

Silicon Valley Chemist

Santa Clara Valley Section

American Chemical Society

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JUNE 2016 NEWSLETTER TOPICS

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Connect with Chemists

Meet fellow local chemists for an early morning coffee.

Look for Ean at a table with molecular models.

Thursday, June 16, 2016, at 7 a.m.

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

Chair's Message

Jane Frommer



June is an apt midpoint to take stock of the year's SCVACS activity. Let's summarize what we have been doing, a good opportunity to query you on what works well for you

and what we might do differently.

Have you noted changes in the activity of the section? Have you participated in local section activity in the past year? If not, then what would lead you to take part more?

Our monthly events have included:

- A tour for chemists of Silicon Valley's

continued on next page

June Dinner Seminar - Joint with the Golden Gate Polymer Forum

Redesigning the Interface Between Fresh Produce and the Environment for Sustainable Agriculture

Dr. James Rogers, CEO Apeel Sciences

Abstract

Apeel Sciences creates products from natural plant extracts that allow growers to reduce reliance on pesticides, increase produce quality, and provide superior shelf life even when optimal temperature control is not possible. As the world confronts the implications of an ever-expanding population, agriculture will need to evolve in order to improve the efficiency with which we use our natural resources. In the US, the majority of our fresh water is consumed for irrigation while 40% of our fresh produce is lost to spoilage before it can be used. This means that we are literally "throwing away" a portion of our available freshwater supply, not to mention the added negative environmental consequences of pesticide usage associated with growing the



huge fraction of produce that ultimately ends up in landfills. Our innovative technologies protect crops and help to significantly reduce spoilage, which in turn reduces water use, lowers energy costs, and helps preserve natural ecosystems. Using agricultural byproducts – parts of the plant

that are normally discarded – Apeel creates products that fortify the surfaces of fresh fruits and vegetables, forming an ultra-thin barrier that camouflages crops and shields produce from both biotic and abiotic stressors.

Made from 100% plant material, Apeel's protective formulas are invisible, tasteless, edible and durable.

Biography

James Rogers, Apeel's Science Director and CEO, received dual undergraduate degrees from Carnegie Mellon University in

continued on next page

ACS Annual Wine Tasting, Family Picnic and Awards Ceremony

Date: Saturday, July 9, 2016

4:00 p.m. Wine Tasting

5:30 p.m. Barbeque Dinner

7:00 p.m. Awards

Deadline for Reservations:

Wednesday, July 6, 2016

Location: Stanford University

Mudd Chemistry Building

<https://goo.gl/maps/gTsaM>

Registration online at:

http://scvacs.org/?page_id=40

Adults: \$20.00

Student: \$10.00

Children under age 12: \$5.00

June Dinner Seminar

Joint with the Golden Gate Polymer Forum

Date: Thursday, June 30, 2016

Time: 6:00 Social Hour

7:00 Dinner

8:00 Presentation

Speaker: Dr. James Rogers

CEO Apeel Sciences

Redesigning the Interface Between

Fresh Produce and the

Environment for Sustainable

Agriculture

Location: Michael's at Shoreline

2960 N. Shoreline Boulevard

Mountain View, CA

Reservations: www.ggpjf.org

Redesigning the Interface, continued from front page

Materials Science & Engineering and Biomedical Engineering and received his PhD in Materials from the University of California, Santa Barbara. For his PhD research, James was the recipient of the 2012 Frank J. Padden Jr. Award for polymer physics, the premier polymer physics prize in the United States. James is a graduate of the UC Santa Barbara Technology Management Program and also holds a Master's degree in Economics.

Drawing from his research, James founded Apeel Sciences to help provide new organic technology solutions for sustainable agriculture. James guides corporate strategy and oversees the company's research and development efforts.

Chair's Message, continued from front page

Advanced Water Purification Center [[March 2016](#)]

- "The Future of Water" seminar by world-renowned water expert and founder of the Pacific Institute, Peter Gleick [[April 2016](#)]
- "The World's Most Destructive Industry (cattle-raising for food) and a Solution" seminar by Impossible Foods founder and CEO, Pat Brown [[May 2016](#)]
- "The Story of Light and Single Molecules" seminar by Nobel Laureate W.E. Moerner [[October 2015](#)]

Many of these topics reckon back to George Whitesides' "Reengineering Chemistry - What's Next" list of 24 societal concerns where chemistry solutions are warranted, a list that was featured in the [February 2016](#)

Chair's Message.

We recently partnered with the Golden Gate Polymer Forum in hosting a joint dinner seminar. The popularity of the joint format on its first occasion in June 2015 led to making it an annual event with another this month, June 2016. The joint June 2015 meeting featured "Materials for Enabling Nanomanufacturing" by Al Nelson (U. Washington and IBM). The [joint June 2016 meeting](#), "Redesigning the Interface Between Fresh Produce and the Environment for Sustainable Agriculture", showcases Apeel Sciences, a start-up in Santa Barbara that extracts hydrogels from unused plant parts for coating fruits and vegetables to prolong lifetimes. That meeting's registration is in this month's newsletter. We would like to foster this format of bringing together the memberships of related organizations in shared events and welcome your suggestions of compatible partners.

Our redesigned [scvacs.org](#) website now has a page for posting [past events](#). One objective is to post there the information-laden presentations of our monthly speakers.

We have 'discovered' the delightful venue of Michael's at Shoreline for our dinner seminar meetings, located in a nature preserve in Mountain View by the San Francisco Bay. The networking hour that precedes the dinner and lecture spills out onto the scenic terrace when lit by daylight.

An ACS Innovation Grant catalyzed the [debut of Monterey Bay area ACS activity](#) in April. With six colleges and universities, several marine research labs, and strong agricultural interests, this southern part of SCVACS territory covering Santa Cruz, Monterey, and San Benito counties held a lot of potential for supporting chemistry-related events. That potential turned into action with a kick-off networking/dinner/lecture event on April 14th at Cabrillo College. Registration was so robust it had to be capped due to space limitations in Cabrillo's Sesnon House. A heartening one-third of the attendees were students from the area's colleges. Plans are underway for additional ACS gatherings in the Monterey Bay area, with a local organizing group and sponsorship from chemistry-related business in Watsonville.

In K-12 education, our recent efforts have been only modestly successful in generating interest among educators in joining the newly formed ACS American Association for Chemistry Teachers (AACT), a [campaign](#)

edipeel Imagine a micro-thin, invisible peel that acts as a "bio-peel" to shield produce from mold, bruising, wilting and drying.

James Rogers, Ph.D.
Apeel Sciences

June 30, 2016
Thursday 6PM

MOISTURE STAYS INSIDE
AIR STAYS OUTSIDE

**Redesigning the interface
between fresh produce and the environment
for sustainable agriculture**

INVISIBLE CAMOUFLAGE LAYER

Santa Clara Valley
American Chemical Society
together with
The Golden Gate Polymer Forum

Michael's at Shoreline, Mountain View

Register at [ggpf.org](#)

invisipeel Invisipeel™ passivates the surface of produce from biotic stressors, reducing the need for harmful pesticides.

Graphics attributable to Apeel Sciences

supported with an ACS nanogrant. We surmise teachers are too strapped for time to explore these options, despite cash incentives. Our participation in the [ACS Science Coaches program](#) did earn an east San Jose high school \$500 for classroom supplies. If you are positioned in the educational community to communicate our offers of support to teachers and community educators, please get in touch with us. Meanwhile, our annual SCVACS Teach-the-Teachers workshop with RAFT (Resource Area for Teachers) for hands-on science continues to draw a strong turnout.

Another area with less impact than hoped is programming to support small chemistry-related businesses. In two networking seminars in 2015 - Creating a Safety Culture and Protecting Your IP - turnout was low, leading us to conclude that small businesses are also too strapped for time to indulge in such extracurriculars. A different approach is being considered of partnering with established small business organizations where a subsection for chemistry-related businesses is provided by our local ACS sections. ACS National Industry Member Programs is supportive of this approach, and we particularly welcome your input positioned from local industry.

The section continues to enjoy certain traditions such as our annual July picnic and wine-tasting at Stanford where we honor and enjoy the stories of ACS 50- and 60-year members. Saturday, July 9th, is the date of this year's family-friendly picnic. Community response to our hands-on children's activity during National Chemistry Week in the Martin Luther King Library and at the Bay Area Science Festival in AT&T Park has been strong, and we cherish our volunteers who make them happen.

Though this summary reveals we have indeed provided a good deal of a positive and varied activity, we relish your fresh ideas and energy.

Get in touch!

Steven Liu Is Going to the Chemistry Olympiad Study Camp

By Sally Peters



Steven Liu, a junior at Monta Vista High School in Cupertino, has qualified to attend the 2016 National Chemistry Olympiad study camp. Congratulations

Steven! He ranked among the top 20 chemistry high school students in the United States who participated in the Olympiad this Spring. To obtain this honor he competed against 1,000 students from across the nation in a full day of testing on April 23.

The study camp will be held at University of Mary Washington in Fredericksburg, VA, from May 31 to June 15. The students will be mentored, taught, and crammed full of chemistry in anticipation of representing the U.S. at the 48th International Chemistry Olympiad in Tbilisi, Georgia, July 23 to August 1.

Now a little about Steven – he lives in Cupertino and is an only child, so he has time for extracurricular activities. Besides chemistry he loves playing the piano and has been playing for 9 years. He actually played at Carnegie Hall in April! Because of his love for music he has also been tutoring kids on music theory for 2 years. Steven also plays on the school's varsity badminton team.

As a true chemistry nerd, Steven has a lab at home and was quick to tell me that his favorite element is copper “because of its

versatility and the vast array of experiments that you can do with it (copper aspirinate, chevreul's salt, etc.)”. He has another year to think about college, but may want to follow his friend, David Wang, and attend MIT. David, if you remember, was our 2015 participant in the International Chemistry Olympiad.

In addition to congratulating Steven on his accomplishments, we also have to congratulate Ms. Kavita Gupta, the AP chemistry teacher at Monta Vista! She brings chemistry alive to her students! Three of her students in the past 4 years have attended the Olympiad study camp and two of them have gone on and won medals at the international Olympiads! Steven, we hope you get to carry on that tradition and make it 3 out of 3 for Ms. Gupta's students!

Introducing Network and Learn Programs for Small Chemistry-related Businesses

Sponsored by ACS Industry Member Programs and Procter & Gamble
First local event: Consultants Tackle Your EPA Questions (Date TBD)

ACS announced a new program for the chemical industry, to be implemented at a local level with resources from the national office and support from the ACS Immediate Past President Dr. Diane Grob Schmidt. The typical format will be the viewing of a prerecorded interview with several experts on the topic (e.g. EPA regulation), followed by Q&A with a local expert or discussion topics for breakout groups. There will, of course, be the opportunity to network with colleagues, enlivened by refreshments from the Santa Clara Valley local ACS section. The ACS vision for the program is described at www.acs.org/content/acs/en/membership-and-networks/acs/welcoming/industry/network-learn.html.

We welcome your input on the program, preferences for the format and times, suggestions for future topics, and your support if you would like to volunteer. Please email Nicole Bouley Ford at nbouleyford@gmail.com with your input and interest in local events for chemistry-related business. The national contact is Susan J. Ainsworth, Manager, Industry Member Programs, S_Ainsworth@acs.org.

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 spouse (or friend) will be our guests. The seminar meetings are at a local spot, somewhat convenient to the section. If you are unable to attend in the evening, perhaps you would join us for an outreach event, like judging a science fair, participating in the Chemistry Olympiad, or 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 Members for April

Dr. Ni Nadine Ding

Camille Dubois

Dr. Scott E. Franklin Jr.

Danielle Freeman

Michael Gottschalk

Hakan Inan

Kenneth Andrew Irvine Jr.

Kiyun Kim

Paige Kotowitz

Dr. Thomas Kroll

Dr. William E. Levinson

Fiona Lin

Tianyu Liu

Dr. Yi Hua Ma

Eduardo V. Mercado

Nicolas Obrecht

Tran Pham

Ramachandran Subbaraman

Dr. Willem Velema

Lan Wang

Dr. Binqing Wei

Birong Zhang

Chemistry Quiz

What class of molecules is not found in genuine Parmigiano-Reggiano cheese but IS found in knock-offs bearing that label, making it a detectable marker for Parmigiano-Reggiano cheese authenticity?

Last Month's Quiz

Hermann Emil Fischer reported the first enantiospecific synthesis by elongating optically active sugars in 1894. Who reported the first enantioselective synthesis from a prochiral starting material?

In 1904 Willy Marckwald, Universität zu Berlin, reported a brucine-catalyzed enantioselective decarboxylation of 2-ethyl-2-methylmalonic acid.



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



*Come to the SCVACS
Annual Wine Tasting, Family Picnic
at Stanford on Saturday, July 9th*

To receive an email when our newsletter
is published on our web site, sign up at:
<http://www.scvacs.org/newsletter/>

SANTA CLARA VALLEY SECTION

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FUTURE EVENTS

- Jun 14-16** ACS Green Chemistry & Engineering Conference
Portland, OR
<http://www.gcande.org/>
- Jun 15** Nizar Ibrahim: National Geographic Live
Spinasaurus: Lost Giant of the Cretaceous
Fox Theater, Redwood City, CA
<https://foxrwc.showare.com/eventperformances.asp?evt=117>
- Jun 26-29** ACS Northwest Regional Meeting 2016
Chemistry Under the Midnight Sun
Anchorage, AK
<http://norm2016.sites.acs.org/>
- Jun 30** SCVACS joint dinner meeting with the
Golden Gate Polymer Forum
"Redesigning the Interface Between Fresh
Produce and the Environment for
Sustainable Agriculture"
Dr. James Rogers, CEO Apeel Sciences
Michael's at Shoreline, Mountain View
- Jul 9** ACS Annual Wine Tasting, Family Picnic and
Awards Ceremony
Stanford University
Mudd Chemistry Department
- Jul 16** Hayward Fault Walking Tour
Fremont, CA
<http://msnucleus.org/haywardfault/hayward.html>