

# Silicon Valley Chemist

Santa Clara Valley Section

American Chemical Society

Volume 30 No. 10

## OCTOBER 2008 NEWSLETTER TOPICS

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## Chair's Message

The Summer's gone, and all the leaves are falling... While the leaves aren't all falling yet, the process is certainly starting, as evidenced by the fruit trees in my back yard, among others.

Voting for section officers and councilors will be electronic this year. Your ExComm has asked Karl Marhenke to start the process of acquiring a roster of section members, and to produce a list of eligible voters that will then go to Vote-Now. The intended starting date for voting is 8 October, and voting will continue for five weeks after that time. Watch the newsletter for further information.

Volunteers will be needed to help with the National Chemistry Week activities in October. Please contact Abby Kennedy (akennedy@exelixis.com) if you can spend some time helping. The schedule of events is posted in

*continued on next page*

## November Dinner Meeting Maximizing Knowledge

Terry Oldberg



### 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 build the syllogisms of Aristotle. They build thermodynamics. They build the theory of communication. They build 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

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## 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.

Chair's Message, continued from front page  
the September newsletter.

Natalie McClure, Program Chair and Chair Elect, is planning the schedule of speakers for next year. If you know of someone that you would like to suggest as a potential

speaker for a monthly meeting, please contact Natalie (nmclure@drugregulatoryaffairs.com) with that information.

See everyone at the monthly meeting.

Maximizing, continued from front page  
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 communities. 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. He can be reached at terry@KnowledgeToTheMax.com or 1-650-947-0811.

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Reminder      October Dinner Meeting      Reminder

## Chemistry of Dental Tissue Regeneration

Please join us on October 16 at Cañada College, Room 3-142 for the October Dinner Meeting with Dr. Stefan Habelitz. Dr. Habelitz is an Assistant Professor at UC San Francisco's Dental School. Knowing about the "Chemistry of Dental Tissue" should help everyone smile a little more. We hope to see you there. Please check our dinner meeting web site for a map to Cañada College, parking instructions and dinner cost. The complete URL for the dinner meeting page is [www.scvacs.org/Local\\_Folder/din\\_mtg.html](http://www.scvacs.org/Local_Folder/din_mtg.html).



minerals and gradually remove organic matrix from the tooth leading to cavity formation. Efforts to rebuild the lost structures using remineralizing calcium phosphate solutions as well as protein-guided crystal growth have been initiated. This presentation

examines different methods that have been used to regain functionality of dentin and enamel applying minimal invasive dentistry and avoiding restorative techniques. The talk will focus on biomimetic approaches for enamel and dentin synthesis in-vitro and point out the relevance of the chemical conditions to obtain tissue functionality.

**Abstract:**

In evolution, teeth were the first tissues that incorporated minerals for reinforcement and increased hardness; however, enamel, the surface of the tooth, and dentin, the underlying supporting and bone-like structure, pursued very different strategies in how to increase and optimize mechanical properties according to their function. While dentin maintains its protein matrix and incorporates apatite minerals into collagen fibrils, enamel mineralizes by a protein-guided crystallization process that is accompanied by protein hydrolysis and produces a final tissue that consists of 98% apatite mineral in form of crystals that are 50 nm wide but hundreds of micrometers long. Dental caries is a prevalent disease that affects over 90% of the population. During the caries process, bacteria dissolve

**Biography:**

Stefan Habelitz is an Assistant Professor at the Dental School at the University of California in San Francisco. He received a PhD in Chemistry from the University of Jena, Germany in 1998 and a master's degree in materials science from the University of Erlangen, Germany and the CSIC, Madrid, Spain. While his initial training has focused on crystallization in glasses and bioceramics, he has for the last ten years researched how organic molecules control crystal formation in tissues and is investigating the importance of protein-mineral interactions for functional biomechanics. He is a principal investigator and co-investigator on several NIH grants dedicated to dental tissue characterization, remineralization and in-vitro synthesis.

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## Volunteer Industry Partners Needed

We are seeking to establish valuable industry alliances to assist us with the implementation of "Chemistry: A Pipeline to 21st Century Careers", a National Science Foundation-Division of Undergraduate Education Grant awarded to Cañada College in 2007. This is a multi-focused project geared to improve chemistry education in High Schools and Community Colleges throughout the Bay Area. The project's overarching goal is to stimulate the recruitment, retention and success of students in the chemistry career pipeline, particularly from underrepresented groups, to produce the technological workforce needed to fill the demands of our local industry. To reach this goal we are developing an Applied Associate in Science in Chemical Technology degree and a Chemistry Laboratory Technician

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Volunteers, continued from previous page

Certificate. Volunteers will be asked to assist with: 1) identifying crucial curriculum topics and hands-on exercises to assure that graduates of these programs are well trained on industry relevant instrumentation and can perform a quality job, 2) expanding student access to career opportunities in chemistry and chemistry-related fields, 3) identifying potential internships and on-site training opportunities for students, and 4) building long lasting and beneficial alliances among the local industry, four-year colleges, high schools, government officials and Cañada College. For additional information contact Dr. Jeanette Medina, Project Director at (650) 306-3255 or (650) 306-3304, by email at Canada.NSFGrant@smccd.edu.



## Please Vote!

It's time to elect Officers, Councilors and Alternate Councilors for 2009. Thanks to your favorable vote on our Bylaws change last spring, the election can now be done electronically.

Our election this year will be run by Vote-Now <http://vote-now.com>. Check out their website for a description of how the e-election will work. Executive Committee members who have reviewed the ballot preview have been very impressed with its ease of use. You can, of course, still vote even if you don't have e-mail or Internet access.

To see a preview of the candidates on the ballot, go to [http://www.scvacs.org/Local\\_Folder/Ballot.html](http://www.scvacs.org/Local_Folder/Ballot.html). The voting period will be from Wednesday, October 8 through Wednesday, November 12. On or about October 8, you should receive an e-mail with information about casting your ballot. If you don't have (or don't want to have!) e-mail or Internet access, you will get a postcard with the necessary information. You can vote from any computer, even one in a public library. And if all else fails, you can mail in a paper ballot.

Please make sure that the ACS National office has your current e-mail and postal addresses. You can update your information at [http://www.scvacs.org/Local\\_Folder/cbngaddr.htm](http://www.scvacs.org/Local_Folder/cbngaddr.htm), or by telephoning 1-800-333-9511.

## Celebrate National Chemistry Week 2008!

National Chemistry Week 2008 is almost here! October 19-25th is designated as our special week this year and in celebration, we hope you will join us in "Having a Ball with Chemistry", our 2008 theme for NCW. The theme this year was specially chosen by the ACS to bring awareness to the Summer Olympic Games in Beijing, China. As well, it is a good opportunity for us to enhance the understanding of our friends, neighbors and community about the materials, design and safety of sports and sports equipment—all made possible through chemistry! We've got two great activities planned to help you celebrate National Chemistry Week 2008!

Our highlight for NCW this year will be a chance for you to literally "Have a Ball with Chemistry"...a BOWLING BALL, that is! Did you know that the surface of bowling balls is made up of unique combinations of isocyanates and polyols with in a base of urethane resin? Yes, even bowling is made better through polymer science and surface chemistry! To

demonstrate this special bowling chemistry, the SCV-ACS is hosting a bowling tournament for members and their families—of all ages! The tournament will begin on Saturday, October 4 at 10 a.m. at "300 San Jose" (5420 Thornwood Drive, San Jose; [www.300sanjose.com](http://www.300sanjose.com)). Cost is \$5 per bowler, payable that day by check or cash. This price includes bowling shoe rental, bowling for two hours and refreshments! We've reserved their private back nine lanes for our tournament, and at 12 noon, after two hours of bowling fun, we'll declare winners in several age categories—and of course prizes will be awarded! Bumper bowling will be available for your little bowlers, and ACS members and their families of ALL ability levels are encouraged to join in the fun! Also, our free ACS newsletters "Celebrating Chemistry" for elementary school-aged kids and "ChemMatters" for high school students will be available for you to pick up that day!

Spaces are limited, so to reserve

your tournament spot, please sign up online at [www.scvacs.org](http://www.scvacs.org). A limited number of walk-in tournament spots will be available that morning, so if you forget to sign up, come anyway and bring your best game! For questions, please contact National Chemistry Week Coordinator Abby Kennedy ([akennedy@exelixis.com](mailto:akennedy@exelixis.com)).

Also in celebration of NCW 2008, our fun annual public outreach booth will take place on Saturday, October 18th from 10 a.m. -1 p.m. at the MLK Jr. Library in downtown San Jose (150 E. San Fernando St., San Jose). Of course, the crowd-favorite Wheel of Chemistry Fortune will be spinning for all kids to win a prize, and we'll have fun hands-on activities for kids to explore chemistry and to celebrate NCW. This will also be your opportunity to pick up your free copy of "Celebrating Chemistry", the NCW newsletter for elementary-aged children. For more information, please contact Abby Kennedy [akennedy@exelixis.com](mailto:akennedy@exelixis.com). Hope to see you there!



## CHEMPLOYMENT ABSTRACTS OCTOBER 2008

### CHEMPLOYMENT ABSTRACT 3912

*Position Title:* Research Associates - Medicinal Chemistry

*Job Description:* We are seeking Research Associates (five positions available) in the medicinal chemistry department who will be responsible for the design and synthesis of biologically active small molecules. Qualified individuals will participate in our drug discovery efforts as part of a multi-disciplinary project team.

**QUALIFICATIONS DESIRED:**

*Education:* A Bachelor's or Master's degree in Chemistry and a minimum of two years of experience in synthetic organic chemistry is required.

*Experience:* Demonstrated expertise in multi-step synthesis, compound purification and structural characterization is preferred.

**LOCATION, SALARY, MAIL ADDRESS:**

*Job Location:* South San Francisco, CA

*Salary:* DOE

*Employer Description:* Genentech is among the world's leading biotech companies, with multiple therapies on the market for cancer and other serious medical conditions.

*Application Instructions:* Genentech is dedicated to fostering an environment that is inclusive and encourages diversity of thought, style, skills and perspective. To learn more about our current opportunities, please visit: [careers.gene.com](http://careers.gene.com) and reference Req. # 1000024087. Please use "Web - ChemEmployment" when a "source" is requested. Genentech is an Equal Opportunity Employer.

### CHEMPLOYMENT ABSTRACT 3913

*Position Title:* Senior Research Associate - Small Molecule Process Chemistry

*Job Description:* Genentech is seeking a highly motivated Process Research and Development Chemist for Genentech's newly formed Chemical Research and Development Department. He/she will conduct research in a team environment, developing and implementing innovative, scaleable chemistry to advance Genentech's early leads into the clinic.

**QUALIFICATIONS DESIRED:**

*Education:* A Bachelor's or Master's degree in Chemistry, with a minimum of two-years of process research and scale up experience is required.

*Experience:* Candidates must have excellent interpersonal and communication skills.

**LOCATION, SALARY, MAIL ADDRESS:**

*Job Location:* South San Francisco, CA

*Salary:* DOE

*Employer Description:* Genentech is among the world's leading biotech companies, with multiple therapies on the market for cancer and other serious medical conditions.

*Application Instructions:* Genentech is dedicated to fostering an environment that is inclusive and encourages diversity of thought, style, skills and perspective. To learn more about our current opportunities, please visit: [careers.gene.com](http://careers.gene.com) and reference Req. #1000024073. Please use "Web - ChemEmployment" when a "source" is requested. Genentech is an Equal Opportunity Employer.

### CHEMPLOYMENT ABSTRACT 3914

*Position Title:* Scientist - Medicinal Chemistry

*Job Description:* We have an exciting opportunity for a Ph.D. level synthetic organic chemist to participate in our innovative program in drug discovery and development. The individual will play a significant role in the expansion of our efforts into new medicinal chemistry projects. The position requires an individual with broad scientific expertise, able to address project biology and develop novel synthetic strategies.

**QUALIFICATIONS DESIRED:**

*Education:* A Ph.D. in Organic Chemistry with at least three years of academic/industrial experience and a strong record of achievement are required.

**LOCATION, SALARY, MAIL ADDRESS:**

*Job Location:* South San Francisco, CA

*Salary:* DOE

*Employer Description:* Genentech is among the world's leading biotech companies, with multiple therapies on the market for cancer and other serious medical conditions.

*Application Instructions:* Genentech is dedicated to fostering an environment that is inclusive and encourages diversity of thought, style, skills and perspective. To learn more about our current opportunities, please visit: [careers.gene.com](http://careers.gene.com) and reference Req. #1000024086. Please use "Web - ChemEmployment" when a "source" is requested. Genentech is an Equal Opportunity Employer.

### CHEMPLOYMENT ABSTRACT 3915

*Position Title:* Scientist - Small Molecule Analytical Chemistry

*Job Description:* We seek outstanding 2 candidates to join Analytical Development efforts in Small Molecule Pharmaceutical Sciences. Responsibilities include characterization of small molecule candidates, isolation of degradants and determination of degradation pathways, impurity identification, development and optimization of analytical methods for starting materials, intermediates, drug substance and drug product. Responsibilities also include identifying critical parameters and quality attributes.

**QUALIFICATIONS DESIRED:**

*Education:* A Ph.D. in a relevant scientific discipline and a minimum of three years of experience in the pharmaceutical industry is required.

*Experience:* Candidates must have deep knowledge of chromatography, practical experience with core analytical methods, solid scientific knowledge of Pharmaceutical Sciences and a good understanding of the drug development process. Experience with advanced mass spectrometry techniques, impurity isolation/identification and degradation pathway determination is preferred.

**LOCATION, SALARY, MAIL ADDRESS:**

*Job Location:* South San Francisco, CA

*Salary:* DOE

*Employer Description:* Genentech is among the world's leading biotech companies, with multiple therapies on the market for cancer and other serious medical conditions.

*Application Instructions:* Genentech is dedicated to fostering an environment that is inclusive and encourages diversity of thought, style, skills and perspective. To learn more about our current opportunities, please visit: [careers.gene.com](http://careers.gene.com) and reference Req. #1000024102 or Req.# 1000024024. Please use "Web - ChemEmployment" when a "source" is requested. Genentech is an Equal Opportunity Employer.

**CHEMPLOYMENT ABSTRACT 3916**

*Position Title:* Research Associate - Small Molecule Analytical Chemistry

*Job Description:* We seek outstanding candidates to join Analytical Development efforts in Small Molecule Pharmaceutical Sciences. Responsibilities include characterization of small molecule candidates, method development and qualification and supporting process scale-up and formulation development. The successful candidate will develop chiral and achiral HPLC methods, conduct assays, document studies in notebooks, summarize and interpret the data, troubleshoot instrument and method problems, present findings at team meetings and contribute to IND/NDA filings.

**QUALIFICATIONS DESIRED:**

*Education:* A Bachelor's or Master's degree in a relevant scientific discipline (Analytical Chemistry preferred) and a minimum of 2-6 years of experience in the pharmaceutical industry are required.

*Experience:* Candidates must have good theoretical knowledge of analytical chemistry, hands on practical experience on chromatography (HPLC, GC, data handling) and other analytical techniques (MS). Knowledge of current FDA regulations/guidance and strong background in organic chemistry, pharmaceuticals or drug discovery are desirable.

**LOCATION, SALARY, MAIL ADDRESS:**

*Job Location:* South San Francisco, CA

*Salary:* DOE

*Employer Description:* Genentech is among the world's leading biotech companies, with multiple therapies on the market for cancer and other serious medical conditions.

*Application Instructions:* Genentech is dedicated to fostering an environment that is inclusive and encourages diversity of thought, style, skills and perspective. To learn more about our current opportunities, please visit: [careers.gene.com](http://careers.gene.com) and reference Req. #1000024025. Please use "Web - ChemPloyment" when a "source" is requested. Genentech is an Equal Opportunity Employer.

**CHEMPLOYMENT ABSTRACT 3917**

*Position Title:* Analytical Chemists

*Job Description:* We are current looking for 3 energetic and talented analytical chemists to join our Analytical Research and Development teams. The group is well equipped with advanced analytical instrumentation and techniques, such as LC/MS, LC/MS/MS, GC/MS and NMR, as well as state-of-the-art data processing and management systems. These are newly opened positions.

**QUALIFICATIONS DESIRED:**

*Education:* PhD, preferred

*Experience:* 3-20 years of related experience

**LOCATION, SALARY, MAIL ADDRESS:**

*Job Location:* Santa Clara, CA

*Salary:* negotiable

*Employer Description:* XenoPort is a biopharmaceutical company in Santa Clara, CA. We are focused on developing a portfolio of internally discovered product candidates for the potential treatment of central nervous system (CNS) disorders.

*Application Instructions:* For consideration, please send your Resume/CV and cover letter indicating job title in the subject line to [jobs@xenoport.com](mailto:jobs@xenoport.com). Website: [www.xenoport.com](http://www.xenoport.com)

**CHEMPLOYMENT ABSTRACT 3918**

*Position Title:* Assistant Professor of Biochemistry (tenure-track)

*Job Description:* Teaching a total of five quarter-long courses in the first year, six quarter-long courses thereafter, and initiating and sustaining a vigorous, independent, and productive undergraduate research program. The courses may include lecture and laboratory sections in biochemistry, general chemistry, and chemistry for non-science majors.

**QUALIFICATIONS DESIRED:**

*Education:* A Ph.D. and postdoctoral experience in Biochemistry or closely allied field

*Experience:* College teaching experience is highly desirable. Experience in teaching a diverse student population is preferred.

**LOCATION, SALARY, MAIL ADDRESS:**

*Job Location:* Santa Clara, CA

*Salary:* Competitive, depending upon experience.

*Employer Description:* Santa Clara University, a highly ranked Catholic Jesuit institution in the Silicon Valley with an ACS-approved undergraduate program and a housing program, is an EO/AA employer committed to excellence through diversity, and welcomes applications from women, persons of color, and members of historically underrepresented groups.

*Application Instructions:* By 10/17/08, submit cover letter, curriculum vitae, copies of undergraduate and graduate transcripts, three letters of recommendation, personal statement(s) covering research plans, teaching philosophy, representative example of scholarship, e.g., in-press or published article, and sample syllabi and teaching evaluations for any lecture course(s) taught to Prof. Linda Brunauer, Biochemistry Search Committee, Department of Chemistry, Santa Clara University, 500 El Camino Real, Santa Clara, CA 95053. For additional information, visit [www.scu.edu/hr/careers/faculty.cfm](http://www.scu.edu/hr/careers/faculty.cfm)



**Happy Halloween!**



SANTA CLARA VALLEY SECTION  
AMERICAN CHEMICAL SOCIETY  
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## 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	nmcclure@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
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2007-2009	<b>Natalie McClure</b>	650-906-7831	nmcclure@drugregulatoryaffairs.com
2008-2010	<b>Mark Kent</b>	408-736-0989	marklent@yahoo.com
2008-2010	<b>Ferenc Makra</b>	650-855-5368	ferenc.makra@roche.com
2008	<b>Lois Durham</b>	650-322-3507	ldurham9398@sbcglobal.net

### Newsletter

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### ChemPloyment Abstracts

Director: **Charles Sullivan** 650-359-0731 [cdansullivan@sbcglobal.net](mailto:cdansullivan@sbcglobal.net)

## FUTURE MEETINGS

- Oct 4** Having a Ball with Chemistry  
(NCW event)  
San Jose, CA  
<http://www.300sanjose.com>
- Oct 16** Chemistry of Dental Tissue  
Regeneration  
Dr. Stephen Habelitz, UCSF  
Cañada College, Redwood City, CA
- Oct 18** NCW Outreach  
San Jose Public Library  
<http://www.sjlibrary.org>
- Oct 19-21** Topics and Tactics in Current  
Drug Design  
ACS ProSpectives Conference  
Cambridge, MA
- Oct 25** Teachers' Workshop  
Theme: Having a Ball with  
Chemistry  
Roche, Palo Alto, CA
- Oct 26-28** Organic Reactions & Synthesis  
ACS ProSpectives Conference  
Philadelphia, PA
- Nov 20** Maximizing Knowledge  
Dr. Terry Oldberg  
Santa Clara, CA