



THE VOYAGER

YOUR VEHICLE TO STELLAR OPPORTUNITIES

The New sletter for COSMOS Alumni - January/February 2005 - Volume I, Issue 3

COSMOS Alum Wins Grand Prize in Essay Contest

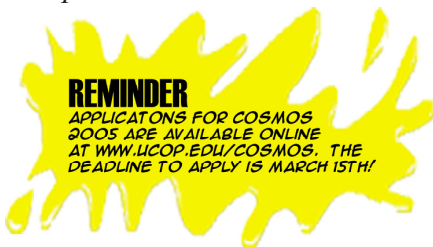
COSMOS is pleased to announce that Samantha Tran, a UC Davis COSMOS '03 alum, has won the Grand Prize in the 2004 Association for Women in Mathematics (AWM) essay contest seeking biographies of contemporary women mathematicians. COSMOS congratulates Samantha on this tremendous achievement!

Samantha's essay "*I Apply Computational Mathematics to*

Understand the Natural World – Dr. Margot Gerritsen" was chosen as the First Place submission in the 9-12th Grade Division and went on to be selected Grand Prize from works that included submissions from 6-12th and university students! With the assistance from her mentor, Dr. Helen Moore, Associate Director of the American Institute of Mathematics (AIM), Samantha (see *Tran on page 2*)



Samantha Tran has been awarded the Grand Prize in an essay contest sponsored by the Association for Women in Mathematics.



Alumni Social at UC Berkeley

The COSMOS Alumni Network is sponsoring its first ever Alumni Social at UC Berkeley! The program will be very relaxed and aims to bring together COSMOS Alumni who now attend UC Berkeley .

Many COSMOS alumni are on the Berkeley campus and the social will provide a space to connect or re-connect with other former COSMOS participants.

Pizza and refreshments will be provided. Your RSVP is requested by Thursday, February 3rd.

Please email Manuel Carmona at mcarmona@ucdavis.edu or call (530) 754-7325 if you plan on attending. See blue box to the right for more information.

Financing Your Higher Education

Trying to comprehend the resources available to help pay for a university education can be very confusing. Every year, the federal government and private sector provide over \$40 billion in financial aid. Investing a bit of time and energy learning about the various money sources is the best way to ensure your college financial needs are met. To be successful, you should be aware of the four types of financial aid: (1) scholarships, (2) government grants, (3) loans, and (4) work-study.

Scholarships are the most recognized type of financial aid and are offered by individuals, organizations, and colleges/universities. Scholarships offer funds that do not have to be repaid and are awarded based on a variety of factors, including (but not limited to) academic achievement, career interest, ethnicity, or

membership in an organization. Be weary of companies that charge for scholarship lists or search engines because scholarship information is free and can be found at your local library or on the internet.

Like scholarships, government grants offer money that does not have to be repaid. Grants, however, are awarded based on financial need. The federal and state governments award grants through the Free Application for Financial Student Aid (FAFSA), which can be found at www.fafsa.ed.gov. Each university sets different deadlines for receiving your FAFSA profile. As such, consult with the financial aid office at all of your prospective schools for deadline information.

Although many students (and parents) may look unfavorably on debt in (see *Financing on page 4*)

COSMOS ALUMNI SOCIAL @ UCB

WHAT: COSMOS Alumni Social
WHEN: Saturday, February 5th from 3 - 6pm
WHY: Why Not!

WHERE: UCB Center for Latin American Studies
2334 Bowditch Street
Berkeley, CA

COSMOS Faculty Spotlight

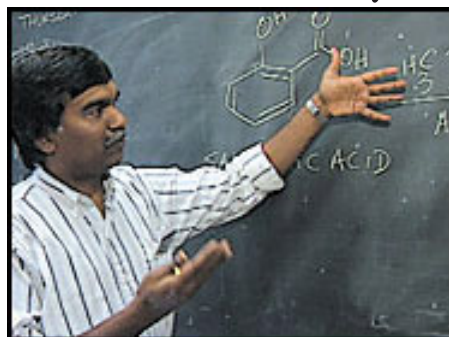
Professors Bakthan Singaram and Stanley Williamson, organic and inorganic chemists respectively, have been involved in science education outreach at UC Santa Cruz for some years. Usually in this work, it is very difficult to incorporate genuine hands-on lab work, since it is usually done outside of our working lab environments. When COSMOS was initiated providing an opportunity for students to work in our real campus lab environment, it seemed natural for us to become involved in this new style of science education.

Finding time to participate in new activities for faculty is always

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entered the international writing contest. Her essay focused on the work of Dr. Gerritsen, an Assistant Professor in the Petroleum Engineering Department at Stanford University. Gerritsen is one of the world's leading computational mathematicians and is a consistent supporter of the development of young women interested in mathematics and applied science.

Samantha developed her Grand Prize winning essay over the course of several months. Dr. John Howe, a mathematics teacher at Presentation High School, remembers "the overall effort was



A major objective of Bakthan Singaram's research program is the development of asymmetric and/or enantioselective methods.

hard, but the end reward is what ultimately causes us to devote the time and energy to teaching in the COSMOS program. Staying with the program since its inception at UCSC is the result of each year's success. When we see the

about four to five months long – the same length of time that it takes to develop a top science fair project!" The process began in the middle of summer at a small tea shop where Samantha and other prospective contestants utilized the Oral History Handbook and methodology that Dr. Howe had developed the year before. The girls listened to oral history from mathematicians willing to participate in the contest and conducted interviews with help from Dr. Moore and Dr. Charles Barker, Vice President for Aurora Networks. The group of young

many able youngsters participate and flourish, it is difficult to allow other activities to get in the way of helping these students attain their goals.

To design such a program that would meet the many needs of this young group, a theme was necessary for us to tie the ideas together in a real world context. We chose a plan, a story that would start at the beginning of how simple elements and a few compounds behave when interacting with light. From this, the concept of "color" emerged. Chemists cannot see the tiny atoms or molecules interact, we can only see the result when there (see Faculty on page 4)

women who participated in the process submitted three essays for the contest.

Samantha Tran has proven to be a stellar contestant over the past years. Samantha won the Grand Prize in the Physical Sciences Division in the Synopsys Science & Technology Championship last year and also competed in the Intel International Science and Engineering Fair with Kristina Tubera (UCD COSMOS '03 alum).

For more information on the Association for Women in Mathematics (AWM), visit <http://www.awm-math.org/>.

COSMOS ALUMNI NETWORK - STATEMENT OF PURPOSE

The COSMOS Alumni Network is dedicated to supporting the educational and career aspirations of COSMOS program alumni. To achieve this goal, the network promotes activities that will help prepare students for college and future careers, highlights opportunities for students to engage in educational or work-related experiences, and fosters ties to other participants and the COSMOS program. The COSMOS Alumni Network is committed to spotlighting programs that will enhance COSMOS participant college preparedness and interest in pursuing courses of study and careers in math, engineering, or science related fields.

The THINK Program

The Davidson Institute for Talent Development and the University of Nevada, Reno are pleased to offer the 2005 THINK Summer Institute, July 9 - July 30, 2005. This three-

experience and earn up to seven transferable college credits.

THINK students can choose to enroll in either a Chemistry or a Logic/Philosophy course and a



Davidson Institute
for Talent Development

week residential summer program offers bright students the opportunity to participate in an extremely rigorous educational

Speech Communications or a Foreign Language course. All courses are taught by university professors on the Univer-

sity of Nevada, Reno campus. Students will stay in the university's newest residence hall, staffed by THINK program employees 24 hours a day.

"The THINK Summer Institute offers twice as many college credits as similar programs in other states," said Marie Capurro, Executive Director of the Davidson Institute. "It's a one-of-a-kind opportunity for students who want to get a leg up (see THINK on page 4)

Lucent Global Science Scholars Competition

The Lucent Global Science Scholars Program, in existence since 1999, is an annual academic competition sponsored by the Lucent Technologies Foundation for students who demonstrate excellence in the sciences and plan to pursue a career in information and communications technologies. Recipients spend a week in Murray Hill, New Jersey, with researchers and scientists and fellow Global Science Scholars at the headquarters of Lucent Technologies and its world-renowned research and development arm, Bell Labs. In addi-

tion to attending the Summit, the winning Scholars receive a \$5,000 award. When an appropriate placement can be found,

ence and technology. To be eligible to apply, students must be a graduating high school senior and exhibit outstanding aca-



Global Science Scholars are offered internships at a Bell Labs or Lucent Technologies facility in their home country.

The Lucent Technologies Foundation is sponsoring this annual international competition to identify and reward students for academic excellence and achievements in math, sci-

demical achievement in math and science. Visit the Lucent Global Science Scholars web site at <http://www.iie.org/programs/lucent> to get more program details, including specific eligibility and application requirements, a downloadable application form, and contact information for the Competition Manager.

Summer Internships for Central Coast Alumni

Do you want to stay involved with COSMOS? Have you always wanted to get some "real world experience in science, technology, engineering or mathematics (STEM) fields?"

[//www2.ucsc.edu/careers/ptp/cosmos/](http://www2.ucsc.edu/careers/ptp/cosmos/)).

Not only will you find the Internship Application (<http://www2.ucsc.edu/careers/ptp/cosmos/application.pdf>), but also you can see all the cool

things past interns experienced.

This internship is open to all COSMOS Alums from Santa Cruz, Santa Clara, and Monterey counties. Deadline to apply is Wednesday, February 2, 2005.

Are you interested in an internship for Summer 2005? Then check out the UCSC Career Center's COSMOS PTP Internship page (<http://www2.ucsc.edu/careers/ptp/cosmos>)

For information on the UCSC Career Center COSMOS PTP Internship, visit:

www2.ucsc.edu/careers/ptp/cosmos

SCHOLARSHIP OPPORTUNITIES

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on their academic career.”

To be eligible for the 2005 THINK Summer Institute, applicants must be currently enrolled in 7th, 8th or 9th grade, or if grade accelerated, be between the ages 12 through 15, and be a United States citizen or permanent U.S. resident. Applicants must also submit a qual-

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is a change in their condition, and color is the most obvious change that we know about and can understand. Therefore our lab work is “colorful.” Change in odor is another obvious detector of change. Chemicals of taste and fragrance are also avenues into this realm of chemistry. Polymers and dyes come together, and so on.

In our course cluster, “Everyday Chemistry: From Perfumes to Pollution” we devote a month of this exploration in lectures

Financing from page 1

general, student loans are an excellent choice for financing your education. Student loans are offered by the federal government, private lenders, and universities. There are two types of loans, subsidized and unsubsidized. Lenders make profit on loans by charging interest that accrues on the amount borrowed, also known as the principal. With a subsidized loan, the federal government pays for the interest accrued while you are in school – this is the preferred type of student loan. With an unsubsidized loan, you are responsible for paying any accrued interest. Eligibility for subsidized loans is determined by the FAFSA. Payments on a student loan are deferred while a student is enrolled

ifying score on the ACT or SAT-I. Students who have not taken the ACT or SAT-I must register immediately to take one of these tests on one of the few remaining test dates by the application deadline of March 1, 2005. Tuition is \$1,850 and financial assistance is available. Applications can be downloaded at

and lab. The positive testimony of former COSMOS students is our reward, and this success excites us to continue. Students’ intellectual capacity is further stretched with instruction in writing about and researching their chemical ideas and projects. Communication is so important in science that it cannot be ignored in favor of only having “fun” in the lab.

Shape, that is geometry, is fundamental in chemistry and the tie-in with mathematical principles is so important that it is natural to bring

in school and the first payment is usually due six months after graduation.

Work-study is another alternative for students looking to finance their education. Work-study is a federal program that subsidizes a student employee’s wage. A work-study position must provide valuable work experience to qualify for the program. As such, work-study positions are limited and are usually filled within the first two to four weeks of the school term. If work-study is offered as part of your federal and state financial aid package, you should accept it and seek work-study positions on your campus immediately when you arrive in the fall. Student eligibility

www.thinksummerinstitute.org.

If you would like to learn more about this program, need information on how to take the ACT or SAT-I exam or would like to request an application, please contact Marie Capurro at the Davidson Institute at think@ditd.org, or call (775) 852-3483 ext. 405.

the clusters of math and chemistry together. Likewise the same chemistry cluster is repeated with a different set of students who are concurrently studying Environmental Toxicology. The role of chemical understanding in environmental issues is beginning to be respected. It will be this young generation who bring new insights into maintaining our environment as a pleasant, sustainable place for us to live. We wish them good fortune as they take the first steps on this most important journey.

for the work-study program is also determined by the FAFSA.

As you can see, the FAFSA application is your key to many of the resources available for students. You can complete your FAFSA beginning January 1st and *most* universities, such as the University of California, have a March 2nd deadline. The scholarship process is independent of the FAFSA, so you should begin looking for opportunities immediately. Understanding the various types of financial assistance is the first step to deciding which option is best for you. For more help, visit Chela Education Financing at www.chelastudentloans.org and download a *Free Guide to Paying for College*.