Newsletter

May 2016

Silicon Valley Chemist

Santa Clara Valley Section — American Chemical Society

Volume 38 No. 5

MAY 2016 NEWSLETTER TOPICS

SCVACS By The Numbers

8	Million gallons of recycled water is purified by the SVAWPC at Zanker Road
Percentage of all waste water that is recycled by the SCVWD	**13**
75	Percent of SCVWD water used in landscaping
Gallons of water an average American uses per day	**176**

Read the article from Ann Woys for more information including the acronyms

May Dinner Seminar

Replacing the World's Most Destructive Industry

Dr. Patrick Brown

Abstract

Animal Farming, the most destructive industry on Earth, transforms cheap plant biomass into meat and dairy foods using an archaic and unscalable technology – livestock. This trillion dollar global industry is responsible for 1/7 of the world's net greenhouse gas emissions and more than a quarter of its fresh water usage, and it currently uses more than a third of Earth's land area to raise livestock for human consumption. Through habitat destruction, resource competition and extermination of competing species, the livestock industry is by far the principal driver of species extinctions and biodiversity losses - today the total biomass of domesticated cattle alone exceeds that of all the wild terrestrial mammals remaining on Earth by more than 15-fold. My colleagues and I, at Impossible Foods, have been working for the past four years to invent an entirely new way to make the best meat and dairy foods the world has ever experienced – directly from plants. Our approach to the problem has been, first, to develop a deep molecular understanding of the chemical and physical principles underlying the sensory properties of these foods and second, to find specific corresponding proteins and other molecules from plants that enable us to recapitulate all the desired properties. Bypassing the intrinsic limitations imposed by animal physiology, makes it possible not only to greatly improve the resource efficien-

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May Dinner Seminar

Date: Wednesday, May 25, 2016
Time: 6:00 Social Hour
7:00 Dinner
8:00 Presentation
Speaker: Dr. Pat Brown, Impossible Foods
Replacing the World's Most Destructive Industry
Location: Michael's at Shoreline
2960 N. Shoreline Boulevard
Mountain View, CA
Cost: $30.00 regular/$15.00 students
No cost for lecture only (still need to register for sufficient seating)
Reservations: ***www.scvacs.org***
Reservation required by May 20

Connect with Chemists

Meet fellow local chemists
for an early morning coffee.
Look for Ean at a table with molecular models.

Thursday, May 19, 2016, at 7 a.m.
Coupa Café, 538 Ramona Street, Palo Alto
(a half a block off from University Avenue)

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Chair's Message

Jane Frommer

A talk entitled "Telling Science Stories: Dispatch from the Conflict Zone" was featured on the opening day of last month's ACS National meeting in San Diego.

Amy Harmon, Pulitzer Prize winning journalist for the New York Times, spoke on

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Impossible Foods,continued from front page

cy of meat and dairy production, but actually to create foods that are more delicious and have better nutritional profiles.

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Biography

On a quest to eliminate the need for animal farming, Pat Brown founded Impossible Foods, providing a delicious, nutritious, environmentally friendly alternative to meat and dairy - directly from plants. Before starting Impossible Foods, Pat was a world renowned geneticist, Howard Hughes Medical Institute Investigator, and Professor of Biochemistry at Stanford University. He is also a founder of Lyrical Foods, maker of Kite Hill artisanal nut milk-based cheeses, and a founder of the Public Library of Science (PLOS), a nonprofit publisher that pioneered the open-access business model. Pat was elected to the National Academy of Sciences in 2002, and is a member of the Institute of Medicine. His numerous accolades include the American Cancer Society Medal of Honor, and the NAS Award in Molecular Biology. Pat received his MD, PhD from the University of Chicago Pritzker School of Medicine.

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Chair's Message,continued from front page

bridging the communication gap of the public's perception of science. With the perspective of someone not formally trained in the sciences – her degree is in American Culture – her writing focuses on the impact of science on the public.

Articles that have garnered attention for presenting objective science in a societal context range from the DNA Age [***"A Race to Save the Orange by Altering Its DNA"*** and ***"A Lonely Quest for Facts on Genetically Modified Crops"***] to autism [***"Autistic and Seeking a Place in an Adult World"***]. She challenged us by claiming the public is more interested in science than we scientists give them credit for. The disconnect could be due to our drive for accuracy over building public trust in the principles, scientific arrogance, or simply a lack of practice in story-telling.

In a sincere effort to turn us into more effective communicators, she shared some of the techniques she uses in communicating science:

- *Find the story in your science —it needs character, plot, and suspense.*
- *Immerse yourself in the story, not forgetting to deliver in a plain-spoken manner.*
- *Illustrate the science issue by creating an analogy to a situation familiar to the listener.*
- *State what is obvious, for it might not be obvious to others.*
- *Keep zero-tolerance for jargon. It alienates. Use simple English.*

To present our work to nonscientists with an engaging story line, she suggested the use of suspense. She pointed out where plenty of conflict already exists in science and encouraged us to take advantage of it in setting up a plot to relate our science to the public. "Science has all the hallmarks of a suspenseful story— with trials, errors, and funding setbacks."

This likely is not the angle of science writing and speaking that we use in our professional lives where the importance of science is inherent to our jobs. Instead, let's follow Amy Harmon's example and embark on story-telling to reach the majority of nonscientists around us.

An opportunity for communicating our activity among chemists on a local scale: our Santa Clara Valley ACS website recently underwent renovation and is in search of a webmaster.

Leave your creative mark on ***scvacs.org*** by volunteering with ***us***.

Science Coaches

What is an ACS Science Coach?

ACS Science Coaches are chemists who volunteer with a teacher for one school year.

Chemistry graduate students, professionals and retirees can be Science Coaches.

Chemists can serve as a Science Coach in two ways:

(1) Science Coaches One-on-One

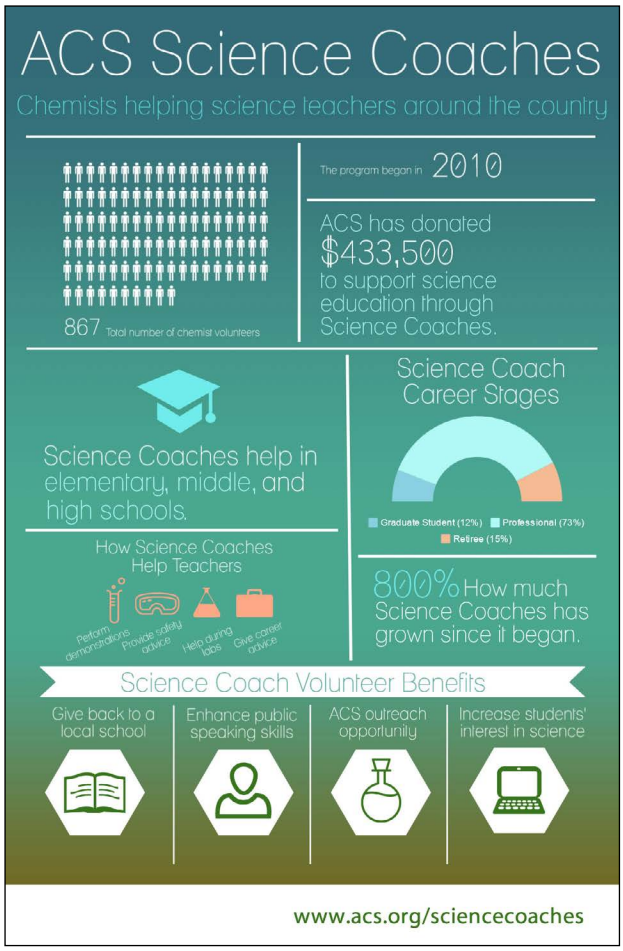
A chemist and a teacher partner for one school year. The Science Coach and teacher select one another and apply together to the program. Or, a chemist or teacher may apply individually and get matched with a nearby participant. Partners interact a minimum of six times in one school year. A $500 donation to enhance science education is made to the schools of teachers in Science Coaches One-on-One.

(2) Science Coaches Groups: A private, virtual forum comprising one chemist who answers questions, contributes to discussions, and provides chemistry advice to three teachers. Teachers and chemists are required to interact in the group at least once a month. A donation is unavailable to teachers in a Science Coaches Group.

Sign Up! Enrollment for the 2016-17 school year opened on April 11, 2016.

Questions? Contact sciencecoaches@acs.org

NOTE: Teachers in Science Coaches must be members of the American Association of Chemistry Teachers (AACT), though they needn't be a teacher of chemistry. Anyone with an interest in conveying science and chemistry to the public can join the AACT and benefit from its many resources. The Santa Clara Valley ACS offers full or half reimbursement of the $50 AACT membership fee. Apply here ***www.scvacs.org/files/AACT_Flyer.pdf***



Councilor's Report on the 251st ACS National Meeting in San Diego

By **Sally Peters**
Councilor for the Santa Clara Valley section of the ACS

Councilors and meeting attendees surprisingly were greeted with clouds on Friday afternoon, March 11th, as they arrived at their hotels and the convention center for the meeting in San Diego. More surprisingly, the skies opened up and it poured El Niño rains before 5 p.m. Our friends from the mid-West and Northeast were really looking forward to southern California sunshine!

For governance attendees, most committee meetings began on Saturday and were housed in the Hilton Hotel adjacent to the convention center. Committees, i.e. Budget & Finance (B&F), Economic & Professional Affairs (CEPA), Project SEED, and Women Chemists, meet early on Saturday morning before the conference activities officially begin. Other committees begin on Sunday morning. All committees have what are called 'open meetings' where any member can attend to learn about that committee's workings. My committee, Community Activities (CCA), is a bit different. We hold an outreach event at a local museum, zoo, park or library, and have hands-on experiments for the public. This year, we were at the San Diego library, which was walking distance to the convention center. As usual, our volunteers and their experiments attracted over 250 young people eager to learn about chemistry. This outreach often serves as a 'dry run' for National Chemistry week experiments. Our subcommittee meetings began in the afternoon and started again at 7:30 Sunday morning!

Divisional papers begin on Sunday, but if you are a councilor that is when the real work begins. Unless of course you were running in the San Diego Half Marathon that began and ended in front of the convention center! Oops! So you may not have the opportunity to attend the Presidential symposium or the Kavli Letures. For several years, Nominations & Elections hosts a town hall meeting to introduce the candidates for president and ask them questions that are generated from the audience. It is important for councilors to attend this meeting because at the Wednesday council meeting we will vote on the four nominees and narrow the field down to two candidates. After that, each regional district (there are six districts) meets and discusses the business for their district and any national business that we will be voting on at council.

Sunday night is the time to meet old friends for dinner or network at a reception. San Diego is a great convention city for several reasons: LARGE convention center, major hotels next to said LARGE convention center, many great restaurants within walking distance and the wonderful boardwalk around the harbor! By Sunday afternoon the sun was out in its full southern California force and the visitors from the cold northeast were happy!

Monday and Tuesday gives most councilors time to attend divisional papers and poster sessions. One event not to miss is SciMix, which is held on Monday evening in the convention center. This is a big, well attended poster session for undergraduate students and divisions alike. Don't miss the free chocolate given away by the Division of Chemistry and the Law. Also, there is free beer and popcorn!

Wednesday morning the council meeting begins early with a light breakfast and plenty of coffee. The four candidates we met on Sunday were presented (Peter Dorhout, Thomas Gilbert, C. Bradley Moore, and Gregory H. Robinson) and the councilors voted by electronic ballot to narrow the field to two candidates for ACS president. In the fall the full membership will vote for president. Peter Dorhout and Thomas Gilbert were chosen by council to be the candidates in the up and coming society election.

Council took action on the following items:

- 2017 dues were set at $166 (an increase of $4).
- Council approved guidelines for the academic community whose job impacts scientists in the profession of chemistry.

We then heard reports from several of the committees that met over the weekend.

B&F reported that we are in good financial shape. "In 2015, ACS generated a Net from Operations of $16.6 million, which was $3.2 million favorable to budget. Total revenues were $511.7 million, essentially on budget. Expenses ended the year at $495.1 million, which was $3.1 million or 0.6% favorable to budget. This variance was attributable to a continued emphasis on expense management across the Society. The Society's financial position strengthened in 2015, with Unrestricted Net Assets, or reserves, increasing from $144.7 million at December 31, 2014 to $163.3 million at year-end 2015. Additional information can be found at ***www.acs.org***, at bottom, click 'About ACS', then 'ACS Financial Information'. There you will find several years of the Society's audited financial statements and IRS 990 filings."

Membership Affairs reported that 25,000 new members joined in 2015, bringing the membership to almost 157,000. The retention rate is 84%.

Meetings and Expositions reported that attendance at the meeting was as expected – 8398 attendees and 5979 students plus exhibitors, guests, etc., for a total of 16,327! The exhibition did not have as many booths as expected because of a conflict with PittCon.

The Committee on Education reported that the new American Association of Chemistry Teachers (AACT) had 3,037 members. 88% were K-12 teachers.

If you would like to contact the current President, Donna Nelson can be reached at djnelson@ou.edu.

Chemistry Quiz

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

Last Month's Quiz

Which company was the largest producer of chemicals, by sales volume, in 2015 for the 9th year in a row?

BASF with sales of $78.7 billion.

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Volunteers Needed for Local Section

1. **Webmaster.**
   The Section has maintained a website (***scvacs.org***), email list, and twitter accounts for a long time now (the website was registered in 1995!). We are looking for someone to help/take over the maintenance of the online resources. Email ewarren@scvacs.org if you're interested in these positions.
2. **Finance Committee.**
   This committee oversees the Treasurer and the Section's financial resources. Email ewarren@scvacs.org if you're interested in this committee.

Tour of Silicon Valley Advanced Water Purification Center Engages the SCVACS Community

By **Ann Marie Woys, Ph.D.**

On Saturday March 26th, members of the SCVACS section toured the Silicon Valley Advanced Water Purification Center (SVAWPC). The site visit was kicked off with an hour-long overview presentation. The presentation emphasized the delicate balance between water usage and water sources within Santa Clara County's water district. The presentation can be viewed at ***http://scvacs.org/?p=354***

The SVAWPC was built in 2014 and helps maintain water balance by purifying water from the sewage treatment center. Each step in the SVAWPC purification process was

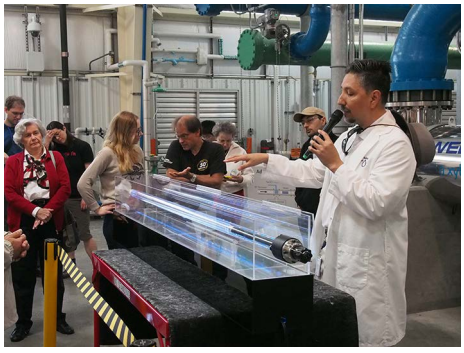
explained in the subsequent hour-long facility tour. The tour was engaging, and SCVACS community and friends were left with a deeper appreciation for the water purification process.

Timing of the tour coincides with the local megadrought and the Flint water crisis. Both catastrophes emphasize the need for water recycling and purification – both major goals of the SVAWPC. Santa Clara County population continues to grow, placing further strain on water resources. Nearly 75% of all district water is used on landscaping. Currently, district water is sourced from: Sacramento-San Joaquin River Delta (55%), local (30%), recycled (5%), and conservation (10%). In addition, conservation of the local groundwater is critical to preventing sinkhole formation. Furthermore, economic implications of a 10-30% water shortage could be as high as $10 billion. Thus, water conservation and recycling is crucial to the county's future.

The water recycling plant operates in three stages – microfiltration, reverse osmosis, and UV-treatment, plus a few intermediate steps. Water entering the plant is received from the San Jose-Santa Clara Regional Wastewater Facility, where it was purified in two stages. Upon arrival, particles >350 μm are removed by cylindrical stainless steel filters. The filters are cleaned periodically via suction and are 95% efficient. To maintain constant pressure, filters alternate between purification and the cleaning cycle. The estimated lifespan of each filter is 10 years.

Following the initial filtration, water is pumped into the first phase of the recycling process; microfiltration. In the microfiltration step, 0.1 μm polymer hollow fiber filters are used to remove solids, bacteria, protozoa, and some viruses from the water. These filters are cleaned every 30 minutes by reversing the water flow and are 85% efficient. The lifetime of these filters is 5 years. After microfiltration, the water is pumped into a holding tank.

Second stage, reverse osmosis, is necessary for removal of viruses, organic molecules, pesticides and salts. Before entering the reverse osmosis filters, water must be acidified to reduce mineral deposition. In addition, to pass through the tightly-coiled reverse osmosis filters, the water must by highly pressurized. The pumps used for pressurization account for



almost 50% of all energy used in the facility! The reverse osmosis filters are also periodically cleaned via backflushing. The filters are 85% efficient and require replacement within 5 years. After passing through the reverse osmosis filters, all particulate matter has been removed, but dissolved CO_2 is high due to pressurization.

This very clean water is then treated with UV (254 nm) light for ~30 s. In this stage of the water treatment, the UV light breaks down any residual pharmaceuticals or other organic molecules that may have eluded previous filtration steps. To remove CO_2, the water surface area exposed to atmosphere is increased in an outdoor holding tank. No carbon-capture is necessary because the amount released is relatively small.

At the end of the process, the water is clean to log 14. The purified water is then sent to the percolation ponds. Our Santa Clara Valley Water District (SCVWD) guide compared

water samples after each stage of the purification process. While the influent appeared murky, the final water was crystal clear. The resultant water passes Federal guidelines for safe drinking water. However, California does not allow treated sewage water to be used for drinking water without additional purification by ground percolation. State lawmakers are currently considering removing this requirement.

The SVAWPC currently purifies ~8 million gallons of water per day. Tours are available to the public by contacting info@purewatersv.org. Your friends from the SCVACS highly recommend the tour. It is important for us as chemists to be good stewards of water conservation and to spread the word about water recycling to our legislators and neighbors.

2016 Outstanding High School Chemistry Students

By **Sally Peters**, Chair of the SCV Chemistry Olympiad Committee

On April 23rd, seventeen of Silicon Valley's top high school chemistry students from the Santa Clara Valley ACS region met at Las Positas College in Livermore to compete in the national testing for the 2016 International Chemistry Olympiad. They were joined by seventeen students from the California Section for a grueling day of exams. Several SCVACS members volunteered to help run the tests.

The students gave up a beautiful Saturday to spend 6 hours indoors working on problem sets, multiple-choice questions, and the 'killer' lab problems.

This year, 23 high schools and over 300 students from the Santa Clara Valley section participated in a local standardized exam administered at the high schools. Some schools give the local exam to all of their AP or Honors chemistry classes as a warmup for the AP exam that is given in May. Other schools administer it only to interested students. The top scorers then represented our section at the ACS national exam at Las Positas on April 23rd. Their national exams were then sent to national ACS for the ACS Olympiad committee to grade. The national committee, composed of about 40 professors and teachers, has over 1,000 exams to grade and compare!

The 1,000 students who participated in the national exam across the country on the weekend of April 23rd get narrowed down to the top 20 students in the country. Those students will attend an intensive study camp for two weeks. The camp has traditionally been held at the Air Force Academy in Colorado Springs. From those 20 students, four will be chosen to travel to Tbilisi, Georgia, in July to compete internationally. Good luck to our students.

For each of the past four years, two of our section's students were chosen to attend the study camp. Two of those students, Stephen Ting and David Wang, went international and won gold medals! Both young men are now majoring in chemistry at Stanford and MIT, respectively!

A special thanks goes to SCVACS members George Lechner, Dave Parker, Howard Peters, and Bruce Raby for their help proctoring this activity for the last several years. The California section hosted us on the Las Positas Community College campus. Eva Ng handled the task of lab prep for the 34 students.

A very special thanks goes to the high school teachers who make it possible for their students to participate. They gave up personal and classroom time to communicate the program, organize the testing, grade the local exams and give a tie-breaker question when it was needed!

The Santa Clara Valley outstanding high school chemistry students and their teachers are:

Bellarmine – ***Pravin Ravishanker*** – Debjani Roy

Carlmont High School – ***Jacob Zhong*** – Felix Guzman

Fremont High School – ***Rajiv Nelakanti*** – Cecilia Walsh

Gunn High School – ***Audrey Cheng & Cory Pan*** – Heather Mellows

Harker School – ***Derek Yen & Linus Li*** – Robbie Korin

Kipp San Jose Collegiate – ***Khoa Doan*** – Blythe Butler

Lynbrook High School – P***ranav Lalgudi & Jeffrey Chang*** – Lester Leung

Monta Vista High School – S***teven Liu & Arjit Misra*** – Kavita Gupta

Palo Alto High School – ***Gregor Dairaghi*** – Carolina Sylvestri

Homstead High School – ***Daniel Guo*** – Susan Mrozack

Saratoga High School – ***Jacky Lee & Alexander Li*** – Janny Cahatol

School for Independent Learners – ***Freya Edholm*** – Matt Sole

Additional high schools that participated in the local exam were: Aragon High School, Archbishop Mitty, Basis Independent Silicon Valley, Carmel High, Crystal Springs Upland, Evergreen Valley, Half Moon Bay High, King's Academy, Los Altos High, Mercy (Burlingame), and Mills High.

Thank you everyone!

If you want to match wits with the students, go to the following ACS website (and no peeking at the answers!) for the 2016 local and national exams: ***www.acs.org/content/acs/en/education/students/highschool/olympiadpastexams.html***

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 March

Ramiz Alkasir I
Mareike Badstuebner
Dr. Simon Russell Bare
Dr. Wendy Bisset
Celia Boone
Joseph Carlson
Salim Charaniya
Dr. Jihong Cheng
Elbert Chin
Dr. Jennifer R. Cochran
Jessica N. Doss
Dr. Rebecca M. DuBois
Vivian Duong
Stephanie Eramo
Marco Fanucchi
Navathej Gobi
Robin Gruver
Dr. Sandeep Gupta
Dr. Christopher Hale
Dr. Matthew J. Jurow
Joshua A. Kaplan
Dr. Matthew B. Kraft
Yuanqing Li
Peter Dalton Haldane Lindley
Spencer Mitchell Little
Dr. Xingrong Liu
Thomas Mohr
Dr. Hirokatsu Nagura
Hoang Nguyen
Dr. Navin G. Patel
Lance Pickens
Dr. Levi Charles Thomas Pierce
Jian Qin
Dr. Elpidio R. Rafanan Jr.
Elizabeth Sattely
Ma F. a. t. i. m. a. C. Seijo
Anton Sinitskiy
Dr. G Jason Smith
Darshan Vijayakumar
Kun Wang
Dr. Korin Wheeler
Mackenzie Whitman
Dr. Ann Marie Woys
Liheng Wu
Taia Sean Wu

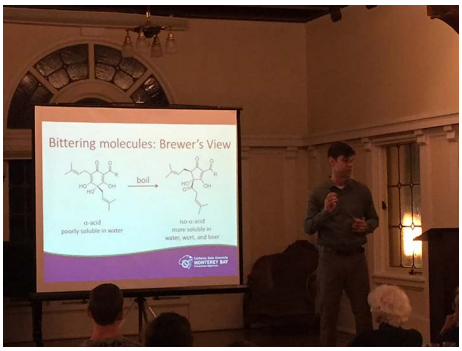
Inaugural Event of Monterey Bay ACS Activity

By **Rudy Wojtecki, Ph.D.**

Animated chatter arose from the gorgeous campus of Cabrillo College in Aptos on April 14th in a local meeting among Monterey Bay chemists, testing the waters for creating a series of ACS events in the area.With people from such diverse backgrounds as chemists who have made a career out of designing explosive materials, to professors from surrounding universities, to students contemplating graduate school, the conversations couldn't be more lively and engaging. The evening was the product of brainstorming by a group of several faculty members from colleges around the Monterey Bay area. The catalyst was an innovation grant from the ACS, intended to support new activity in areas traditionally not served by local ACS sections. Jane Frommer, the chair of the Santa Clara Valley ACS section that includes Santa Cruz, Monterey, and San Benito Counties, secured the grant in 2015 to test the waters for interest in ACS events central to those three counties. She wrote an editorial in the section's newsletter describing the motivation and progress. Together Jane and the faculty team plotted the inaugural event's timing, location, and topic, to come up with what turned out to be a success that exceeded expectations. Planning for 50 attendees, they had to close registration at 65 registrants due to dining room space constraints.

Dinner was created by the Cabrillo College Culinary Arts Department in their Pino Alto restaurant. Following a Spanish theme, they prepared excellent upscale manchego-stuffed fried olives, paella, and some addictive dessert. The gathering highlighted the rich beer and wine culture of the area as many of the night's beverages were locally brewed by fellow chemists including both wine and, appropriately, beer. Attendees were treated to hand-crafted beers produced by the evening's speaker himself - Professor John Goeltz of the California State University Monterey Bay chemistry department. White wine was donated by chemist-owned Pelican Ridge Winery. The event was also support by a generous donation from Nano And More of Watsonville.

While the San Francisco Bay area boasts a couple of ACS sections with strong followings, this meeting at Cabrillo College was a first for the Monterey Bay area. Perhaps it was the title that drew an overwhelming amount of interest: Batteries and Beer: The Chemistry of Energy Storage and the Aroma Chemistry of Beer. Dr. Goeltz described processes the hops undergo, imparting bitter flavors and signature aromas. His talk was illustrated by the molecular structures of isohumulones that undergo critical reactions in the brewing process, in particular, a light-triggered decomposition that leads to the formation of thiols associated with the "skunkiness" of some beers. He also provided insight into ongoing work on large-scale batteries for power grid applications, central to his research in academia and in industry.

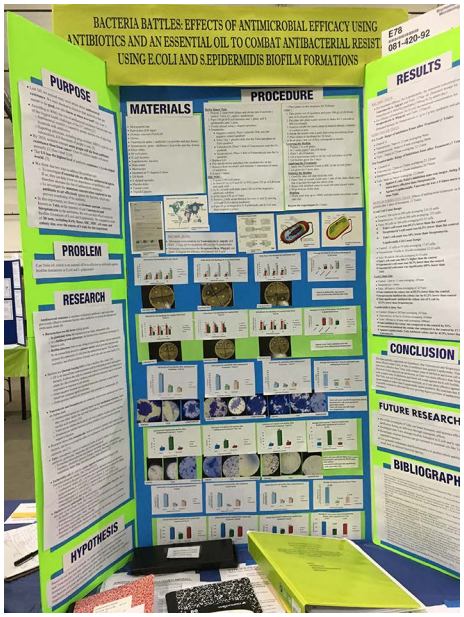


Judging in the 2016 Synopsys Championship Science Fair

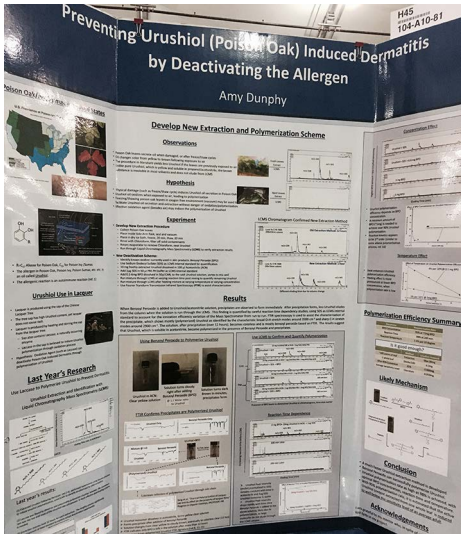
Sreeja Nag, Ph.D.

I participated in the Synopsys Championship Science Fair on March 17, 2016, by judging and handing out four Special Awards as a part of the Santa Clara Valley ACS team of judges. We awarded first and second prizes as well as a team prize in topics relevant to chemistry, biochemistry, earth and environmental science and microbiology. The Championship Fair had over a thousand posters set up at the San Jose Convention Center, of which over 200 were allocated to the ACS for reviewing. There was also a special award from the Promethium Chapter of Iota Sigma Pi, a national honor society for women in chemistry. The ACS judging team, led by Susan Oldham-Fritts, was comprised of science and technology researchers and professionals from around the Bay Area: Sreeja Nag, Toby Astill, Gary Bullard and Owen Gooding. The team met in the morning to review the posters and identify questions for the interviews, before the students arrived for in-person interviews in the afternoon.

The Championship was incredibly well-organized in a large tent addition to the convention center and all judges were addressed in a luncheon presentation by the organizers. The candidate students arrived at their posters at 1 pm. There was quite of crowd of students and judges! All ACS judges interviewed the best candidates, shortlisted by at least one ACS judge in the first round of poster viewing. I was extremely impressed by the level of meticulous research and hard work that I observed in many of the projects, and the presentation skills of the students. Some of the high school students had worked with large universities and made breakthroughs on par with college students. We looked out especially for those students who had identified their problem statement on their own and exercised creativity to solve the problem as independently as possible. After a whirlwind day of research and science, the ACS judging team decided to award the first and second prizes to Amy Dunphy (10th grade) and Shivek Narang (7th grade), respectively, and the team prize to Michelle Nazareth and Andrew Nazareth (Grades 7 and 8).



The poster that eventually won the ACS Team Award



The poster than won the ACS First Prize

Synopsys Championship's Awards Ceremony on April 3

I had the honor of presenting the awards to the winners on April 3 at the Campbell Heritage Theatre. The winners were announced amid loud cheer from a full auditorium. As with the Championship, the Awards Ceremony was very well organized and the winners were brought on stage in groups. The judges were made comfortable with refreshments backstage, and were invited over to announce and present awards when it was their group's turn. Overall, my experience with judging the Synopsis Championship has been fantastic. I am looking forward to volunteering again next year.

UC Santa Cruz Chemistry and Biochemstry
15th Annual Joseph F. Bunnet Symposium

Molecular Recognition of DNA From Discovery to Applications

Professor Peter B. Dervan
California Institute of Technology Bren Professor of Chemistry

Peter B. Dervan is the Bren Professor of Chemistry at the California Institute of Technology. Dervan pioneered a field of chemistry with studies directed toward understanding the chemical principles for the sequence specific recognition of DNA. Cell permeable small molecules that modulate protein-DNA interfaces may be useful for the external control of aberrant gene expression relevant in human disease.

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Register Now
May 27, 2016

4:00 pm	Registration at Physical Sciences Building Atrium, UC Santa Cruz
5:00 pm	Lecture and Awards at Baskin Engineering Auditorium, UC Santa Cruz
6:00 - 8:30 pm	Gala Reception and New England Themed Strolling Dinner at Physica Sciences Building Atrium, UC Santa Cruz

For additional information about this lecture and registration, please call UC Santa Cruz Chemistry Department at 831-459-3154.

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

http://www.scvacs.org

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

2016 Section Officers

Chair	Jane Frommer	408-927-2224	frommer@scvacs.org
Chair Elect	Todd Eberspacher	650-723-2505	eberspacher@stanford.edu
Past Chair	Ashley Piekarski	408-855-5269	ashley@scvacs.org
Secretary	Richard Bone	650-714-7897	rgab@scvacs.org
Treasurer	Ihab Darwish	650-594-1654	darwishis@yahoo.com

Councilors

2014-2016	George Lechner	408-226-7262	glechner@aol.com
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FUTURE EVENTS

May 18 Dr. Zachary Smith
Golden Gate Polymer Forum
Polymers and Mixed-Matrix Materials for Membrane-based Gas Separations
Michael's at Shoreline
http://ggpf.org/

May 19 Ron Hipshman
Everything Matters: Silicon
Exploratorium, San Francisco, CA
www.bayareascience.org/calendar/index.php?eID=17075

May 25 SCVACS Dinner Seminar
Dr. Patrick Brown, Impossible Foods
Replacing the World's Most Destructive Industry
Michael's at Shoreline
www.impossiblefoods.com

Jun TBD SCVACS Joint meeting with the Golden Gate Polymer Forum

Jun 26-29 ACS Northwest Regional Meeting 2016
Chemistry Under the Midnight Sun
Anchorage, AK
http://norm2016.sites.acs.org/

Jul 9 Santa Clara Valley ACS Annual Wine Tasting and Awards Picnic
Stanford Chemistry Department
Stanford, CA