

March 2013

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



Southern California Section Dinner Meeting

**“The Epidisulfide Natural
Products: an Exciting Platform for
the Development of New
Reactions”**

**Dr. Sarah Reisman
Caltech**

Wednesday, March 27th, 2013
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San Gorgonio Section

**Ballot Issue
Don't forget to Vote!**

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**March Dinner Meeting
“Chemistry on Mars”
Dr. William D. Smythe
Wednesday, March 20, 2013**
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Southern California Section



Chair's Message

2013 is off to a great start for the Section. We had a very informative meeting in January on changes to patent law that take effect in March. We also unanimously approved our new Section bylaws.

We have more exciting events planned for March and April. We are planning a dinner meeting for March 27th on "The Epdisulfide Natural Products: an Exciting Platform for the Development of New Reactions" by **Dr. Sarah Reisman** at Beckham Grill in Pasadena (see announcement on page 3 for details).

The Local Exam for the **2013 High School Chemistry Olympiad**, hosted by the Southern California Section of the American Chemical Society, will be held on Wednesday, March 13th, and Thursday, March 14th, 2013 at over 30 schools in the Los Angeles area. A Women Chemists' Committee panel discussion planned for February has been rescheduled for April. Visit our website, www.scalacs.org for more details. The Tolman Award honoring **Prof. John Bercaw** is also being scheduled for April 18th. More details will be available in the upcoming April issue of SCALACS.

This active section calendar has all been put together by volunteers working for the section. If you have ideas for other activities you would like to see, or participate in, please let us know. We currently have several other activities under discussion; a few hours help from volunteers here and there could turn these ideas into reality.

Also, don't forget the ACS National meeting is coming up April 7-11 in New Orleans.

Cheers,

Brian Brady, Chair

Southern California Section

Section Dinner Meeting

Wednesday, March 27th, 2013

Beckham Grill

77 W. Walnut St,
Pasadena, CA 91103
(626)796-3399

**“The Epidisulfide Natural Products: an Exciting Platform for
the Development of New Reactions”**

Sarah Reisman, Ph.D.
Assistant Professor of Chemistry, Caltech

Check-in: 6:00 pm
Dinner: 7:00 pm
Presentation: 8:00 pm

Abstract: The overarching goal of our laboratory is to discover, develop, and study new chemical reactions within the context of natural product total synthesis. In addition to providing opportunities for biological collaborations, our synthetic undertakings serve to drive innovation in, and deepen our fundamental understanding of, organic and organometallic chemistry. Our laboratory has an ongoing research program targeting the chemical synthesis of several related redox active, sulfur-containing natural products that exhibit promising anticancer activity. The densely packed arrays of heteroatoms and stereogenic centers that constitute these polycyclic targets challenge the limits of current synthetic methodology. This seminar will describe our latest progress in both our methodological and target-directed synthesis endeavors.

Biography: Sarah E. Reisman was born and raised in Bar Harbor, Maine. She was an undergraduate student at Connecticut College in New London, CT, where she developed a passion for organic synthesis working in the laboratory of Prof. Timo Ovaska, and graduated with honors in 2001. In the fall of that year, Sarah enrolled in graduate studies at Yale University and joined the research group of Prof. John Wood. She earned her Ph.D. in chemistry in 2006; her thesis detailed the total synthesis of the natural product welwitindolinone A isonitrile.
(Continued on Page 4)

Southern California Section

March Dinner Meeting (Continued from Page 3)

For her postdoctoral work, Sarah pursued studies in the field of asymmetric catalysis as an NIH fellow, working with Prof. Eric Jacobsen at Harvard University. In 2008, Sarah joined the faculty at the California Institute of Technology as an assistant professor of Chemistry. The overarching goal of her research is to discover, develop, and study new chemical reactions within the context of natural product total synthesis. Sarah is the recent recipient of several honors and awards, including an Alfred P. Sloan Fellowship, the Cottrell Scholar award, the Camille Dreyfus Teacher-Scholar award, the Amgen Young Investigator award, the Novartis Early Career award, the Arthur C. Cope Scholar award, and the ACS Women's Chemist Committee Rising Star award.

Reservations: There is a choice of Stuffed Chicken (stuffed with Goat Cheese, Spinach and Walnuts with a Mushroom Dry Sherry Demi-Glaze) or Braised Boneless Beef Short Ribs for dinner. The cost of the dinner is \$33 per person including tax, tip, and wine with dinner; cash or check at the door. Please call Nancy Paradiso in the Section Office at 310 327-1216 or email office@scalacs.org by Monday, March 25, 2013 for reservations.

Directions: You can find an interactive Mapquest map at <http://www.beckhamgrill.com/Location.html>

Outreach Activities

The **Expanding Your Horizons Conference** for middle school girls will take place on **April 6th, 2013** 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, parents, teachers and counselors. For more information, please go to www.expandingyourhorizonsla.org. 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.

Save The Date - On June 1st SCALACS will be hosting its annual **Chemistry Merit Badge activity at the Scout Expo** being held at Santa Anita Park. If you would like to volunteer, please contact Derek Marin (Derek.Marin@DunnEdwards.com) or Jerry Delker (delker@earthlink.net).

Southern California Section

ACS-Hach Land Grant Scholarships

The ACS-Hach Second Career Teacher Scholarship is awarded to professionals in the chemistry field pursuing a Master's degree in education or becoming certified as a chemistry/science teacher. Up to \$6,000 per year. Apply by April 1 at www.acs.org/hach.

The ACS-Hach Land Grant Undergraduate Scholarship is awarded to undergraduate chemistry majors who attend one of 72 partner institutions and are interested in teaching high school chemistry. Scholars receive \$6,000 per academic year for up to six years. Contact the partner institution for application and renewal details. Find more information at www.acs.org/hach.

ACS-Hach High School Chemistry Grants are awarded to school teachers. Grants of up to \$1,500 are available to chemistry teachers with innovative ideas that transform classroom learning. Apply by April 1 at www.acs.org/hach.

In Memoriam George Papps

George Papps, 96, passed away on January 22, 2013. George was born April 26, 1916 in New York City. He is survived by his loving wife of 58 years, Mary Papps, his three children and four grandchildren. His parents were immigrants from the island of Karpathos, Greece.

George attended Stuyvesant High School and then attended CCNY and received his Bachelors in Chemical Engineering at Brooklyn Polytechnic. He worked for National Oil Products in New Jersey, M. W. Kellogg in New York, National Lead in New York and Fansteel in California. He married Mary on July 11, 1954. They lived in Queens, New York before moving to California.

George's family was the center of his life. George was a faithful parishioner of St. Katherine's Greek Orthodox Church. He served on the Parish Council, acted as a Sunday School teacher, choir member and was an active worker at the annual Greek Festival.

Southern California Section



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Undergraduate Research Conference

The 2013 Undergraduate Research Conference in Chemistry and Biochemistry will be held on **Saturday, April 27th** at Claremont McKenna-Pitzer-Scripps Colleges. The deadline for submissions of either oral or poster presentations is **March 15th**. For information, please contact Kayla A. Kaiser, at (909) 607-9606 or KKaiser@kecksci.claremont.edu or Patrick Fleming at (909) 607-8272 or pfleming@kecksci.claremont.edu.

A website for the conference, <http://faculty.jsd.claremont.edu/kkaiser/acsscurrecb>, is under construction and will be opened shortly.

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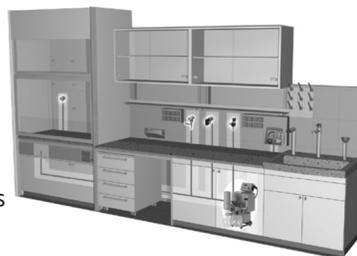
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This Month in Chemical History

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

I am writing this column – such are the exigencies of the publishing process – early in January, and at the start of a new year my thoughts turn to significant anniversaries that chemists should be acknowledging in 2013. As an opera lover I know from extensive publicity that this year marks the 200th anniversary of the birth of Giuseppe Verdi and the 100th anniversary of the birth of Benjamin Britten, both significant composers in the development of opera. But what should chemists be taking note of? To help jog my memory I turn to “The Timetables of Science”, a chronology compiled by Alexander Hellemans and Bryan Bunch (Simon and Schuster, New York, 1988).

It turns out that 1913 (on the eve of World War 1) was a rich year in the progress of chemistry. On the industrial front let's look at the work of Friedrich Bergius. Born near Breslau in 1884, Bergius studied chemistry (his father owned a chemical plant) in Leipzig; Berlin, where he studied with Nernst; and Karlsruhe, where he studied with Haber. These experiences led him to examine reactions under conditions of high pressures and temperatures. In 1911 he moved to Hanover as a Privat-Dozent where he began the study of the hydrogenation of coal and oil that yielded successful results in 1913. He began his industrial career in Essen in 1914. The Bergius process produced gasoline from coal or heavy oil but was not fully developed on an industrial scale before the end of the war in 1918. It involved mixing pulverized coal and heavy oil with a metal catalyst and hydrogenating the heated mixture at around 200 atmospheres pressure. From 1000 kg of coal 750 L of gasoline was produced. The Bergius process has been used in a number of countries since, and is still of interest today. Bergius won the Nobel Prize in chemistry in 1931; he shared it with the chemical engineer Carl Bosch, both being recognized for work on high pressure synthesis, Bosch for his work with Haber on ammonia synthesis.

A new element, protoactinium, was discovered in 1913 by Kasimir Fajans. Fajans was born in Warsaw in 1887. His chemical career led him to study in Leipzig, Heidelberg, and Zurich. In 1910 he worked with Rutherford in Manchester, England on radioactivity; Henry Moseley was another colleague. With Soddy he formulated the radioactive displacement law. Returning to Karlsruhe he isolated, with his colleague Oswald Goehring, a radioisotope of the new element 91, protoactinium. In 1935 Fajans, of Jewish background, left Germany for England and then the United States where he became a faculty member at the University of Michigan, Ann Arbor. Among many other contributions to chemistry Fajans, Born, and Haber developed fundamental thermodynamic relationships; and when I studied inorganic chemistry we learned Fajans' rules, a way of deciding whether a chemical bond will be covalent or ionic. **(Continued on Page 8)**

This Month in Chemical History

(Continued from Page 7)

Leonor Michaelis was born in Berlin in 1875 and studied medicine in Berlin. He worked in private laboratories and in clinical medicine, and was drawn to the study of bacteriology and biochemistry. He established his biochemical laboratory at the University of Berlin, where his title was "Extraordinary Professor" – a literal translation which simply marks him as not a regular member of the faculty! He began studying enzyme reactions along with his female collaborator, the Canadian physician Maude Menten. In 1913 they proposed a mathematical expression to explain the rates of enzymatically catalysed reactions, the Michaelis- Menten equation, still used today.

There is more to say about the year 1913 in chemistry. Watch this space.

I have just published "**A Chemical Chrestomathy: Chemical History Sketches, Vol. 1: Chemists**". It is available (at a modest price!) from Amazon.com. Just search for the title. The book contains many short sketches of the careers of chemists, slightly modified from the forms in which they first appeared in a number of ACS Local Section journals.

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San Gorgonio Section

Chair's Message

Hello San Gorgonio Section Members!

One of the outcomes of our new bylaws is that we are now able to make the Section ballot available electronically. Printing and mailing the ballots has become a major expense. In an attempt to reduce this cost, the ballot will be available on the San Gorgonio Section website (<http://sangorgonio.sites.acs.org>) for those who wish to download it. We realize that many Section members will still prefer to have a paper ballot, so the biographical information and ballot are included in this Chair's message. You may either tear out the page or photocopy it.

We haven't arrived at the point where the actual voting is electronic! All ballots must be signed and mailed to the Section Secretary, whether you use this one or you download a ballot from the website.

Ballot for local section officers for the San Gorgonio Section of the ACS for 2013:

Candidates are listed below with biographical information and a personal statement if available. Please check each candidate in the ballot for whom you wish to vote, and return the ballot to the address listed on **page 11** no later than **March 22, 2013**.

Chair-elect (one year): My name is **Eileen DiMauro** and I am running for the position of Chair-elect. I have a Bachelor's degree from UC Santa Barbara in Pharmacology and a Masters degree from UC Irvine in Biochemistry/Molecular Biology. I have been involved in the field of chemistry since 1976- as a laboratory technician in the pharmaceutical industry for five years and then as a chemistry teacher. I have been teaching at Mt. San Antonio College since 1984, including seven years as Department Chairperson. I have been a member of ACS for almost twenty years. As a member of the Executive board of the San Gorgonio Section, I intend to continue the tradition of providing local access to interesting programs, activities and events for anyone interested in chemistry.

Treasurer (two years): **Dennis Pederson** is Professor of Chemistry and Biochemistry at California State University, San Bernardino. He joined the faculty at CSUSB in 1970 after completing his PhD at Purdue University and doing postdoctoral research at the University of North Carolina, Chapel Hill. He has been a member of ACS since 1964 and of the San Gorgonio Section since 1970. He served as Treasurer of the section and member of the Executive Committee from 1982-1986 and from 2009 to present, and also acted as one of the coordinators of the section scholarship examination during the early years of its operation and again from 2010-2012. At CSUSB his teaching areas include introductory chemistry, general chemistry, and introductory and **(Continued on Page 10)**

San Gorgonio Section

Chair's Message (Continued from Page 9)

advanced biochemistry. His research is focused on the biochemistry of organisms that live in extreme environments, particularly those living at very high temperatures. In conjunction with this work he has held one-year visiting research appointments at the Swiss Federal Technical University, the Australian National University, the University of Wales, Swansea, the University of Cambridge, and most recently, at the University of Bath.

Alternate Councilor (three years): My name is **Laurie Starkey** and I would like to be considered for the Alternate Councilor position. I have been teaching organic chemistry at Cal Poly Pomona for 16 years and I have been an ACS member for 22 years. As an undergraduate student, I was president of the SAACS chemistry club and I have had the pleasure of being an advisor to Cal Poly's club since I started teaching in 1996. I know first-hand the benefits derived from membership in the ACS and participation in ACS-sponsored activities, and I strive to get students involved at all levels. As a Councilor I would have the opportunity to facilitate communication between national and local sections, and to the various constituents in the San Gorgonio region (schools, industry, etc.). Communication is the key to fostering active members who will contribute to a vibrant local section. As a faculty member, I have been immersed in the Scholarship of Teaching and Learning (SoTL) research around the use of teaching with technology, including creating and assessing online pre-lab tutorials and quizzes, developing multiple-choice questions for classroom "clickers", providing lectures for Educator.com, creating and implementing assignments for Calibrated Peer Review (CPR) and serving on the editorial board for MERLOT. In 2012, I published a textbook for senior-level undergraduate students, "Introduction to Strategies for Organic Synthesis" (Wiley) and since 2008 I have served on the GRE-Chemistry Committee of Examiners. My community involvement includes serving as Corresponding Secretary for the PTA and providing a variety of hands-on science demos at my children's elementary school every year for the past five years (www.youtube.com/user/ChemistryConnected).

Note: Secretary David Srulevitch, and councilors Ernie Simpson and James Hammond will serve the remainder of their terms.

The ballot is on the following page (page 11). Please fill it out and return it by March 22nd, 2013 to the address noted.

- Eileen DiMauro, Chair
edimauro@mtsac.edu
(909) 594-5611x4533

San Gorgonio Section

BALLOT- 2013 San Gorgonio Section ACS Elections

2013 Chair-elect (vote for one)

- Eileen DiMauro
 Other

Treasurer (vote for one)

- Dennis Pederson
 Other

Alternate Councilor

- Laurie Starkey
 Other

After making your selections please sign your ballot, place in an envelope, put on a stamp. Return your ballot to: **David Srulevitch, 924 Crystal Water Lane, Walnut, CA 91789-1466.**

Signature: _____

Due Date: March 22, 2013

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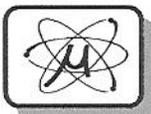
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San Geronio Section

March Dinner Meeting
Wednesday, March 20, 2013

Air Quality Management District Headquarters
21865 Copley Drive - Diamond Bar, CA 91765

“Chemistry on Mars”
Dr. William D. Smythe
JPL Geochemist

Social and Check-in: 6:00PM
Dinner: 6:30 PM
Featured Speaker: 7:15 PM

Overview of Program: Mars has intrigued mankind for at least 2000 years BCE. Telescopic work over centuries starting with Galileo 1610 identified polar caps that changed in size, permanent features, yellow clouds and some interpretations of (blurry) features that later proved incorrect such as canals and a wave of darkening. These interpretations were carried further to suggest a system of irrigation and annual flourishing of flora. While none of these proved to be true, the search for life on Mars is still pursued vigorously.

Pictures from spacecraft starting with Mariner 4 (1964) altered the nature of studies of the surface of Mars. The increasing level of detail in the imagery show no canals but have features that suggest large quantities of flowing water were once on the surface of Mars. Pictures detecting details as small as about 30 centimeters show clear evidence of annual melts and minor water flow in the polar regions – consistent with the existence of the permanent water ice cap and permafrost region.

The evidence for the prior existence of a massive amount of water, however, is still a matter of some debate. Investigations increasingly use measurements by Mars rovers of the chemistry of surface materials to look for unambiguous evidence for an early aqueous environment – an environment that is also considered to be the most propitious place to search for evidence of extinct, pre-biotic and extant life on Mars .

Biography: Dr. William Smythe is a native Californian who greatly enjoys discovering how the solar system works. At UCLA he received a doctorate in Geochemistry and devoted 25 years to conducting a research program in Antarctica on oscillations of the Earth's inner core and the Earth's free oscillations. He is presently a principal scientist at JPL, specializing in understanding the composition of the surfaces of planetary bodies, and producing cutting edge science instruments like ones that flew on the Deep
(Continued on Page 13)

San Gorgonio Section

March Dinner Meeting (Continued from Page 12)

Impact mission. He is currently engaged in designing new missions to the planets, in building a miniature spectrometer to fit within a drill for a future Mars mission, conducting laboratory research on the transport of light in snow and the origins of the methane and nitrogen currently in Titan's atmosphere. He has participated in many flight missions including Viking, Voyager, Galileo, Mars Observer, and Deep Impact. Dr. Smythe has been a strong supporter of education and outreach for many years, often speaking to the public, at student career workshops and at teachers' workshops on deep space missions.

Dinner will be in the Blue Sky Café at AQMD and consist of a selection of gourmet wraps. The gourmet ingredients wrapped in tortillas are served hot or cold with one side salad and cookies. Choices include chicken caesar, turkey bacon club, cold cut meats, southwestern chicken, and grilled vegetables.

Cost and Reservations: The cost (meal, tax and tip) is \$12 members, \$15 non-members, \$10 seniors and retirees, \$7 students with ID. Cash or check only please, at the door. Please make your dinner reservations no later than 12:00pm noon on Friday, March 15 by contacting Eileen DiMauro (edimauro@mtsac.edu, phone (909) 274-4533). Include names and number of persons when making your reservation. Space is limited, so first come, first served. The Section is obligated to pay for all reservations so please be certain to honor your reservation! **There is no cost if you plan to attend the program only, beginning at 7:15 in room GB. No reservation is needed for attending only the program.**

Directions: Link to AQMD site: <http://www.aqmd.gov/map/dir2.html>. **From the east:** Take the 10 West to 57 South to 60 West. Exit Grand Ave. Go left onto Grand, right on Golden Springs Drive and then left on Copley Drive. The AQMD building is on the right. **From Los Angeles:** Take the 60 East. Exit Grand Ave. Go right onto Grand, right on Golden Springs Drive and then left on Copley Drive. The AQMD building is on the right.

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Contains Dated Meeting Announcement

PERIODICAL

Bi-Section Chemists' Calendar

March

- 13/14 SC High School Chemistry Olympiad at various schools—see page 2
20 SG Dinner Meeting with Dr. William Smythe—see page 12
22 SG Ballot Deadline—see page 11
27 SC Dinner Meeting with Dr. Sarah Reisman from Caltech—see page 3

April

- 18 Save the Date! Tolman Award Dinner honoring Prof. John Bercaw at the Caltech Athenaeum. More information in the April issue of SCALACS