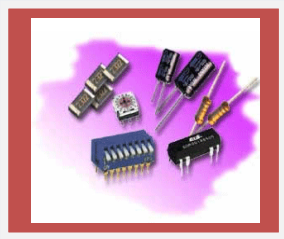




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### Cool Chem Fact Did you Know?



## Germanium

Germanium (32) was the first semiconductor discovered. It was commonly used between 1950 and 1970 in electronics. Later germanium was replaced by pure silicon in transistors, diodes and rectifiers because of better electrical properties of the Si. Because germanium, unlike other semiconductors, is very sensitive to infrared it is still used in spectrometers and other optical equipment.



## Director's Message...



Dear Readers,

It is hard to believe that an entire semester has gone by. A new chemistry fulltime colleague was hired. Welcome Dr. Robert Tricca. Dr. Tricca comes to us with an extensive industry background which is a tremendous asset to the chemical laboratory technology program. Dr. Devang Shah taught the Introduction to Chemical Laboratory

Instrumentation class offered for the first time. Dr. Shah also has an extensive industry background. The focus of the class was on spectroscopy and chromatography with an emphasis on method validation, a very important aspect of industry work.

Two new high school collaborations were established: Carlmont High School Organic Chemistry class and Woodside High School Green Academy. Thirty students enrolled in the Organic Chemistry class at Carlmont High School (a unique class developed by Mr. Felix Guzman) make it to campus once a month to utilize our organic chemistry laboratory facilities unavailable to them at their campus. Mr. Guzman and I work on the experiments beforehand. He then gets to help his students through college level experiments involving synthesis, purification, melting point determination, column chromatography, gas chromatography and IR analysis. Mrs. Ann Akey, Woodside High School Green Academy Chemistry teacher and I introduced her 40 students to the determination of water quality index using the Vernier probeware purchased with NSF funds. I brought three college student volunteers to her class for an experiment on the principles of green chemistry. They will come for an informational tour of campus and a chemistry activity in the Cañada chemistry labs at the end of January.

In terms of outreach, we had a phenomenal group of student volunteers who supported chemistry activities on campus and donated their time for a variety of jobs and events sponsored by the Santa Clara Valley section of the American Chemical Society. Some of which are manning the "Wheel of Chemistry Fortune" at the Martin Luther King library in San Jose; transporting Drs. Lang and Showalter with her materials from The Exploratorium to San Jose State University for their magic show; help setting up, manning and taking down experiments and giveaways at the all-day "Teacher's Workshop held at RAFT.

We are now approaching the end of our one-year grant extension. We will be spending a good portion of the spring semester getting our project's final external evaluation done and putting together our final project report. I will continue holding science outreach activities in the next academic year but at a much smaller scale and frequency after I resume my fulltime teaching load. These activities will be sponsored by the chemistry department. I will also continue collaborating with our local ACS section to make chemistry accessible to teachers and students alike.

We will seek additional external funding opportunities to continue the work already started such as infusing chemical instrumentation components across the chemistry laboratory curriculum; incorporate new topics of interest such as renewable energy, environmental chemistry, polymers, superconductors and nanomaterials into our chemical laboratory technology program; and maintain the collaboration with the high schools to foster the interest for careers in STEM fields.

Jeanette Medina

## Help Needed!

If you seek individuals with excellent laboratory and employability skills we would like to hear from you!

Please contact us at:

**(650) 306-3304**

email us at:

[Canada.NSFGrant@smccd.edu](mailto:Canada.NSFGrant@smccd.edu)

## Cañada College News

### ☞ Math Jam Set for January 10-14

The Winter Mini-Math Jam is a one-week program designed especially for Cañada students who placed into a college math course below pre-calculus and who want to advance to the next math level by scoring higher on the Math Placement Test at the end of Math Jam. The goal of Math Jam is to help students complete their Associates Degree and/or transfer requirements for a four-year college/university in less time than previously possible.

☞ Cañada College has received a three-year, \$450,000 grant to improve student success in math and engineering courses through a partnership with the National Aeronautics and Space Administration (NASA) Ames Research Center. NASA's goal is to attract and retain STEM (Science, Technology, Engineering and Mathematics) students and develop the nation's STEM workforce. NASA will provide the college with \$150,000 per year over the next three years to help create opportunities for minority students in engineering technology and science. Cañada College has a high number of female and ethnic minority STEM students.

☞ On January 1, 2011, Cañada College became a smoke-free campus. The new policy prohibits smoking on campus. Smoking will be allowed only in designated parking lots.

☞☞☞☞

## Project News:

In the final 4-6 months of our grant, we have been focused on three specific goals:

- ❖ Present effective outreach activities in an effort to educate elementary and high school teachers
- ❖ Present effective outreach activities in an effort to stimulate student interest in the sciences
- ❖ Purchase several high quality pieces of chemistry equipment for the Cañada College chemistry laboratory

To that end we completed the following:

- ❖ Ongoing instructor training for high school AP Chemistry teacher with Saturday lab courses presented to students at Cañada College
- ❖ Outreach activities for GATE (Gifted And Talented Education) students in the Redwood City Elementary School District. Five groups totally over 100 4<sup>th</sup> – 6<sup>th</sup> grade students came to our campus for hands-on lab activities at Cañada.
- ❖ Bids are being collected for the following equipment that could be purchased in late January 2011:

**FT-IR Spectrometer – Atomic Absorption Spectrometer  
Digital Polarimeter – HPLC system**

## Events This Quarter

### October 19, 2010 – San Mateo Dept of Health

**Waymond Wong**, Hazardous Materials/Pollution Prevention Program Supervisor brought his Mobil Unit Laboratory to the Cañada College campus. As program supervisor he was heavily involved with the San Bruno gas explosion cleanup. Over 50 students attended the event. In addition, Mr. Wong brought the county Fire Department Response Unit with two representatives from the emergency response team. The presenters demonstrated various chemical experiments that they perform in the field to identify and clean up hazardous materials when they respond to emergency calls.



### October 28, 2010 – Student Panel

Three former and current Cañada students participated in a small panel discussion during National Chemistry Week (October 17-23) here at Cañada College. Over 30 current chemistry students were very interested in hearing about the panel member's successes, what brought them to the Cañada campus, their experiences here, and their plans for the future. Also, the students got tips on how to find and secure internships and network.



For additional details about our grant go to the National Science Foundation Website at:

<http://www.nsf.gov/awardsearch/showAward.do?AwardNumber=0703188>



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## Chemistry: A Pipeline to 21st Century Careers

National Science Foundation ATE Grant  
#0703188

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### Email:

[Canada.NSFGrant@smccd.edu](mailto:Canada.NSFGrant@smccd.edu)

### We're on the Web!

[www.canadacollege.edu/nsfgrant](http://www.canadacollege.edu/nsfgrant)

Newsletter archives can be found on the Photo Gallery page of the our site

## More Events This Quarter

### October 17-23, 2010 – National Chemistry Week

#### "Behind the Scenes with Chemistry!"

The goal for chemistry week is to diminish the term "magic" associated with the "unexplainable" and direct attention to the chemistry which makes things work. During the week Dr. Medina and chemistry students set up and manned an information booth located on the landing of our new student center to talk with students about our chemistry program. There were chemistry experiments and demonstration in addition to brochures with information about our programs. Bagels and juice were provided to over 100 students.



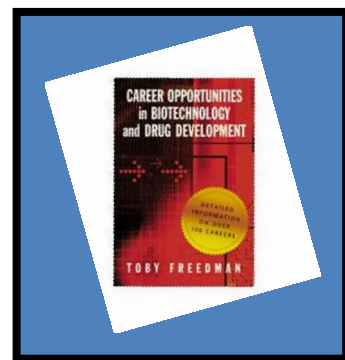
### September 18, 2010 – GEMS (Girls Engaged in Math and Science) Workshop

There were over 50 people involved in our GEMS activity this year including students, chaperones, observers, staff, and invited guests. Two hands-on activities were planned, a robotics engineering activity presented in the morning session and a green chemistry activity presented in the afternoon session. In addition, a student panel of college students majoring in math and science told their stories and answered questions about college and majoring in science. Lunch was hosted by our grant for all who attended.



### October 14, 2010 – Hosted American Chemical Society, Santa Clara Section - Monthly Meeting

The American Chemical Society – Santa Clara Valley Section held its monthly dinner meeting at Cañada College. In addition to the monthly business, the meeting featured guest speaker, Dr. Toby Freedman. Dr. Freedman is an author and the Founder and President of Synapsis Search. A scientist by training, she transitioned into business as a recruiter, writer, and entrepreneur. Her book "Career Opportunities in Biotechnology and Drug Development", provides a comprehensive overview of the many careers in the life sciences industry. It covers over twenty vocational areas ranging from venture capital to marketing to discovery research.



### October 12 – December 7, 2010 – Redwood City GATE Student Campus Tour and Chemistry Lab Activity

Over a period of two months, our grant hosted five classes of GATE (Gifted And Talented Education) students from every school in the Redwood City Elementary School District. Over 100 students in grades four through eight participated in hands on chemistry experiments in our new chemistry laboratories at Cañada College. In addition to the lab activities the students were given a tour of the campus including the new student center and library.

