

# THE VORTEX

AMERICAN CHEMICAL SOCIETY  
VOLUME LXXX NUMBER 8

CALIFORNIA SECTION  
OCTOBER 2018



CalACS Volunteers, Lindsey and Adam, demonstrating chemical principles at the Solano Stroll

## TABLE OF CONTENTS

OCTOBER WCC MEETING	PAGE 2
CHAIR'S MESSAGE	PAGE 3
ACS MEETING REPORT (M. FRISHBERG)	PAGE 4
CALACS 2018 ELECTION INFORMATION	PAGE 4
ERYTHRITOL, ET. AL..(PART 2) (B. MOTZER)	PAGE 6
SOLANO STROLL (A. MADONIK)	PAGE 10
BUSINESS DIRECTORY	PAGE 11
INDEX OF ADVERTISERS	PAGE 11

California Section  
American Chemical Society



All are welcome

Friday, October 12, 2018

Dominican University of California  
Angelico Hall  
50 Acacia Avenue  
San Rafael, CA 94901

Time

3:30PM

Saturday, October 13, 2018

Mills College  
Rothwell Center Theater  
5000 MacArthur Blvd.  
Oakland, CA 94613

Time

2:30PM

Reservation Required

Please register by:

1. Email [office@calacs.org](mailto:office@calacs.org), or
2. phone 510.351.9922, or
3. Eventbrite: go to [www.calacs.org](http://www.calacs.org) and click desired date.

For either option #1 or #2, send a check for the desired number of tickets (indicating student or regular) made payable to: CA Section ACS, 2950 Merced St., #225, San Leandro, CA 94577, postmarked no later than September 29, 2018. Individuals needing special assistance (ADA, allergies, etc.) should notify CA Section ACS.

Cost

\$15 (\$8 for students and the unemployed)



Marie Curie–Nobel Laureate twice!

About No Belles

No Belles is a dramatic production about women scientists and the Nobel Prize. Portal Theatre is a theater company based in Portland, OR, whose play "No Belles" focuses on the lives of women scientists who won Nobel Prizes and some who did not. It was performed at the Fall 2017 ACS meeting in Washington, DC, and the CA Section WCC have arranged for it to be shown in the San Francisco Bay Area to benefit and inspire young women STEM students, in particular, and be accessible to all students aspiring to become the scientists of tomorrow.

From the Actors

"Portal Theatre is a group of artists dedicated to making exciting, challenging and eclectic new theatre on a variety of topics that are socially and culturally relevant. Through our company-created works, we engage in conversation with our audiences in ways that are both illuminating and entertaining."

About your Role

As attendees, you will be invited to participate in a survey immediately following the play, as well as a networking event that allows students to meet Bay Area scientists to learn about their careers. Don't be shy!

Directions

Dominican University of California:

Go to the website to chart the most suitable route  
Parking: The preferred location for events parking is the Conlan Recreation Center Lot / Grand Avenue Lot. This location does not require a parking permit. This lot is located at the intersection of Grand and Acacia Avenues.

Mills College:

From I-580 E: Follow I-580 E to MacArthur Boulevard. Take exit 25B.  
From I-580 W: Follow I-580 W to exit 25, which connects to MacArthur Boulevard.  
Parking: Free visitor parking is available on campus.

In Partnership With

*Gifts & Donations*

A gift of \$25 to our High School Chemistry Teachers programs helps support the teacher and school with Chemistry supplies and equipment. Call or email and find out how your valued contribution can be used. Donations to the California Section are tax deductible.

Lou Rigali, LR101898@aol.com

# THE VORTEX

Published monthly except July & August by the California Section, American Chemical Society. Opinions expressed by the editors or contributors to THE VORTEX do not necessarily reflect the official position of the Section. The publisher reserves the right to reject copy submitted. Subscription included in \$15 annual dues payment. Nonmember subscription \$15.

## MAGAZINE OF THE CALIFORNIA SECTION, AMERICAN CHEMICAL SOCIETY

### EDITOR:

Louis A. Rigali  
255 4th St. Ste #101 Oakland 94607 510-268-9933

### ADVERTISING MANAGER:

Vince Gale, MBO Services  
Box 1150 Marshfield MA 02050-1150 781-837-0424

### OFFICE ADMINISTRATIVE MANAGER:

Julie Mason  
2950 Merced St. # 225 San Leandro CA 94577 510-351-9922

### PRINTER:

Quantity Postcards  
255 4th Street #101 Oakland CA 94607 510-268-9933  
Printed in USA on recycled paper

### CONTRIBUTING EDITORS:

Evaldo Kothny  
William Motzer

### EDITORIAL STAFF:

Evaldo Kothny  
Lee Latimer  
Alex Madonik  
Margareta Sequin  
Linda Wraxall  
Wally Yokoyama

For advertising and subscription information, call or write the California Section Office, 510 351 9922, office@calacs.org  
California Section Web Site: <http://www.calacs.org>

### Chair's Message

Our ACS California Section has again organized diverse events for this month of October.

Most importantly there will be two performances of the theater production "No Belles": on October 12, at Dominican

University, San Rafael, and on Saturday, October 13, at Mills College, Oakland. Linda Wraxall and Elaine Yamaguchi from our Women Chemists Committee have been working hard to make these performances possible in our area. NoBelles, presented by Portal Theatre, a theater group from Portland, OR, is a critical play about deserving women scientists who have (and have not) received the Nobel Prize. If you have not signed up yet for this very special event (for a modest price) please check this *Vortex* how you can obtain tickets.

Our dedication to public outreach, with hands-on chemistry and general science activities, is ongoing. In October we'll again participate at several such events, namely at the East Bay Mini Maker Faire in Oakland on Sunday, October 21, and then at the North Bay Science Discovery Day at the Sonoma County Fair Grounds on Saturday,

October 27. We'll also have a booth at the huge Science Discovery Day event at AT&T Park on Saturday, Nov. 3. If you would like to volunteer at one of those events (extra hands are always needed), please contact Alex Madonik at alexmadonik@sonic.net.

Make sure to read Mark Frishberg's informative and detailed report on the recent ACS National Conference in Boston in this *Vortex*. Our eight councilors have again been representing our California Section at the conference. The report describes the many diverse aspects and projects of ACS, some of which you may not have been aware of.

This report is also of special interest if you were not able to attend the conference. And check out our renovated website, at calacs.org, as we keep adding information on events and news to the site. We hope you can join us at some of our CalACS events!

Margareta Séquin

### Editor's note

The report by Mark Frishberg starting on page 4 has been edited so that it fits into this month's issue. A unedited version will be placed on the website. [www.calacs.org](http://www.calacs.org).

Lou Rigali

## REPORT FROM THE ACS NATIONAL MEETING

### Highlights from the Boston Meeting

ACS hosted its 256<sup>th</sup>, on August 19-23, 2018

national meeting in Boston, traditionally one of our members' favorite locations for a National ACS meeting. A nice compact city with many historical sites, great food, and an extensive and convenient transit system – and the Red Sox were in town the whole week of this meeting. As this busy meeting progressed, many members began to reminisce as to how circumnavigating a Boston ACS meeting was so convenient in the past when the exhibition and technical sessions were primarily in the Hynes Convention Center and governance and some technical sessions were held in the five hotels in the Prudential Center/ Copley Place area. Unfortunately, ACS outgrew Hynes four meetings ago in Boston and the new Boston Convention Center is miles away on the bay and a 30-45 minute trip by shuttle bus, taxi, or subway – and for some reason the ACS schedules shuttle buses less often during the middle of the day when it was more likely that Councilors need to transition from the governance hotels to the Convention Center for technical talks and the exhibition, and then back again for a caucus or key reception. Unfortunately, the extra hotels and food venues promised during the opening of the new convention center never developed due to the economic recession, although it was noted that there

was a lot of building in progress at the convention center area this year, so maybe that is finally going to be remedied. For this and financial reasons the Boston ACS meetings initially scheduled for the early 2020's have been relocated to Atlanta, which will be a logistic improvement, but likely to reduce attendance, especially from industrial members.

For California Local Section members this was a very busy and eventful meeting, especially for Lee Latimer who is running for reelection as a Director-At-Large (the other candidates being Frank Blum, Ingrid Montes, and Angela Peters) and participated in the meet the candidates Town Hall meeting on Sunday afternoon.

CAL-ACS was well represented on Tuesday evening at the ChemLuminary Awards, where our section was one of the finalists for Best Local Section Performance in the Very Large Local Section Category. While not winning the award, many visitors to the associated poster session commented favorably on our poster, which was developed primarily through the efforts of Alex Madonik, with input from Elaine Yamaguchi and other section members. Not mentioned, but recognized by CAL-ACS members, were the joint efforts of Stephanie Malone and our local YCC to the craft beer competition event which won a ChemLuminary Award for the Silicon Valley Local Section.

Prior to the start of the ACS meeting, a Presidential Public Outreach event:

(Continued on page 5)

### *California Section Election – 2018*

The California Section, will hold an election this fall for the following positions: Chair-elect, Secretary, Director, two Councilors, two Alternate Councilors, and three Members-at-Large. All these positions are members of the Section's Executive Committee, and the first three positions are members of the Section's Board of Directors. If you have an interest in being a candidate for one of these positions or would like more information,

please contact Michael Cheng [(510) 527-8998, [michaeltcheng@gmail.com](mailto:michaeltcheng@gmail.com)], Secretary, and member of the Nominations and Election Committee, or Jim Postma [[jpostma@csuchico.edu](mailto:jpostma@csuchico.edu)], the chair of the committee ASAP. While the first five elected positions may be filled only by full members of the ACS, the positions of Member-at-large are open to both members and student members of the Society.

*(continued from page 5)*

“Exploring Our World through Chemistry”, which has become a feature on the Saturday preceding National Meetings, was held at the Boston Children’s Museum, with over 700 people attending. The overall theme of the Boston meeting was “Nanoscience, Nanotechnology & Beyond.” As usual a plenary session on Sunday afternoon highlighted and introduced the overall theme, while Division programs related to the theme continued throughout the week.

The Presidential Symposium on Sunday “Moving the Safety Values of the ACS Forward” was followed on Monday by “Growing with Project SEED” commemorating Project Seed’s 50th anniversary and featuring Nobel Laureate Sir Fraser Stoddart; “Ion Transport at the Nanoscale,” and “Synthetic Biology: The State of the Science.”

The popular Kavli Foundation Lecture series continued on Monday afternoon, with the Emerging Leader lecture given by Dr. Jill Millstone of the University of Pittsburgh on “Metal-Ligand Chemistry in Nanoparticle and Performance” and the keynote Innovations in Chemistry lecture given by Dr. Harold Atwater of Cal Tech entitled “Light as Fuel.”

Another very interesting symposium offering was the joint Polymeric Materials Division/CME “Polymeric Materials Advances in Human Space Exploration – Chemistry for Humanity’s Next Big Leap.”

Monday’s evening’s SciMix poster session showcased posters from most ACS Divisions, including a Division Row with 16 Divisions promoting Division membership. A highlight was the many enthusiastic Project SEED high school students who were happy to share their summer research experiences.

Report from the Council Meeting and other Society governance activities:

All CAL-ACS Councilors or Alternates, our Director-At-Large, and our two Past ACS Presidents were present at the Council meeting and most participated on National ACS committees. Information on

some of the activities of the committees to which they are affiliated can be found below. CAL-ACS Councilor, Bryan Balazs was recognized for 20 years of service on the Council, and Director-At-Large and former Councilor, Lee Latimer, was recognized for 15 years of service.

The Boston Council meeting was lively in spots. The petition to amend the ACS by-laws to remove restrictions on the ability of International Chapters to obtain funding allocations and have Council representation, although not providing such funds or representation, received considerable discussion from both sides before passing with an 81% favorable vote, well over the 2/3<sup>rd</sup>s majority needed.

Up for consideration, with a vote scheduled for the Orlando meeting in the Spring of 2019, was a 60-page petition to reorganize and revise the entire ACS Constitution and by-laws, including the addition of a section to be entitled “Standing Rules” where most committee functions would reside. The petition in the Council agenda covered the entire document, indicated the changes recommended by the Task Force to Simplify Governance and where each section would reside in the amended document. A special Council discussion session was held for 30 minutes on the subject of sexual harassment and what role ACS should play in preventing sexual harassment in the sciences. There was considerable input from many Councilors who were supportive of the importance of having this discussion, many of whom shared personal experiences. It was very instructive that a poll of Council members asking who had experienced or observed such harassment at ACS meetings or on the job yielded results of 77% of female Council members and 57% of male Council members. Council members were also polled on their level of knowledge about the ACS Volunteer National Meeting Code of Conduct and the Chemical Professionals Code of Conduct.

In another action of note, the Council voted to approve a petition to charter an International Chapter in Columbia, subject to Board confirmation, and the petition

*(continued on page 7)*

**THE VORTEX**

## Erythritol, et al. (Part 2)

Bill Motzer



In Part 1 (September 2018 Vortex), I reviewed some of the sucrose (sugar) substitutes known as sugar alcohols or polyols. Currently, the most popular of these substances is erythritol (systematic

IUPAC name: 2R,3S-butane-1,2,3,4-tetrol; chemical formula: C<sub>4</sub>H<sub>10</sub>O<sub>4</sub>, with a molecular mass of 122.12 g/mol), which has recently been approved in the U.S. as a food additive. It was originally discovered by Scottish chemist John Stenhouse in 1848. Because erythritol is about 60 to 70 percent (%) as sweet as sucrose (common table sugar) it's considered essentially non-caloric, thereby not affecting blood sugar, or causing tooth decay. Under U.S. Food and Drug Administration (FDA) labeling requirements, it has a caloric value of 0.2 kilocalories per gram (kcal/g), which is approximately 95% less than sugar and other carbohydrates. Nutritional identification varies with some countries, such as Japan and the U.S. labeling it as a zero-calorie food and; the European Union labeling it as 0 kcal/g.

Erythritol occurs naturally in some fruits (up to 0.2 g per serving) such as pears, melons, and grapes, mushrooms, and fermented/yeast-derived foods such as wine, beer, sake, soy sauce, and cheese. It also occurs naturally (endogenously) in tissues and body fluids of humans and animals. Industrially, it's produced by starting with the enzymatic hydrolysis of the corn and/or wheat starch to generate glucose, which is then fermented with a non-GMO yeast (e.g., *Moniliella pollinis* or *Trichosporonoides megachilensis*) or another fungus producing erythritol. The end or final product is then crystallized to 99.5% purity by concentrating and filtering the fermentation broth. Commercially, erythritol is produced as a white, anhydrous, crystalline powder, granules, or liquid with a shelf life of about two years.

Erythritol generally remains undigested in the stomach passing through to the small intestines where about 90% absorption occurs generally by passive diffusion like that of many low molecular mass organic molecules which do not have associated active transport systems. The rate of absorption for such molecules is determined by their molecular size. Therefore, erythritol, which is a 4-carbon molecule, passes through intestinal membranes at a rate faster than larger molecules such as mannitol or glucose. Therefore, because only 10% absorption reaches the large intestine, it does not have the laxative effects often experienced after consumption of other sugar alcohols such as xylitol and maltitol. However, extremely large doses can cause nausea and stomach upset. Studies of erythritol consumption indicate that a dose of less than 35 g has fewer gastrointestinal side effects such as bloating, abdominal gas, and diarrhea than other polyols (e.g., xylitol). However, if an erythritol dose intake exceeds 50 g, nausea and borborygmi (a rumbling or gurgling noise made by the movement of fluid and gas in the intestines) may occur. Another study indicated that in males, doses greater than 0.66 g/kg body weight and in females, doses greater than 0.8 g/kg body weight, will have a laxation.

### Some general physical properties

Erythritol has no discernible odor occurring with a clean sweet taste. In crystalline form, it imparts a strong cooling effect in the mouth; however, when dissolved, such as in soft drinks, this cooling effect is lost.

It does not decompose at ordinary cooking/baking temperatures of about 180° C (356° F).

Very low hygroscopicity, not readily attracting moisture from air with a relative humidity 90%.

Density is 1.451 g/cm<sup>3</sup> at 20° C (68° F).

Water solubility at 25° C (77° F) is 370,000 mg/L solution, which is much lower than that of sucrose's water solubility of 2.12 x 10<sup>6</sup> mg/L at 25° C. However, it begins reaching sucrose's solubility at

(continued on page 10)

*continued from page 5)*

covering Local Section and Division affiliation with other Societies passed by voice vote.

It was announced that hard-copy meeting programs would no longer be produced and the Committee on Meetings and Expositions is looking into ways for providing members with several program download options in addition to the meeting mobile app.

#### Affiliations and comments from our Councilors and Past ACS Presidents

Bryan Balazs – Committee on Budget and Finance (B&F), Undergraduate Program Advisory Board (UPAB)

B&F - Overall, the finances of the ACS continued their positive trends seen in the last few years, and the long-term effects of the 2008 recession are now a distant memory. Based on ACS financial performance thus far in 2018, the ACS is projected to end 2018 with \$565M in revenues and \$533M in expenses, well within the approved 2018 budget. B&F voted to recommend to the ACS Board of Directors that the Advance Member Registration Fee for the two national meetings in 2019 be set at \$505, a figure which included both an inflationary adjustment over the 2018 registration fee, plus an extra \$15 fee due to action taken by Council several years prior. However, in subsequent action by the Board, the 2019 fee was set at \$490, temporarily removing the extra \$15 fee for 2019 due to strong financial performance by the recent National meetings. UPAB (an affiliate of SOCED) reported that the multi-day programs and activities for undergraduates continue to be well attended with very positive attendee feedback. UPAB reviewed the tentative plans for undergraduate programming for the two national meetings in 2019, Orlando and San Diego. Of note for UPAB was that, in lieu of a committee dinner, several UPAB members (including Bryan Balazs) went to a Red Sox game in Fenway Park.

Mark Frishberg Council Policy Committee (CPC), ACS Career Consultant and Workshop Presenter – Career Fair CPC Long Range Planning Subcommittee organized and held a very successful Strategy Café, attended by over 40 Councilors to get input on three of the Change Drivers for future consideration within the ACS Strategic Plan: Conferences and Events Reimagined; Chemistry's Changing Workforce; and Globalization of Chemistry. The CPC Subcommittee on Petitions reviewed all petitions up for Council action or consideration and recommended those for support by CPC. ACS Career Fair related activities included presentation of the three-hour workshop, Finding Your Career Pathway, and one-hour Introduction to Networking, and four hours of mock interviews and resume reviews. Fifty members attended each of the workshops.

Sheila Kanodia – Committee on Ethics (CE) CE is developing on-line resources related to ethics, to help members and make sure the existing links connect to the intended sites. Local Sections and Divisions can apply for the 2019 ChemLuminary award by CE for programs related to ethics, developing resources for ethics, and/or ethics education.

Lee Latimer – Director At-Large, Western Regional Meeting Board The Board of Directors met Friday and Saturday before the technical programs started. New plans for Corporation Associates, a Board Committee and an important prime voice of industry within the ACS, were approved. The Leadership Advisory Board Committee is beginning a reimagining of the Leadership Development System which will be ten years old in 2019. Reports and discussions covered broadly the progress and challenges of CAS and the Publications division. Presidential Symposia plans are developing, under President-Elect Bonnie Charpentier, for the Orlando meeting, including one on Chemistry and Safety in

continued on page 8

*(continued from page 7)*

Natural Disaster Recovery (working title) relevant to the 2017 hurricanes in the Gulf of Mexico and Caribbean basin.

Alex Madonik – Alternate Councilor – Committee on Community Activities (CCA) volunteers and 700 visitors to the ACS Kids Zone at the Boston Children's Museum got their first look at the NCW 2018 edition of Celebrating Chemistry, with the theme, "Chemistry Is Out of This World." The NCW 2019 theme will be "Marvelous Metals" with articles about element discovery in honor of the 150th anniversary of the Periodic Table of the Chemical Elements, The Earth Week 2019 theme will be "Take Note: the Chemistry of Paper."

Attila Pavlath – Committee on Public Relations and Communications (CPRC), International Activities Committee (IAC) – IAC addressed the forthcoming International Year of the Periodic Table (IYPT2019). Remembering that 2011 was recognized by the United Nations as the International Year of Chemistry (IYC2011), the United Nations has now recognized the importance of chemistry in our lives for the second time. IAC initiated an effort to create a special poster series to describe, in layman's terms, the benefits of each element in various aspects of our lives. The posters will be on display in January at the official opening of IYPT2019 in Paris, and will be translated into other languages for display throughout the world.

In other action, IAC recognized the importance of growing the interaction of ACS local sections with international chapters, to seek areas of cooperation and provide mentoring. The 22<sup>nd</sup> International Chapter was approved in Columbia and a request for chapter status was received from Pakistan.

Paul Vartanian – Committee on Constitution and By-Laws (C&B) C&B is working with the Task Force on Governance to prepare the formal petition for ACS Constitution and By-Laws revision for action at the Orlando Council

meeting.

Marinda Wu – Committee on Budget and Finance (B&F), ACS Career Consultant – Career Fair and Chinese -American Chemical Society (CACS). At the CACS Banquet an excellent talk was given by Dr. Pei-Qiang Huang, former Dean and current professor from Xiamen University in Xiamen, China,

Elaine Yamaguchi – Local Section Activities Committee (LSAC) and Project SEED LSAC – Volunteered for new volunteer Local Section (LS) peer mentoring pilot program. This is meant to contact a LS before they are in trouble. The LS has to want help from the LSAC volunteer member. Bill Carroll gave LSAC a preview of what the bylaw changes are trying to achieve: Make ACS more nimble and push many of the issues down to the relevant committees. Dr. Mark Cesa, past President of IUPAC, asked all LSAC members to do a worldwide survey of scientists and take it back to their LS. I will have Julie send it out to our members. Link: <https://statisticalresearchcenter.aip.org/cgi-bin/global18.pl>

At the Open Meeting of the SEED Committee, Chair, Don Warner, focused on the 50th anniversary activities. Beginning with Sunday conversations with Sir Fraser Stoddart, the SEED symposium on Monday, 8/20/18 heard from previous SEED students, one of whom is a Director of ACS. The SEED committee approved 426 SEED programs nationwide, 16 more than in 2017. This year saw 40 more SEED I students than last year. Twenty-eight SEED freshman year college scholarships were awarded, while 3 Ciba scholarships were awarded to previous SEED freshman scholarship winners who did extremely well in their first year of college. SEED participation in 2018 involved students from 38 states, Puerto Rico, and the District of Columbia. subcommittee." Since many members are still unaware of SEED's existence, the committee is planning to produce a Webinar for those wanting to start and/or grow a SEED program..A strategic planning retreat for the SEED committee is planned for 2019.

This resulted from a survey of 38 current mentors and coordinators. A new SEED web page went live on 8/13/18. Elaine had to send out the correct links. The new web page does not have the link to the student survey. As for fundraising, SEED needs about \$400,000 to reach its goal of \$2 million in this anniversary year for the endowment.

Looking ahead to Orlando – March 31-April 4, 2019

The overall meeting theme will be “Chemistry of New Frontiers.”

The advance registration fee for this meeting will be \$490.

With 2019 proclaimed by the UN as the International Year of the Periodic Table, symposia can be anticipated on this theme.

#### News you might use

Abstracts of the papers and posters presented at the meeting are archived at [www.acs.org](http://www.acs.org), and those plenary and symposium presentations that were recorded, with sequenced slides, can be found at [www.acs.org/meetingcontent](http://www.acs.org/meetingcontent).

Any members interested in the latest ACS financial performance can look at [www.acs.org](http://www.acs.org), click on the “About ACS” tab at the bottom and then “ACS Financial Information.”

Information regarding grants offered by all ACS committees can be found at [www.acs.org/getinvolved](http://www.acs.org/getinvolved).

The Younger Chemists Committee (YCC) is continuing its “Catalyze the Vote” effort to encourage members to vote in ACS National elections and is sponsoring an online virtual town hall for ACS Presidential candidates on September 27th, and a joint voting day on Oct. 16th.

The Committee on Minority Affairs is developing a workshop on Diversity/

Inclusion for the 2019 Leadership Conference, which will move from Dallas to Atlanta and be held January 25-27, 2019.

The Committee on Disabilities is establishing travel awards up to \$3000 to help undergraduates, graduate students, and postdocs with disabilities attend ACS National meetings.

The new 2018 ACS Guidelines for Middle and High Schools were approved by the Committee on Professional Training and can be found on the ACS website.

#### Interesting Statistics

Attendance at the Boston meeting as of the Council meeting was 14,235, including 8294 regular attendees, 3671 students, and 1181 exhibitors. This was around 500 greater than the last Boston meeting in the summer of 2015. The exhibition was 99% sold out with 441 exhibit booths.

The ACS Career Fair was very busy, with 539 job seekers, and 48 employers offering 62 positions. Professional “headshots” were again offered to registrants for use in on-line networking. The ACS Scholars program has now had over 300 former participants earn their Ph.D. degrees. The current distribution of ACS Scholars is 50% Hispanic, 42% Black, and 8% Native American.

ACS membership had another slight decline in 2017 and now stands at 149,584, including International members. The Local Section Activities Committee (LSAC) approved 17 IPG grants bringing the total funding to \$86K for the year. The Division Activities Committee (DAC) approved 11 IPG grants totaling \$73K.

Submitted by Mark Frishberg, CAL-ACS Councilor, with input from our other Councilors, Director At-Large, and Past ACS Presidents – September 14, 2018

*continued from page 6)*

higher temperatures, for example, rapidly dissolving in water at up to 600,000 mg/L at 30° C (86° F). Once dissolved it forms a clear/colorless solution with a low viscosity. It is only slightly soluble in ethanol and insoluble in fat.

The crystalline form's melting point range is 119° to 123° C (246° to 253° F).

According to some producers, erythritol does not caramelize; however, some cooks believe that it does. Erythritol does not undergo the Maillard browning reaction with amino acids.

Erythritol is not considered toxic to humans, but there are several studies indicating animal toxicity and these will be described in the final part of this series.



## *Solano Stroll*

If you didn't make it to the Solano Stroll Sunday, September 9th, you missed a perfect day to enjoy great food, discover Solano's merchants, meet with numerous civic organizations, and do some hands-on science! Chair Margareta Séquin arrived early to help set up our booth where we were soon joined by Charles Lee of the USDA, who loaned us a folding table and chairs. Our booth featured the 2018 National Chemistry Week theme, "Chemistry Is Out of This World," as described in the current edition of Celebrating Chemistry.

Project SEED coordinator Elaine Yamaguchi joined us and soon visitors were ready to investigate UV-color changing beads that warn of excess exposure to the Sun, a significant risk to astronauts traveling outside the Earth's atmosphere. Since the color change in these beads is reversible, a bracelet made with them is useful long-term for detecting the presence of UV radiation. Astronauts on the International Space Station have concern for their supply of oxygen to breathe. Since they have plenty of solar-generated electricity, one source of oxygen would be to decompose water using an electric current. It's easy to demonstrate water-splitting using a nine-volt battery for power, a pair of ordinary #2 pencils as electrodes, and some wires with alligator clips to connect everything. Dipping the pencil electrodes into a solution of Epsom salts caused bubbles to form immediately, with twice as many bubbles at the negative electrode (which makes hydrogen) compared to the positive electrode (which forms bubbles of oxygen). Since inexpensive nine-volt photo-voltaic panels are now readily available,

our booth featured a pair of them generating oxygen (and hydrogen) continuously throughout the day.

We enjoyed interacting with visitors of all ages, including a number of science teachers. We especially encouraged teachers to follow up if they would like more NCW resources. We carried out an informal poll to track the number of visitors at the booth. Our question: "What is your favorite planet?" You may be happy to know that the Earth won handily (with 30% of the votes), followed by Jupiter and Pluto (14% each). Although Pluto is no longer an official planet, it retains a sympathetic following. We recorded a total of 110 responses, but we must have talked with two or three times that number of visitors during the day.

Some of our volunteers were relieved by another contingent of volunteers from the Sigma chapter of Alpha Chi Sigma at UC Berkeley. Outreach coordinators Felix and Lindsey were joined by Adam, Ashley, Chad, and Sanket, who welcomed visitors to the ACS booth. We were also joined by recent UCB graduate Emily Bloom, who is now a district counselor for AXS.

High School Committee Chair Eileen Nottoli took over supervision of the booth in the late afternoon, and Greti Séquin returned at 5 PM to carry off the displays and materials. Many thanks to everyone who helped make the day such a success! If your local school or other group could use some materials for NCW activities, please let us know. Julie in the Cal ACS office is ready to make sure you get what you need.

Alex Madonik NCW Coordinator

# BUSINESS DIRECTORY

## INDEX OF ADVERTISERS

Robertson Microlit

PAGE BP

### SEARCHING FOR THAT SPECIAL JOB?

There are many companies and organizations searching for chemical and biochemical personnel to fill important jobs in their organizations.

- Companies for laboratory and management positions
- Universities & Colleges for teaching positions and laboratory personnel
- Hospitals for technical and research personnel

There are several web sites that may help you search for these open positions.

- [www.mboservices.net](http://www.mboservices.net)
- <http://www.calacs.org/page.asp?id=22>

CALIFORNIA SECTION  
AMERICAN CHEMICAL SOCIETY

TIME VALUE

Non-Profit Organization  
U.S. POSTAGE



## **Robertson Microlit Laboratories**

*Where speed and accuracy are elemental*

Elemental CHN, S, X, Analysis (same day service)  
Metals by ICP-OES, ICP-MS, A/A  
FTIR, UV/VIS Spectroscopy  
Ion Chromatography

GC-MS  
Polarimetry  
DSC, TGA, melting point  
KF Aquametry, Titrimetry

1705 U.S. Highway 46 • Suite 1D • Ledgewood, NJ 07852 • 973.966.6668 • F 973.966.0136  
[www.robertson-microlit.com](http://www.robertson-microlit.com) • email: [results@robertson-microlit.com](mailto:results@robertson-microlit.com)

**Rapid Results • Quality • Accuracy • Competitive Pricing**

PLEASE DO NOT DELAY - DATED NOTICE INSIDE