## November Dinner Meeting

### Chemistry at Community Colleges – A Closer Look

**Dr. Jeanette Medina**

*Abstract*

We are all probably aware of the overarching mission of community colleges. Community colleges are consistently described as open access, student focused institutions that serve an academically, economically, socially and culturally diverse student body by providing an array of academic programs and student support services to ensure the academic success of all students. There are 112 community colleges in the State of California enrolling over 2.7 million students. However, enrollment into chemistry programs is very low. The ACS Committees on Professional Training and Minority Affairs cite “lack of awareness of career opportunities in the chemical field and lack of sufficient mathematics preparation prior to entering college” as two of the many factors preventing students from pursuing chemistry degrees. Typically, students who attend community colleges face a variety of personal obstacles.

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### November 2011 Newsletter Topics

- Chemistry at Community Colleges - A Closer Look
- November Dinner Meeting
- 2011 Teacher-Scholar Awardee
- Chair’s Message
- ChemLuminary Award for Outstanding Teacher Program
- New Members List for October
- About Project Seed
- Chemistry and Thanksgiving
- ChemPloyment Abstracts

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### 2011 Teacher-Scholar Awardee

**Dr. Madeline Adamczeski**

**Dr. Madeline Adamczeski** of San José Community College is thrilled and honored to receive this year’s Teacher-Scholar Award. Recipients of Santa Clara Valley ACS Community College Award are recognized both for their excellence in teaching and for a commitment to their students that goes well beyond the classroom.

Dr. Adamczeski earned her Ph.D. in 1989 at the University of California at Santa Cruz in organic chemistry, working in Dr. Phillip Crews’ Marine Natural Products lab. Following graduation, she worked in industry as a senior scientist and technical consultant in natural products/drug discovery and software development companies before entering academia. She began her full time academic career in 1994 at American University in Washington DC (1994-1998) and in 1999 was hired at San José City College. She co-authored grant proposals, and was awarded numerous grants in systemic education initiatives from California State Partnership for Excellence and National Science Foundation programs. Dr. Adamczeski has been active in directing the Peer Led Team Learning Program since 1994.

San José City College is identified as

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**Continued on next page**
ChemLuminary Award for Outstanding Teacher Program

Our local section was honored at the 13th annual ChemLuminary Awards held during the ACS National Meeting in Denver. The SCV section won in the Outstanding Teacher Program category for its amazing 2010 "Teach the Teachers" Workshop. This workshop has been held during National Chemistry Week for over ten years. The 2010 workshop celebrated the theme "Behind the Scenes with Chemistry." The 2010 workshop for middle and elementary school teachers involved teachers performing experiments such as pH color changes and demonstrating the chemistry behind slime, fake blood, and magic writing set to examples from movies including "Flubber", "Ghost Busters" and "Harry Potter".

The 13th Annual ChemLuminary Awards celebration was held in conjunction with the ACS National Meeting in Denver, CO, on August 30, 2011. Approximately 400 chemists came together to recognize local sections, regional meetings, and divisions that received accolades for their tireless efforts and work in promoting chemistry and the chemical sciences in local areas during 2010.

Join us in congratulating the many people responsible for the workshop's success including: Bonnie Charpentier (the organizer of the event), Linda Brunauer, Juanita Ryan, Lee Latimer, Josefa Arruiza, Jeanette Medina, Lois Durham, Maurizio Franzini, Mark Kent, George Lechner, Susan Oldham-Fritts, Howard Peters, Bruce Raby, Carmen Rodriguez, Rebecca Suttmann, Susan Sakaguchi, Jeanne Izant, Sylvia Lodge, the Resource Area for Teaching. The event would not have been possible with out the generous donation made by Gilead Sciences. They contributed $5000 to make the event the success that it was and we are very grateful for their generosity.
Chair's Message

Caps for sale! Caps for Sale! Are you like the infamous mustachioed cap salesman in Esphyr Slobodkina’s classic children’s tale, “Caps for Sale”?—do you travel throughout your life happily wearing as many caps as possible? Or are you hesitant to try on a cap of a different color?

While my year as Chair is coming to a close, I wanted to take a few minutes to tell you about one of the caps that I enjoy wearing. You may be interested to learn what opportunities may exist as a lab scientist looking to move downstream from the lab within pharmaceuticals, and I’d love to share my experience.

I work in Clinical Operations and I like to think we are the logistical experts in the clinical development arena. We manage clinical studies (both pre-marketing application and post-approval) and our goal is to ensure that clinical studies are completed on time and on budget. We manage internal clinical study teams made up of diverse scientists, doctors and business people. With this team, we draft protocols, informed consent forms, and all the study materials necessary to run the study. We manage external vendors that support the studies, including: contract research organizations, labs, radiological facilities, central readers, Investigational Review Boards. We manage clinical sites, and keep Principal Investigators and site staff all moving toward the same goal—a benefit for subjects and a successful trial. And a successful trial may not mean that your clinical endpoint is positively reached—it may instead mean that your timely go/no-go decision is made.

The largest amount of chemistry that I have performed in the past several years is to lookup the structures of drugs that I’m curious about. But all of the problem-solving, researching and successful project management skills that I learned in chemistry have transferred to Clinical Operations. And I’m not the only one. I have chemist friends who have successfully transitioned from a pharmaceutical bench chemist position to Clinical Operations, Regulatory Affairs, Quality Assurance, Project Management or Business Development. This makes sense to me, because I’ve long heard it said that as you move ahead in your career, it is important that you gain knowledge in several silos on the farm, rather than being an expert in just one silo.

In a June 2011 HBR article by Thomas J. DeLong and Sara DeLong (“Managing Yourself: The Paradox of Excellence”: you can read it free of charge by registering at www.hbr.org), the authors suggest ways of embracing risks in order to heighten your success. New cap, anyone? They suggest you use your support network to ask for help, and don’t be afraid to be vulnerable. Opening yourself up to new learning opportunities may bring a temporary feeling of vulnerability, but these will help you fill up other “silos” of experience.

So, as I “pontificated” in an earlier Chair’s message to you, if you love chemistry, than stick with your passion and be a chemist. But if you’re looking to dip your toes in the water of another career path, one that may even lead to a career watershed, don’t be afraid to try on that new cap!

I believe I may now hold the record for the largest number of metaphors ever used in a single Chair’s message, I bid you farewell until next month. In the meantime, why not pontificate back at me on Facebook? Search for Santa Clara Valley ACS and click on “Like” to have the discussions stream directly to you.

Welcome to the Santa Clara Valley Section of ACS

Each month the section receives a spreadsheet from national ACS with the names of members new to our section. The members are either new to ACS, have transferred in from other areas, or are the newest members -- students. To welcome you to the section and get to know you, the Executive Committee offers new members a free dinner!! To encourage you to attend a monthly section dinner meeting, we would like you to be our guest. When you register, make certain to mention that you are a new member and you and a spouse (or friend) will be our guests. The dinner meetings are often the 3rd Thursday of the month at a local spot, somewhat convenient to the entire section. If you are unable to attend in the evening, perhaps you would join us for an outreach event, like judging a science fair, participating in the Chemistry Olympiad, or a National Chemistry Week event in October. Then, there is our annual wine tasting and awards picnic in July. The local section is a volunteer organization. Please attend an event, volunteer to help, and get to know your local fellow chemists. Welcome!!

New Members List for October

Paul Jacob Alperin  Eric Hu
Dr. Deepshikha Angrish  Dr. Yingying Huang
Dr. Kathleen Burgoon Armstrong  Prof. Mark Jacobson
Dr. Thomas Bligaard  Ian W. Jones
Farzin Bolourchian  Zeeshan Kamal
Eric Brecht  Kapil Karki
Timothy Brown  Dr. Wooseok Ki
Jenna Caldwell  Sara Kokkila
Martin Chandler  Chang Hoon Lee
Jonathan Paul Chang  Katrina Lexa
Kimberly Ryan Davis  Dr. Lichuan Liu
Abraham El Gamal  Mousumi Mani Biswas
Dr. Erik Fenster  Daniel Matisiev
Justin A. Fisher  Domenic Matthews
Stephen David Fried  Robert Treiman McGibbon
Meredith K. Fujidala  Ron Neulinger
Priya Ganguli  Jason Nguyen
Dr. Adam L. Garske  Dr. Carrie Parutch
Dr. Mary Linda Holland  Dr. Adina Paytan
Thomas Hood  Bruce Drury Phebus
Paul Jacob Alperin  Eric Hu
Dr. Deepshikha Angrish  Dr. Yingying Huang
Dr. Kathleen Burgoon Armstrong  Prof. Mark Jacobson
Dr. Thomas Bligaard  Ian W. Jones
Farzin Bolourchian  Zeeshan Kamal
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Dr. Adam L. Garske  Dr. Carrie Parutch
Dr. Mary Linda Holland  Dr. Adina Paytan
Thomas Hood  Bruce Drury Phebus
Neil Harmon Price  Dr. Nick Pugliano
Dr. Girija Ramam  Jessica M. Roestenburg
Dr. Carrie Partch  Jack W. Rose
Lindsay A. Scats  Lokesh Sekhal
Abiriti Sharma  Colin A. Smith
Ronald M. Smith  Breena Stoner
Dr. Yibin Zhang  Wei-Lin Tan
Jian Zhang  Dr. Martin G. Teresk
Jessica M. Roestenburg  Rhiannon Thomas
Dr. Adina Paytan  Ba L. Tran
Dr. Eric D. Woodbury  Cesar R. Viteri
Jian Zhang  Dong Jin Woo
Dr. Eric D. Woodbury  Dr. Erik D. Woodbury
Jian Zhang  Dr. Yibin Zhang
With the New Year upon us, please take a second to look into how you can affect your local community and the lives of deserving young people in it. Project SEED was established in 1968 to help economically disadvantaged high school students expand their education and career outlook. The program provides opportunities for students who historically lack exposure to scientific careers to spend a summer conducting hands-on research with a scientist in academic, industry, and governmental research laboratories. Students receive a fellowship award for their efforts and a chance to receive a SEED college scholarship.

The Opportunities
Benefits of Project SEED
• Exciting research opportunities
• Information on career paths
• Preparation for college studies
• Individual mentoring by SEED scientists
• Exposure to other assistance programs

The Students and Mentors
In addition to hands-on research, Project SEED students receive guidance on their career and personal development. Mentors and students build relationships that help to expand their awareness and understanding of the workforce. Mentors provide strategies for helping students reach their objectives, give feedback, and allow opportunities for growth.

Professional Networking
Each fall, SEED students work side-by-side with professional chemists to present their research projects at ACS local, regional and national meetings, and at other scientific meetings. Presenting their summer research findings gives students exposure to chemists, engineers, and college students who review their research and motivate them to pursue science careers.

Project SEED Scholarships
Through the generosity of private corpo-
Making gravy, unless it comes pre-thickened from a jar, requires a thickening agent. Corn starch and flour are common choices. Though they both thicken the gravy by attracting water molecules to them, they work differently. For its volume, corn starch has much more thickening power than flour and, because of the size of the molecules that it brings together, gives the gravy a reflective sheen. Flour is a bit easier to work with at low temperatures but because it contains molecules that appear more opaque, it will not have the same shine. And, since it takes more flour to do the same job, it has more effect on the flavor.

After it’s all over, what do you do if heartburn is preventing that much-deserved post-gorge nap and somebody already took the last antacid? Your fridge most likely contains a simple remedy.

Baking soda is the active ingredient in popular antacids and acts to settle the churning in your stomach. That, ahem, effervescent effect that seems to emerge in the form of a belch or two -- that’s just carbon dioxide, the product of the neutralizing reaction, escaping.

Bunce’s course covers all sorts of phenomena that are impacted by chemistry, aiming to help people gain the skills that help them think for themselves. “We want people to understand the science behind issues and to know how to find out more information,” she said. “It’s a filter through which you look at life.”

Listen up, all you science geeks: Do you want to be the star of Thanksgiving dinner? Then watch this video.


Taped at the Catholic University of America in Washington, D.C., the video features a lecture and demonstration given by chemistry professor Diane Bunce. Bunce is also associate editor for chemical education research for the American Chemical Society’s Journal of Chemical Education. She dons a pilgrim-esque bonnet and apron -- and then a lab coat -- to explain how chemistry and Thanksgiving intersect. Watch it and you’ll amaze and possibly annoy friends and family with your newfound knowledge!

Answering those questions and many others like it requires some knowledge of simple chemistry.

Dr. Bunce thinks it’s important that everyone learns at least a little chemistry.

“I love the chemistry-phobic students because it’s great to be able to show them that they really can succeed at chemistry,” Bunce said. In her course for non-science majors, Bunce covers Thanksgiving dinner, with a big helping of demonstrations and yes, taste tests. The students probably don’t anticipate that they’ll be asked to chew on raw potato and paper and compare the two. The big difference between these items -- and one reason why we don’t sup on mashed notebooks -- is that the long chains of sugars that make up both of them are linked together in different ways. Our bodies need enzymes to break down those links and digest the sugars, but we don’t have one for the link in paper’s bonds.

Could you please pass the turkey?

Sure, if you can answer this question: How did the chef know the big bird was ready to be removed from the oven? Bunce knows the answer to that. Did you know the pop-up device that releases when the turkey is done is not technically a timer or a thermometer?

When Bunce cut one open, it revealed a spring stuck to the end pushed into the turkey, secured by a blob of solder. When the turkey reaches about 185 degrees Fahrenheit, the solder melts, triggering the spring and the popper. Done!

I’d like some more gravy, please.

Diane Bunce, Ph.D., explains the chemistry of Thanksgiving in a HD video from the American Chemical Society.

Credit: American Chemical Society

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CHEMPSLOYMENT ABSTRACT 3967

Position Title: Scientist – colloidal chemist

Job Description: Candidate will work with variety of organic and carbon materials including solutions, dispersions and suspensions, developing and testing coating methods in conjunction with the formulation optimization, evaluating physical properties of the newly formulated materials and dry films obtained from them. Candidate will join our research and development group to develop next-generation products using a proprietary technology for energy storage applications.

QUALIFICATIONS DESIRED:

Education: PMS (Ph.D. is a plus) in chemistry, materials science, physical chemistry or related fields

Experience: 3-5 years hand-on working experiences

LOCATION, SALARY, EMPLOYER:

Job Location: South San Francisco, CA
Salary: DOE
Employer: Ribtan, Inc. is a material technology company developing new graphene-based materials for electronics.

Application Instructions: Please contact Greg King at 415-902-4721, or send your CV to info@cryscade.com; please mention that you are applying for the Colloidal Chemist position at Ribtan.

CHEMPSLOYMENT ABSTRACT 3969

Position Title: Scientist – Analytical Chemist

Job Description: The candidate will be responsible for leading QA and QC work for the company on all products and creating analytical equipment base for stable control of incoming and outgoing chemical materials. The person will assemble and manage group of 2-3 engineer who would work on particular analytical methods and manage relations with chemical subcontractors by establishing clear common procedures for QC and QA.

QUALIFICATIONS DESIRED:

Education: MS (Ph.D. is a plus) in analytical chemistry

Experience: 3-5 years experiences, preferable in cosmetics or pharmaceutical industries.

LOCATION, SALARY, EMPLOYER:

Job Location: South San Francisco, CA
Salary: DOE
Employer: The Company - Crysoptix - Crysoptix has developed coatable materials for commercial production of Thin Birefringent Film retarders via slot-die technology.

Application Instructions: Please send your CV at info@cryscade.com

CHEMPSLOYMENT ABSTRACT 3970

Position Title: Sr. Laboratory Analyst

Job Description: Perform Method development and adaptation. Coordinate laboratory staff training in method transfer to production use for tests including material identity testing and finished product testing. Perform leadership tasks, test data review, basic troubleshooting and maintenance of lab equipment.

QUALIFICATIONS DESIRED:

Education: BS in Chemistry, Biology, Microbiology or equivalent

Experience:

• Experience working in a Quality Control or Analytical testing laboratory.
• Experience with HPLC, HPTLC, FT-IR, ICP-MS, UV-Vis.
• Experience writing reports, test methods, and Standard Operating Procedures.
• Knowledge of GMP requirements.
• Understanding of Out of Specification investigation procedures.

LOCATION, SALARY, EMPLOYER:

Job Location: Scotts Valley, CA
Salary: Depends on experience
Employer: Threshold Enterprises is an industry leader in the manufacturing and production of Nutritional Supplements, vitamins, and wellness products.

Application Instructions: Interested applicants can send resumes to: resumes@thresholdent.com Please include: “Sr. Lab Analyst” in the subject line.
CHEMPLOYMENT ABSTRACT 3971

Position Title: Natural Products Chemist

Job Description: Lead QC Research Lab in development of new test methods, specification reviews, raw material and final product review. Research and gather information, review testing results, make recommendations / changes / improvements in existing methods, processes and practices. Lead a team of Lab Analysts in developing and executing strategies to improve GMP goals.

QUALIFICATIONS DESIRED:

Education: Ph.D. in Pharmacognosy or Chemistry or Food Science and Technology, or equivalent.

Experience: Natural Products Chemist with experience in identity and quality testing of Ayurvedic, Chinese and western botanical raw materials and extracts. Comprehensive knowledge and exp in analytical and QC method development and adaptation for HPLC / LC-MS, and also desired TLC, GC-MS. 10 years exp in dietary supplement industry or related industry. Excellent communication skills.

LOCATION, SALARY, EMPLOYER:

Job Location: Scotts Valley, CA
Salary: Depends on experience and fit
Employer: Threshold Enterprises is an industry leader in the development and manufacturing of award winning Nutritional and Dietary Supplements, vitamins, skin creams and wellness products.

Application Instructions: Interested candidates should send a current resume, along with salary history to: Resumes@thresholdent.com

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CHEMPLOYMENT ABSTRACT 3972

Position Title: Process Engineer

Job Description: Responsibilities include developing process for deposition of crystal electrode materials and assembling of lab level devices with a focus on then applying these procedures towards roll-to-roll production processes.

QUALIFICATIONS DESIRED:

Education: BS or MS in engineering, chemistry, materials science, physical chemistry or related fields

Experience: 3-5 years working experience in process development, roll-to-roll coating experience desired

LOCATION, SALARY, EMPLOYER:

Job Location: South San Francisco, CA
Salary: DOE
Employer: Carben Semicon, LTD, is creating next-generation products for energy storage applications. www.carbensemicon.com

Application Instructions: Please send your resume at greg.king@carbensemicon.com.

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CHEMPLOYMENT ABSTRACT 3973

Position Title: Scientist – Analytical Chemist

Job Description: The candidate will be responsible for leading QA and QC work for the company on all products and creating analytical equipment base for stable control of incoming and outgoing chemical materials.

QUALIFICATIONS DESIRED:

Education: MSc/PhD in analytical chemistry

Experience:
- 5 years or more in analytical lab
- Good knowledge of organic chemistry and general analytical chemistry
- Direct experience running the instruments and interpreting data using HPLC, MS, 1H-NMR, IR, UV-Vis spectrophotometry, DSC/TG
- Proficient with MS Office (Word, Excel, Power Point, Project)

LOCATION, SALARY, EMPLOYER:

Job Location: South San Francisco, CA
Salary: DOE
Employer: Crysoptix has developed coatable materials for commercial production of Thin Birefringent Films™ (TBF™) retarders via slot-die technology. Please refer to website www.crysoptix.com

Application Instructions: Please send you resume at info@cryscade.com. Thank you.

Happy Thanksgiving
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/

FUTURE MEETINGS

Nov 10-12 Western Regional Meeting
(WRM 2011)
Pasadena, CA
www.wrmacs.org/index.html

Nov 17 Chemistry at Community Colleges
- A Closer Look
2011 Teacher-Scholar Award
Dr. Jeanette Medina, speaker
Dr. Madeline Adamczeski, awardee
Biltmore Hotel & Suites
Santa Clara, CA

Jan 17 Mosher Award Dinner
Biltmore Hotel & Suites
Santa Clara, CA