



SCALACS

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March 2010

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



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Southern California Section Meeting
A presentation by our Women Chemists
Committee

**Pioneering the Development of
Cultured Ruby**
The Research and the Entrepreneurial Sides
of the Story

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What Works in 2010"**

**Part 2 of the OCACS Series on Practical Information
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A Joint Publication of the
Southern California, Orange County and San Gorgonio
Sections of the American Chemical Society

Volume LXIII March 2010 Number 2

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SCALACS (ISSN) 0044-7595 is published monthly March through May, September and October; and Bi-monthly January/February and November/December. Published by the Southern California Section of the American Chemical Society at 14934 South Figueroa Street, Gardena CA 90248. Subscription price is \$10.00/Yr. Make checks payable to Southern California Section, ACS. Second Class postage paid at Gardena, CA 90247., e-mail: office@scalacs.org.

ADVERTISERS: Advertising rates on application. Mail COPY, CONTRACTS and CHECKS to Southern California Section, ACS, 14934 South Figueroa Street, Gardena, CA 90248.

CONTRIBUTORS: Send all copy to Editor, SCALACS, 14934 South Figueroa Street, Gardena, CA 90248, e-mail: editor@scalacs.org.

POSTMASTER: Send change of address to SCALACS, 14934 South Figueroa Street, Gardena, CA 90248.

Southern California Section Chair's Message



What to do? So, now you've kind of decided, "I'd like to become a volunteer, but I just don't know what I can do!" Maybe a few reasons why you shouldn't do anything come to mind: "I'm so busy with other things!" Hmmm...

I remember when I was a kid and someone was always telling me to "sit up straight" or "dress properly" or something of the sort? I'd ask, "why?" and the reply usually had something to do with how I always represented myself, my family, my school and every organization I ever belonged to (both past and present)! It's simply the "nature of the beast"- this grown-up thing!

Let's see, now I am a Banana Slug (UC Santa Cruz) alumnus, Specialist Reserve Officer with the LAPD HazMat Unit and an ACS chemist, to name a few things I am proud to be! Yes, I guess we always serve as representatives of every group we become a member of. In a sense, we are ambassadors to the world!

If you are reading this, chances are good you're a chemist and, as such, a member of the ACS. Then why not become an ACS Chemistry Ambassador? Show how much you support chemistry and all the wonderful advantages of understanding the world around us that much more because we understand how much of it works! Most of all, show how much fun we chemists can have and spread your enthusiasm to your colleagues, friends and family!

The ACS encourages you to become a Chemistry Ambassador! Find out more about becoming one by just searching the www.acs.org website using "chemistry ambassador" as keywords! In short, it's about chemists becoming "compelling spokespersons for their profession, whether they have a lot of time, or a little. It's about connecting ACS' many and excellent resources with the audiences they are intended to serve. And doing it with a human face and voice." Every time I give a tour of my university department to middle or high school students, I talk about all the fun and "expensive toys" I get to play with on a daily basis. Nuclear magnetic resonance and mass spectrometers, oh my! Demonstrating how having safe fun with liquid nitrogen can be so cool - literally! Making the stuff we do fun is a reward unto itself when we can spread the wealth to others, like students, so they can see how much fun science can really be. What are some things you can do to be a *Chemistry Ambassador*? How about being a participant in *National Lab Day*? Again search the ACS website with these keywords or see www.NationalLabDay.org. The ACS invites you to, "join ACS Chemistry Ambassadors around the country in providing high quality, hands-on, discovery-based lab experiences to middle and high school students in your community" during the first week in May, 2010.

Whatever you chose to do, just do something to represent how much fun you have doing chemistry! Remember we are all *Chemistry Ambassadors* for life!

- Paul Shin, Chair, alchemy@csun.edu

Southern California Section

March Meeting

A presentation by our Women Chemists Committee

Saturday, March 13th, 2010

2:00-3:00 p.m. Social

3:00-4:00 Talk

**Pioneering the Development of Cultured Ruby
The Research and the Entrepreneurial Sides of the Story
Judith Osmer and Virginia Carter**

Los Angeles City College, Room Science 132

855 N. Vermont Avenue, Los Angeles California 90029

Abstract: Judith Osmer, founder and CEO of the J.O. Crystal Co., Inc., manufacturer and distributor of the Ramaura™ Cultured Ruby, will begin with a discussion of the history of synthetic gems. The talk will be illustrated with a collection of slides and will include a brief description of the technique Osmer developed to grow her Ramaura Cultured Ruby. Slides of the beautiful natural forms of Ramaura Cultured Ruby along with faceted rubies will be shown. The J.O. Crystal Co., Inc. caused a major stir in the gemstone world and forced a reexamination of what constitutes value in gems. Virginia Carter, president of the J.O. Crystal Co., will discuss the evolution of the Company. Points of interest include the glass ceiling for women in science, the discovery of the many crucial elements which go into the creation of a corporation, the origin of the word "Ramaura", the war with the Jewelers Vigilance Committee over the use of the word "Cultured", and the joy of seeing the Ramaura on display in the Gem & Mineral Hall in the Smithsonian Natural History Museum.

Biographies: **Judith A. Osmer** began her career in crystal growth research in 1958. Her expertise includes laser materials, electro-optics, semiconductors and window and substrate materials. Osmer did some of the early work on the growth and properties of ruby at Hughes Research Labs in the 1960s after the first laser was invented in the laboratory next to hers using a ruby crystal. In 1983, Osmer started the J.O. Crystal Co. and served as its CEO until retirement in 2002. The company produced and marketed the Ramaura™ Cultured Ruby. All major gemological institutions have studied the Ramaura and declare it the most "natural" appearing synthetic gemstone on the market. Ramaura is so difficult to distinguish from natural ruby that Osmer developed a chemical dopant to aid gemologists and jewelers in determining its synthetic origin. Ramaura is the only lab grown gemstone on display at the Gem & Mineral Hall in the Smithsonian Natural History Museum.

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Southern California Section

March Meeting (Continued from Page 3)

Osmer majored in chemistry in her early college years and went on to major in Physical Science-Mathematics at UCLA. She has published more than two dozen papers on crystal growth. Judith Osmer has a long history of work for Women's Rights and has taken pleasure in encouraging young women to aspire to careers in science.

Virginia L. Carter began her career as a research physicist at the Aerospace Corporation. During her 10 years there she became the first woman to successfully design and fly a satellite based experiment measuring properties of the high atmosphere. With a B.Sc. from McGill University, and an M.S. from USC, Carter authored 20 papers in the fields of high atmospheric studies and spectroscopy. In 2002 she received an honorary Doctorate in Science from McGill University.

In 1973, Carter changed careers becoming VP Embassy Television, in Hollywood. Productions under her supervision included All In The Family, Maude, Good Times, The Jeffersons and many others. As Senior VP, she established a Movie For Television division and served as executive producer of many highly rated shows. Carter is the recipient of a number of Emmy and Peabody awards.

In 1987, Carter joined Judith Osmer at the J.O. Crystal Company. She is currently active on the Board of the Population Media Center, working to elevate the status of women and to reduce population growth and the spread of disease in third world countries, through the broadcast of long running radio or television soap operas.

Refreshments and RSVP: There is a \$5 donation for desserts and refreshments. Students are free. Reservations are requested so we know how much food to get. Please call Nancy at 310 327-1216 by Wednesday, March 10, 2010.

Directions: The meeting will take place in Science 132 in the Science and Technology Building (Quad I5). For directions to the campus as well as a campus map, please go to www.lacitycollege.edu/public/cmap/map.html. Free parking is available in Parking Lot #5. Parking Lot #5 is on Heliotrope Drive just south of Willowbrook (northwest corner of campus) and the Science building is on Vermont just south of Willowbrook (northeast corner of campus).

Southern California Section

Senior Chemist's Reminiscence Getting Started By Emil Lawton

I arrived at Rocketdyne in December of the year that Sputnik was launched. I had been hired as the inorganic, synthesis chemist to replace a young organic chemist who had resigned. The Research Division had several excellent physical chemists and thermodynamicists and they had figured out that compounds containing the N-F bond could serve as excellent rocket propellant oxidizers.

The young chemist had got as far as setting up a system for fluorinating urea safely and had obtained a yellow, fuming corrosive liquid. It could not be contained in glass but was stable in polyethylene bottles. My job was to prove that there were compounds containing N-F bonds in the mixture, extract and identify them. I asked one of the theoreticians where the desired bonds would absorb in the IR. By analogy to NF_3 he predicted about 9.8 microns. (Remember, this was in the days before micrometers.) So why had they not gotten the IR spectra? The liquid instantly attacked the salt windows. They had tried coating the windows with paraffin wax but if the coating was thin, the liquid pin-holed through. If they made it thick enough to protect the NaCl windows, the windows were no longer transparent. CaF_2 windows were available then, but cut off before 9 microns.

That evening I went home and we had just gotten some shirts back from the laundry. They were wrapped in the then new polyethylene film. Hmm, I thought, they can make this disposable by making them thin. Thin, thin - I thought. The next morning I brought some of the film into the lab, heating a scissors in a flame, I found that I could make small bags which could contain the yellow liquid. Squeezing the bags with the liquid gave us the spectra at the proper frequency. But if there were N-F bonds there, they should be oxidizing. A drop oxidized iodide to iodine.

My boss pulled back a report that was going to the sponsor, Naval Research Laboratory, and added the new data to the report. Back came a temporary extension of the project with enough funds to hire an assistant. It was then I found out that the sponsor was about to terminate the program but gave us a temporary lease on life. During this time we isolated difluoramine and N, N difluorourea. We were off and running and this led to my being promoted, and eventually getting a research team to supervise.

Southern California Section

Outreach Activities

Local competition for the ACS High School Chemistry Olympiad—March 17th and 18th. Winners of the local exam will be invited to participate in the National Exam on **April 24th** for a chance to be part of the International Olympiad in July in Tokyo, Japan. The High School Awards Banquet is June 4th at Mount St. Mary's College. Ask your local high school to participate. Contact the office for registration forms or visit our website at www.scalacs.org.

Sunday March 14th, 2010 (9:30am – 3:30pm) Sustainable Sundays "World Water Day LA" at the Natural History Museum of Los Angeles County, 900 Exposition Boulevard Los Angeles, CA 90007. SCALACS will host a polymers activity table in the main hall of the museum. Contact Bob de Groot at: rdegroot@oxy.edu for questions or if you would like to volunteer.

Saturday, April 3rd, 2010 (8:30 am to 2:00 pm) Opportunities for You in Science and Engineering Conference at Caltech. This is a program that encourages high school students to study science and engineering. The event includes talks on innovations in science and engineering, tours of labs, talks on getting financial aid and college admissions, and hands-on activities. The event will be hosted by Caltech's Center for the Science and Engineering of Materials, The HHMI Undergraduate Science Education Program, and the local section. Contact Bob de Groot for more information: rdegroot@oxy.edu.

The Expanding Your Horizons Conference for middle school girls will take place on April 10, 2010 from 8:45 am to 2:45 pm at Mount St. Mary's College Doheny Campus, Los Angeles. Expanding Your Horizons is a career day supported by SCALACS and organized by MATH/SCIENCE INTERCHANGE to inform young women about careers in math- and science-related fields. The conference is intended for girls in grades 5-8. There are hands-on workshops for girls as well as parents, teachers and counselors. There is a \$10 fee for each participant to cover lunch and materials. For more information and to register, please go to www.expandingyourhorizonsla.org. Registration opens in January and is limited to the first 200 participants. Since this is a conference for girls, women volunteers to help out for the day are very welcome. If you would like to volunteer, please contact Dr. Eleanor Siebert at esiebert@msmc.la.edu.

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Southern California Section

Outreach Activities (Continued from Page 4)

April 10, 2010 (9 am – 4 pm) Sally Ride Science Festival at Cal State Los Angeles. Join the CSULA Student Members and the Partnership for Research and Education in Materials (PREM) for a day of fun activities and workshops at the Sally Ride Science Festival. We need local section volunteers to help with activities at the Festival's street fair and with the workshops. Contact Bob de Groot at rdegroot@oxy.edu for questions or if you would like to volunteer.

April 16, 2010 (time TBD): Joint Younger Chemists Committee and Alpha Chi Sigma Lab Tour at the J. P. Getty Museum. The tour of the lab will be followed by a mixer. Due to the size of the lab, the group is limited to 30 (15 for each group). For questions or reservations, please contact Derek Marin at ma@axsgimalapro.org.



Chemists Celebrate Earth Day Events Theme: "Plants - The Green Machines!"

ACS observes Earth Day with the Chemists Celebrate Earth Day (CCED) program. We offer a suite of events, contests, and educational resources that can be used by members, chemical educators, and chemistry enthusiasts to illustrate the positive role that chemistry plays in the world.

Wednesday, April 21st, 2010 (10 am - 1 pm): Earth Day Celebration and Fair at East Los Angeles College, 1301 Avenida Cesar Chavez, Monterey Park, CA 91754. ACS will host a table with the Student Members from ELAC. For more information, contact Bob de Groot at rdegroot@oxy.edu or Armando Rivera at RiveraAM@elac.edu.

Tuesday, April 20th, 2010 (Time TBD): Earth Day Celebration at California State University, Northridge. Junior and high school student workshops in chemistry, biology and geology. Contact Dorothy Nguyen-Graff for more information at dng@csun.edu.

Southern California Section

In Memoriam Joan Marie Shenk Kaesz

Joan was the wife of our esteemed councilor, Dr. Herb Kaesz, as well as a former ACS employee. She passed away on January 14th, 2010. Joan was born on March 15, 1932 in Lynn, Massachusetts. She attended Pembroke College at Brown University in Providence, Rhode Island and after graduation, enrolled in the Katherine Gibbs Secretarial School where she excelled.

Joan met Herb when she worked for Prof. Eugene Rochow at Harvard. Herb stayed at Harvard to become involved in an Academic Year Institute for high school teachers and in March 1960 was invited to join the Faculty at UCLA. In 1970, Herb asked Joan to be assistant for his Associate Editorship of Inorganic Chemistry (M. F. Hawthorne, Editor-in-chief). Due to nepotism rules in force at the time, Joan could not be hired by UCLA so she became an ACS employee. Joan held this position until Herb retired as Assoc. Editor in the year 2000. Joan then also retired from her ACS employment.

Over those years, Joan and Herb traveled to numerous scientific conferences and workshops taking them to the U.K., France, Germany, Italy, the USSR, Japan, China, New Zealand and Australia. Joan also enjoyed spending time with her grandchildren and pursuing intellectual interests. She very much enjoyed tending to her backyard which overlooks canyons in the Santa Monica mountains. Joan was devoted to her family who miss her sorely and remember her with great love and affection. Donations can be made to the UCLA Foundation with the notation "In Memoriam-Joan Kaesz" in the memo portion.

Undergraduate Research Conference

The 2010 Southern California Undergraduate Research Conference in Chemistry and Biochemistry will be held at Chapman University on Saturday, April 17, 2010. The deadline for registration and abstract submission is Friday, March 26, 2010. For registration, abstract submission and meeting information, please contact Dr. Daniel Wellman or Mr. Brad Agrums at chembiochem@chapman.edu.

Call for Nominations—2010 Election

The Nominations, Elections and Awards Committee of the Southern California Section is soliciting nominations for the election of 2011 Section officers (Chair-Elect and Secretary), members of the Executive Committee, and Councilors. If you wish to propose names (including your own) for consideration, email the Section Office at office@scalacs.org or call Nancy Paradiso at 310 327-1216.

Orange County Section

Chair's Message



As we move into the spring - there are some big changes and events for the Orange County section and the Southern California ACS community. In January, I attended the ACS Leadership Institute and met leaders from all of the Southern California local sections. It was both an inspirational and educational weekend! We all discussed the upcoming Anaheim and San Diego National Meetings (2011 and 2012, respectively), including joint programming, networking and socializing for our sections. In addition, we discussed how we can better link up the Southern California sections through webinars, local programming and local speaker circuits. A lot of this information was presented at our February Dinner Meeting.

For the Anaheim National Meeting, we will be organizing at least a half day of programming and possibly an entire day. The programming will focus on chemistry from Southern California. We are discussing whether we can invite high schools from the area, along with asking the ACS to provide them with reduced or no entry fees, in order to introduce young chemists to the possibilities of scientific discovery. We are also planning a reception and other activities in order to bring together the local sections in our area.

Also, our local section will be putting a greater emphasis on our website this year (www.ocacs.org). The content, calendar and announcements will be updated regularly. So much so, that we are going to use the local section budget normally reserved for the paper newsletter - and invest it in our website. To this end, our last SCALACS participation will be the May/June 2010 issue. Please visit our website, update your information with us and set it as your homepage! Also, we are on Facebook at American Chemical Society - Orange County Local Section. Please become a fan and receive regular updates on activities and programming on your Facebook page.

As always, please contact me if you have any questions. You can reach me at sthompson@buchalter.com.

- Sandra Thompson,
2010 Chair

Orange County Section

March Dinner Meeting

Wednesday, March 17, 2010

The DoubleTree Club Hotel

7 Hutton Centre Drive, Santa Ana

Phone: 714-751-2400

"Resumes, Cover Letters and Interviews: What Works in 2010"

Part 2 of the OCACS Series on Practical Information for Chemical Industry Professionals

Social: 5:30 PM

Dinner: 6:00PM

Presentation: 6:30PM

Abstract: This presentation will be a panel discussion from several of Orange County's academic, industry and private professionals on what works and what doesn't when applying and interviewing for graduate school positions and jobs in 2010. The panel will also take questions from the attendees. Please check www.ocacs.org for panel members and other information on this series.

All Reservations: Please contact us no later than 12 noon Friday, March 12, 2010. Email: OCACS@sbcglobal.net. Please indicate if you will be attending dinner or program only. Please list the names of all attendees.

Host: OCACS pays the hotel on the basis of the number of dinner reservations made. Please help our efforts to keep the Dinner Program going by honoring your reservations.

Dinner Cost: \$25 for members; \$25 for member's spouses; \$30 for non-members or those without reservations.

Program: Members and guests are invited to attend the program at 6:30PM. There is no charge for the program but reservations are requested. Space may be limited.

Directions: Take the Costa Mesa freeway (55). Exit at MacArthur Blvd. and go west (towards South Coast Plaza). Turn left at Mac Arthur Place. DoubleTree Club Hotel is straight ahead slightly to the left. Use parking lot in front of hotel or follow signs to nearby parking. If in error you turn right at Hutton Centre Drive, you will find the DoubleTree Hotel, which is not the DoubleTree Club Hotel. Please be aware of the similar hotel names. Our dinner is at the DoubleTree Club Hotel.

Orange County Section

OCACS Environmental Program

Kennedy/Jenks Consultants

2355 Main St, Suite 140

Irvine, CA - 92614

April 22, 2010 at 7:30 p.m.

Characterization of Surface Runoff from Single-Family Residential Drainsheds

Darren L. Haver, Ph.D.

University of California Cooperative Extension, Orange and Riverside Counties

In mid to late 2006, a surface runoff monitoring program was initiated from 4 neighborhoods in Sacramento County and 4 in Orange County with the following objectives: 1) characterize the runoff from these residential drainsheds and 2) determine the effect of intensive outreach activities to reduce runoff volumes and the pollutants in the runoff that may be generated from landscape maintenance activities. Grab samples were taken of surface runoff at each site every 1-2 weeks along with associated field data, such as pH, EC and dissolved oxygen. Sample collection began in Sacramento County in July 2006, in October 2006 in Orange County, and continued to late 2008. Water samples were analyzed to determine the levels of: a) pathogen indicators such as total coliform bacteria, enterococci, male-specific coliphages, and *Clostridium perfringens*; b) nutrients (nitrate, TKN, phosphate, total P); c) components of drinking water quality standards including: organic carbon (TOC & DOC), bromide, chloride, total dissolved solids (TDS), total suspended solids (TSS), turbidity; and d) the pesticides: diazinon, chlorpyrifos, synthetic pyrethroids (esfenvalerate, bifenthrin, permethrin, cyfluthrin, and cypermethrin), and the increasingly more popular ant control insecticide, fipronil. Intensive outreach was provided to homeowners within 2 "test" sites in each county with the assistance of UC Cooperative Extension Master Gardeners. Activities included the distribution of printed material to homeowners, neighborhood workshops, and personalized gardening advice.

Biography: Dr. Haver earned a B.S. in Ornamental Horticulture from the California State Polytechnic University, Pomona and a Ph.D. in Botany & Plant Sciences from the University of California, Riverside. He currently serves as the Water Resource/Water Quality Advisor for the UC Cooperative Extension in Orange and Riverside Counties and Center Director at South Coast Research and Extension Center in Irvine. He assists agricultural producers and wholesale nurseries with the development and implementation of best management practices to meet water quality regulations. He also provides technical support to urban landscape professionals, municipalities, HOAs, and developers with the implementation of management practices to reduce water use and improve the quality of surface runoff. His current research focuses on the identification, transport, fate, and mitigation of pollutants, specifically pesticides, from both agricultural and urban environments.

Reservations: Limited to first 25 with reservations. E-mail reservations to Ganesh Rajagopalan [RGanesh@KennedyJenks.com] by April 20, 2010.



This Month in Chemical History

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

Among the sources I often consult for subjects for my columns is the book "Essays in Historical Chemistry" by Sir Edward Thorpe; my copy is dated 1911 and was published by Macmillan in London. As I was looking it over, it occurred to me that I knew nothing about the author himself. A little research led me to the obituary notices of the Royal Society, and this sketch of Edward Thorpe's distinguished career is drawn from information in the "Obituary Notices of Fellows Deceased" of the Royal Society for 1925.

Thorpe was born in December 1845 in a small town near Manchester, England where his father was a cotton merchant. He attended Hulme Grammar School and then Owens College, which developed into Manchester University. (Personal note: I was on the faculty of the University of Manchester Institute of Science and Technology from 1958 to 1962, and we always referred to the central facility of the University, which was situated a couple of miles away, as "Owens". At Owens, Thorpe worked with the distinguished inorganic chemist Henry Roscoe on photochemistry and on the chemistry of vanadium. There followed the almost obligatory pilgrimage to Germany. At Heidelberg, under the tutelage of Bunsen, he worked on the remarkable liquid alloy of sodium and potassium, the subject of his Ph.D. thesis. He lodged in the same building as Victor Meyer, who was also working with Bunsen, and they became close friends.

From Heidelberg he moved to Bonn to work with Kekule and they published in 1869 a paper on ethylbenzoic acid. Returning to Manchester he continued to collaborate with Roscoe and they jointly published two papers on photochemistry in 1870. As an up-and-coming young chemist, it was not surprising that Thorpe was chosen for the Professorship in Chemistry at the Andersonian

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This Month in Chemical History

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College of Glasgow, Scotland in 1870 and in that same eventful year he married Caroline Emma Watts. At Glasgow, Thorpe published several papers: on a new oxychloride of chromium; on phosphorus chlorides; on the constitution of paraffin; and on the interaction between carbon tetrachloride and phosphorus pentasulfide. His work on chemical effects of light led to his going on an expedition to observe a total eclipse of the sun in Sicily to be observed on December 22, 1870. Sadly the ship was wrecked on the voyage from Naples to Sicily on December 15, but without loss of life.

Thorpe was “called” to the Professorship of Chemistry at the Yorkshire College of Science in Leeds (later Leeds University) in 1874 and worked there for 11 years. He turned to physico-chemical research on specific volumes of related liquid compounds and was elected a Fellow of the Royal Society in 1876. He made a successful trip to Colorado in July 1878 to observe the solar eclipse, and then began a series of magnetic observations, in collaboration with a physics colleague at Leeds, Professor Arthur Rucker. These included measurements along the 40th. parallel of the U.S. from the East Coast to the Great Salt Lake; in the Azores; and then a complete survey of terrestrial magnetism in the British Isles which was eventually published as a complete volume of Philosophical Transactions in 1896.

Thorpe was picked to succeed Sir Edward Frankland in 1885 as Professor of Chemistry at what was then the Normal School of Science and Royal School of Mines in South Kensington, London – later known as Imperial College of Science and Technology of the University of London. In the next column I will complete my discussion of the career of this distinguished chemist.

San Gorgonio Section



Chair's Message

The San Gorgonio Section will be hosting a "Science Café" on March 20 at the San Bernardino County Museum. We are excited to be able to hold this public event about the intersection between chemistry and archeology. Please help spread the word to anyone you think would be interested in learning more about this topic. The event is free; we hope that you will join us for this exciting afternoon event.

The section is in the process of developing a new website. We are planning on having pages devoted to the specialty areas in chemistry (e.g. organic, analytical) as well as for interest groups (e.g. Younger Chemists, Women Chemists, Industrial Issues, Technicians, etc.). The web site will enable you to sign up for e-mail notices about events for each of the areas and groups of interest. Please watch this page for more information about the upcoming website.

San Gorgonio will sponsor the Chemistry Olympiad competition for high school students again this year. Dr. Michael Page at Cal Poly Pomona will spearhead this effort for the section. This event consists of a written exam where the top eight performers on the exam (no more than two from the same school site) then compete in a "lab" exam. Did you know that the section provides scholarships for college to the top students on the section's exam? If you are interested in learning more about this event, or in supporting the section's efforts to reward these excellent students, please contact me.

We thank all of you that voted in the section election. Your participation is important to us! If you are interested in heading an interest or area group for the section, we'd like to hear from you.

See you in San Francisco at the ACS Spring National Meeting!

- Jodye Selco
Cal Poly Pomona
jiselco@csupomona.edu

San Gorgonio Section

March Meeting: Science Cafe

Ancient Techniques Meet Modern Analyses: Reconstructing Aztec and Mayan Technologies

**Frances Berdan and David Maynard,
CSU San Bernardino**

**Saturday, March 20, 2010
At 2:00 p.m.**

**San Bernardino County Museum Hall of History
2024 Orange Tree Lane
Redlands, CA 92374**

Abstract: The Laboratory for Ancient Materials Analysis (LAMA) was created in 2001 at CSUSB to provide contextual, experimental and technical analyses of a wide range of ancient organic and inorganic materials. The laboratory's unique interdisciplinary collaboration serves as an interface between analytical chemistry (Maynard) and anthropology (Berdan) to provide archaeologists and museum curators with detailed cultural, physical, and chemical data about ancient artifacts. The most common goal is to identify actual materials comprising specific ancient artifacts. Examples of these projects include analyses of pigments on Aztec pottery, 500-year old rubber from Aztec excavations, and adhesives on a number of Classic Mayan funerary masks dating from approximately 1500 years ago. Our cover photo is one of the Mayan burial masks circa AD 200-600 that was analyzed by the LAMA scientists at CSUSB.

Speakers: Frances Berdan is a Professor of Anthropology at CSU San Bernardino where she specializes in the indigenous cultures of Mexico, particularly the ancient Aztecs and their modern descendents. David Maynard is a Professor of Chemistry
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San Gorgonio Section

March Meeting (Continued from Page 15)

and Biochemistry at CSU San Bernardino. His area of expertise is in the structural determination and syntheses of natural products.

The Science Café is an informal meeting where a scientific topic of general interest is presented and the public at large is invited to join us for discussion and food. To this end the talk will be geared for the general public with discussion encouraged. Following the presentation there will be a reception in the Garden Café where all will have the opportunity to continue the discussions over food and drink.

Cost and Reservations: Admission to the museum is \$5.00 for students, \$6.00 for seniors, and \$8.00 for adults. The reception is free, but reservations are requested to assist in planning. Please make your reservation by Wednesday, March 17, by contacting either Jodye Selco (jiselco@csupomona.edu) or Dennis Pederson (909-537-5477, dpedersn@csusb.edu).

Directions: From the west, take Interstate 10 to the California Exit. Turn left (north) onto California, go under the freeway. and turn right onto Orange Tree Lane. Go approximately 0.2 miles and the museum will be on the left. From the east, take Interstate 10 to the California Exit. Turn right (north) onto California and then proceed as described above.



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