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January/February 2011

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

Southern California Section Dinner Meeting Celebrating the Section's 100th Anniversary! Speaker: Jason Low South Coast Air Quality Management District "There and Back Again, a Historical Tale of Air Quality in Southern California" Steven's Steakhouse February 9, 2011

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San Gorgonio Section International Year of Chemistry and Wine Speaker: Dr. Ernie Simpson "The Chemistry of Wine: an International Perspective" California State Polytechnic University, Pomona February 19, 2010 See Page 11





SCALACS

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

Volume LXIV

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Number 1

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Chair's Message—Joe Khoury

Welcome to 2011, which marks a confluence of two events: The United Nations International Year of Chemistry as well as the 100th Anniversary of the founding of our local section. We will kick off the celebration of these twin events on February 9th with a dinner meeting and close the year with a Western Regional Meeting in Pasadena on November 11-12.

The topic of that first monthly meeting, held on February 11, 1911, was "Our Smoke Nuisance." The talk discussed the Los Angeles basin's problem with atmospheric haze due to smoke particulates. On February 9, 2011, almost exactly 100 years later, another dinner meeting will echo that first one with a presentation from the South Coast Air Quality Management District that will review 100 years of Air Quality in Southern California. That event will also mark the official local kick-off of events for the International Year of Chemistry (www.acs.org/iyc2011) that will focus on the "achievements of chemistry and its contributions to the well-being of humankind."

For those of us who have worked together in the local section, 2010 will be remembered for the loss of Paul Shin (see page 6). At his memorial service, family, friends, students, and colleagues all testified to the truth that "his generous heart, his kind speech, and his life of service and compassion" had inspired them to step higher. Learning about how Paul lived his life caused me to look more closely at my own. Paul worked with a spirit of service, and he inspired others to do the same. He wrote his last Chair's Message just two weeks before he passed away. I encourage you to go back and re-read that powerful message which demonstrates his love and passion for service.

SCALACS expects to continue to grow in service to our local community. In September, our Project SEED high school students reported on their summer's research projects to our 50/60 year members. It was clear that this experience made a profound impact on their lives. We hope to continue expanding our local Project SEED program. Last summer, with funds from Avery Dennison as well as an individual donor, we sponsored six high school students. We would like to expand this program further and are in need of more local donors. Please contact us if you are interested in supporting this effort. The national ACS matches our locally raised funds, giving us twice the bang for our buck.

You saw in last month's issue the list of volunteers from 2010. Will the 2011 issue include your name?

Finally, I would like to dedicate my service this year to the memory of Paul Shin.

- Joe Khoury, Chair JKhoury@lacsd.org



February Dinner Meeting

Come Celebrate the 100th Anniversary of the Southern California Section!

International Year of CHEMISTRY 2011

Wednesday, February 9th, 2011

Steven's Steakhouse 5332 E. Stevens Place

Los Angeles, CA 90040

"There and Back Again, a Historical Tale of Air Quality in Southern California" Jason Low South Coast Air Quality Management District

> 6:00 pm check-in 7:00 pm dinner 8:00 pm presentation

Abstract: Air pollution is a significant concern to residents living in Southern California and has been for over a century. Different types and levels of air pollution can cause or contribute to everything from watery eyes and fatigue to respiratory disease, lung damage, cancer, birth defects and premature death. There are many different sources, both biogenic and anthropogenic, that contribute to the air pollution levels.

The presentation will compare and contrast Southern California air quality as presented 100 years ago to that of today and summarize the historical progress that has been made in one of the nation's most polluted air environments. An overview of the toxic chemical emissions, chemistry, meteorology and transport which contribute to the challenges to air quality in Southern California and a synopsis of the current tools in air quality regulation that are used to improve air quality for the future will be given.

Biography: Jason Low is the Quality Assurance Manager of the Monitoring and Analysis Division of the SCAQMD. He leads the Branch that is responsible for ensuring the quality of the environmental measurement data produced by AQMD meets or exceeds the state and federal specifications.

Jason graduated from the University of California, Irvine with a B.S. in Chemistry, a B.S. in Biology, and an M.S. and Ph. D in Analytical Chemistry *(Continued on Page 4)*

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February Dinner Meeting (Continued from Page 3)

with a focus on atmospheric chemistry. His graduate research involved ambient air studies which included one in the South Coast Basin. He has experience working in the AQMD laboratory performing technical analytical work on projects related to federally mandated programs such as PAMS and PM2.5 monitoring. He has taken the lead on special projects within large studies such as MATES III and also coordinated laboratory involvement in the AQMD emergency response program which included outreach to local first responder agencies.

His current role at the AQMD provides him the responsibility for the implementation, development and assessment, maintenance of the Monitoring and Analysis Division quality system. This system encompasses the project documentation, methods, training, and QC work performed in the Laboratory and Source Test Engineering and Atmospheric Measurements Branches. Also, he is a co-coordinator for the AQMD monitoring response to regional wildfires that may affect ambient air quality.

He enjoys his new role as a father to his infant son, Zephyr. Zephyr's first name, meaning "west wind," combines with his middle name, Riku, meaning "clear skies," as a reminder that the goal of good air quality is an important legacy that should be passed on from generation to generation.

Cost: There is a choice of Prime Rib or King Salmon for dinner. Vegetarian entrée available upon request. The cost is \$35 including wine with dinner, tax, and tip, payable at the door with cash or check.

Reservations: Please call Nancy Paradiso in the Section Office at (310) 327–1216 or email office@scalacs.org by Monday, February 7, 2011.

Directions: To access Google maps from their website, go to http:// www.stevenssteakhouse.com/home/driving_directions. From the 5 Fwy. Northbound, exit Atlantic South. Make a right turn off exit. Stay in the middle lane and go under the bridge. Stay in the left lane and Stevens will be on your right. From the 5 Fwy. Southbound, exit Atlantic-Eastern Avenue. The restaurant is straight ahead off the exit. From the 710 Long Beach Fwy. North, exit Atlantic North. Continue north on Atlantic. Pass Washington Blvd., go 3 lights. The next street is Stevens Place. Turn right to Stevens. There is free parking in the rear of the building.

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President

January/February 2011



In Memorium Paul Shin

Dr. Paul Shin, 47, chair of the Southern California Section, died on October 29th, 2010, shortly after being diagnosed with liver cancer. Paul received his B. A. in chemistry from the University of California Santa Cruz in 1986 and his doctorate from Colorado State University in 1993. Following post-doctoral

research with Joan Valentine at UCLA, he held several high school and community college teaching positions before serving as Instruments Facilities Manager at Occidental College and then as an Applications Engineer for Bruker BioSpin Corporation. After leaving Bruker BioSpin, he taught at several colleges and community colleges before joining California State University at Northridge as Chemical Instrumentation Manager and part time instructor, as well as the department's webmaster. He was also an adjunct professor of chemistry at Los Angeles City College.

Dr Shin had a huge impact on the public face of chemistry in Southern California. In addition to serving as chair of the Southern California Section, he chaired its Educational Affairs Committee. This committee is responsible for choosing the Section's outstanding high school teacher. He organized the first Science Cafes for the Section as well. He was the Section's representative on the Committee on the Public Understanding of Science (COPUS). He was active in the California State University Northridge chemistry teacher's support group. His service as a Specialist Reserve Officer for the Los Angeles Police Department's hazmat unit led to his receiving the 2008 Reserve Officer of the Year award. Paul spoke at the recent ACS national meeting in Boston about his activities. He was an enthusiastic promoter of scientific literacy on Facebook with numerous friends and nearly daily postings.

Paul is survived by his wife, Diane, and two children. Our thoughts are with them. Paul, who was always full of energy and enthusiasm, will be missed by all. There is a college fund set up for Paul's children. If you would like to contribute, please contact the Section Office at office@scalacs.org for information.

2010 Election Results

Thanks for everyone who voted! The people who were chosen in the election follows. Their terms of office begin in January, 2011.

Chair-elect: Bob de Groot Secretary: Aleksandr Pikelny Members of the Executive Committee: Jason Anspach, Armando Rivera, Tieli Wang Councilors: Rita Boggs and Barbara Sitzman Alternate Councilors: Devin limoto and Sofia Pappatheodorou

Congratulations to those who won the election and thanks to those others who were willing to be candidates. We hope that many more of our members will become involved with the Section in the near future. Please contact our Section Office (office@scalacs.org) to ask how you can participate.

In Memoriam Charles William Keller, Jr.

Charles Keller was born in 1926 in Brooklyn, NY and passed away on December 3, 2010. He graduated from Wagner College in State Island, NY with a BS. Charles worked as a chemist for Perkin Elmer for many years and retired in 1990. He also served as a Reserve Police Office for 16 years for the City of Azusa. During retirement, Charles enjoyed teaching in the Glendora and Azusa School Districts, as well as traveling, gardening, reading and photography.

During WWII and the Korean War, Charles served as a Staff Officer in the grade of Jr. Assistant Purser and Pharmacist on several vessels of the U.S. Merchant Marine.

Charles was an emeritus member of the American Chemical Society and also a member of the Glendora Masonic Lodge. He is survived by his wife, Margo and two children.

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This Month in Chemical History Harold Goldwhite, California State University, Los Angeles hgoldwh@calstatela.edu

We can learn a lot from old science textbooks; of course they tell us about the received truths of the science at the time the book was published – but that isn't the point I want to make in this sketch. We may in fact be induced to re-examine the way we teach science by the example of some of these old books.

These reflections are prompted by some of the contents of a colleague's bookshelves. He is retiring and urged me to look at some of the older books in his collection, and one that caught my eye, and is the subject of this sketch, is entitled "Prove it Yourself: Easy Experiments in Elementary Science" by Bertha F. Gordon, a teacher of elementary science and manual training at James Ward Public School, Chicago, and published by the F. A. Owen Publishing Company in 1928. Upon "Googling" Bertha F. Gordon I found that she is mentioned in the annual catalog of the Indiana Normal School of Pernnsylvania for 1897 – possibly her graduation year. Her book is mentioned in a 1953 article on experimental science for K-12, and it was favorably reviewed in two education journals in 1930, including one aimed at high school science teachers.

The book's introduction is eminently practical, as perhaps befits a teacher not just of elementary science but also manual training. It asks some basic questions such as "What makes the cover of a kettle move up and down [when the water in it is boiling, I presume]? How is it that a lump of coal and a diamond are first cousins? "The author promises to answer questions like these by having students do experiments with readily available materials – diamonds excepted! The cover shows a student carrying out a flame test. While the text includes a wide range of science areas covering heat, magnetism, electricity, sound, the earth's crust, weather, astronomy and the like, I will glance at the sections devoted to chemistry in its widest sense involving distillation, fermentation, chemistry of light, the candle (shades of Michael Faraday), forms and properties of matter, and soils – all within some 250 pages.

Let's look at the chapter on chemistry. No periodic table, but the elements, 92 in number at the time, are divided into metals and others, and the major metals are divided into "precious" and "commercial". The *(Continued on Page 9)*

This Month in Chemical History (Continued from Page 8)

different forms of carbon are presented with the comment that microscopic diamonds have been made artificially – probably a reference to Moissan's experiments which are now generally discredited. The first chemical experiment in the book is the classic in which a candle is lit and a glass inverted over it. Students are asked some relevant questions such as "Why does a fireman wrap his coat around a person whose clothes have caught fire?" A lively experiment investigates the action of diluted nitric acid on copper. "The nitric acid can be bought from any drug store" (!) I haven't asked my local CVS but I have my doubts. A lot has changed during my career; when I was a teenager I was able to go to the local chemists shop (British usage) and buy all kinds of chemicals without question. And I had my own laboratory in my bedroom where I did chemical experiments. I wonder if there's a connection between our warranted concerns about safety and the dwindling interest in chemistry among young people.

There are many more experiments including tests of the action of hydrochloric acid on bone, eggshells, chalk, and marble ("buy five cent's worth of hydrochloric acid at a drug store"). Then there's potassium! "Druggists do not usually keep pure potassium. One must generally secure it from a wholesale chemist.... It is dangerous to handle and hard to keep, but you will have no trouble with it if you will keep it in a tightly corked bottle covered with kerosene". The experiment involves cutting off a very small piece of potassium and throwing it into a bowl of water. Iodine is gently warmed to give its purple vapor. Chemical combination is illustrated by the action of concentrated sulfuric acid (one ounce from your friendly local drug store again) on sugar. Invisible ink is made from iron sulfate and potassium ferricyanide is the developing agent.

I'm not suggesting that elementary teachers of science should encourage their students to engage in such hazardous experiments as are described in Ms. Gordon's text. But the philosophy of having students actually do meaningful experiments as a way of learning about science is consistent with many modern approaches to teaching and learning in the sciences. Bertha F. Gordon was on to something valuable.

San Gorgonio Section



Chair's Message—Eileen DiMauro

Hello! I am the incoming Chair of the San Gorgonio section. I have been a community college chemistry teacher for the past 28 years. Previous to that, I worked in the pharmaceutical industry as a chemical technician for several years. When I tell new acquaintances that I am a chemist, there are usually two very strong responses: either they absolutely loved their experience with chemistry or they passionately

hated it (with a ratio of 10 "hated it" to 1 "loved it")! No one is neutral about their experience with chemistry! That is one reason that I am so excited about being the Chair of the San Gorgonio Section during the International Year of Chemistry. It seems like the perfect platform to educate people about what chemists do (and don't do) and the positive effect chemistry has on almost every aspect of their lives. My personal goal is to reduce the number of people who "hated" their experience with chemistry and increase the number of people who "loved" it!

The International Year of Chemistry (IYC) is the perfect time for all us chemists to share our profession with others! The international chemistry community is coming together with ideas and resources (IYC homepage - http://www.chemistry2011.org/). ACS has a webpage dedicated to IYC (http://acswebcontent.acs.org/iyc/) with information and activities.

The San Gorgonio Executive Board plans to incorporate one or more of the International Year of Chemistry themes (environment, energy, materials, or health) into our 2011 events. The first event, February 19, is **The Chemistry of Wine: an International Perspective** (see announcement in this issue). The "**General Health and Safety**" workshop, originally scheduled for Dec. 3, has been rescheduled for early in 2011. National Lab Day occurs in May (more information to come). If you ever wanted to attend activities with other chemists or participate in outreach activities, 2011 is your year! Please check the San Gorgonio Section website, http://www.sgsacs.org for the latest information.

- Eileen DiMauro, 2011 Chair

SCALACS

San Gorgonio Section

February 2011 Meeting

Saturday, February 19, 2011

Collins College Building, 79A Wine Lecture Auditorium Room # 1263 California State Polytechnic University, Pomona 3801 West Temple Avenue Pomona, CA 91768-2557

International Year of Chemistry and Wine Dr. Ernie Simpson "The Chemistry of Wine: an International Perspective"

1:00- 2:30 PM Check-in, light refreshments and viewing student posters. 2:30- 4:30 PM Lecture & wine tasting (must be 21 years old or older to attend)

Abstract: From 1:00-2:30 PM student chemistry clubs from San Gorgonio Section colleges and universities will present posters on the current status and notable history of chemistry in eight countries/regions which also will be featured in the wine lecture and tasting (for example, Germany, France, Italy, Canada/BC, Australia/New Zealand, South Africa and Spain/Portugal).

Dr. Simpson's lecture will include an overview of wine and wine making and more detailed descriptions of the chemical composition of grapes and wine, laboratory methods for analysis of grapes and wines, sensory and organoleptic methods used for wine, the role of tannin and other phenolic compounds in wine and some potential health aspects of wine. Integrated with the talk will be wine samples from the leading regions of the world.

Biography: Dr. Simpson joined the Chemistry Department at Cal Poly Pomona in 1968 after completing his BS, MS and Ph.D. (Organic Chemistry) at the University of New Mexico and spending one year as a visiting professor at Pomona College. In 1973/74 he was on leave as a visiting Research Associate in the Department of Enology and Viticulture at UC Davis. He is an active member of the American Society for Enology and Viticulture and has served on the editorial board of the society's journal. He has published a California Wine Guide. He is a member of the Society of Wine Educators and the American Wine Society. At Cal Poly he developed Industrial Chemistry and Cooperative Education courses/programs. He directed Cal Poly's Co-op Ed/ paid internship program from 1979 to 2001. His research interests and publications are in the areas of polycyclic aromatic hydrocarbons, C-13 labeled compounds, and phenolic compounds, especially those in grapes and wine. In 1996 he was selected as an outstanding advisor at CPP and his Co-op Ed. Program was chosen as the best in California. He is a member of ACS (San Gorgonio past (Continued on Page 12)

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San Gorgonio Section

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chair, and current councilor), California Association of Chemistry Teachers (Program chair and Southern Section president 1985-7), California Cooperative Education Association (President 1996-7) and Sigma Xi. He has been an ACS Local Section Tour Speaker since 1988. He has refereed high school basketball since 1960.

Wine Tasting: All lecture attendees must be 21 years of age or older.

Cost: \$12 per person (proceeds to fund the Woodward-Graff-Simpson Collins College Scholarship).

Reservations: Strongly recommended as space is limited, must be prepaid in cash or check and mailed to Eileen Di Mauro, Chemistry Department, Mt. San Antonio College, 1100 Grand Avenue, Walnut, CA 91789, phone 909-594-5611 ext 4533, e-mail edimauro@mtsac.edu. Reservations must be received no later than Friday, February 4, 2011. Please submit the attached form with your prepaid reservation. Those making reservations that have not signed in by 2:15 PM on February 19 risk losing their seats.

Directions: From Interstate 10, take the Kellogg Drive exit. Heading south on Kellogg Drive, stay in the right lane and curve right onto University Drive. Stay on University Drive past 3 stop signs, then turn at the first left (Center Circle Road) up the hill to Kellogg West. From I-57, exit Temple Ave. Go north/west following Cal Poly signs past the lights at Valley Blvd. Turn right onto University Drive. Take the third right (Center Circle Road) up the hill to Kellogg West and the Collins College for Hospitality Management at the south end of the parking lot. A campus map can be found at www.kelloggwest.org, go to locations and points of interest and click on campus map.

Cut and mail registration form with payment to: Eileen Di Mauro, Chemistry Department, 1100 S Grand Avenue, Mt. San Antonio College, Walnut, CA 91789

Registration for: San Gorgonio Section February 2011 Meeting

Number of attendees: _____

Name(s) of all attendees: _____

Phone number of contact person _____

Email address of contact person _____

Cost per person: \$12 cash/check

Amount enclosed: \$ _____ Make check payable to: San Gorgonio Section

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PERIODICAL

IMPORTANT Do Not Delay!

Contains Dated Meeting Announcement

Bi-Section Chemists' Calendar

February

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