

Silicon Valley Chemist

Santa Clara Valley Section

American Chemical Society

Volume 35 No. 3

MARCH 2013 NEWSLETTER TOPICS

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April Dinner Meeting

Industrial Nanoparticles in the Food Chain Tracing Nanoparticle Transformations in Soybean Plants



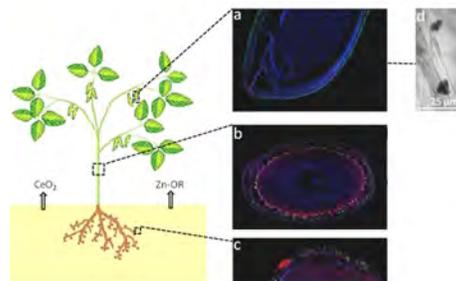
Dr. Joy C. Andrews

Scientists from the University of Texas

Abstract: The global production of engineered nanoparticles (ENPs) is currently a trillion-dollar industry, with nanoparticles now found in products ranging from sunscreen, gas sensors and pigments (ZnO ENPs), to catalysts for internal combustion and oil cracking processes (cerium-based ENPs). While their benefits in such products are known, much is yet to be determined regarding their fate, transport, and toxicity in the environment, including the implications of the potential storage of these ENPs or their biotransformed products in the edible and reproductive organs of crop plants.

Scientists from the University of Texas

El Paso, UC Santa Barbara, ESRF and SSRL studied ENP uptake in soybean plants (Glycine max). The team used X-ray imaging and spectroscopy to study the transformation



Tricolor micro X-ray fluorescence maps (red = Zn, green = Ca, blue = K) of soybean a) pod, b) stem and c) nodule. d) Full-field transmission X-ray microscopy image depicts Zn precipitates in the soybean pod. Figure from: Hernandez-Viezcas et al. 2013, ACS Nano, 10.1021/nn305196q

continued on next page

April Dinner Meeting

Date: Thursday, April 18, 2013

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

Presentation: Joy C. Andrews, PhD
Staff Scientist, Stanford Synchrotron Radiation Lightsource; Professor Emerita of Chemistry, California State University, East Bay

Location: Biltmore Hotel & Suites
2151 Laurelwood Road
Santa Clara, CA

Cost: TBD, Menu TBD

Reservations: www.scvacv.org
Lois Durham, 650-322-3507

Reservations should be made by April 15th stating your name, address, company/school affiliation, and dinner selection. If you are unable to honor your reservation, please cancel by April 16th.

Chair's Message

Tell Us What You Think

In March, this newsletter and other means will remind you that a survey is coming your way. With the help of some professionals at ACS headquarters, the Executive Committee has prepared a survey to help us help you. That's right; help us help you. We have over 3,000 members in the Santa Clara Valley (SCV) local section. You're one of them, and you can tell us things we don't know.

Many volunteers work on the many projects, awards, and meetings that are scheduled throughout the year. From the survey, you will see all of them if you don't know about them already. Which ones can you help with by volunteering? One of the nice things



about SCV activities is the number of people who volunteer and how well their work is received. You can do it and find how rewarding and grateful people can be.

Back to the survey... It is designed to take 5 to 7 minutes. That's all; seven minutes, tops. Sure, there are some questions, and

we even have one of those 1 to 5 rankings for one of the questions. The rest you will breeze through.

Don't forget, you're welcome at any or all of these events and the Executive Committee meeting.

The SCV local section needs your help by taking the time tell us what you think.

Industrial Nanoparticles, continued from front page
of ZnO nanoparticles within soybeans, finding that they are transformed into a chemical form bound to organic acids within the plants. CeO₂ nanoparticles within these plants were found to persist in the nanoparticle form even within the edible soybean, and therefore may persist into future plant generations, with potential health implications.

Biography:

Joy C. Andrews earned a PhD in Physical Chemistry from UC Berkeley, where she researched photosynthesis with Prof. Ken Sauer. After a postdoctoral fellowship at the Lawrence Berkeley National Laboratory, she became Professor of Chemistry at CSU East Bay in Hayward CA, where she continues currently as Professor Emerita. In 2008 she joined the staff at SSRL and leads the transmission X-ray microscopy program. She uses many synchrotron X-ray techniques to study nanoparticle uptake and transformation in plants, and chemical transformations in energy materials including batteries, fuel cells and catalysts.

Reminder

**March 21st Dinner Meeting
Carbon for Water**

Reminder

A film by Evan Abramson and Carmen Elsa Lopez

More than one-sixth of the world's population lacks access to safe drinking water and 3900 children die from water-borne diseases daily. In recognition of this, the American Chemical Society launched Pennies for PUR Water for the International Year of Chemistry 2011. This program provided funding for a 3.5-cent sachet that can safely treat 2.5 gallons of water. The movie "Carbon for Water" pres-



ents a similar program found in Kenya where a for-profit company aims to provide 900,000 water filters to villagers to reduce the practice of boiling water via burning wood. These filters will decrease the deforestation and the time women and girls walk every day to collect wood. The reduction in wood burning will reduce CO₂ emissions. The company can sell this CO₂ credit on the voluntary open market. "Carbon for Water" is a 22-minute film that describes how the company distributes the filters and the effect on the local community. The film is directed and produced by Evan Abramson and Carmen Elsa Lopez (www.carbonforwaterfilm.com).

This documentary was shown at the last ACS National Meeting in Philadelphia as part of the Committee on Environmental Chemistry project. Watch the movie, and join in the discussion.

**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 dinner 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 dinner meetings are often the 3rd Thursday of the month at a local spot, somewhat convenient to the entire 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 List for February

Jim Aldridge
Charles B. Chisom
Dr. Hai Deng
Dr. Andrew W. Drake
Dr. Alexander Edens
Professor Ronald K. Hanson
Sarah C. Heilshorn
Dr. Meng Heng
Eric C. Hilario
Dr. Ann E. Jain
Dr. Noemie Janot
Kanchi Kejriwal
Wanmei Kuang

Robert George Kuimelis
Lindsey Rae Lawrence
Professor Michael Z. Lin
Chong Liu
Yuelie Lu
Brian McDonald
Marya Melkie
Dr. Richard Alan Miller
Sanjay K. Mohanty
Rao Morusupalli
Dr. Claudia E. Mueller
Alexia Nicole Perryman
Olivier Rene

Joseph Roan
Kimberly M. Sogi
Casandra Mae Sowash
Richard Stephenson
Zachary Kevin Sweeney
Dr. Janet Tamada
Binh Thai
Corazon T. Victa
Dr. Leiming Wang
Dale Waters
Brian Wong
Dr. Bin Yang
Calvin W. Yee

March Dinner Meeting

Date: Thursday March 21, 2013
Time: 6:00 p.m. Social Hour
7:00 p.m. Dinner
8:00 p.m. Movie Presentation

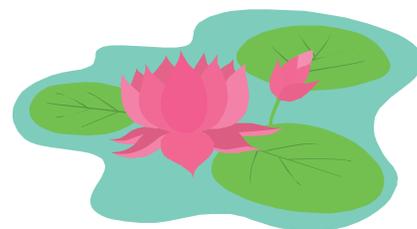
Presentation: "Carbon for Water"
A film by Evan Abramson
and Carmen Elsa Lopez

Location: Biltmore Hotel & Suites
2151 Laurelwood Road
Santa Clara, CA

Cost: \$26.00
Teriyaki Steak or Vegetarian Crepes

Reservations: www.scvacs.org
Lois Durham, 650-322-3507

Reservations should be made by March 18th stating your name, address, company/school affiliation, and dinner selection. If you are unable to honor your reservation, please cancel by March 20th.



Chemistry and Chocolate Ambassador Report for 2012

Public Outreach for ACS Santa Clara Valley Local Section: Bring chocolate...and they will come

Howard and Sally Peters

In March and August of 2012, we had our usual posters, chocolate sampling, and chocolate raffle for the ACS Division of Chemistry and the Law (CHAL) at the ACS national meeting SCIMIX event in San Diego and Philadelphia.

In April, we were invited by Dr. Marinda Wu to talk "chocolate" at a Science Cafe event at the public library in Lafayette, CA.

In April and November, Howard was a speaker on chocolate at the SPLASH program at Stanford University. SPLASH is a volunteer program where grad students (and old alums,

etc.) get to teach at a special weekend event in Stanford classrooms to local 7-12th grade students. Over 2,000 students showed up for that weekend event.

In July, Howard was the "comic relief" for talented junior and high school students at the COSMOS program at University of California, Santa Cruz campus. COSMOS supports about 800 talented CA students enjoy an immersion in science and technology for a month on a UC campus.

In September, Howard was the "comic relief" talking chocolate at the Santa Clara

University Law Alumni weekend gala. Howard's contract law professor from over 40 years ago, Father Paul Goda, won the chocolate T-shirt giveaway.

In October, we were at the ACS Virginia Local Section in Bridgewater, Virginia talking about chocolate after a special committee meeting at ACS HQ in DC.

<http://veritas.bridgewater.edu/blog/2012/10/25/death-by-chocolate/>

In November, Howard presented his fun talk on chocolate in western Pennsylvania to the ACS Erie, Penn-Ohio Border, and Western PA Local Sections on a self-assembled ACS Speakers tour.

If you are interested in seeing our fun chocolate talk, then visit <http://tiny-url.org/chocolate> for a recording by ACS national from August of 2009, when it was presented to about 300 undergraduates at the ACS annual meeting in Washington DC.

CALL for NOMINATIONS Shirley B. Radding Award

The Santa Clara Valley Section of the American Chemical Society (ACS) announces the call for nominations for the 2013 Shirley B. Radding Award.

First awarded in 1994 to its namesake, the Shirley B. Radding Award annually honors someone who has been a member of the ACS for at least 20 years. Nominees must have demonstrated dedicated, unselfish leadership, service and significant contributions over a sustained period of time to industrial, applied or academic chemistry and to the ACS through elected or appointed positions at local, district and national levels.

Award Criteria

- Member of the American Chemical Society for more than twenty (20) years.
- Demonstrated dedicated and unselfish service to ACS and its members over a sustained period of time.
- Provided leadership through elected and appointed ACS positions at local, district and national levels.
- Made significant contributions to industrial, applied or academic chemistry.

Previous Award Recipients

1994 Shirley B. Radding (deceased)	1995 Agnes Ann Green (deceased)
1996 John F. "Jack" Riley (deceased)	1997 Howard M. Peters
1998 Alan C. Nixon (deceased)	1999 Valerie J. Kuck
2000 Halley A. Merrell	2001 Norman A. LeBel (deceased)
2002 Paul H. L. Walter	2003 Jean'ne M. Shreeve
2004 Maureen G. Chan	2005 Glenn Fuller (deceased)
2006 Janan M. Hayes	2007 Merle I. Eiss
2008 Dorothy J. Phillips	2009 Bryan Balazs
2010 Herbert B. Silber	2011 Carol A. Duane
2012 Bonnie Charpentier	

The award consists of an honorarium of \$1,000 and a suitably inscribed memento. Nominations must consist of at least one letter of nomination stating how the nominee's work relates to all aspects of the award. It is strongly recommended that seconding letters accompany the nomination.

Nominations are due on or before May 1, 2013, and may be sent electronically to Radding-Award@scvac.org or be mailed to:

Radding Award Committee
Santa Clara Valley Section ACS
Post Office Box 395, Palo Alto, CA 94302-0395





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In Memory of M. Floyd Hobbs

1924-2013



The Santa Clara Valley Section is sad to announce the passing of one our long-term members, M. Floyd Hobbs. He was 88. Floyd helped the section in a number of ways, and he was a tireless recruiter for candidates to serve on the Executive Committee.

Floyd was a major player in the recent revision of our by-laws, and actively served from the early years of our Section's existence. During his time with the Section, Floyd chaired the Nominating Committee for many years, and he was Chair of the Section in both 1968 and 1989. Floyd also received the SCV-ACS Ottenberg Award in 1976.

Floyd was a truly good friend to many of us and will be sadly missed.

Call for Volunteers: Teach the Teachers Workshop

Saturday, March 16th, Resource Area for Teaching, Redwood City

The Santa Clara Valley Section's popular workshop for teachers needs some volunteers to help prepare materials (prior to the workshop), and to help the day of the workshop (8 am set up, 3 pm clean up, and assist during the day). If you would like to be part of this great event, even for just a couple of hours, please contact Bonnie Charpentier at: b.charpentier@acs.org for more information.

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CHEMPLOYMENT ABSTRACTS MARCH 2013

For a complete list of current abstracts, please visit: www.scvacs.org/Local_Folder/abstract.htm

CHEMPLOYMENT ABSTRACT 3982

Position Title: Associate Scientist, Small Molecule Analytical Chemistry

Job Description: This laboratory-based position focuses on analytical characterization, method development and GMP release of formulated drug product, drug substance, intermediates, starting materials and functional excipients to support clinical and pre-commercial CMC drug development. The Associate Scientist will be a key team member working within an analytical project group.

QUALIFICATIONS DESIRED:

Education: A PhD degree in a relevant scientific discipline and 0-3 years in the pharmaceutical industry are required.

Experience: For more than 30 years, Genentech has been at the forefront of the biotechnology industry, using innovative science to develop breakthrough medicines that improve the lives of people with serious or life-threatening diseases.

LOCATION, SALARY, EMPLOYER:

Job Location: South San Francisco

Salary: DOE

Employer: For more than 30 years, Genentech has been at the forefront of the biotechnology industry, using innovative science to develop breakthrough medicines that improve the lives of people with serious or life-threatening diseases

Application Instructions: Please visit our website at <https://roche.taleo.net/career-section/10002/jobapply.ftl?lang=en&job=00408544&src=JB-11480> or submit your resume to mackenzie.perino@ckrinteractive.com



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Chemists Celebrate Earth Day

2013 Illustrated Poem Contest:

“Our Earth: Handle with Care!”

The Santa Clara Valley Section of the American Chemical Society (SCVACS) is sponsoring an illustrated poem contest for students in Kindergarten - 12th grade. Winners of the Santa Clara Valley Section illustrated poem contest will advance to the ACS National Illustrated Poem Contest!

Contest Deadline: Friday March 22nd

Contact: Jeanette Medina – medinaj@smccd.edu

Mail poems and entry form (found at scvacs.org) to:

Jeanette Medina

Cañada College/ Science and Technology Division

4200 Farm Hill Boulevard

Redwood City, CA 94061



Write and illustrate a poem using the CCED theme, **“Our Earth: Handle with Care!”** Your poem must be **no more** than 40 words, and in the following styles to be considered:

HAIKU • LIMERICK • ODE • ABC POEM • FREE VERSE • END RHYME • BLANK VERSE

Possible topics related to Chemists Celebrate Earth Day include:

- Green chemistry and sustainability
- Recycling aluminum, glass, paper, and plastic
- Clean air, carbon footprint, and fuel emissions
- Plant, photosynthesis, and composting
- Water conservation and purification
- Any other relevant topics

Entries will be judged based upon:

- | | |
|--|---|
| <ul style="list-style-type: none"> • Relevance to and incorporation of the theme • Word choice and imagery • Colorful artwork | <ul style="list-style-type: none"> • Adherence to poem style • Originality and creativity • Overall presentation |
|--|---|



Contest Rules:

- Poems must conform to a particular style. No poem may be longer than 40 words.
- The topic of the poem and the illustration must be related to the CCED 2013 theme, “Our Earth: Handle with Care!”
- All entries must be original works without aid from others.
- Each poem must be submitted and illustrated on an unlined sheet of paper (of any type) not larger than 11” x 14”. The illustration must be created by hand using crayons, watercolors, other types of paint,

colored pencils or markers. The text of the poem should be easy to read and may be printed with a computer, before the hand-drawn illustration is added, or the poem may be written on lined paper which is cut out and pasted onto the unlined paper with the illustration.

- Only one entry per student will be accepted.
- All entries must include an entry form.
- All illustrated poems and/or digital representations of the poems become the property of the American Chemical Society.
- Acceptance of prizes constitutes consent to use winners' names, likenesses and entries for editorial, advertising and publicity purposes.



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

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<http://www.scvacs.org>

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

SANTA CLARA VALLEY SECTION

2013 Section Officers

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Chair Elect	Ean Warren	650-329-4554	ewarren@scvacs.org
Past Chair	Natalie McClure	650-906-7831	nmclure@drugregulatoryaffairs.com
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2011-2013	Herb Silber	408-924-4954	hbsilber@science.sjsu.edu
2012-2014	Abby Kennedy	209-640-2005	akennedycali2007@yahoo.com
2012-2014	Ean Warren	650-329-4554	ewarren@scvacs.org
2013-2015	Linda Brunauer	408-554-6947	lbrunauer@scu.edu
2013-2015	Sally Peters	650-812-4994	sallybrownpeters@gmail.com
2013-2015	Peter Rusch	650-961-8120	pfrusch@aol.com

Alternate Councilors

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2013-2015	Stephanie Bachmann	408-429-9681	s_gehling@hotmail.com
2013-2015	Lois Durham	650-322-3507	ldurham9398@sbcglobal.net
2013-2015	Natalie McClure	650-906-7831	nmclure@drugregulatoryaffairs.com

Newsletter

Editor	Nathaniel Zuckerman	408-802-7443	nathanielzuckerman@gmail.com
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ChemPloyment Abstracts

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

- Mar 1-29** Chemistry Olympiad Local Exam
Participating SCV High Schools
- Mar 21** Santa Clara Valley Section Meeting
Biltmore Hotel & Suites
Santa Clara, CA
- Mar 17-21** Pittcon
Philadelphia, PA
<http://pittcon.org>
- Apr 1, 3** 18th Annual John Stauffer Lectures
Department of Chemistry
Stanford University
http://chemistry.stanford.edu/stauffer_lectures/
- Apr 7-11** 145th National ACS Meeting
New Orleans, LA
www.acs.org/neworleans2013
- Apr 9** DeNardo Lectureship
Santa Clara University
www.scu.edu/cas/enrichment/denardo/
- Apr 13** Chemistry Olympiad National Exam
Santa Clara University
- Jul 13** Annual Family Picnic and
Awards Ceremony
Department of Chemistry
Stanford University