

Silicon Valley Chemist

Santa Clara Valley Section

American Chemical Society

Volume 23 No. 12

2001 Harry and Carol Mosher Award

– Dr. James D. Morrison –

From Chiral Synthesis to Glaciers and Galaxies, It's All Chemistry

Over the last fifty years or so, chiral synthesis has moved from an esoteric corner of organic chemistry to the forefront of organic chemical research and development. Fifty years ago there was only an occasional paper published on the subject. Today, one aspect or another of chiral reactions comprises a speciality that is the subject of more research publications than any other in organic chemistry. Fifty years ago chiral reactions that yielded a five to ten percent excess of one enantiomer over the other were cause for celebration. Today, enantiomeric excesses of greater than ninety-five percent are common, and there are industrial processes that employ the techniques of chiral synthesis to make very large quantities of pure enantiomers. A few months ago, the Chemistry Nobel Prize was given to two U.S. chemists



and a Japanese chemist for their work on chiral synthesis.

A subset of chiral reactions is chiral hydrogen transfer; the work of two of the new Nobel Laureates is in this area. One aspect of chiral hydrogen transfer involves

chiral reagents that can deliver a hydrogen selectively to one face of an unsaturated substrate so that the hydrogen becomes one ligand at a new stereocenter. Early examples of such chemistry are found in the pioneering studies of Harry Mosher at Stanford starting in the early Fifties. These studies were highly rational, based on concepts of mechanism and the minimization of unfavorable non-bonded interactions in presumed transition states. In retrospect, they are seen as quite exemplary, groundbreaking investigations that helped to

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Chair's Message

The past weeks were very busy with ACS activities! In October Dick Zare's talk on bubbles was delightful! As we all know, demonstrations can be fraught with mishaps and problems, to the delight of the audience and the discomfort to the speaker; Dr. Zare experienced this first hand! Bubbles would not rise, enlarge, spin or even blow, but thanks to Dr. Zare's patience, we learned about bubbles through art and history as well as demonstration. Did you know that bubbles would increase in size when chilled with dry ice?

On Saturday, October 27th, four SCVACS members helped the California section celebrate its 100th anniversary. Glenn Fuller's historical retrospective was both humorous and enlightening. The first years of meetings were "old boy smokers" held in San Francisco restaurants or the UC Berkeley faculty club. They hosted their first national ACS meeting in San Francisco in 1910 complete with a full day trip to Napa Valley; the times and tastes have not changed in 90

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January Dinner Meeting

Date: January 17, 2002

Time: 6:00 pm Social Hour

7:00 pm Dinner

8:00 pm Talk

Location: Scott's Seafood Grill
2300 East Bayshore Road
Palo Alto, CA
(650) 856-1046

Speaker: Dr. James Morrison
Professor of Chemistry,
Emeritus
Vice President for
Research, Emeritus
University of New
Hampshire

Cost: \$27 with choice of
Grilled Salmon, Oven
Roasted Chicken, or
Vegetarian Pasta

Reservations: Shirley Radding
(408) 246-2564
(408) 296-8625 FAX

Reservations should be made by January 13; stating your name, company affiliation, number of people in the party and the meal preference. People may also register using our web site: www.scvacs.org/Local_Folder/din_mtg.htm.



Chair's Message, continued from front page

years! As the section grew, its dinners and meetings became similar to what we have today. Women became involved with the section in the early Twenties, but did not hold office until WWII. The many large oil and chemical companies (Shell and Chevron) that employed chemists in the early years have changed and some have disappeared all together (Dow) to be replaced with smaller biotech companies. The government's USDA research center and the Lawrence Labs still employ large numbers of chemists. The section took this opportunity to honor its 50+ year members and their past section chairs. The section's senior member, Dr. Alan Nixon, who is over 90 years old attended the anniversary and was honored. We were reminded several times that our 50th anniversary is coming in three years! An enjoyable time was had by all!

The November 3rd Workshop for Teachers was a lively event. Several section members and Roche Bioscience employees arrived at 7:30 a.m. to set up for the daylong event. Again, Juanita Ryan and Julie Schultz shared their expertise and enthusiasm for teaching science to elementary and middle school teachers. The activities and lessons were designed to correspond with National Chemistry Week (NCW) with the theme of Chemistry and Art. The teachers made paint and created butterflies as they got suggestions on how to explain colloidal suspensions, absorption and the reflection of colors to the various age groups that they teach. Besides binders full of detailed science experiments, the teachers left with gifts and supplies donated by Roche, and a renewed enthusiasm for science in the classroom. A special thanks to Bonnie Charpentier for organizing the event and Juanita and Julie for conducting the workshop.

Over the next few months you might want to check out the website, <http://tea.rice.edu>. Juanita was chosen to be one of nine teachers from the entire U.S. to go to the Antarctica and participate in scientific research!! As a member of Teachers

Experiencing Antarctica and the Arctic, this past summer she trained in New Hampshire and Wisconsin in preparation for a 6 to 8 week trip in late January to McMurdo Station in Antarctica. She promised to keep us up to date with her experiences! She will be able to have audio contact with her classroom in San Jose and share her experiments with them.

Susan Roberts-Manganelli's talk in early November on art conservation concluded our NCW events. Ms. Manganelli is Manager for Collections, Exhibitions, and Conservation at the Cantor Center for Visual Arts on the Stanford campus. Chemistry plays an important part in art restoration. She explained how the museum preserves and restores its collection, from old oil paintings to the wonderful Rodin sculptures that are scattered across the campus.

The world of chemistry is becoming smaller and smaller, and I am not referring to atoms and molecules! Fifty years ago in 1951, a California and Bay Area chemist, Dr. Glenn Seaborg won the Nobel Prize in chemistry. Last month it was announced that the 2001 prize was won by another California chemist, Dr. Barry Sharpless (who spent several years studying and teaching at Stanford). Dr. Sharpless' prize was for work in the field of asymmetric catalysis (chirally catalyzed oxidation reactions). In January, our speaker, Dr. James Morrison, will be honored with the section's Mosher award and his talk will include his work on asymmetric organic reactions! That was also the field of interest of Dr. Mosher! Save January 17th for the talk and dinner with Dr. Morrison.

The January dinner and talk will be held at Scott's Seafood Grill in Palo Alto, a new venue for us. You will notice a slight increase in the price to \$27.00. Prices for dinner meetings are continuing to rise, regardless of the local economy. The local section continues to subsidize the dinners several dollars. Scott's serves extremely good food and their staff is very helpful. I am certain this will be a memorable

evening. Again I will ask for help. If you know of a reasonably priced restaurant, hotel, or company location where we can hold some of our monthly meetings, please contact me! As usual, you are very welcome to attend just the presentation part of the evening.

Recently there have been a few comments about the difficulty of reaching the chair and the executive committee, and I apologize for that. The board is in contact continually by email and did not realize that our addresses were not available to the general membership! So that has been corrected! If you go to the web page, www.scvacs.org/officers.html there are now active links to us all. The newsletter has been redesigned to include them also.

Best wishes for a happy holiday season!

Sally Peters



2001 Mosher Award, continued from front page
trigger a flood of later work on chiral reagents.

Starting with these early studies, we will examine some of the work that has been done at the University of New Hampshire (UNH) on chiral hydrogen transfer reagents, including some done collaboratively by students at UNH and at Stanford. In addition, some very different kinds of chemistry done below the surface of ice fields and in outer space that can be called "time-machine chemistry" will be briefly discussed. By the chemical analysis of ice cores, one can determine aspects of ancient climates going back as far as 200,000 years. Also, one can detect bursts of energy from far back in the history of our galaxy, using a satellite carrying a Gamma-Ray Observatory.

Professor James Morrison Will Present His Award Address

Our annual Harry and Carol Mosher Award will be held on January 17, 2002. This year's recipient is Professor James Morrison the emeritus professor and vice president at the University of New Hampshire. Dr. Morrison has a distinguished academic career where he mentored many graduate students and have scores of scientific papers to his credit. He also contributed to the industrial field by being a consultant. In his nomination letter, Dr. Robert Lyle wrote: *"Professor Morrison maintained an interest in applying his belief in an entrepreneurial attitude to education of graduate students. He combined his consulting assignments with contract research involving his students".*

Early on in his career, Professor Morrison spent a period as a NSF Postdoctoral Fellow with Professor Harry Mosher at Stanford University. They shared an intense interest in asymmetric synthesis. Their book "Asymmetric Organic Reactions" became the major reference to all organic chemists who worked in this field. It is a coincidence that the topic of this year Nobel Prize in Chemistry is asymmetric synthesis; which Dr. Morrison will address in his presentation.

The Silicon Valley Chemist is the ACS Santa Clara Valley local section newsletter which is published monthly.

The submission deadline for each issue is the **10th** of the month preceding publication.

Contact Laura Rasay at 650-859-4782 or editor@scvac.org for more information.

Workshop for Teachers Celebrates Chemistry and Art

The first event in the Santa Clara Valley Section celebration of National Chemistry Week (NCW) was a free workshop for teachers sponsored by Roche Bioscience on November 3 on its Palo Alto campus. The workshop was taught by superteachers Juanita Ryan of Toyon Elementary and Julie Schultz of Redwood Middle School who again provided the enthusiasm and knowledge base for a very successful program. Elementary and middle school teachers from more than 40 schools from many area communities (from Petaluma through Hollister) attended.



Banner announces start of National Chemistry Week

The workshop program followed the NCW theme of "Celebrating Chemistry and Art." The morning included refreshments and two sessions of hands-on experiments which covered a variety of fun activities including mixing colors in solution, dispersion of solutions, chemistry of leaves, stained glass glue, chromatography butterflies, frescos, and making artists' paints. Teachers received curriculum binders, as well as materials and supplies to take back to their



Teachers convene for workshop

classrooms. Following lunch, which was provided as part of the workshop, Roche employees provided tours of four laboratories. The workshop concluded with an evaluation



Workshop presenters Julie Schultz (left) and Juanita Ryan (right) with Bonnie Charpentier

and raffle of donated items including classroom sets of goggles, a fax machine, bulletin boards, and many other office supplies. Funding for the workshop provided classroom sets of the KTEH TV produced investigation and experimentation booklet "Real Science" and sets of plastic beakers. The giveaways were sponsored through Roche's "Walk the Walk", a campus walkathon that matches funds for each employee participant.



Teachers enjoy experimenting

Feedback from the teachers was very positive as expressed in the following quotes: "I like how the chemistry is explained with each activity." "Love the hands-on with simple materials." "I can't wait to try some of them with my sixth graders." "This is what will make my kids excited." "Very cool." In at least one case, the science and art teachers from one school attended the workshop together

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Teacher makes observations on colors in black paper

er, a nice example of the outreach potential of this year's NCW theme.

A successful workshop depends on the hard work of volunteers and we were fortunate this year to have many enthusiastic volunteers. Thank you to the following Section members who dedicated their day to the workshop: Lois Durham, Carol Mosher, Howard Peters, Sally Peters, Bruce Raby, Jack Riley, and Ean Warren. Roche employees who volunteered on Saturday (and in preparation) were David Swinney and Ferenc Makra (co-organizers), Shirley Ross, Brenda Price, Barbara Murphy-Wesley, Bart Miaullis,



Another National Chemistry Week has come and gone. This year, as in years' past, the local section participated with a variety of events designed to reach a range of audiences: teachers, museum visitors, local section members, and students. Bonnie Charpentier, Juanita Ryan, and Julie Schultz organized and taught a workshop for teachers (see accompanying article), exposing them to a variety of fun activities involving chemistry and art. San Jose State Student Affiliates and their advisor, Roger Terrill, spent



Hailey Warren with her butterfly creation.

Saturday, November 10 at the Tech Museum in San Jose, doing chemistry demonstrations for the visitors. Jonathan Touster organized a local section meeting featuring a talk

Mike Maddox, Khanh Nguyen, Gary Hedden, Chuck Dvorak, Nixy Zutshi, Stephen Gomez, Erin Engelhardt, Marie Dinh, and Becky Mackenzie. Additional help with preparation of the workshop came from Roche volunteers Thelma Gill, Eileen Cancilla, Tricia Takahara, Carmen Rodriguez, Lynne Yacovetta, Ina Lee, Peter Thana, and Mandy Rees.

Stay tuned for next year's theme—this is one of the most effective community service projects of the Section and everyone leaves feeling great.

Bonnie Charpentier
Workshop Organizer



Researcher Mike Maddox uses periodic table to explain a point during laboratory tour.

on Restoration and Conservation of Art by Susan Roberts-Manganelli, Manager for Collections, Exhibitions and Conservation at the Iris and B. Gerald Cantor Center, Stanford University. And Ean Warren brought chromatography to a kindergarten class by doing a butterfly art project and talking about blending and movement of colors in coffee filters. If you have any thoughts on future National Chemistry Week events, contact ncw@scvac.org.



Social hour preceding Section dinner meeting.

Election Returns for 2002 Operating Year

The Nomination Committee received a total of 281 envelopes of which 8 did not have signatures on the return address envelopes; consequently, 273 ballots were counted. No petition candidates were received. The election results are as follows:

CHAIR-ELECT

Maureen Scharberg 251

SECRETARY

Karl Marbenke 250

TREASURER

Hong Gao 249

COUNCILORS (two to be elected)

Bonnie Charpentier 251

Herb Silber 247

ALTERNATE COUNCILOR (three to be elected)

Carol Mosher 248 (2 YR)

Peter Rusch 242 (3 YR)

Jonathan Touster 241 (3 YR)

The Nomination & Election Committee will accept Petition Candidates any time during the year to provide the membership with greater access to become an officer of the Section. However, the petition must be received by August 1 of the year of the election. The petition must be signed by 15 members of Member Grade, and the candidate has to have agreed to serve if elected. Send all petitions to the secretary of the Section.

The Bylaws of the National ACS and the Santa Clara Valley Section state that the voter signature must appear on the outer return envelope to be a valid ballot. Thus, in this election, 8 ballots were invalidated. Please sign the outer envelope and have your vote count!



2003 ACS Regional Awards in High School Chemistry Teaching

The Office of the Awards Program is soliciting nominations for the nine Regional Awards in High School Chemistry Teaching that will be presented in 2003. If there is an outstanding and dedicated high school chemistry teacher in your region, nominate them for one of these awards. Each award consists of a \$1,000 cash prize, two certificates (for the recipient and the recipient's institution), and reimbursement of reasonable travel expenses to and from the regional meeting where the award will be presented. Former recipients and retired teachers are ineligible for nomination. Recipients of the Regional Award in High School Chemistry Teaching will automatically become candidates for the James Bryant Conant Award in High School Chemistry Teaching (<http://chemistry.org/awards/conant.html>) in 2004.

The deadline date for all nominating material for the 2003 Regional Awards in High School Chemistry Teaching is February 1, 2002. Earlier transmittal is encouraged. Contact Marvin Jones at m_jones@acs.org or 800.227.5558, x4408 for more details. The regional meetings that are being held in 2003 are:

36th Middle Atlantic Regional (MARM)

35th Great Lakes Regional (GLRM)

58th Northwest Regional Meeting (NORM)

32th Northeast Regional Meeting (NERM)

55th Southeast (SERMACS)

38th Midwest Regional (MWRM)

59th Southwest Regional (SWRM)

39th Western Regional (WRM)

35th Central Regional (CRM)



Newsletter Forum

This month's question:

Do we currently have the technology to counteract chemical, biological, or nuclear terrorism?

Email your contributions to forum@scvac.org.



*Season's
Greetings*

Where Are the New ACS Volunteers?

Recently, President Bush addressed the nation again after two of the most wrenching months in my memory. One part of his address focused on the request for Americans to volunteer more. This request has direct impact on the National and Local American Chemical Society - a group of volunteer chemists - which is now very visible as the largest scientific society in the world.

Two weeks ago, I traveled to Walnut Creek to be a part of the 100th anniversary of the California section. ACS president Attila Pavlath (who knows a little bit about being an unpaid volunteer) commented again that the world had changed. Over fifty years ago, Chemical Abstracts was staffed by volunteers who translated and abstracted the chemical literature for pennies per word. They laid the foundation to create the largest automated chemical database that serves the chemical world — but it doesn't come cheap. He also said that members join and

members leave — usually with the comment, "What has the ACS done for me lately?" It is a new world.

Within the Santa Clara Valley Section, we have seen some new and young volunteers step forward to accept responsibility for the Section's activities. We thank them profusely for their welcome and continued support.

I have been involved with the ACS and the Santa Clara Valley Section activities for 25 years when Shirley Radding innocently asked me to be the second name on the ballot for local councilor. Over the 25 years, I have seen most new faces at the 50 year ACS awards. That is often the first and last time they attend any ACS functions.

The Santa Clara Valley Section has been blessed over the years with a core group that has seen that things have gotten done and needs your active support. At times, it seemed that the Section has about 300 members rather than 3,500. We are all getting older.

We don't need to have elections with one candidate. We don't need to recycle the chair. I know - I have been recycled once. We have good evening dinner programs and our other organized activities have won ACS awards.

The education programs I wrote about in the last newsletter were about the need for ACS volunteer judges for the George Washington Carver Day Science Fair on Saturday, January 5, 2002 at the Santa Clara Convention Center and the concurrent Carver Kidvention. About 6 hours of time is needed. So far my e-mail has not crashed and my voice mail is not full with volunteers asking to serve.

Where are the new volunteers? Now more than ever we have important responsibilities to fulfill. Technology, science, and chemistry are major components in the resolution of the problems we face as a society and as a nation. Come on-it is time to roll.

Howard Peters



SANTA CLARA VALLEY SECTION
AMERICAN CHEMICAL SOCIETY
P.O. Box 395, Palo Alto, CA 94302

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CHEMPLOYMENT ABSTRACTS



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the word "subscribe" in the body.



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Chememployment Abstracts

Director: Shirley B. Radding	408-246-2564	sradding@att.net
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FUTURE MEETINGS

Jan 10	Executive Committee Meeting
Jan 17	SCV Dinner Meeting <i>James Morrison</i>
Feb 21	SCV Dinner Meeting <i>Harry Cook, USGS</i>
Feb 24-27	Process Chemistry in the Pharmaceutical Industry Barcelona, Spain
Mar (TBD)	Chemistry Olympiad
Apr 7-12	ACS Spring Meeting Orlando, FL

For the latest information, please visit the
SCV/ACS Web Site: www.scvacs.org



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