

May/June 2012

A Joint Publication of the Southern California and  
San Gorgonio Sections of the American Chemical Society



**Southern California  
Section  
Educational Awards  
Banquet  
Friday, May 18, 2012**

**Honoring our top  
students and  
Larry Walker,  
Southern California  
Outstanding High  
School Teacher of the  
Year**

See Page 3

**San Gorgonio Section  
Student Scholarship and Awards  
Recognition Banquet**

**May 3, 2012**

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# SCALACS

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## Southern California Section

### Chair's Message

#### Inspiration.

"We keep moving forward, opening new doors, and doing new things, because we're curious and curiosity keeps leading us down new paths."

- Walt Disney

I return from ACS national meetings exhausted and also very energized. In San Diego I had an opportunity to share successes, challenges, and new ideas with a community that is constantly providing support and insightful feedback. I was also seeking advice and inspiration. At the end of 2012, I reach the end of my final term on the Community on Community Activities, and I wonder where I will go next. During my many conversations with our most "seasoned" members of the section I am reminded that our ACS experience evolves through the "seasons" of our membership from Student Member to Younger Chemist and eventually to Silver Circle.

At a different scale our involvement in ACS governance takes us along all sorts of paths, perhaps in directions that we never even considered. Regardless, there is never a lack of inspiration. I am inspired by Larry Walker the 2012 SCALACS Chemistry Teacher of the Year. Larry has had an influence on many thousands of students through his use of poetry to convey complicated chemistry concepts. Please join us in honoring Larry at the 2012 Educational Awards Banquet. Details are in this issue of SCALACS.



ACS Leadership Workshop



Grifols CSULB SMACS Tour

Our friends at Grifols Biologicals inspire me because they recently opened their doors to provide a tour for the student member chapter from Cal State Long Beach. Larry, the folks at Grifols, my fellow local section leaders, and all of our partners live the ACS vision of **improving people's lives through the transforming power of chemistry.**

Regardless of the season of your ACS membership there is always an opportunity to be involved. During the long summer break please consider the next ACS challenge you will tackle. I hope you return refreshed and inspired to share your talents and interests. We will be better people and a better Society because of your contribution.

Happy trails!

Bob de Groot, rdegroot@oxy.edu

## **Southern California Section**

### **Educational Awards Banquet**

**Friday, May 18, 2012**

#### **Mount St. Mary's College, Donahue Center**

10 Chester Place  
Los Angeles, CA 90040

Awards will be presented to the top-placing students in the local High School Chemistry Olympiad, to their teachers, to local ACS scholars and to

#### **Larry Walker Paul Shin Memorial Outstanding High School Teacher of the Year**

6:00 p.m. Check-in  
6:30 p.m. Dinner  
7:30 p.m. Presentation of Awards

This year, we had more than 1,400 students representing over 40 high schools throughout Los Angeles County take the Local ACS Exam in March. The top overall school was Francisco Bravo High School. The top first year school was North Hollywood High School. From these students, 17 students representing 12 high schools were selected to take the National ACS Chemistry Exam on April 21st for a chance to be one of the 20 students nationwide who will be attending the Chemistry Camp in June. These students, as well as the top performers and teachers from each school of 10 or more participants, will be honored at our annual Educational Awards Banquet, along with the Outstanding High School Teacher of the Year, Larry Walker (see page 4 for his biography).

**Reservations:** We have an Enchilada Buffet featuring chicken and cheese enchiladas with all the fixings. The cost of the dinner is \$20 per person or \$15 for students, cash or check at the door. Please call Nancy Paradiso in the Section Office at 310 327-1216 or email [office@scalacs.org](mailto:office@scalacs.org) by Monday, May 31, 2010 for reservations. *Note: Please honor your reservation. If you make a reservation and do not attend, you will be liable for the cost of the dinner.*

**Directions:** The meeting will take place in the Donahue Center in McIntyre Hall on the Doheny Campus. For directions, please go to <http://www.msmc.la.edu/about-msmc/our-campuses/driving-instructions.asp>.

## **Southern California Section**

### **Larry Walker Calabasas High School Paul Shin Memorial Outstanding High School Teacher of the Year Recipient**

In today's schools you find a very scary statistic: 50% of all new teachers quit after five years. This year's ACS Outstanding High School Chemistry Teacher has surpassed that milestone nine times. Larry Walker has been teaching high school chemistry for 46 years now and shows no sign of slowing down. In fact, I think he can outlast most people one-third his age.

I first met Larry at an Occidental High School Chemistry Teachers Meeting in 1991 where we were both presenting. As a relatively young and new teacher I was interested in seeing what others were doing. He did not disappoint. Larry completely blew us away with an hour-long talk on integrating food into your lectures, and none of it involved eating! He extracted compounds, used as novel sources for his labs, and showed how to never let anything go to waste. He brought in recycling and being green long before it was a mainstream topic for high school courses. In fact, his science was "integrated" long before the catch phrase caught on. He finished the talk with a poem that we found sarcastic and pretty funny. It wasn't until years later that I realized the power of his poems.

In the last 15 years or so I have had the pleasure of teaching with Larry once a month at the UCLA AP Readiness Program and at countless workshops. It is in this program that I have realized I have been watching a true master at work. Larry has some of the most innovative ideas for presenting material that I have ever seen. His examples are not the normal everyday ones we all use in our classes, but instead are the ones that involve everyday items we would not normally dream of bringing into our lessons. Samples of Mono Lake water serve as excellent acid base demonstrations. His rock collection is not just a hobby but a tool for teaching chemistry, even more than Earth Sciences. His poems are legendary. Most students will boo them on their first exposure, full of puns and bad rhymes, but once you actually start to read them you realize just how insightful they are for presenting difficult concepts. His students come to appreciate them once they make the connection that his poems represent the material he is trying to teach.

Larry grew up in the San Fernando Valley back when it was mostly farmland. He attended what is now called CSUN for his Bachelors and UCLA for his Masters. He started teaching at Notre Dame High School in September 1966. I find this amazing since I was born in October of 1966. He moved to  
(Continued on Page 5)

## Southern California Section

### Larry Walker Biography (continued from Page 4)

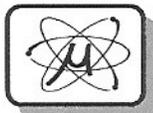
Calabasas High School in 1977 and has been there ever since. In those years he has taught as diverse subjects as Oceanography and Ecology, coached Track and Field, and his mainstay for most of his career has been Chemistry and AP Chemistry. He also coaches Science Bowl and other academic endeavors.

Larry's best known contribution to chemical education may be his involvement in the first UCLA Science Project in the summer of 1983. This was a collection of truly outstanding chemical educators, many of whom are still quite active. The group he was part of went on to produce the ACS "Doing Chemistry" laser discs and associated curriculum. In the fall of 1983, I was a student at North Hollywood High taking chemistry for the first time. I thought the course was excellent and it convinced me to pursue a career in chemistry. When I started teaching and examined the "Doing Chemistry" materials I recognized many of the lessons as ones that I had done as a student back in 1983. I was a guinea pig for these lessons and many of them were Larry's creations.

Larry has presented countless workshops for CSTA, NSTA, ACS, and GLATSA. He has been a keynote speaker for Science Teacher events and published in The Journal of Chemical Education, NSTA Papers, and even published some of his poems.

Not many others know that Larry was a participant in every Olympic trial from 1968 to 1988. He twice made the US team—once in 1976 for Montreal and then the 1980 Moscow games but was blocked by the US boycott from attending. His event was the 20 km walk race. In fact, he held American records in the 2-mile indoor and outdoor events.

- Michael A. Morgan, SCALACS Education Committee Chair  
Francisco Bravo Medical Magnet High School



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## Southern California Section

### Outreach Activities

**Saturday, June 2nd—Chemistry Merit Badge Activity.** SCALACS Younger Chemists Committee will have a booth at the Boy Scout Expo at Santa Anita Park Infield. We need volunteers to work with the Scouts on the Chemistry Merit Badge. The show is from 10 am to 3 pm. Contact Gerald Delker at [delker@earthlink.net](mailto:delker@earthlink.net), or (626) 622-7776 or Derek Marin at [Derek.Marin@DunnEdwards.com](mailto:Derek.Marin@DunnEdwards.com).

### Call for Nominations

The Nominations, Elections and Awards Committee of the Southern California Section is soliciting nominations for the election of 2013 Section officers (Chair-Elect and Secretary), members of the Executive Committee, and Councilors. If you wish to propose names (including your own) for consideration, send them to:

Nominations, Elections and Awards Committee  
Southern California Section, ACS  
Email [office@scalacs.org](mailto:office@scalacs.org)

### Councilor Talking Points Highlights Spring National Meeting in San Diego

Due to space constraints, we are not printing the Councilor Talking Points from the ACS National Meeting in San Diego. Please go to our website, [http://scalacs.org/?page\\_id=44](http://scalacs.org/?page_id=44) for the complete report.

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## Southern California Section

### In Memoriam F. Sherwood Rowland

F. Sherwood Rowland, the UC Irvine chemistry professor who warned the world that man-made chemicals could erode the ozone layer died on March 10, 2012 in his home in Corona del Mar of complications of Parkinson's disease. He was 84.

In 1995, Rowland was one of three people awarded the Nobel Prize in Chemistry for his work explaining how chlorofluorocarbons, ubiquitous substances once used in an array of products from spray deodorant to industrial solvents, could destroy the ozone layer, the protective atmospheric blanket that screens out many of the sun's harmful ultraviolet rays.

The prize was awarded more than two decades after Rowland warned of the problem, and challenges to his theory plagued him for many years before he won widespread recognition for his work and leaders of the nations worldwide began to act to ban or reduce usage of the chemicals.

"We have lost our finest friend and mentor," Kenneth C. Janda, UC Irvine physical sciences dean, said. "He saved the world from a major catastrophe: never wavering in his commitment to science, truth and humanity and did so with integrity and grace."

Rowland was mentored by Willard F. Libby, the chemist who developed the carbon-14 dating technique at the University of Chicago. He taught at Princeton before joining the faculty at the University of Kansas, but when the UC Irvine campus opened in 1965, he became the new school's inaugural chemistry department chairman. Long interested in the environment, he attended a lecture in 1972 about atmospheric concentrations of chlorofluorocarbons. The inert chemicals, it was believed, would serve as effective tracers for identifying air mass movements. Rowland wondered what eventually happened to the compounds. In 1973, he and Mario Molina realized the chemicals were involved in a chain reaction that depleted the stratospheric ozone. The pair's findings were published in the journal *Nature* in 1974, and were met with scorn by the chemical industry and even many scholars. They persevered to prove their hypothesis, but it took 15 years before the international scientific community accepted their findings. Manufacturers began to phase out chlorofluorocarbons in the late 1980's, prompted by the "hole" over Antarctica that formed each winter.

Rowland considered the phase-out of CFCs his greatest achievement. Receiving the Nobel Prize alongside Molina and Paul. J. Crutzen of the Netherlands in 1995 was icing on the cake. Rowland also received the Tolman Award from the Southern California Section of ACS in 1976 for his work on CFCs.



## **This Month in Chemical History**

Harold Goldwhite, California State University,  
Los Angeles  
hgoldwh@calstatela.edu

There's something fascinating about hundredth anniversaries – that something or some institution has lasted one hundred years, longer than the great majority of human lives. I live in a house that is one hundred years old this year – fairly old for California, though a mere babe compared to many houses in the land of my birth, England. There's a lot of current fuss about the hundredth anniversary of the launch of the ill-fated Titanic. And last year, 2011, the Southern California Section of the American Chemical Society celebrated its one hundredth anniversary. The November Western Regional Meeting of the ACS included celebrations of this event, and I gave a talk on one hundred years of teaching chemistry (not, I hasten to add, a personal reminiscence) looking back at what and how chemistry was taught in local universities in 1911. This article presents some of my findings.

First an overview of the California scene. The Journal "Pacific Outlook" Volume X, January 1911 has an article on the state of higher education in the state. It argues for a State University in Southern California. Chemistry courses are popular. At Berkeley, the only State University in California, chemistry laboratories designed for 150 students are now housing 1000. Interestingly the 6 year high school program experiment is doing well in Fresno: the final 2 years are vocational (some analogies to what is happening in high schools and Community Colleges in California now). There were seven private secular universities and colleges in Southern California in 1911, but no state-supported institution.

The 1911 bulletin of the Throop Institute in Pasadena, California (later to metamorphose into the California Institute of Technology) gives the rigorous preparation expected of undergraduates:

"The chemistry curriculum prerequisites (high school):

Engineering degrees require 1 unit of chemistry .. 5 recitations/week for 1 year. Besides the usual text-book and recitation work, each student should have a laboratory course in which he performs the experiments for himself. Accurate notes of the laboratory work should be kept. The necessary amount of laboratory experience cannot be obtained in less than four hours a week for one school year, in addition to the class-room. It is preferred that the laboratory work be entirely devoted to illustration of the important facts and principles of general chemistry, rather than partly to analytical chemistry. (1 unit)".

No less rigor is evident in the undergraduate course work. Again from the Throop 1911 bulletin:  
(Continued on Page 9)

## **This Month in Chemical History**

*(Continued from Page 8)*

“At Throop: 3 hrs. lec; 4hrs lab 5 hrs prep. First and second semesters Freshman year.

The course in Chemistry is planned with especial reference to the needs of engineering students, the object being to give them a training that will add to their general culture as well as to their technical equipment. To this end work in general chemistry and qualitative analysis is required of all Freshmen in the Engineering courses. In the Sophomore year there is opportunity for some exercise in quantitative analysis; especially designed for those contemplating a course in Mining Engineering.

300, 301. General Chemistry and Qualitative Analysis.-

This includes lectures on general inorganic chemistry, fully illustrated with experiments and supplemented by study of a text-book and by laboratory work. Special attention is given to class discussion and to the solution of problems. The laboratory work consists of experiments in qualitative analysis, in which emphasis is placed on careful manipulation, accurate recording of results and logical interpretation of phenomena.

Text: *Alexander Smith's General Chemistry for Colleges and Morgan's Qualitative Analysis*. Required of all engineering students, freshman year. (12 + 12 units)”

The sophomore year in chemistry was given over to quantitative analysis:

“303, 304. Quantitative Analysis.-This includes typical determination of metals and non-metals, with class-room discussions of processes and reactions, special attention being given to stoichiometry. Both gravimetric and volumetric processes are given, the aim of the course being to lay a good foundation for subsequent work in analysis as well as to give that thorough drill in careful manipulation which is so important to the student of science in general. Text: *Talbot's Quantitative Analysis*. Prescriptive, sophomore year. (9 + 9 units)”.

The Throop laboratories boasted the latest equipment: “... the department is well supplied with platinum ware, quartz dishes and crucibles, and graduated glassware for use in quantitative analysis. For the use of instructors there is special apparatus for gas, water, and milk analysis, assaying and research work. This includes boiling-point and freezing-point apparatus, assay furnace, crushing and grinding apparatus, assay balance. Zeiss-Abbe refractometer, Schmidt and Haensch polariscope, Babcock milk tester, and Elliott's apparatus for gas analysis.”

Clearly chemistry was a rigorous and challenging discipline in 1911 – and yet a popular subject. Is there a lesson for us here? In a later column I will continue my exploration of chemistry teaching a century ago.

## San Gorgonio Section

This month's message is about celebrating chemists in the San Gorgonio Section who have achieved major milestones. Congratulations to the Section chemists who have achieved 50 and 60 year membership status. Thank you for your service, inspiration and continued support!

### 60 year members

Dr. James D. Crum  
Dr. Ralph H. Petrucci

### 50 Year members

Dr. Mark M. Cliath  
Mr. Myung Ki Hong  
Dr. William H. Okamura  
Ms. Joan C. Pleasants  
Mrs. Julie Stewart  
Dr. Gerald R. Van Hecke  
Mr. Jamil M. Wakim

At the other end of the spectrum are the 200 youngsters who recently spent a Saturday morning working their way through a standardized, multiple choice chemistry exam in the hopes of earning a scholarship and/or representing the country in the International Olympiad competition. This event is successful because of the dedication and guidance of incredible high school chemistry teachers! Congratulations to the 2012 scholarship winners and thanks to the teachers.

### **Diamond Bar High School – Jennifer Bravo teacher**

Alex Cheng  
Christina Chen  
Ryan Huang

### **Santiago High School – Branton Lachman, teacher**

Morgan Brubaker

### **Webb High School – Andrea Chou, teacher**

Jack Yang

- Eileen DiMauro, San Gorgonio Section

## San Gorgonio Section

### Student Scholarship and Awards Recognition Banquet

Thursday, May 3, 2012

California State University San Bernardino  
5500 University Parkway, San Bernardino, CA  
Chuck Obershaw Dining Room, University Commons  
Building labeled CO on the campus map.  
([http://www.csusb.edu/MapsDirections/img/  
CSUSB\\_Campus\\_Map\\_web.pdf](http://www.csusb.edu/MapsDirections/img/CSUSB_Campus_Map_web.pdf))

Dr. Rigoberto Hernandez  
***“Transitions and Janus Particles”***

Social and Check-in: 5:45 PM

Dinner: 6:30 PM

Featured Speaker: 7:15 PM

Awards/Recognition Program Following

In March, high school students in the San Gorgonio Section region took an exam to qualify for the National Chemistry Olympiad. Our section also uses this exam to choose the recipients of section-sponsored college scholarships. Please join us in honoring these truly remarkable students and their teachers at this meeting.

**Biography:** Dr. Rigoberto Hernandez is a Professor in the School of Chemistry and Biochemistry at Georgia Tech, a Co-Director of the Center for Computational Molecular Science and Technology and the Director of the Open Chemistry Collaborative in Diversity Equity (OXIDE). He holds a B.S.E. in Chemical Engineering and Mathematics from Princeton University (1989), and a Ph.D. in Chemistry from the University of California, Berkeley (1993). He is the recipient of a National Science Foundation (NSF) CAREER Award (1997), Research Corporation Cottrell Scholar Award (1999) and the Alfred P. Sloan Fellow Award (2000). He is a Fellow of the American Association for the Advancement of Science (AAAS, 2004), the American Chemical Society (ACS, 2010), and the American Physical Society (APS, 2011). Dr. Hernandez's research area can be broadly classified as the theoretical and computational chemistry of systems far from equilibrium. This includes a focus on microscopic reaction dynamics and their effects on macroscopic chemical reaction rates in arbitrary solvent environments.

(Continued on Page 12)

## San Gorgonio Section

### May Dinner Meeting (Continued from Page 11)

**Abstract:** In Roman mythology, Janus is the god of transitions. He has two faces: one looking to the future and one to the past. This metaphor is quite literal as we celebrate the past success of San Gorgonio Section's best high school students and look at their bright future. It also provides a basis to discuss challenges and opportunities presented to those students who walk in two cultural worlds. In my case, these were demarcated by the languages of my youth, Spanish and English. Meanwhile, Colloidal particles can be decorated with varying charges or hydrophobicity such that each of its two hemispheres has a distinct type not unlike the other. These so-called Janus particles assemble and move in unexpected ways. Throughout the talk, we will discuss how life's transitions and the chemistry of Janus particles mirror each other. In turn, this gives us a deeper perspective on both.

**Dinner, Little Italy Buffet:** Antipasto, Caesar salad, sautéed zucchini, pasta bar, pasta sauces, chicken cacciatore, rolls, tiramisu, ice tea, and coffee.

**Cost and Reservations:** The cost (meal, tax and tip) is \$13 members, \$15 non-members, \$10 seniors and retirees, \$8 students, free for student honorees and their teachers, cash or check only please, at the door. Please make your reservations no later than Tuesday, May 1st by 12 noon by contacting Dennis Pederson [dpedersn@csusb.edu](mailto:dpedersn@csusb.edu), phone (909) 537-5477) or David Srulevitch [srulev@charter.net](mailto:srulev@charter.net), phone (909) 594-3070. Include names and number of persons. Please be certain to honor your reservation.

**Parking:** Free parking with pass in Parking Lot D. Please pick up a parking pass at the parking kiosk (Parking Lot D) or risk a \$30 parking fine.

**Directions: From the East or West:** take I-10 or I-210 to I-215 North. Take the University Parkway exit and turn right. University Parkway becomes the main entrance to CSUSB (at Northpark Blvd). Ahead on your left will be the Parking Services Information Booth where you can pick up your parking pass. Parking Lot D will then be to the right.

**From the South or North:** Take I-215 to University Parkway and turn East (towards the mountains). University Parkway becomes the main entrance to CSUSB (at Northpark Blvd). Ahead on your left will be the Parking Services Information Booth where you can pick up your parking pass. Parking Lot D will then be to the right.

**Attention Chemistry Professors:** Please bring any extra science or chemistry textbooks that you may have to this meeting so that we may donate them to the students and high school libraries. Thank you!

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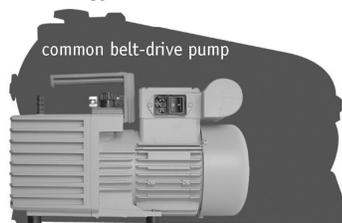
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**PERIODICAL**

**Bi-Section Chemists' Calendar**

**May**

- 3 SG Student Scholarship and Awards Recognition Banquet—see page 11  
18 SC Educational Awards Banquet—see page 3

**June**

- 2 YCC Boy Scout Chemistry Merit Badge—see page 6

**Have a great summer!**