

# Silicon Valley Chemist

Santa Clara Valley Section

American Chemical Society

Volume 30 No. 11

## NOVEMBER 2008 NEWSLETTER TOPICS

- January Dinner Meeting – Results of the Phoenix Mission to Mars and Analog Sites on Earth
- Chair's Message
- November Dinner Meeting – Maximizing Knowledge
- An Award for Excellence in Community College Teaching – Harry Ungar
- Highlights of the September Dinner Meeting with Dr. Lustig
- Highlights of the October Dinner Meeting with Dr. Habelitz
- Teach the Teachers Workshop at Roche
- ChemPloyment Abstracts

## January Dinner Meeting

# Results of the Phoenix Mission to Mars and Analog Sites on Earth

Dr. Christopher P. McKay

It may seem as if January is a long way away, but really it is just around the corner. The SCVACS does not have a December dinner meeting so we certainly hope you will join us for this very interesting discussion in January with Dr.

Christopher P. McKay from NASA Ames Research Center. Please check the December newsletter for dinner details.

### **Abstract:**

Phoenix landed at 68°N in the ice-rich ground on Mars and investi-



gated the chemistry and geology of a polar site on Mars for the first time. The site is particularly interesting for astrobiology because 5 million years ago the tilt of Mars' axis was 45° and the amount of sunlight reaching the Phoenix site at summer

solstice was 2 times the present value - Earth-like levels. Understanding the microbial activity in high elevation dry permafrost in Antarctica provides a basis for considering habitability conditions on Mars during these periods of higher obliquity.

### **Biography:**

Dr. Christopher P. McKay is a Planetary Scientist with the Space Science Division of NASA Ames. Chris received his Ph.D. in AstroGeophysics from the University of Colorado in 1982 and has been a research scientist with the NASA Ames Research Center since that time. His current research focuses on the evolution of the solar system and the origin of life. He is also actively involved in planning for future Mars missions including human settlements. Chris has been involved with polar research since 1980, traveling to the Antarctic dry valleys and more recently to the Siberian and Canadian Arctic to conduct research in these Mars-like environments. Dr. McKay is a recipient of the prestigious Kuiper Award from the Division of Planetary Sciences of the American Astronomical Society.

## Chair's Message

It was to have been so straightforward and easy. Just write the message and send it in on time. However, the best laid plans are as nothing when faced with the foibles and wonders of modern technology and its backlash in terms of time spent trying to get everything put back together again. [Translation – my hard drive crashed on October 10th, and it took far more time than expected to get the drive replaced and all software reinstalled properly].

Cards have been sent out to all members of the section for whom there was no valid email address on file, reminding us that it is time to vote; if your email address was valid, you should have gotten the reminder via email. We are voting electronically

this year (huzzah to all involved in getting the process up and running) – no more losing the ballot, hunting for stamps, etc. A few clicks with the mouse and away we go.

The October meeting topic was interesting – remineralization of teeth. While the technology is still in the in vitro stage, I imagine that many of us might be willing to be guinea pigs in a few years when the in vivo testing is ready to go. It is always good to see people at the meetings; those who are interested in only hearing the speaker are more than welcome: we will definitely make space for you to pull up a chair and listen.

I'll see everyone at the monthly meeting.



Reminder

## November Dinner Meeting Maximizing Knowledge

Terry Oldberg

Reminder

### Abstract

A scientific model is a procedure for making inferences; the builder of a model selects the inferences that will be made from among the much larger (usually infinitely large) set of inferences that could be made. Which inferences shall be selected?

Consideration of this question has led to a general theory of knowledge and to principles of reasoning that create the maximum possible knowledge from given resources. Models built in conformity with these principles consistently outperform the alternatives; sometimes, the outperformance is of an astounding magnitude.

The principles of reasoning built the syllogisms of Aristotle. They built thermodynamics. They built the theory of communication. They built the first, successful long-range weather forecasting model. Scores of successful applications have been made in medicine, engineering and throughout the sciences. Still, despite the perfect record of outperformance, only a tiny fraction of today's models are built by this methodology.

### Biography

Terry Oldberg found himself in a bind. As head of the theoretical side of a 100-million-dollar study, he was responsible for delivery of a scientific model. However, construction of a suitable model had eluded the best efforts of laboratories around the world. Seeking help, Oldberg tracked down and hired Ronald Christensen. While a physics Ph.D. candidate at U.C. Berkeley, Christensen had developed a general theory of knowledge plus principles of reasoning that created the maximum possible "knowledge" from given resources. Encouragingly, Christensen had profitably traded commodity future contracts, based upon his theory, while a student at Berkeley. In the event,



Christensen's theory saved the day.

In 2007, Oldberg formed the firm KnowledgeToTheMax in Los Altos Hills to offer model building and related services, based on Christensen's theory of knowledge, to the scientific and business com-

munities. Earlier, he held positions in research, engineering and management with organizations that included the Lawrence Livermore National Laboratory, the General Electric Company, the Electric Power Research Institute and Alltel Healthcare Information Systems. Oldberg holds degrees in mechanical and electrical engineering from Cornell University, the University of Michigan and Santa Clara University. He is a registered professional engineer in nuclear engineering in California.

## November Dinner Meeting

**Date:** Thursday, November 20

**Time:** 6:00 Social Hour

7:00 Dinner

8:00 Presentation

**Location:** Biltmore Hotel & Suites  
2151 Laurelwood Blvd.  
Santa Clara, CA 95054

**Speaker:** Terry Oldberg  
Maximizing Knowledge

**Cost:** \$27.00 with a choice of:  
Grilled Salmon  
Vegetarian Crepes

**Reservations:** [www.scvacs.org](http://www.scvacs.org)  
or Shirley Radding  
408-246-2564  
408-296-8625 Fax

Reservations should be made by November 17th stating your name, address, company affiliation, number of people in party, and menu selection. If you are unable to honor your reservation and do not cancel by Tuesday, November 18th, you will be invoiced following the dinner meeting

## An Award for Excellence In Community College Teaching

Harry Ungar, Cabrillo College Chemistry Department and  
PI of the ChemEdBridges Project

There are many local and regional ACS awards for excellent high school chemistry teaching, including the James Bryant Conant Award at the national level, but there are none for community college faculty. At the Las Vegas Regional meeting Tom Lane, Bonnie Charpentier, Howard Peters and I discussed the creation of an award for excellence in community college teaching. We decided to propose awards first at the local and regional levels because doing it nationwide is financially challenging. This idea was also informally approved by the Western Regional Meeting Steering Committee.

I am the Principal Investigator of the NSF funded ChemEdBridges Faculty Development Project, the ultimate aim of which is to improve the vitality of Community College (CC)

chemical education by increasing participation of the faculty in the national educational community. We create symposia and workshops at national ACS meetings on topics that are particularly attractive to CC faculty and offer partial travel support to faculty who apply at our website, <http://chemedbridges.weebly.com/>.

Details of the award process will need to be arranged with the appropriate local or regional ACS group. To solicit nominations we plan to follow the methods used by the high school awards. We are prepared to support part of the cost of the award from our NSF grant funds.

Harry Ungar



For further information,  
please contact Harry Ungar,  
[haungar@cruzio.com](mailto:haungar@cruzio.com).

# Highlights of the September Dinner Meeting with Dr. Lustig

Photos courtesy of Lois Durham



Dr. David Lustig



Natalie McClure



Daniel Levy, Jim McClure, Mark Kent



Dr. David Lustig and George Lechner



Mark Kent, Susan Oldham-Fritts, Natalie McClure



Bonnie Charpentier, Daniel Levy



Randa Marhenke, Andrew Ingram, Gilles Muller, Jamie Lunkley

# Highlights of the October Dinner Meeting with Dr. Habelitz

Photos courtesy of Lois Durham



Natalie McClure and Dr. Habelitz



Jeanette Medina (our hostess at Cañada College)



Dr. Stefan Habelitz (speaker)



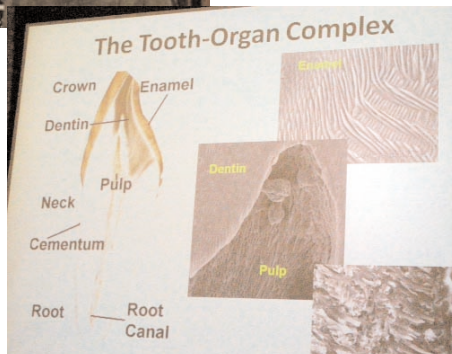
Howard Peters, Peter Rusch



Susan Oldham-Fritts, Sally Peters



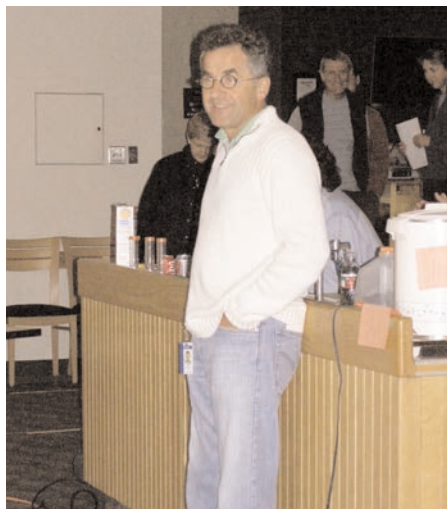
Jim Dinkey, George Lechner



Natalie McClure, Steven Kuwahara

# Teach the Teachers Workshop at Roche\*

October 25, 2008



Ferenc Makra, our host at Roche



Juanita Ryan, instructor



Laura Randall, instructor

\*More Teachers Workshop highlights in the December issue.

## CHEMPLOYMENT ABSTRACTS NOVEMBER 2008

### **CHEMPLOYMENT ABSTRACT 3919**

*Position Title:* Scientist, Synthesis / Bioconjugation Chemistry

*Job Description:* The incumbent will develop novel macromolecular conjugates and linkers for our formulations. He/She is expected to contribute to the creation of new methods, technologies, products, and intellectual property of Intradigm; will have primary responsibility for developing innovative approaches to preparation of the needed constructs and for methods transfer to Process and Product Development; and may contribute to CMC section of regulatory filings.

#### **QUALIFICATIONS DESIRED:**

*Education:* B.Sc. or M.Sc. degree in chemistry or equivalent

*Experience:* Experience in handling and purification of macromolecular conjugates including chromatography, is desirable. Hands-on experience in the development of synthesis methods, linking chemistries, and characterization of products using NMR, MS, and chromatography is also desirable. The candidate must have good interpersonal and communication skills, team orientation, and strong work ethic

#### **LOCATION, SALARY, MAIL ADDRESS:**

*Job Location:* Palo Alto, CA

*Salary:* Competitive

*Employer Description:* Intradigm is a biopharmaceutical company developing novel siRNA-based formulations for oncology. Our technology combines polymer-based nanoparticle delivery with interfering RNA technology to achieve targeted therapeutics. Visit us at [www.intradigm.com](http://www.intradigm.com)

*Application Instructions:* Please submit your CV and cover letter to: [careers@intradigm.com](mailto:careers@intradigm.com) and include Scientist, Synthesis / Bioconjugation Chemistry and job code: SS-BC-02-SCVACS in the subject line.

Intradigm is an Equal Opportunity Employer.

### **CHEMPLOYMENT ABSTRACT 3920**

*Position Title:* Scientist, Formulations

*Job Description:* The Scientist will develop nanoparticle formulations from novel macromolecular conjugates and siRNA. Responsibilities include perform the experimental formulation development work, document the results, and provide updates at internal meetings and in reports; creation and validation of new methods, techniques, products, and intellectual property of Intradigm; and help support efforts leading to a regulatory IND filing.

#### **QUALIFICATIONS DESIRED:**

*Education:* B.Sc. or or M.Sc. degree in chemistry, biochemistry, biophysics or pharmaceutical sciences

*Experience:* Previous experience in formulations or product development. Ideally will have experience in parenteral formulations of biologics, nucleic acids, or traditional parenteral drug formulations. Knowledge of polymers, nucleic acids is desirable, as is experience and interpretive skills in various analytical techniques, e.g. HPLC, PAGE, MS. Familiarity with GMP, understanding of regulatory requirements and prior experience in helping with regulatory submission (IND, NDA) is an advantage.

#### **LOCATION, SALARY, MAIL ADDRESS:**

*Job Location:* Palo Alto, CA

*Salary:* Competitive

*Employer Description:* Intradigm is a biopharmaceutical company developing siRNA-based agents for oncology. Our technology combines nanoparticle delivery with interfering RNA to achieve targeted therapeutics. Visit us at [www.intradigm.com](http://www.intradigm.com)

*Application Instructions:* Please submit your CV and cover letter to: [careers@intradigm.com](mailto:careers@intradigm.com) and include Scientist, Formulations and job code: SS-FORM-08-04-SCVACS in the subject line. Intradigm is an Equal Opportunity Employer.



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

Visit our web site at:



<http://www.scvacs.org>

To receive an email when our newsletter  
is published on our web site, sign up at:  
<http://www.scvacs.org/newsletter/>

## SANTA CLARA VALLEY SECTION

### 2008 Section Officers

|             |                        |              |                                     |
|-------------|------------------------|--------------|-------------------------------------|
| Chair       | <b>Mark Kent</b>       | 408-736-0989 | marklent@yahoo.com                  |
| Chair-Elect | <b>Natalie McClure</b> | 650-906-7831 | nmccclure@drugregulatoryaffairs.com |
| Past Chair  | <b>George Lechner</b>  | 408-226-7262 | glechner@aol.com                    |
| Secretary   | <b>Karl Marhenke</b>   | 831-688-4959 | karlmar@armory.com                  |
| Treasurer   | <b>Herb Silber</b>     | 408-924-4954 | hbsilber@science.sjsu.edu           |

### Councilors

|           |                       |              |                          |
|-----------|-----------------------|--------------|--------------------------|
| 2006-2008 | <b>Abby Kennedy</b>   | 209-640-2005 | akennedy@exelixis.com    |
| 2006-2008 | <b>Ean Warren</b>     | 650-329-4554 | ewarren@scvacs.org       |
| 2007-2009 | <b>Linda Brunauer</b> | 408-554-6947 | lbrunauer@scu.edu        |
| 2007-2009 | <b>Sally Peters</b>   | 650-812-4994 | Sally.Peters@parc.com    |
| 2007-2009 | <b>Peter Rusch</b>    | 650-961-8120 | pfrusch@aol.com          |
| 2008-2010 | <b>George Lechner</b> | 408-226-7262 | glechner@aol.com         |
| 2008-2010 | <b>Herb Silber</b>    | 408-924-4954 | hsilber@science.sjsu.edu |
| 2008      | <b>Howard Peters</b>  | 650-854-4614 | peters4pa@sbcglobal.net  |

### Alternate Councilors

|           |                          |              |                                     |
|-----------|--------------------------|--------------|-------------------------------------|
| 2006-2008 | <b>Ihab Darwish</b>      | 650-594-1654 | darwishis@yahoo.com                 |
| 2006-2008 | <b>David Parker</b>      | 408-615-4961 | dparker@santaclaraca.gov            |
| 2006-2008 | <b>Bruce Raby</b>        | 408-294-6718 | brida954@comcast.net                |
| 2007-2009 | <b>Stephanie Gehling</b> | 408-261-3974 | s_gehling@hotmail.com               |
| 2007-2009 | <b>Natalie McClure</b>   | 650-906-7831 | nmccclure@drugregulatoryaffairs.com |
| 2008-2010 | <b>Mark Kent</b>         | 408-736-0989 | marklent@yahoo.com                  |
| 2008      | <b>Lois Durham</b>       | 650-322-3507 | ldurham9398@sbcglobal.net           |

### Newsletter

Editor: **Cinzia Muzzi** 408-864-5790 muzzicinzia@deanza.edu

### ChemPloyment Abstracts

Director: **Charles Sullivan** 650-359-0731 cdansullivan@sbcglobal.net

## FUTURE MEETINGS

- Nov 16-20** AICHE 100th annual meeting  
Philadelphia, PA  
[www.aiche.org/Conferences/AnnualMeeting/index.aspx](http://www.aiche.org/Conferences/AnnualMeeting/index.aspx)
- Nov 20** Maximizing Knowledge  
Dr. Terry Oldberg  
Biltmore Hotel & Suites  
Santa Clara, CA
- 2009**
- Jan 11-16** 19th Winter Fluorine Conference  
St Petersburg, FL  
<http://membership.acs.org/F/FLUO/19WFC/INDEX19WFC.HTM>
- Jan 15** Results of the Phoenix to Mars  
and Analog Sites on Earth  
Dr. Chris McKay  
NASA Ames Research Center