

SILICON VALLEY CHEMIST

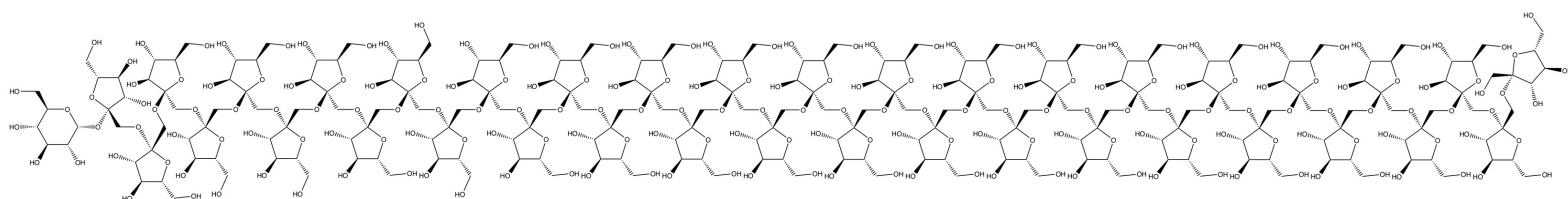


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Moshier Award Dinner and Lecture

Ushering in the Era of Digital Drug Design with Spherical Nucleic Acids

Over two decades ago, nucleic acid therapeutics emerged as a promising new technology for treating diseases with a known genetic basis. In recent years, nucleic acids have been identified as sequence-specific regulators of the immune system. However, issues pertaining to their



Prof. Chad A. Mirkin
Department of Chemistry and International Institute for Nanotechnology
Northwestern University

stability, toxicity, and delivery have dramatically limited their application and thus slowed the growth of the field. Indeed, the vast majority of nucleic acid drugs that are currently being developed target diseases that can be addressed

in the liver, the site where nucleic acids accumulate when systemically administered. We have discovered a new form of nucleic acids that can be actively internalized by most cell and

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Chair's Message

Matt Greaney



Happy New Year! With my first message of the start of my year as Chair, I'd like to re-introduce myself as well as the newly elected section

officers, Councilors and Alternate Councilors. I've gotten to know many of our members over the last four years in my role as an SVACS Councilor, and look forward to meeting many more as I step into the more prominent role as Chair of our section.

I was born and raised in the Bay Area, attending UC Berkeley for my undergraduate education and University of Southern California for my graduate studies in chemistry. I currently work as an R&D chemist at Clariant's high-throughput catalysis center in Palo Alto. Aside from my day job, participation in ACS on a local and national level has enabled my continued engagement with the greater scientific community. I believe this is one of the countless benefits that ACS offers. I also think that many of my fellow officers and councilors have a similar take. This year, our membership elected a new

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Connect with Chemists

An early morning chat with fellow chemists

Thursday, Jan. 16th, 2020, at 7-8 am

Coupa Café, 538 Ramona Street, Palo Alto

Contact Ean Warren (ewarren@scvacs.org) for more information or ask for ACS at Coupa.

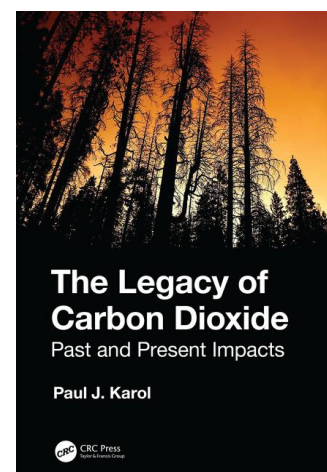
Member News

Paul Karol, Professor Emeritus of Chemistry from Carnegie Mellon University, now lives in the Bay Area and is a member of the Silicon Valley Section. He is the author of *The Legacy of Carbon Dioxide: Past and Present Impacts* that was published by CRC Press (Taylor & Francis) in 2019. This book "covers the truly varied roles carbon dioxide has played and continues to play in the character of our planet. Chapters address the synthesis of CO₂ in stars, the evolution of the atmosphere over billions of years, the chemical and physical properties of

CO₂ and how those influence common phenomena.

How well this knowledge is understood and how it was determined, including existing uncertainties in our confidence and the stress from competing possibilities are discussed. Much of the technological jargon in various incorporated sciences has been modified to ease consumption by the non-expert.

Share noteworthy news and accomplishments with other members of the ACS Silicon Valley Section
Please send items to: editor@scvacs.org



Chair's Message, continued from front page

Chair-elect (Jigisha Shah), a new Secretary (Laura Yeager), two Councilors (Madalyn Radlauer and myself), four Alternate Councilors (Howard Peters, Heddie Nichols, Todd Eberspacher, Avni Gandhi, and one more to be appointed in January 2020). Additionally, our long-time Treasurer, Ihab Darwish, was re-elected for another two years. We are your local ACS section representatives and serve our members, so do not ever hesitate to reach out to any of us with comments, requests, or inquiries.

Over the course of 2019, our section was active and visible on multiple fronts. The year kicked off with our annual Mosher Award reception with the 2019 Award given to Professor Gary Molander of University of Pennsylvania. Don't miss the next Mosher Award dinner reception in just a few weeks on Thursday, January 23, 2020, at the Holiday Inn in South San Francisco! This year's Mosher awardee is Professor Chad Mirkin of Northwestern University. Additional information regarding logistics and registration is available on our website and in this newsletter edition.

We led or participated in several other events in 2019 including the annual Chemistry Olympiad, the Teach-the-Teachers workshop, the Bay Area Science Fair, Younger Chemists Committee speed-networking events and trivia nights, and Chemists Celebrate Earth Week, to name a few. Our Monterey Bay sub-section continued to thrive with Spring and Fall events featuring Professor Phil Crews of UC Davis in April and Professor Rebecca Braslau of UC Santa Cruz in September. The Monterey Bay sub-section will be active during 2020 as well, so I encourage you to consider using one of the future events as an excuse to drive over the hill, take in some beautiful scenery, and meet some new colleagues. We also kicked off the first ever Bay Area Chemistry Symposium featuring several prominent Bay Area chemists from industry and academia, with strong industrial

support. We plan to make this an annual event, so stay tuned for information on the 2020 BACS. We ended the year on a strong note with a dinner meeting at the Stanford Faculty Club featuring Dr. Wendy Young, Senior VP of Small Molecule Drug Discovery at Genentech. Needless to say, 2019 was a big success and a busy year. We all benefited from some downtime with friends and family over the holidays. Now that we're rested and recharged, we're ready to head into 2020 with a bigger and equally exciting slate of events.

This year's programming starts off fast. As previously mentioned, the 2020 Mosher Award will be in a few weeks on January 23, 2020, at the South SF Holiday Inn. Professor Mirkin is world-renowned, and we anticipate a large crowd, so be sure to register ASAP. Also, in 2020 we will host dinner meetings featuring scientists from Stanford, the local national labs, Tesla, Carbon 3D, and more. On Tuesday, April 7, Jason Rolland (Senior VP of Materials at Carbon 3D) will give a presentation titled, "Production Redefined: Carbon's Digital Light Synthesis Platform". The event will be held at Michael's at Shoreline. Additional information for all our upcoming events is (or will be) available on our website and in our monthly newsletters and emails. We will continue our constant outreach efforts and attempt to build upon and improve them in ways that benefit our members and the greater community.

This may be the first time you've heard from me, but it won't be the last. I'll continue to update our members through this forum, and I ask that you reach out to me and/or my fellow Councilors and officers anytime you'd like. We all volunteered for these roles because this is what we love doing. There is always room for new ideas and volunteers, and there will always be open ears to listen to whatever input you may have. I wish you all a great start to 2020, and I hope to meet you soon.

Matt Greaney
SVACS Chair, 2020; Councilor 2020-2022

they have also shown immense promise as advanced immunotherapeutics for cancer. This presentation will describe how SNAs are steering the community toward a whole new way of thinking about digital drug design.



Mirkin, continued from front page

a tissue types, without the need for transfection agents, owing to their novel nanoscale architecture. These new forms of DNA and RNA, referred to as spherical nucleic acids (SNAs), are revolutionizing the way we study, track, and treat disease. SNAs are being used as potent gene regulation agents that can be topically delivered to the skin and cross the blood-brain-barrier to treat neurodegenerative conditions;

Mosher Award Dinner and Lecture

Thursday, January 23, 2020

6:00 Social Hour
7:00 Dinner
8:00 Presentation

Speaker:

Dr. Chad Mirkin, Northwestern University
Ushering in the Era of Digital Drug Design

Location:

Holiday Inn
275 South Airport Blvd.
South San Francisco, CA

Cost:

\$45.00 regular members/\$23 students
Stuffed chicken breast or salmon or veggie
pasta

Reservations:

<https://www.brownpapertickets.com/event/4485157>
or, 650-906-7831

*Reservations should be made by January 19th. For
further details visit <http://svacs.org>*

2020 Radding Award Nominations

The Silicon Valley ACS Awards Committee invites you to Submit Nominations for the 2020 Shirley B. Radding Award. Since 1994, the award has been given annually to an individual who:

- Has been a member of the ACS for more than 20 years
- Has demonstrated dedicated service and leadership to the ACS and its members through elected or appointed positions at local, regional and national levels over a sustained period of time
- Has made significant contributions to industrial, applied or academic chemistry

The award consists of an honorarium of \$1000.00 and an engraved plaque. For each candidate, submit more than one letter of nomination relating the nominee's work to the award criteria and candidate curriculum vitae to Heddie Nichols (hnichols105@gmail.com) by May 1, 2020.

2019 Bubble Grants

Joseph A. Castellano

Since 2011, the Santa Clara Valley Section of the American Chemical Society has provided elementary and secondary school educators funds for science programs. The Bubble Grant program was established in 2011 by a generous donation from ACS member Bryan Balazs, which supported the program through 2015. Since 2016, the program has been funded by the Silicon Valley Section of the ACS, and in 2019 by an additional generous donation from Peter Rusch.

Qualified uses of the funds are for purchases related to the proposed project, such as scientific equipment, instructional materials and/or supplies. Over the past seven years, awards of up to \$500 per year were granted to California K-12 schools for projects that helped to enhance the teaching of physical science.

This past year's \$1,000 Bubble Grant was split between two California schools. A \$500 grant was awarded to science teacher Eileen Resnick at Martin Murphy Middle School in the Morgan Hill, California school district. The purpose of the school project is to provide the 7th and 8th grade science teachers with a Document Camera. These cameras are being widely used in science classrooms to direct a computer's output for a unified presentation of classroom material on a large screen in the front of the room. They are effective in the classroom as it enables the teacher to display the lesson in real time on a screen while facing the class.

A second \$500 grant was awarded to science teacher Thomas Lau at Jerry D. Holland Middle School in Baldwin Park, California. The grant will be used to acquire materials that will aid in physical and life science teaching. Wisconsin Fast Plant seeds will be acquired to help students understand the genetic variation from seed to seed. The school will also purchase gram blocks to simulate atoms in the study of chemistry and will purchase a simple motor kit to allow students to explore how magnetic fields and motors function.

The 2019 Bubble Grant Committee consisted of Rex Maimait, Peter Rusch, Jane Frommer and myself. Please contact me by e-mail if you have any questions, comments or suggestions. Nominations for the 2020 Bubble Grant are now being accepted.

Joseph A. Castellano, Ph.D.

60-year ACS Emeritus Member

E-mail: drjcast@aol.com

Local Science Fairs

Susan Oldham-Fritts

Haven't decided on a New Year's resolution yet? How about encouraging middle and high school students to participate in the world of STEM—science, engineering, math, and science? It takes just one day of your time to judge at your local science fair. The following area science fairs need category awards judges, especially in the areas of botany, biology, chemistry, microbiology, and behavioral science. In addition, we need more chemists on our SVACS sponsored special awards judging team at the Santa Clara County science fair, and the Synopsys Championship. The latter is a qualifier for the International Science and Engineering Fair, ISEF. Please contact me at svsefmgr@gmail.com to join our team of dedicated chemists at the South Valley Science and Engineering Fair on February 8 and the Synopsys Championship on March 12. No matter which fair is close to home, please volunteer now!

- Sciencepalooza!*: February 1, Santa Clara County Fairgrounds, San Jose (www.outreach-foundation.org/judges/)
- South Valley Science Fair*: February 8, Christopher High School, Gilroy (<https://southvalleyscience.com/judge-registration/>)
- Synopsys Championship: March 12, San Jose Convention Center, San Jose (<https://science-fair.org/judges-3/category-judges/judging-registration/>)
- Golden Gate STEM Fair: March 13, U.S. Army Corps of Engineers Bay Model Visitors Center, Sausalito (<https://ggstemfair.org/login>)
- Santa Cruz County Science and Engineering Fair: March 14, Santa Cruz County Fair Grounds, Watsonville (<https://ca-scc.zfairs.com/?f=7482c7e8-ffce-4b54-8ef3-3919bccafddd>)
- San Mateo County Science, Math, & Technology Fair: March 15, San Mateo Events Center, Fiesta Pavilion, San Mateo (<https://www.stemfair.net/judges-and-volunteers>)
- Monterey County Science & Engineering Fair: March 29, California State University, Monterey Bay, University Center, Bldg. 29 Seaside (www.montereycountysciencefair.info)

**Many students at these competitions are first time science fair participants.*

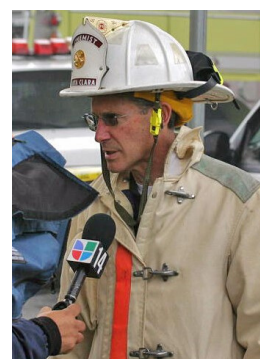
Two Long-Term Members Retire from the Executive Committee

On December 5, 2019, George Lechner and Dave Parker, two long-term Executive Committee Members, were recognized with deep gratitude for their exceptional and enduring service to the ACS Silicon Valley Section.



George Lechner served on the Executive Committee as Alternate Councilor from 2000-2006, Councilor from 2006-2019, and Chair-Elect/Chair/Past-Chair from 2003-2005 and 2006-2008. In 2019, George put in extraordinary effort for the Executive Committee by getting the ByLaws revised, updating the Operations Manual for Officers, and managing the election of new officers.

George plans to continue serving on the Program and ByLaws Committees in 2020.



Dave Parker served on the Executive Committee as an Alternate Councilor from 2003-2019, and Chair-Elect/Chair/Past-Chair from 2005-2007. For the past several years, Dave has also served on the Program Committee. This is one of Dave's favorite pictures because it reflects his 29 years serving the City of Santa Clara as a chemist and the administrator of the Fire Department's HAZMAT Division. In his final years, he also served as the Public Information Officer, as you can see in the photo.

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 beer & 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

Dr. Rajib AHMED
 Dr. Robert James Alaimo
 Dr. Eric Ashley
 Dr. Paul A. Barsanti
 Dr. Indranil Chakraborty
 Fang Chen
 Angela Chilcott
 Mike Cohen
 Yuchen Fan
 Dr. Catherine C. Fenselau
 Mr. Robert Ferber Jr.
 Jessica Frick
 Renee Fuller
 Mr. Alexander Gunn
 Christopher Hahn
 Jack Hu
 Raana Kashfi Sadabad
 Ms. Katrina Marie Knauer
 Dr. Scott E. Lazerwith
 David Lilienfeld

Kristin Marie Lips
 Yingdong Luo
 Katie Maass
 Dr. Danielle Jamie Mai
 Lucas Man
 Shaun McKinnie
 Dr. Katherine Vanessa Nelson
 Angel Nguyen
 Mr. Minh Nguyen
 Dr. Lizanne Nilewski
 Michelle Niu
 Dr. R Wayne Ohline
 Mr. Dylan B. Paulsen
 Lingxuan Peng
 Dr. Jeremy Pietron
 Mr. David Allen Quincy
 Ms. Carin Ragland
 Ariana Maria Remmel
 Nicholas M. Riley
 Pawankumar Suresh
 Thomas Tarara
 Dr. Leann Quertimont Teadt

Stephane Tesson
 Dr. Rohan Ashok Thakur
 TIAN TIAN
 Ms. Maureen Heckman Tischler
 Mr. Loc Truong
 Mr. Kyle Tubbs
 Dr. Martin Voegelé
 Jiayu Wan
 Hongxia Wang
 Ms. Susan Williams
 Dr. Rachel M. Witek
 Mr. Alex Wixtrom
 Dr. Abraham Wolcott
 Brian Wong
 Zijie Xia
 Yusheng Ye
 Mingshuo Zeng
 SHUYUAN ZHANG
 Zeqiong Zhao
 Hongyu Zhou
 Shengshuang Zhu
 Shiqiang Zou

Melody Esfandiari Completes Term as Past-Chair

Many thanks to Melody Esfandiari for all her efforts as Chair-Elect/Chair/Past-Chair from 2017-2019. The dedication, energy, and passion that she brought to this leadership position were appreciated very much. During her very busy tenure, one especially noteworthy accomplishment was performances of the play No Belles at San Jose State University, Santa Clara University, Stanford University, and University of California at Santa Cruz.



Across	
1	For looking at bones
6	Element #5
11	Makes EtOH
17	Makes modern batteries
21	Element Pb
26	For turning small currents into voltage
31	Chinese fragrant plant oil
45	European Environmental Agency
52	Water by elements, plural
57	CGS unit of energy
61	Multiple large blood vessels
73	Indium
76	Cerium
79	Silver
86	Gold
91	Electron _ _ _
95	A single un-bound Oxygen is...
Down	
1	Xylene containing
2	Fishing mechanical
3	Bill W. group squared
4	Yellow sulfur, di-nuclear
8	Costa _ _ _ _
9	Diatomic molecule 1/5 of air
10	Nitrogen, Hydrogen, Silver
26	Yes
35	Mixed semiconductor
39	Sodium nitride
52	Holmium
53	Winter constellation
54	Hi temp Nitrogen Sulfide
58	Yttrium
60	CGS unit of energy
61	Gold Amalgam
76	Short for positive terminal
77	Europium Oxide
79	Pharma drug precursor
82	Europium

ACS Sacramento Section Crossword Puzzle

1	2	3	4		6	7	8	9	10
11	12	13	14	15		17	18	19	20
21	22	23	24		26	27	28		30
31	32	33	34	35	36	37	38	39	40
41				45	46	47		49	50
	52	53	54	55		57	58	59	60
61	62	63	64	65			68		70
71		73	74		76	77		79	80
81	82	83	84		86			89	
91	92	93		95	96	97	98	99	100

A huge thank you to Annie Ma, a senior at The Harker School, for all her efforts to redesign the look and feel of our newsletter. She did a fantastic job! Many thanks to Steve Boyer for providing the chemical structure used in the masthead. Thanks to George Lechner, Natalie McClure, and other Executive Committee Members for their copyediting help.



SILICON VALLEY SECTION

2020 Section Officers

Chair	Matt Greaney	510-410-0195	greaney19@gmail.com
Chair-Elect	Jigisha Shah	315-289-5115	jssheth@syr.edu
Past-Chair	Grace Baysinger	650-725-1039	graceb@stanford.edu
Secretary	Laura Yeager	626-826-3145	laura.yeager123@gmail.com
Treasurer	Ihab Darwish	650-624-1389	darwishis@yahoo.com

Councilors

2018-2020	Ean Warren	650-714-5133	ewarren@scvacs.org
2018-2020	Natalie McClure	650-906-7831	mccclure@drugregulatoryaffairs.com
2019-2021	Linda Brunauer	408-554-6947	lbrunauer@scu.edu
2019-2021	Jane Frommer	408-927-2225	jane@collabra.net
2019-2021	Sally Peters	650-447-3027	sallybrownpeters@gmail.com
2020-2022	Matt Greaney	510-410-0195	greaney19@gmail.com
2020-2022	Madalyn Radlauer	408-924-5482	madalyn.radlauer@sjsu.edu

Alternate Councilors

2019-2021	Sogol Teschler	408-896-2367	sgyahyazadeh@gmail.com
2019-2021	Laura Yeager	626-826-3145	laura.yeager123@gmail.com
2020-2022	Todd Eberspacher	650-723-2505	eberspacher@stanford.edu
2020-2022	Avni Gandhi	626-831-8230	avni.caltech@gmail.com
2020-2022	Heddie Nichols	310-435-2133	hnichols105@gmail.com
2020-2020	Howard Peters	650-447-3027	Peters4pa@sbcglobal.net
2020-2020	Vacant		

Newsletter

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Director	Liang Cao	liang.cao@aol.com
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FUTURE EVENTS

SVACS Dinner & Lecture <i>Dr. Chad Mirkin Harry & Carol Mosher Awardee</i>	Jan 23
Holiday Inn, South San Francisco, CA	
Science Saturday: Amazing Migrations	Jan 25
Pacific Grove Museum of Natural History https://www.pgmuseum.org/sciencesaturday/	
SVACS -YCC Speed Networking	Feb 6
Santa Clara Univ. Dept. of Chemistry Madalyn.radlauer@sjsu.edu	
SVACS Dinner & Lecture <i>Dr. Andy Stevenson</i>	March
Redwood Materials TBD	
SVACS Dinner & Lecture <i>Dr. Jason Rolland</i>	April 7
VP Materials at Carbon 3D Michael's Restaurant Santa Clara, CA	