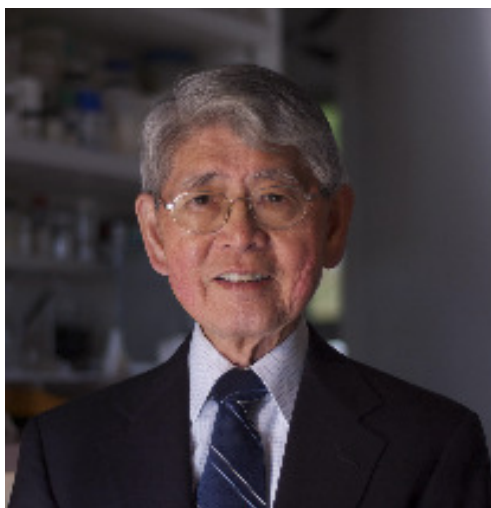


January/February 2012

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



**Southern California
Section
Dinner Meeting**

**Dr. Joseph T. Lin
Green Cosmetics and
Serious Chemistry**

**Thursday, January
26th, 2012
Steven's Steakhouse**

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San Gorgonio Section

Executive Board Message

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Academic Laboratory Workshop

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Number 1

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Chair Elect: Brian Brady
Secretary: Spencer Ririe
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Southern California Section

Chair's Message

Get your mole on in 2012!

Happy New Year! After such a busy 2011 I hope you had an opportunity to rest, spend time with family, and also consider a few resolutions. If you have room for one more, I request that you “get your mole on” in 2012. “Getting your mole on” is simple. Consider the ACS vision:

Improving people's lives through the transforming power of chemistry



Think of one **new** thing that you could do this year that would assist you in fulfilling the ACS vision. For example, you might consider getting involved with the local section. There are many opportunities for participation such as joining a committee, running for an elected office, hosting a Chemists Celebrate Earth Day or National Chemistry Week event, planning a Science Café, planning an event with a student chapter, or supporting our Project SEED program. When I wrote a similar message in 2009, a few of my colleagues wanted to see **me** get my mole on so I am providing my most recent performance as the mole at the

2011 ACS Leadership Conference.

The biggest example of getting our collective mole on in 2011 was our very successful 43rd Western Regional Meeting attended by over 500 ACS members and guests. I am also proud to report that we had 129 undergraduates and 91 graduate students participate. Many of them presented their outstanding research. Their enthusiasm and passion has me convinced that the future of chemistry is bright indeed!

I would like to extend personal thanks to the meeting planning committee for all of their hard work over the last year. I am also thankful to the WRM veterans who advised us in many different areas. What started as a one-day commemoration of the centennial of our local section evolved into a multi-day event that brought us together. I believe we provided many memorable experiences for the attendees. I don't think another group of volunteers could have achieved what we did in such a short time. In light of this, I am authorized to double everyone's salary in 2012!

Join us for an exciting year which includes the 25th anniversary of National Chemistry week in November. Our first SCALACS dinner is on January 26th featuring Dr. Joseph Lin. Please find the details on the next page.

I am constantly inspired and humbled by my fellow ACS members who tirelessly transform people's lives through good chemistry. Best wishes to all in 2012 and go forth and get on your mole!

- Bob de Groot, Chair

Southern California Section

Section Dinner Meeting

Thursday, January 26th, 2012

Stevens Steakhouse

5332 Stevens Place
Los Angeles, CA 90040

Green Cosmetics and Serious Chemistry

T. Joseph Lin, PhD, TJL Associates

Check-in: 6:00 pm

Dinner: 7:00 pm

Presentation: 8:00 pm

Abstract: Cosmetics increase attractiveness by concealing flaws or enhancing skin coloring. They are not required to actually make skin healthier or more youthful. In fact, according to FDA's definition, cosmetics must not affect skin structure or function. In the 1970s, consumerists accused the cosmetic industry of selling frivolous, unsafe products, harmful to the environment. Some of these claims held truth, as scientists had started to suspect certain cosmetic colors to be carcinogenic, leading to FDA ban.

Chlorofluorocarbons (CFCs) were once considered safe as a refrigerant, and also as a propellant for aerosols, like hair sprays. In 1974, Prof. Rowland of UC Irvine, speculated that some CFCs might react with ozone in the stratosphere under intense sunlight to cause ozone depletion. As evidence of CFC's damaging effects accumulated, FDA banned their cosmetic use in 1978. In the 1980s, animal rights activists boycotted cosmetic companies using the Draize eye irritation test, which they considered cruel to rabbits. The cosmetics industry was forced to find a non-animal alternative to this reliable test.

To assure cosmetics safety, companies started making "hypoallergenic/ dermatologist tested" claims on their skincare products. This was the first appearance of drug-like cosmetics in the US. As this segment grew in the 1980s, the industry entered the "**Age of Serious Cosmetics**," implying that cosmetics no longer just hid skin imperfections; they could actually make skin healthier and more youthful. Cosmetics were becoming more like drugs, and the term, "**Cosmeceuticals**," was born. The popularity of organic food has driven the market for organic cosmetics. "Green" cosmetics are perceived as safer and more effective than traditional
(Continued on Page 4)

Southern California Section

Dinner Meeting (Continued from Page 3)

cosmetics containing many “chemicals.” However, formulation of green cosmetics presents a huge challenge to formulation chemists as they are forced to use unfamiliar natural ingredients instead of effective chemicals. The problem is worse for emulsion-based cosmetics.

Global warming is changing the standards of “green cosmetics,” and cosmetics will become more “serious.” Europe is already considering labeling of carbon footprint for cosmetics, and the game of replacing “chemicals” with green-sounding INCI names will not be sufficient. The cosmetic industry will need help from “serious” green chemistry and engineering. In the 1970s, I pioneered **Low Energy Emulsification (LEE)** to reduce energy use in making cosmetic emulsions. The principle described in my book, *“Manufacturing Cosmetic Emulsions: Pragmatic Troubleshooting and Energy Conservation,”* is that by focusing energy application only where and when needed, it is often possible to reduce consumption by over 50%, without reducing product quality. I call this **“Less Is More”** processing, because less energy input means less energy to be removed later, shortening the batch cooling time. I have used LEE to solve various processing problems and improve product quality of emulsions. Examples will be presented to demonstrate the basic principles of LEE and **Less Is More**.

Biography: Dr. Lin was born in Taiwan in 1932 and came to the U.S. in 1953 to study chemical engineering. He received a B.S. from the University of California, Berkeley in 1957, and an M.S. from the University of Washington in 1959. While working for Beauty Counselors, Inc. in Detroit, he earned a Ph.D. from Wayne State University in 1963. After a stint at Rohm & Haas Co., Dr. Lin joined Max Factor’s Hollywood R&D Lab as Head of the Emulsion Laboratory in 1965. He has been working as a consultant for the past 40 years, specializing in emulsion technology and process engineering. Dr. Lin has been a member of ACS, AIChE and SCC (Society of Cosmetic Chemists) for nearly 50 years. He has presented many papers at SCC and IFSCC (International Federation of Societies of Cosmetic Chemists) meetings and has received several awards for his presentations. In 2001, Dr. Lin received SCC’s highest honor, the Maison deNavarre Medal Award, in recognition of his contributions to scientific research, including his pioneering work on Low-Energy Emulsification (LEE). His book, *“Manufacturing Cosmetic Emulsions: Pragmatic Troubleshooting and Energy Conservation,”* was published by Allured Books in 2009. A Japanese edition of this book was published by Fragrance Journal in 2010.

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Southern California Section

Dinner Meeting (Continued from Page 4)

Cost: There is a choice for dinner of Prime Rib or King Salmon. The cost is \$31 including salad, dessert, tax, tip and wine with dinner. Vegetarian entrée available upon request.

Reservations: Please call Nancy Paradiso in the Section Office at 310 327-1216 or email office@scalacs.org by Monday, January 23, 2012.

Directions: To access Google maps from their website, go to http://www.stevenssteakhouse.com/home/driving_directions. From the 5 Freeway. 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 Freeway. Southbound, exit Atlantic-Eastern Avenue. The restaurant is straight ahead off the exit. From the 710 Long Beach Freeway. 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.

Election Results

Thanks for everyone who voted! The people who were chosen in the election follows. Their terms of office begin in January, 2012.

Chair-elect: Brian Brady

Secretary: Spencer Ririe

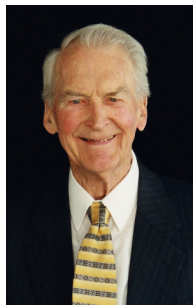
Members of the Executive Committee: Tina Choe,
William Harter, Michael Morgan

Councilors: Bob de Groot and Virgil Lee

Alternate Councilors: Henry Abrash and Jodye Selco

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.

Southern California Section



IN MEMORIAM
JOHN A. A. THOMSON, PH.D., D.A.
NOVEMBER 23, 1911 – NOVEMBER 28, 2011

Dr. John Ansel Armstrong Thomson, inventor of the world-famous horticultural vitamins-hormones solution **SUPERthrive®**, passed away peacefully on November 28, 2011, five days after his 100th birthday. He will be greatly missed by all who knew him.

Thomson developed the **SUPERthrive®** formula in 1939. Seventy-two years later, he was still engaged in the daily operations of his company, Vitamin Institute, actively selling worldwide. As the new President, his daughter Patrisha Thomson will continue her father's legacy of improving horticultural and agricultural crops with the firm's sole product.

Holding a Ph.D. in biochemistry, Thomson has collected awards and commendation for his lifetime of work. In 1940, he earned the Science & Industry's only Gold Medal at the San Francisco World's Fair Golden Gate International Exposition. In 2006, Dr. Thomson became the first chemist to be honored with a Lifetime Achievement Award from the Lawn & Garden Marketing & Distribution Association. Other honors include Lifetime Environmental Awareness Award from Sustainable Environmental Education and induction into the "Nursery Retailer" magazine's Hall of Fame.

Throughout World War II, his **SUPERthrive®** was used by five U.S. Government departments (Army Corps of Engineers, Air Force, Navy, Department of Agriculture, and Forest Service) respectively to: transplant mature trees for defense plant camouflage; plant and sustain low-dust turf landing fields; improve soil conditions where salt interfered with plant success; develop vital drug- and oil-bearing plants domestically; and increase production of necessary guayule rubber.

When asked about his primary philosophy of life, Dr. Thomson summed it up saying, "My whole idea is to try to leave the world better off for wherever I touch it."

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Southern California Section

In Memoriam Aron Kupperman

Aron Kupperman, 85, an emeritus professor of chemistry at Caltech who pioneered the use of early computers to measure chemical reactions, died October 15th at his home in Altadena.

While practicing computational chemistry, Kupperman used an IBM 370 mainframe computer during the 1970s to complete the world's first complete three-dimensional picture of a quantum mechanical reaction, according to Caltech.

A native of Sao Paulo, Brazil, Kupperman was born May 6, 1926. He studied at the University of Sao Paulo, receiving a bachelor's in chemical engineering and another in civil engineering. He taught in Brazil and Scotland before coming to the United States and earning a doctorate at the University of Notre Dame in 1955. He taught at the University of Illinois before joining Caltech as professor of chemical physics in 1963. He took emeritus status in 2010. Dr. Kupperman was a 60 year member of the American Chemical Society.

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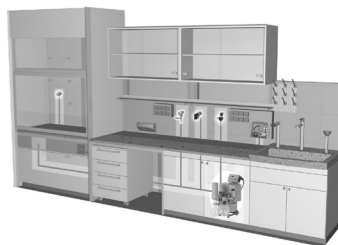
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This Month in Chemical History

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

I get inspiration (?) for my columns from all kinds of sources, some of them quite unexpected. I have recently moved into a new, but windowless, office, and I decided to put up some pictures and posters to relieve the blankness of the walls. I found at home a beautiful poster of an 18th. century painting, “An Iron Forge”, by Joseph Wright of Derby, who happens to be a favorite artist of mine. Wright was primarily a portrait painter, but he also painted scenes of technology, like this one of the forge, and several marvelous paintings of scenes representing science. One of his master works, “An Experiment with the Air Pump” is in the National Gallery in London. So, how does this lead to this month’s column?

Looking at the poster of Wright’s painting I recollected a visit to Derby some years ago which included viewing the Wrights in that city’s art museum, and visiting the cathedral which, in the 18th. and 19th. centuries was the Church of All Saints. In a family vault in that church are interred the remains of Henry Cavendish, one of the greatest natural philosophers of the 18th. century, and an important figure in the history of chemistry. And so, finally, I get to the subject of this and my next column.

There are excellent accounts of Cavendish’s work and life. The early “standard” biography by George Wilson (“The Life of the Honorable Henry Cavendish”, London, 1851) is a propaganda piece, written in part to support Cavendish’s claim to have established the composition of water. I have relied on “Cavendish: The Experimental Life” by Christa Jungnickel and Russell McCormmach, Bucknell, 1999, for these columns.

So why the “Honorable” as a title for Henry Cavendish? This was a courtesy designation since Henry’s uncle was the 3rd. Duke of Devonshire and his father was Lord Charles Cavendish. Henry
(Continued on Page 9)

This Month in Chemical History

(Continued from Page 8)

was born in Nice, France, in October 1731 where his parents were staying to avoid the English winter weather. Henry's mother was never very strong and she died at the age of 27.

The Cavendish family was wealthy; a later Cavendish helped found the famous laboratory in Cambridge which bears the Cavendish name. Henry Cavendish was initially taught by tutors and by his father, a man well versed in the sciences of the time. He was sent to Hackney Academy, run by "a family of teachers, Anglican clergy, and Cambridge graduates with an interest in science" when he was 11. At age 18 he went to Peterhouse College in Cambridge where he studied for four years including work in mathematics, astronomy, and pneumatic chemistry (the chemistry of gases), but he left without bothering to take the qualifying examinations for a degree; this was not unusual for Cambridge students who did not intend to enter the Church.

After he left Cambridge, Henry Cavendish was taken as a guest of his father's to many meetings of the Royal Society where he became acquainted with the leading British natural philosophers. He became a member in 1760. He became a regular attendee at the Society's dinner meetings and all his published scientific works appear in the Society's journal, *Philosophical Transactions of the Royal Society*. He began doing scientific research at his home laboratory, which was clearly equipped with a wide range of current equipment. Some of Cavendish's equipment is held in the collections of the Science Museum in London. As befits the wealthy amateur who commissioned the apparatus, it is all of the highest quality and beautifully finished. In my next column I will turn my attention to Cavendish's chemical experiments, with a passing reference or two to his work in physics.

San Gorgonio Section

A Message from the San Gorgonio Executive Board

Hello Fellow San Gorgonio Chemists!

Last year, the San Gorgonio Section offered several exciting events and activities – the chemistry of wine and beer, a presentation on forensic chemistry, a workshop on academic and industrial lab safety, a Mole Day celebration, participation in the Chemistry Olympiad culminating in the presentation of scholarships and awards at the annual Awards Banquet. This year, **the Executive Board has two goals** – to continue to plan interesting events and to address the difficulty of participation in an area that extends from the eastern edge of Los Angeles County to the Nevada border.

Several events have been tentatively scheduled. Check SCALACS and the San Gorgonio Section website for details.

- Second workshop on academic and industrial laboratory safety in early February (see page 12).
- Chemistry Olympiad exams for high school students in March and April.
- The Annual Chevy Goldstein Lecture on May 4 featuring speaker Rigoberto Hernandez of Georgia Institute of Technology.
- Mole Day celebration on October 20.

We would like to complete the schedule with events that are meaningful and available to a wide area of the Section. Therefore, we are asking for people to **volunteer to serve as local liaisons** that will form a program committee. We have a large population of members in the **Riverside** area as well as moderate populations in the **Palm Springs, Victorville, Claremont and Temecula** areas. It seems reasonable that members living in these areas are more familiar with the local interests and resources. They
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San Gorgonio Section

Board Message (Continued from Page 10)

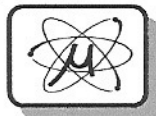
would be able to provide input and assistance in planning an event that would be both meaningful and available to chemists in that area.

The Executive Board will be emailing a survey to all Section members soon asking for ideas and volunteers. Consider volunteering to help with just one event or committee! ***Please complete the survey and return it to Eileen DiMauro.***

Email – edimauro@mtsac.edu.

Mailing address:

Eileen DiMauro
Mt. San Antonio College
1100 Grand Ave
Walnut, CA 91789



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San Gorgonio Section

Coming in Early February

Academic Laboratory Workshop

- *Academic laboratory technicians*
- *Teachers of chemistry or physical science*
- *Department chairs or heads*
- *School district risk management directors*

If you are an **academic laboratory technician, department chair or head, chemistry teacher, or school district risk management director**, you should attend these **free** workshops intended to make your job easier, and your students safer!

**Check the San Gorgonio Section website in
January for more information**

<http://sangorgonio.sites.acs.org>

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Contains Dated Meeting Announcement

PERIODICAL

Bi-Section Chemists' Calendar

January

26 SC Dinner Meeting at Stevens Steakhouse with talk by Dr. J. T. Lin
on Green Cosmetics and Serious Chemistry

February

SG Section: See page 12 for information about the Academic
Laboratory Workshop