

# Silicon Valley Chemist

Santa Clara Valley Section

American Chemical Society

Volume 39 No. 1

## JANUARY 2017 NEWSLETTER TOPICS

- SCVACS February Dinner Seminar
- Connect with Chemists
- Chair's Message
- SCVACS By The Numbers
- New Members
- Reminder: January Dinner Seminar
- Santa Clara Valley ACS Local Section 2016 Election and Ballot Results
- Welcoming Future Sponsors: Bubble Grant Helps Teachers Fund Science Programs
- SV USPTO Patent and Trademark Office Tour Postponed
- Volunteers Needed for the Mosher Award Committee
- SCVACS 2016 Grant Awarded to Piedmont Hills High School
- Chemistry Quiz

## Connect with Chemists

Meet fellow local chemists  
for an early morning coffee.

Look for Ean at a table with molecular models.

**Thursday, January 19, 2017, at 7 a.m.**

Coupa Café, 538 Ramona Street, Palo Alto  
(a half a block off from University Avenue)

**S C V A C S**  
**By The Numbers**

Issues of the  
Silicon Valley Chemist  
in 2016

**12**

**15**

Number of events  
organized by the  
section in 2016

Connect with Chemists  
breakfast events  
in 2016

**12**

## SCVACS February Dinner Seminar

### Making Medicines More Sustainably: Efforts of the Green Chemistry Institute Pharma Roundtable (GCIPR)

Dr. Stefan Koenig



Development (IQ Consortium) and ACS. He is a process chemist at Genentech, where he has contributed to both early and late research and development projects. Stefan received his Ph.D. from Yale University and was a post-doc at the ETH Zurich prior to embarking on his career in industry.

#### Abstract

The ACS Green Chemistry Institute Pharma Roundtable (GCIPR) was founded in 2005 to bring committed pharma companies together to help the industry become more efficient and reduce its environmental footprint. The presentation will provide an introduction to the GCIPR as well as an overview of ongoing activities in making the discovery and development of medicines a more sustainable enterprise.

#### Biography

Stefan Koenig is Co-chair of the American Chemical Society (ACS) Green Chemistry Institute Pharma Roundtable (GCIPR) as well as a member of the International Consortium for Innovation and Quality in Pharmaceutical

## February Dinner Seminar

**Date:** **Wednesday, February 15, 2017**

6:00 p.m. Social Hour

7:00 p.m. Dinner

8:00 p.m. Presentation

**Speaker:** Dr. Stefan Koenig  
Co-chair of the ACS GCIPR  
*Making Medicines More Sustainably: Efforts of the Green Chemistry Institute Pharma Roundtable*

**Location:** Michael's at Shoreline Park  
Mountain View, CA

<http://michaelsatshoreline.com/>

**Cost:** \$30/person  
\$15/student  
Breast of Chicken with Herb Butter Sauce, or  
Grilled Vegetable Brochette

**Registration:** <http://scvacs.org/>  
Sally Peters 650-854-4614

Reservations should be made by February 8th with each attendee's name, email, phone, and company/school affiliation. Watch the web site for more information. If you are unable to honor your reservation, please cancel by Monday, February 13th.

## Chair's Message

Todd Eberspacher



One of the duties of the Chair is to write the monthly Chair's Message for our newsletter. For those who don't know me, I work at Stanford University where I am the Facilities/Safety/Operations Manager for the Department of Chemistry. At Stanford, we are big on reducing our carbon footprint. Like many companies, Stanford shuts down to the greatest extent possible over the holiday break. This works very well for the teaching effort

*continued on next page*

*Chair's Message, continued from front page*

and nearly as well for the administrative side of Stanford, but not so well for the research functions and not at all for the hospital. This 'holiday shutdown' is done in a large part to save energy by shutting down as many of the buildings as possible. I can assure everyone that it is not a simple task to turn off a city, nor is it simple to turn it back on; it is even more difficult to keep the chemistry neighborhood running in a closed city.

With the shutdown in mind, I have been thinking about how "green" and "sustainable" have become common adjectives to describe many aspects of work and life. Recycling, renewable energy, carbon footprint, and waste diversion are pervasive topics at work for many of us. Applying green or sustainable to describe chemistry is not a recent trend. I recall hearing Prof. Barry Trost give a talk on Atom Economy as a graduate student sometime around 1990. Fast forwarding, a recent issue of C&EN spotlighted the artificial leaf, using light to ultimately drive chemical reactions. Chemistry and the chemical industry have in some circles gotten a bad reputation and have been blamed for all sorts of problems. In other circles chemistry has been the answer to making things better. It may well be a matter of perspective in deciding if our chosen profession is good or bad.

Our local section has not been left out, nor have we ignored the growing trend. Last year we featured several talks that would qualify as fitting the green or sustainable trend. First, Pat Brown from Impossible Foods presented on how destructive the farming of red meat is and how to manufacture an "impossible" burger from plant-based materials. James Rogers from Apeal Sciences discussed using plant-based materials to enhance the shelf life of produce. Both talks emphasized the sustainability aspect of chemistry in a prominent way. We also hosted a talk by Peter Gleick on the future of water resources.

January traditionally starts our year with the Mosher Award ceremonies. For our first talk of 2017, "Innovation and Sustainability: Designing the Future" will be given by Dr. John Warner. The February dinner meeting will feature Stefan Koenig speaking on efforts to make medicines in a sustainable way. I would like to encourage everyone to attend one or both of the meetings.

In keeping with the sustainability trend of my first column, at the last Executive Committee meeting we discussed traffic getting to and from dinner meetings and the ExComm

meetings. There is no longer a good commute; a drive that took me 25 minutes 15 years ago now takes nearly an hour. We briefly discussed how many meetings should we have, where should we have them, and when should we have them. Your input is welcomed on this subject. We currently have ~10 dinner meetings a year and 11 ExComm meetings. Should we have fewer dinner meetings, should we try teleconferences, should we meet on weekends, or try video conferences instead of meeting in person?

Let's not forget that the Spring National ACS meeting in 2017 will be held at the Moscone Center in San Francisco. The meeting will be jointly hosted by our section and the Cal section, and it is expected to be among

the larger national meetings held by the ACS. There are many ways for members of our section to get involved with this meeting. If you are interested, please contact us.

Finally, I would like to welcome the new officers and councilors who were elected in November, as well as welcome back those who were re-elected. There are many opportunities to participate and everyone is welcome to join in; we can always use the extra hands. The program committee has some interesting activities in the works—more on this soon.

We look forward to your active participation and hearing your feedback and ideas. Please contact us at [chair@scvacs.org](mailto:chair@scvacs.org) anytime.



## Welcome to the Santa Clara 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 SVCACS Members

Dr. Tara S. Baney	Zachary Benjamin Hill	Anand Rao
Liam Berryman	Dr. Adam R. Johnson	Jodee Sasamoto
Daniela E. Bolanos	Sydney Johnson	Kevin Schilling
Alex Bonomi	Dr. Hannah Kallewaard-Lum	Yanika Schneider
Mrs. Jennifer Carlson	Mireille Kamariza	Dr. Chong Kuang Shaw
Claudine Yumi Chang	Joshua Kirsch	Stephanie Spahr
Dr. Xin Chen	Dr. Lay Min Lee	Tomoya Tisdale
Professor Roberto Crea	Dr. Juchuan Li	Keith Warren Walcott
Yang Cui	John Matsubu	Dr. Hui Wang
Aleksandra Kirillovna Denisin	Anna M. Michalak	Jinyuan Wang
Dr. Sidney Elmer	Martina Morelli	Dr. Simon Peter Williams
Giangranco Filice	Christina Owens	Stephanie Wong
Patrick Fracisco	Hillary Pan	Taichi Yatsuzuka
Dr. Keith P. Fruzzetti	Dr. Matthew A. Pellow	Dr. Inn Yuk
Rachel Hendricks	Katarzyna Piechowicz	

Reminder: January 26, 2017  
Mosher Award Dinner Seminar

## Innovation and Sustainability: Designing the Future

Dr. John Warner

### Abstract

Imagine a world where all segments of society demanded environmentally benign products! Imagine if all consumers, all retailers and all manufacturers insisted on buying and selling only non-toxic materials! The unfortunate reality is that, even if this situation were to occur, our knowledge of materials science and chemistry would allow us to provide only a small fraction of the products and materials that our economy is based upon. The way we learn and teach chemistry and materials science is for the most part void of any information regarding mechanisms of toxicity and environmental harm. Green Chemistry is a philosophy that seeks to reduce or eliminate the use of hazardous materials at the design stage of a material's process. It has been demonstrated that materials and products CAN be designed with negligible impact on human health and the environment while still being economically competitive and successful in the marketplace. This presentation will describe the history and background of Green Chemistry and discuss the opportunities for the next generation of materials designers to create a safer and more sustainable future.

### Biography

Dr. John Warner is the recipient of the 2014 Perkin Medal, widely acknowledged as the highest honor in American Indus-



trial Chemistry, and was named a 2016 AAAS-Lemelson Invention Ambassador. He received his BS in Chemistry from UMASS Boston, and his PhD in Chemistry from Princeton University. After working at the Polaroid Corporation for nearly a decade, he then served as tenured full professor at UMASS

Boston and Lowell (Chemistry and Plastics Engineering). In 2007, he founded the Warner Babcock Institute for Green Chemistry, LLC, (A research organization developing green chemistry technologies) where he serves as President and Chief Technology Officer, and Beyond Benign (a non-profit dedicated to sustainability and green chemistry education). He is one of the founders of the field of Green Chemistry, co-authoring the defining text Green Chemistry: Theory and Practice with Paul Anastas. He has published nearly 300 patents, papers and books. His recent work in the fields of pharmaceuticals, personal care products, solar energy and construction and paving materials are examples of how green chemistry principles can be immediately incorporated into commercially relevant applications. Warner received The 2004 Presidential Award for Excellence in Science Mentoring (considered one of the highest awards for US science education), the American Institute of Chemistry's Northeast Division's Distinguished Chemist of the Year

## January Dinner Seminar

Date: Thursday, January 26, 2017

6:00 p.m. Social Hour

7:00 p.m. Dinner

8:00 p.m. Presentation

Speaker: Dr. John Warner  
President and CTO  
Warner Babcock Institute for  
Green Chemistry  
*Innovation and Sustainability:  
Designing the Future*

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

Cost: \$28/person  
\$14/student  
Grilled Salmon or Eggplant  
Parmesan

Registration: <http://scvac.org/>  
Sally Peters 650-854-4614

Reservations should be made by Jan. 23rd with each attendee's name, email, phone, and company/school affiliation. Watch the web site for more information. If you are unable to honor your reservation please cancel by Wednesday, January 25th.

for 2002 and the Council of Science Society President's 2008 Leadership award. Warner was named by ICIS as one of the most influential people impacting the global chemical industries. In 2011, he was elected a Fellow of the American Chemical Society and named one of "25 Visionaries Changing the World" by Utne Reader.

## Santa Clara Valley ACS Local Section 2016 Election and Ballot Results

The 2016 Section elections and ballot were conducted online from November 1 to November 27, 2016. The turnout was around 11%: 285 members cast a ballot out of 2573 eligible members. This turnout was comparable to 2015's election.

Congratulations to the re-elected and newly-elected Section officers, Councilors, and Alternate Councilors.

### Chair-elect

Melody Esfandiari (262)

Write-ins (5)

### Treasurer

Ihab Darwish (266)

Write-in (1)

### Secretary

Richard Bone (265) Write-in (1)

### Councilors

George Lechner (181)\*

Matt Greaney (180)\*

Charlie Cox (164)\*\*

Peter Rusch (119)

Herb Silber (114)

\*elected for a 3-year term

\*\*elected for a 1-year term

### Alternate councilors

Elizabeth Pollom (228)\*

Slava Bekker (221)\*

Howard Peters (183)\*\*

Mark Kent (92)

\*elected for a 3-year term

\*\*elected for a 1-year term

The local section would like to thank all candidates who ran for office as well as the

Nomination Committee for finding these well-qualified candidates.

Also on the ballot was a vote to change the section's name from Santa Clara Valley ACS to Silicon Valley ACS. By a wide margin the voting members supported the change: 80% of 284 votes cast.

The numbers:

- 229 votes (80.6%) supported the proposed name change.
- 31 votes (10.9%) had no opinion.
- 24 votes (8.5%) opposed the proposed name change.

The next step in changing the section's name is already in progress: petitioning the ACS National Council.



## - Welcoming Future Sponsors - Bubble Grant Helps Teachers Fund Science Programs

The Santa Clara Valley Section of the American Chemical Society provides local elementary and secondary school educators funds for science programs through its Bubble Grant program. The program was established in 2011 by a \$500 annual donation from ACS member Bryan Balazs. His generous annual donations supported the program for five years. In 2016, the Santa Clara Valley ACS Executive Committee voted to continue funding the program out of its own budget. With a goal of increasing the effectiveness of this direct source of support for science classrooms, the section seeks a corporate or individual sponsor and hopes to raise the annual grant to \$1000. Sponsors who fund the Bubble Grant award will receive recognition each year on the SCVACS website and newsletter.

Local science teachers submit short proposals describing how they would put the funds to use in their classrooms. Qualified uses include purchases related to proposed projects, such as scientific equipment, instructional materials and supplies. Over the past six

years, awards of up to \$500 per year have been granted to local California K-12 schools for the following projects that helped to enhance the teaching of physical science:

1. Lone Tree Elementary School in Antioch purchased laboratory equipment that enabled students to prepare copper ammonium sulfate solution.
2. Jerry Holland Middle School in Baldwin Park used the grant to purchase digital timers for chemical reaction rate experiments and supplies to perform paper chromatography as well as other experiments in chemistry and biology.
3. Piedmont Hills High School in San Jose used Bubble Grant funds for equipment for students to identify compounds by melting point and to measure pH and temperature changes in chemical reactions.
4. Sequoia Hills High School in Redwood City purchased laboratory supplies to support science learning programs in various Redwood City schools.
5. Bret Harte Middle School in San Jose used

a Bubble Grant award for chemicals and science kits for student chemistry experiments.

6. Corte Madera School in Portola Valley purchased chemicals for students to perform acid-base reactions and polymer cross-linking.

Most of the schools awarded a Bubble Grant serve communities with a high level of minority students including many who are economically disadvantaged. The program will continue to support projects that enhance science and technology within the realm of the Next Generation Science Standards (NGSS) now being implemented in schools throughout California.

The 2016 Bubble Grant Committee consisted of Rex Maimait, Peter Rusch and Joe Castellano. Please direct any questions, suggestions, and offers on leads to corporate or individual sponsors to [drjcast@aol.com](mailto:drjcast@aol.com).

Joseph A. Castellano, Ph.D.  
50-year ACS Emeritus Member



## SV USPTO Patent and Trademark Office Tour Postponed

by Howard Peters

The December Silicon Valley Chemist announced that a SCV ACS tour was scheduled for noon on November 30 at the new SV USPTO office near City Hall in San Jose. Seven SCV members responded.

This Patent Office tour did not occur and was postponed – for lack of interest. Why?

The SV USPTO only has tours during business hours between 8 am and 5 pm. It was the third event for SCV members in November. The noon time was selected

because of the increasing traffic problems in San Jose during commute times. What was the problem that more SCV members did not respond? Please contact Howard Peters at [peters4pa@sbcglobal.net](mailto:peters4pa@sbcglobal.net) with any suggestions for future dates and times for any future tour. Note: On January 6, 2017, at noon will be a regular PTO public tour. See <https://www.uspto.gov/about-us/uspto-locations/silicon-valley-ca/silicon-valley-uspto-events>

Registration with the PTO is required.

## Volunteers Needed for the Mosher Award Committee

by Howard Peters

The next Mosher Award event will be January 26 at the Biltmore Hotel in Santa Clara.

Two to four additional SCV volunteers are needed to serve on the 2017 Award Committee.

The time involvement is less than ten hours per year and is primarily concerned with the selection.

Starting in 2017, Dr. Natalie McClure will serve as the committee chair



253rd American Chemical Society  
**NATIONAL MEETING & EXPOSITION**  
*Advanced Materials, Technologies, Systems & Processes*  
APRIL 2-6, 2017 | San Francisco, CA

**Registration and Accommodations** are Now Open!  
**Contact us** to learn about opportunities to volunteer

# SCVACS 2016 Grant Awarded to Piedmont Hills High School

The Santa Clara Valley Section of the American Chemical Society is pleased to announce that it has awarded a grant of \$500 to Mr. Lope Macasaet, chemistry teacher at Piedmont Hills High School in San Jose. Piedmont Hill High serves a community of 92% minority students including 27% who are economically disadvantaged. The award

is part of an annual SCVACS program – The Bubble Grant - that recognizes and supports local teachers of the physical sciences.

Mr. Macasaet will use the funds to purchase five sets of wireless chemistry probes to enhance specific lessons in high school chemistry classes. These wireless devices include temperature and pH probes. The

wireless probes will be interfaced to computers for gathering and interpreting data. The instrumentation ties into the principles of 'crosscutting concepts' that are integral to the Next Generation Science Standards (NGSS) now being implemented in schools throughout California. Crosscutting concepts link the different domains of science and include the themes of cause and effect, scale and proportion, energy and matter, structure and function, and stability and change.

Congratulations Mr. Macasaet!

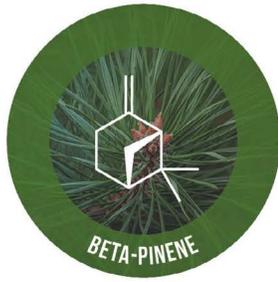
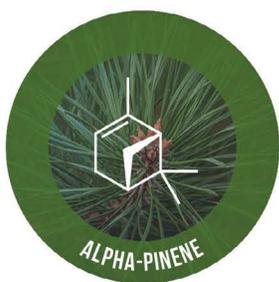
The Bubble grant is described on the Santa Clara Valley ACS website [http://scvacs.org/?page\\_id=44#Bubble](http://scvacs.org/?page_id=44#Bubble)

Applications for a 2017 Bubble grant are being accepted from K-12 science teachers. Send your application or nomination to [drjcast@aol.com](mailto:drjcast@aol.com) by September 1, 2017.

Joseph A. Castellano, Ph.D.  
Chair, Bubble Grant Committee  
50-year ACS Emeritus Member

## Aroma Chemistry

# THE AROMA OF CHRISTMAS TREES



### BORNYL ACETATE

FORMULA  
 $C_{12}H_{20}O_2$

CLASS OF COMPOUND  
Ester

#### ABOUT

Found in volatile oils of conifers, particularly silver pines and balsam firs, and has a clean, pine-like odour. The use of silver pines as Christmas trees has declined, but balsam firs are popular in the United States.

### ALPHA-PINENE

FORMULA  
 $C_{10}H_{16}$

CLASS OF COMPOUND  
Terpene

#### ABOUT

Alpha-pinene has a turpentine-like odour, and is found in volatile oils of many different species of pine tree. It has two enantiomers; one is more common in European pines, the other more common in North American pines.

### BETA-PINENE

FORMULA  
 $C_{10}H_{16}$

CLASS OF COMPOUND  
Terpene

#### ABOUT

An isomer of alpha-pinene, beta-pinene is a major compound emitted by forest trees. It has a fresh, woody, turpentine-like smell. Both pinene isomers are flammable, hence why pine cones & Christmas trees burn well.

### OTHER COMPOUNDS



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HAPPY NEW YEAR  
**2017**

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SANTA CLARA VALLEY SECTION  
AMERICAN CHEMICAL SOCIETY  
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## SANTA CLARA VALLEY SECTION

### 2017 Section Officers

Chair	Todd Eberspacher	650-723-2505	eberspacher@stanford.edu
Chair Elect	Melody Esfandiari	408-924-4973	melody.esfandiari@sjsu.edu
Past Chair	Jane Frommer	408-927-2224	frommer@scvacs.org
Secretary	Richard Bone	650-714-7897	rgb@scvacs.org
Treasurer	Ihab Darwish	650-594-1654	darwishis@yahoo.com

### Councilors

2015-2017	Ean Warren	650-329-4554	ewarren@scvacs.org
2017-2017	Charlie Cox	650-485-1041	ctcox@stanford.edu
2016-2018	Bonnie Charpentier	650-380-5353	charpentierbon@yahoo.com
2016-2018	Linda Brunauer	408-554-6947	lbrunauer@scu.edu
2016-2018	Sally Peters	650-854-4614	sallybrownpeters@gmail.com
2017-2019	George Lechner	408-226-7262	glechner@aol.com
2017-2019	Matt Greaney	510-410-0195	greaney19@gmail.com

### Alternate Councilors

2015-2017	David Parker	408-615-4961	drdrparker@comcast.net
2017-2017	Howard Peters	650-854-4614	peters4pa@sbcglobal.net
2016-2018	Natalie McClure	650-906-7831	nmclure@drugregulatoryaffairs.com
2016-2018	Heidi Vollmer-Snarr	650-723-9518	hrvsnarr@stanford.edu
2016-2018	Stephanie Bachmann	408-429-9681	s_gehling@hotmail.com
2017-2019	Elizabeth Pollom	408-924-5012	elizabeth.pollom@sjsu.edu
2017-2019	Slava Bekker	831-759-6005	sbekker@hartnell.edu

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### ChemPloyment Abstracts

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

- Jan 22** *21st Century Conservation - Insights from Monarch and Checkerspot Butterflies*  
Dr. Stuart Weiss  
Pacific Grove Museum of Natural History  
Pacific Grove, CA
- Jan 26** SCVACS Mosher Award Dinner  
Dr. John Warner, President and CTO of  
Warner Babcock Institute for Green  
Chemistry  
Innovation and Sustainability: Designing  
the Future  
Biltmore Hotel & Suites  
Santa Clara, CA
- Jan 28** *Stanford Engineering Opportunity Job Fair*  
Huang Engineering Center  
Stanford, CA
- Feb 2** *"Girls Coming to Tech!" A History of American Engineering Education for Women*  
Dr. Amy Sue Bix  
Paul Allen Center for Integrated Systems,  
Stanford University
- Feb 15** SCVACS Dinner Seminar  
Making Medicines Sustainably  
Dr. Stefan Koenig  
*Michael's at Shoreline*, Mountain View, CA

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see this newsletter at [http://scvacs.org/?page\\_id=99](http://scvacs.org/?page_id=99)