest are as follows:

1. Include the section name “Silicon Valley American Chemical Society” either in its entirety, abbreviated “Silicon Valley ACS”, or abbreviated “SVACS”
2. Submit only original designs. No copyright infringement is permitted, and the selected design will have to get approval by ACS National before we announce the winner
3. Colors used should be CMYK, and the colors should stand out against a white background
4. Use of programs such as Inkscape or Adobe Illustrator is encouraged
5. Submit files to SVACSLogo@gmail.com. Your submissions should be PDF files. If your design is selected, we will ask for a higher quality file.
6. All submissions should be labeled as: **LASTNAME_FIRSTNAME_#.PDF**. If you submit more than one logo, number your files appropriately (# = 1, 2, or 3). No more than three submissions per person.

Submission due date: **March 30, 2018.**

A prize will be awarded to the winner!

Where might the winning logo appear? Look for it on our website, in the SVACS letterhead, or displayed at SVACS functions.

We enthusiastically await your creative designs!

ACS National Council Meeting

March 21, New Orleans

The ACS Council is the society's deliberative assembly of national officers plus councilors representing local sections (80%) and divisions (20%). The Council acts as an advisory body in matters pertaining to the general management of the ACS. The Council will meet at the ACS national meeting in New Orleans on Wednesday, March 21, at 8AM in Grand Ballroom A-D of the Hilton New Orleans Riverside Hotel.

The agenda for this meeting with supporting documents - available online at www.acs.org/councilors - contains material on Council business and information to explain actions taken at the meeting. Immediately after each national meeting all councilors receive a summary of actions taken by the Board and Council at that meeting. Ask a Councilor for this summary if you would like to report on the actions taken at the meeting.

Non-councilors are invited to observe the Council meeting. The space set aside for this purpose will be available to ACS members on a first-come, first-served basis. Take advantage of this opportunity if you are planning to be in New Orleans for the national meeting.



Industry Networking Reception

March 19

ACS National Meeting in New Orleans

The industry networking reception will be held on Monday, March 19 from 6:30 to 8:00 PM at the Hilton New Orleans Riverside Hotel, 2 Poydras Street, New Orleans, in the Port/Starboard/River Rooms. Light refreshments will be served.

ACS Industry Member Programs is organizing this event with support from the following cosponsors:

- ACS Division of Chemistry and The Law (CHAL)
- ACS Division of Small Chemical Businesses (SCHB)
- ACS Division of Business Development and Management (BMGT)
- ACS Corporation Associates

Please RSVP online at <https://fs23.formsite.com/kate1dc/form175/index.html> by March 2. Send any questions to Industry@acs.org.

Younger and Senior Chemists Home Brew Competition

The Younger Chemists of the Silicon Valley local section ACS partnered with their Senior Chemists to host a home brew competition at Golden State Brewery in Santa Clara, CA on Saturday, November 11, 2017. A total of 12 home brews were submitted by 8 home brewers. As hoped, the collaboration between the local section YCC and the Senior Chemists resulted in a diverse set of entrants and attendees, with a final head count that exceeded 70 people. Dr. Matt Greaney (Silicon Valley section Councilor 2017-2019), was the lead organizer for the YCC with direct assistance from several additional local younger chemists.

Following a successful November, 2016, networking happy hour and brewery tour at Golden State Brewery in Santa Clara, the idea for a follow-up event home brew competition was concocted during a local section Program Committee meeting in early 2017. After several months of planning and brewing, the day of the joint YCC-Senior Chemists Home Brew Competition had arrived. Over 70 people convened at the brewery to participate in the event.

A panel of judges was assembled and a rubric was created to officially evaluate each of the home brews. The judges consisted of the owner of Golden State Brewery (Seth Hendrickson), a representative from the Senior Chemists (Alternate Councilor Howard Peters), and Terry, a beer-aficionado friend of the brewery owners. In addition to the official 3-member judging panel, every attendee was given an evaluation sheet for use in tracking the various home brews they sampled. A special "People's Choice Award" was also determined by soliciting each attendee's choice for best brew. The winner of the People's Choice Award (Kristina Ogle, Lemon-Ginger Beer) and the official Judge's Choice (Richard Rucker, Sippin' Citra Pale Ale) each received an apparel package donated by the brewery that included sweatshirts, hats, and tees. Stephanie and Seth, the brewery owners, were acknowledged for their support by presenting them with a "Salute to Excellence" ACS award.

As an unexpected bonus, the brewery owners generously invited the winner of the

Judge's Choice to return to the brewery in February, 2018, to brew a full-scale commercial batch of the chosen beer. Dr. Richard Rucker (a polymer chemist consultant at Exponent and one of the assistant event coordinators) entered a 'Sippin Citra Pale Ale', which was selected as the judge's choice. He added a unique touch to this ale by (in his own words) "changing the water chemistry" used for the wort. (The wort is the liquid extracted from the grains and barely during brewing that contains the sugars to be later fermented by the brewing yeast). Despite fielding questions probing this unique twist, he remains tight-lipped on the proprietary details of his process, but he promises to include them in the scale-up. Richard and Matt Greaney are scheduled to return to the brewery in February to meet with the head brewer and plan out the logistics for a commercial 30-barrel batch of Richard's winning brew.

We plan to report the progress of this "scale-up" in our monthly newsletter, and there are plans being made to host a follow-up tasting event at the brewery once the batch

is ready for consumption (May-July, 2018). We are actively soliciting interested younger chemists to help plan and participate in future events. Several ideas for future YCC events are being explored including a career panel for learning about post-academic options, a nerd-night for professional networking over chalk-talk disseminations of personal research, and a follow-up home brew competition. Anyone interested in participating in the Silicon Valley YCC is strongly encouraged to contact Matt Greaney (greaney19@gmail.com) or any other Executive Committee member.



Home brewer Andrew Bartynski performs quality control on his products before serving.



Attendees gather in front of Golden State Brewery waiting for the beer tastings to begin.



The judges hard at work. Owner Seth Hendrickson (left) recruited his beer-loving friend, Terry (center) to assist with the judging. Howard Peters (right).



Local section Councilor Sally Peters and Chair-Elect Grace Baysinger work the registration booth checking in attendees and passing out scoring cards.



Professor (and home brewer) John Goeltz (right) shares his beer with Wes.

continued on next page

Home Brew, continued from previous page



Home brewer Kristina Ellice Ogle took home the People's Choice Award for her refreshing Ginger Beer.



Matt Greaney (center, back) with the home brewers thanking the participants and announcing the winners.



Attendees took a break from the sunshine in the game room.



Senior chemist and local section Alternate Councilor Howard Peters presents a Salute to Excellence Award to Seth and Stephanie Hendrickson, owners of Golden State Brewery.



Local Science Fairs in 2018

by Susan Oldham-Fritts

This month is your last chance this year to judge at one of the county science fairs. All county fairs are qualifiers for student advancement to the International Science and Engineering Fair, ISEF. While the cost is minimal (a day of your time judging at your local science fair), the return is great: encouraging middle and high school students to participate in the world of STEM – science, technology, engineering, and math. Please sign up as a **category judge** for one of the following regional science fairs. Also, ask professionals you know in botany, biology, and the behavioral/social sciences to judge. A few spaces remain if you would like to **join our SVACS-sponsored special awards judging team at the Synopsys Championship on March 15th**. We judge about 200 projects in the fields of biomedical and health science, biochemistry, chemistry, and earth and environmental science.

The interaction between the students and judges is the heart of each and every science fair. The encouragement, gentle critique, and interest we as judges share with the students benefit all of the participants. No matter which fair is close to home, **please volunteer now!**

San Mateo County Science, Math, and Technology Fair

(San Mateo Events Center, Fiesta Pavilion), March 4

<https://www.stemfair.net/app/signup/judges>

Santa Cruz County Fair (Santa Cruz County Fair Grounds), March 10

http://www.science.santacruz.k12.ca.us/judges_registration_new.html

Monterey County Science and Engineering Fair

(California State University, Monterey Bay, University Center, Bldg.29), March 17

www.montereycountysciencefair.info

Synopsys Championship (San Jose Convention Center), March 15

<https://science-fair.org/judges-3/category-judges/judging-registration/>

Golden Gate STEM Fair

(San Francisco County Fair Bldg., 9th and Lincoln, Golden Gate Park), March 19

<http://sfbasf.org>

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! To encourage you to attend a monthly section seminar meeting, we would like you to be our guest. When you register, 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. If you are unable to attend in the evening, perhaps you would 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. Then, there is our annual wine tasting and awards picnic in July. The local section is a volunteer organization. Please attend an event, volunteer to help and get to know your local fellow chemists. Welcome!

New SVACS Members

David Boyle

Michelle Butler

Hoi-Kit Cheung

Igor Dubovyk

David Entwistle

Julie A. Farand

Dr. Patrick G. Holder

Dr. Ashutosh S. Jogalekar

Dr. Camilla M. Kao

Dr. Neeraj Kapoor

Terry Kellar

Joshua Lee

Dr. David W. Lin

Dr. Min Lin

Prof. Till Maurer

Dr. Essam Metwally

William Mitch

Victoria Piunova

Tiffany Rivera

Katherine Roelofs

Dr. Zhe Rui

David Sham

Elaine Shepard

Dr. Michael Volny

Lisa Wong

Guoxi Xu

Yang Yang

John Stanley Zaremba



SILICON VALLEY SECTION
AMERICAN CHEMICAL SOCIETY
P.O. Box 395, Palo Alto, CA 94302

Happy St. Patrick's Day

To receive an email when our newsletter
is published on our web site, sign up at:

http://scvacs.org/?page_id=99

SILICON VALLEY SECTION

2018 Section Officers

Chair	Melody Esfandiari	408-924-4973	melody.esfandiari@sjsu.edu
Chair-Elect	Grace Baysinger	650-725-1039	graceb@stanford.edu
Past Chair	Todd Eberspacher	650-723-2505	eberspacher@stanford.edu
Secretary	Jigisha Shah	315-289-5115	jssheth@syr.edu
Treasurer	Ihab Darwish	650-624-1389	darwishis@yahoo.com

Councilors

2016-2018	Linda Brunauer	408-554-6947	lbrunauer@scu.edu
2016-2018	Sally Peters	650-447-3027	sallybrownpeters@gmail.com
2018-2018	Peter Rusch	650-961-8120	pfrusch@aol.com
2017-2019	George Lechner	408-226-7262	glechner@aol.com
2017-2019	Matt Greaney	510-410-0195	greaney19@gmail.com
2018-2020	Ean Warren	650-329-4554	ewarren@scvacs.org
2018-2020	Natalie McClure	650-906-7831	nmclure@drugregulatoryaffairs.com

Alternate Councilors

2018-2018	Alex Klevay	408-561-0087	alex.klevay@gmail.com
2016-2018	Heidi Vollmer-Snarr	650-723-9518	hrvsnarr@stanford.edu
2018-2018	Howard Peters	650-447-3027	peters4pa@sbcglobal.net
2017-2019	Elizabeth Pollom	408-924-5012	elizabeth.pollom@sjsu.edu
2017-2019	Slava Bekker	831-759-6005	sbekker@hartnell.edu
2018-2020	Madalyn Radlauer	408-924-5482	madalyn.radlauer@sjsu.edu
2018-2020	Jane Frommer	408-927-2225	jane@collabra.net

Newsletter

Editor	Kevin Greenman	408-634-2309	editor@scvacs.org
Assoc. Editor	Partha P. Bera		partha.pb@gmail.com

ChemPloyment Abstracts

Director:	Liang Cao	liang.cao@aol.com
-----------	-----------	-------------------

FUTURE EVENTS

- Mar 15** *SVACS March Dinner Seminar*
2017 Harry and Carol Mosher Award
Dr. Nicola Pohl, Indiana University
Bridging the Gap for Biotherapeutics
Development
Biltmore Hotel & Suites, Santa Clara, CA
- Mar 18-22** *National ACS Meeting and Expo*
Nexus of Food, Energy and Water
New Orleans, LA
- Mar 23** *The Life Art Science Technology (LAST)
Festival*
SLAC National Accelerator Laboratory
Menlo Park, CA
- Mar 24** *Bees, Wasps, Honey, and Hives*
Pacific Grove Museum of Natural History
Pacific Grove, CA
- Apr 21** ACS High School Chemistry Olympiad
National Exam
Las Positas College, Livermore, CA
- Apr 28** SVACS Tour and Talk at Hopkins Marine
Station www.scvacs.org
Amanda Whitmire, Head Librarian
Pacific Grove, CA
- Click on links for more information or
see this newsletter at http://scvacs.org/?page_id=99