

# Silicon Valley Chemist

Santa Clara Valley Section

American Chemical Society

Volume 39 No. 9

## SEPTEMBER 2017 NEWSLETTER TOPICS

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## Connect with Chemists

An early morning chat with fellow chemists  
**Thursday, September 21, 2017, at 7 a.m.**  
 Coupa Café, 538 Ramona Street, Palo Alto  
 Contact Ean Warren ([ewarren@scvacs.org](mailto:ewarren@scvacs.org))  
 for more information or ask for Ean at Coupa.

## Chair's Message

Todd Eberspacher



August is a busy month. The National ACS Meeting just wrapped up, we had an ExComm meeting; the Nominations Committee is at work on selecting a ballot for the officers and councilors; the name change documentation with the State of California was completed, and numerous other committee activities took place. Finally at the last minute I made some time to finish the 'Chair's Message'.

First some business, if you are interested

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## The 49th International Chemistry Olympiad Bringing Home the Gold

The U.S. National Chemistry Olympiad program proudly announces the extraordinary performance of the U.S. team at the 49th International Chemistry Olympiad competition in Nakhon Pathom, Thailand.

Steven Liu, a 2017 Monta Vista graduate, won a gold medal, as did his co-participants; Joshua Park of MA, Harrison Wang of IL, and Brendan Yap of IN. 297 high school students represented the 76 participating countries. The U.S. team tied with Taiwan as the top performing countries.

Steven said that the team was so successful because each member brought his individual strength and skill which complimented each other. Plus, "we studied really hard, and I think that paid off"

The competition consisted of a five-hour theoretical exam plus a five-hour practical laboratory exam. In addition to the grueling exams, all of the teams were treated to excursions around the countryside, to historic palaces and temples and a floating market, where they sampled fresh coconut and the exotic fruit, mangosteen. Most of the students found the excursions very interesting, but the heat and humidity were hard on our California kid!

The most interesting part of the trip for



Gold medalists Brendan Yap, Steven Liu, Joshua Park and Harrison Wang

Steven was meeting so many like-minded people his age. They bonded in the evenings over card games and just 'hanging out'! The students from all the countries spoke English! But everyone tried their native languages on each other.

The team and their mentors were in Thailand from July 6-15. Their expenses were paid by the American Chemical Society.

The most difficult part of the trip was waiting for the results at the awards ceremony according to Steven. But our students did extremely well and made our country proud!

Congratulations, Steven, on a job well done!

REMINDER

September 13th Dinner Seminar

REMINDER

## The FBI, WMD, and the Chemical Industry

Todd J. Piantedosi

### Abstract

This presentation focuses on how the FBI interacts with the chemical industry as it seeks to accomplish its mission of protecting the American people while preserving the Constitution. More specifically, the San Francisco office's Weapons of Mass Destruction (WMD) Coordinator will explain how chemicals can be used in WMD attacks and the steps the FBI is taking to counter the threat.

### Biography

Special Agent Todd J. Piantedosi joined the FBI after ten years in the health care finance sector. Upon completion of 20 weeks of training in Quantico, Virginia, he was assigned to the Washington, DC, field office where he worked counterintelligence for three years. He transitioned to weapons of mass destruction (WMD) preparedness, response

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*Chair's Message, continued from front page*

in an elected position within the local section, do contact Melody or myself [chair@scvacs.org](mailto:chair@scvacs.org), there is still time to participate. There are many opportunities to participate in outreach activities. Feel free to contact us about that as well.

The September 13th dinner meeting features FBI Special Agent Todd Piantedosi giving a talk entitled 'The FBI, Weapons of Mass Destruction, and the Chemical Industry.' This should be a very interesting talk and I encourage everyone to attend, if possible.

Also in September is the next installment of The Flavors of Chemistry series jointly hosted with the surrounding sections and held on the UC Davis campus. The event this year is centered around Coffee, Olive Oil, and Chocolate. Local chocoholics and section members Sally and Howard Peters will be among the presenters. Details are on the section website.

Elsewhere in this newsletter is an announcement for the YCC Home Brew Competition. I want to encourage everyone to show up and participate. This event will be joint with the YCC, Senior Chemists and the Cal Section.

Finally, earlier this year I found an abstract book from the 133rd National Meeting of the American Chemical Society held in San Francisco in April 1958. Flipping through the pages, a few titles struck me as interesting. One that stuck with me is related to our new name, Silicon Valley Section. It is an abstract entitled "Mechanized Information Memory Using Large-Scale Random Access Memory" by John J. Nolan, International Business Machines Corp., San Jose, California. The abstract describes the use of large scale magnetic storage devices such as the IBM RAMAC magnetic disk unit for data management. For many years, one of the new in 1956, hard drives sat in the lobby of the IBM Almaden Research Facility. I believe that system now lives at the Computer History Museum in Mountain View. Interesting to me is that nearly 60 years ago we were talking about how to deal with the large data sets scientists can generate...and we are still discussing this under the term 'big data'. If you care to browse the book, it will be in the Chemistry Library at Stanford.

Enjoy what is left of the Summer.



*September Dinner, continued from front page*

and investigations for four years, after which he was promoted to Headquarters. There, he oversaw counterproliferation cases nationwide and managed several WMD programs. In January of 2016, he relocated to the FBI's San Francisco office, where he recently assumed the role of WMD Coordinator.

Special Agent Piantedosi is a graduate of Brown University and The Catholic University's Columbus School of Law. He lives and works in Oakland.

## Committee Members Needed

The BUBBLE GRANT program was established in 2011 by a generous donation from an ACS member. Awards of up to \$500 per year are granted to worthwhile science projects at K-12 California schools. Grants are awarded for projects that enhance the teaching of physical, life or earth science. Qualified uses of the funds are for purchases related to the proposed project such as scientific equipment, instructional materials and/or supplies. Time commitment is minimal and mainly includes reading proposals and awarding the grant. If you are interested in improving K-12 education in our state, please join our committee. Please contact me by e-mail if your interested in participating.

Joseph A. Castellano, Ph.D.  
E-mail: [drjcast@aol.com](mailto:drjcast@aol.com)

## September Dinner Seminar

**Date:** Wednesday, September 13, 2017

6:00 p.m. Social Hour

7:00 p.m. Dinner

8:00 p.m. Presentation

**Speaker:** Todd J. Piantedosi

Special Agent, WMD,  
Coordinator, San Francisco  
office of the Federal Bureau  
of Investigation (FBI)  
*The FBI, WMD, and the  
Chemical Industry*

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

<http://michaelsatshoreline.com/>

**Cost:** \$30 for members, \$15 for students

**Menu:** Broiled salmon, Breast of chicken  
Florentine or Mushroom crepes

**Registration:** [www.scvacs.org](http://www.scvacs.org)

## ACS Book Club

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

### A Tasting, Judging, and Networking Event

## YCC Home Brew Competition in Partnership with the Senior Chemists

**Date:** Saturday, November 11, 2017

**Time:** Noon-3 pm

**Location:** Golden State Brewery, 1252 Memorex Drive, Santa Clara, CA 95050

**Lead Contact:** Matt Greaney (SCV Councilor and YCC Lead); [greaney19@gmail.com](mailto:greaney19@gmail.com)  
Registration Site (under construction, stay tuned)

**Registration Cost:** \$20 regular members, \$10 for students and 50-year members

**Description:** Come join your local section, the YCC, and the Senior Chemists for an afternoon sampling home brewed beers and networking with your fellow chemists and engineers. Honorary judges and Golden State Brewery owners, Seth and Stephanie Hendrickson, have again opened their doors to us for this sure-to-be-awesome event. We will be hosting between 5-10 teams of home brewers from our local SCV and Cal sections to face off in a friendly home brew competition. Food and beer will be included with the registration cost. We are still on the hunt for additional teams to enter a home brew, so please contact Matt Greaney if you are interested in entering a brew or if you have any additional questions. He can be reached at [greaney19@gmail.com](mailto:greaney19@gmail.com). Stay tuned for additional announcements in the near future.

## August Molecule of the Month - Glutathione Transferases -



*Glutathione transferase* tags toxic molecules, making them easy to recognize and remove.

Cells are filled with a confusing jumble of small molecules. Sometimes dangerous molecules get introduced in the mix, and cells need a way to find and remove them. In a first line of defense, enzymes like *cytochrome p450* modify slippery carbon-rich toxins, making them more soluble. In a second line of defense, the glutathione transferases attach a convenient handle to unwanted molecules, which is then recognized by the cell's export machinery.

### Molecular Handle

The trick to making a useful molecular handle is two-fold. First, the handle needs to be recognizable, and recognizably different from other molecules in the cell. Glutathione is composed of three familiar amino acids: a glutamate, a cysteine and a glycine. But it won't be confused with normal peptides because the glutamate is attached in an unusual way, forming the covalent bond

## 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 SCVACS Members

Nicholas P. Calta	Dr. Carmela Molinaro	Lalit Kumar Sharma
Hsing-Ta Chen	Dr. Alper Nese	Rabindra V. Shivnaraine
Yiming Chen	Darlene H. P. Nguyen	Dr. Raghuvir Singh
Dr. Natalie L. Gruenke	Anthony Ken Ogawa	Eric Taw
Dr. Sven Hackbusch	Kaz Otsuka	Dr. Ankit Vora
Dr. Sarah C. Heilshorn	Thomas Pattison	Xiaoke Wang
Kaylene Kay Hung	Dr. Madalyn Radlauer	Zijun Wang
Angelina Tien Huynh	Jing Ren	Dr. Rex W. Watkins
Pearl Lee	Dr. Masato Sasaki	Dr. Shunqi Yan
Bo Lu	Dr. William M. Seganish	Meng Zhao
Joshua Michael Massey		

through its sidechain. Second, a molecular handle needs an easy chemical way to attach it to other molecules. Glutathione has a sulfur

atom at the center (part of the cysteine) that is easily activated and attached to a variety of different molecules.

## CHEMPLOYMENT ABSTRACTS SEPTEMBER 2017

### CHEMPLOYMENT ABSTRACT 4003

**Position Title:** Quarterly Adjunct Lecturer

**Job Description:** Duties include but are not limited to:

A. Planning and teaching a lecture section for Chem 101 (Bioinorganic Chemistry).

B. Fulfilling all responsibilities associated with assigned course.

Specific responsibilities are posted at <https://jobs.scu.edu/postings/6298/>

C. Starting Date: April 3, 2018

#### QUALIFICATIONS DESIRED:

**Education:** Ph.D. in chemistry and biochemistry or closely allied field

**Experience:** Prior experience teaching bioinorganic chemistry at the university level.

#### LOCATION, SALARY, EMPLOYER:

**Job Location:** Santa Clara, CA

**Salary:** \$6,600 per lecture section; not benefits eligible

**Description:** Santa Clara University is a comprehensive Jesuit, Catholic university located in California's Silicon Valley with an ACS-approved undergraduate program. It is an EO/AA employer committed to excellence through diversity, and welcomes applications from women, persons of color, and members of historically underrepresented groups.

**Application Instructions:** Submit your application on <https://jobs.scu.edu/postings/6298>

## Chemistry Quiz

What are the metals that make up the alloy pewter?  
The answer will appear in next month's newsletter.

### Last Month's Chemistry Quiz

About how much gasoline is consumed per capita in the US each year?

**In 2016 about 143 billion gallons of gasoline were consumed by 323 million residents (about 443 gallons per person).**

[www.eia.gov/tools/faqs/faq.php?id=23&t=10](http://www.eia.gov/tools/faqs/faq.php?id=23&t=10)



SANTA CLARA VALLEY SECTION  
AMERICAN CHEMICAL SOCIETY  
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To receive an email when our newsletter  
is published on our web site, sign up at:

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

## 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	rgab@scvacs.org
Treasurer	Ihab Darwish	650-624-1389	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	650-447-3027	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	650-447-3027	peters4pa@sbcglobal.net
2017-2017	Heddie Nichols	310-435-2133	nichols@scvacs.org
2016-2018	Natalie McClure	650-906-7831	nmclure@drugregulatoryaffairs.com
2016-2018	Heidi Vollmer-Snarr	650-723-9518	hrvsnarr@stanford.edu
2017-2019	Elizabeth Pollom	408-924-5012	elizabeth.pollom@sjsu.edu
2017-2019	Slava Bekker	831-759-6005	sbekker@hartnell.edu

### 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
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## FUTURE EVENTS

- Sep 13** SCVACS Dinner Seminar  
The FBI, WMD, and the Chemical Industry  
Special Agent Todd J. Piantedosi  
Michael's at Shoreline  
Mountain View, CA
- Sep 23** *Free Community Day at the Exploratorium*
- Sep 30** *Flavors of Chemistry*  
Joint meeting between the Sacramento, Cal,  
and Santa Clara Valley ACS sections  
Davis, CA
- Oct 21** SCVACS National Chemistry Week  
Celebration "Chemistry Rocks!"  
Hands-on Chemistry Fun for Elementary to  
Middle-School Students  
MLK Jr. Library, San Jose, CA
- Oct TBD** Monterey Bay ACS Dinner Seminar  
Dr. Claudia Luhrs, Naval Post Graduate School,  
Cabrillo College, Aptos, CA
- Nov 11** SCVACS YCC Home Brew Competition,  
Judging and Tasting  
Joint with Cal section and Senior Chemists  
Contact **Matt Greaney** to enter a home brew  
in the competition

Click on links for more information or  
see this newsletter at [http://scvacs.org/?page\\_id=99](http://scvacs.org/?page_id=99)