



COSMOS UC San Diego

California State Summer School for Mathematics and Science

Alumni Newsletter Winter 2011

COSMOS Alumni:

This is your newsletter, so let us know what you want to see! Send us your updates, your accomplishments, your photos, anything you'd like to share with your fellow alumni!

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Message from Director Charles Tu

Dear COSMOS-UCSD Alumni,

Welcome to the inaugural issue of COSMOS-UC San Diego Alumni Newsletter. COSMOS (California State Summer School for Mathematics and Science) at UC San Diego was launched in 2004. You were challenged intellectually and experienced residential life. With about 160 students each year, there are more than 1,000 COSMOS-UCSD alumni. Many of you have written us that COSMOS was a life-changing event for you; you have bonded very quickly through working and playing and living together; and you formed alumni groups right after your COSMOS experience ended. We would love to hear from you.

The mission of COSMOS is to provide outstanding high school students in, science, technology, engineering, and mathematics (STEM) disciplines with opportunities to delve deeply into

their subjects and to prepare for university careers in the STEM fields. With the difficult economic climate in the State of California, outreach programs like COSMOS are always on the chopping block, so it is all the more important that we need to know how effective COSMOS is. Some of you are still in high school, some of you are in college, some of you are in graduate schools, and some of you are working now. We would like to know what you are doing, how your COSMOS experience has influenced you, and how you think COSMOS can be improved.

This newsletter is also for you to stay connected with each other and with us. We are profiling our alumni and our dedicated COSMOS instructors in this newsletter. Look to learn more about your friends and your favorite instructors. Contact them, and they will be



thrilled to hear from you.

Enjoy and give us feedback. Thank you.

Charles W. Tu
 Director, COSMOS at UCSD
 Associate Dean, Jacobs School
 of Engineering

Alumni Profile: Philip "PJ" Loury

In each issue of the Alumni Newsletter, we'll take the opportunity to catch up with one of you, to see what you've accomplished since your time at COSMOS. This issue, we profile PJ Loury, 2008 COSMOS alum and current UCSD Bioengineering student. PJ is one of the Jacobs School Scholars, a group of undergraduate student lead-

ers here at UCSD that came in at the very top of their respective classes.

On why he chose UCSD: "Building off of a fantastic experience at UCSD COSMOS going into my senior year of high school, I was offered the Jacobs School of Engineering Scholarship to come

to UCSD. Our highly renowned Bioengineering Department also made UCSD a natural choice. Since choosing to come to this school, I've worked hard to continue to grow as an engineer and as a leader."

Why he chose Bioengineering: "Bioengineering lies at the inter-

Alumni Profile continued



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section of science and engineering, medicine and technology. Exciting breakthroughs are announced in these areas almost every day, and I wanted to participate in developing technology to change the face of personal health.”

On his favorite classes: “Two of my favorite courses have been MAE 3 and BENG 140A, a Robot Design course and Bioengineering Physiology. I really enjoyed going through the hands-on experience of designing and building a competitive robot in MAE 3, and it was really interesting to learn how the human body works as a system in BENG 140A at both a macroscopic and microscopic level.”

What he’s up to outside of class: “The past two years I worked under Dr. Shu Chien and Dr. Jason Haga studying the effects of mechanical strain on vascular endothelial cells. This project aims to better understand how forces from pulstale bloodflow regulate cell behavior. This

year, I have begun a project under Dr. Loren Mell in Radiation Oncology at Moores Cancer Center on improving radiation treatment planning for cervical cancer patients. The project goal is to validate a new medical imaging technique used to identify pelvic bone marrow sub regions associated with hematological toxicities that setback cancer treatment. I am also currently serving as Co-President of Engineering World Health at UCSD and running a medical technology project team working with Dr. Davey Smith in the UCSD School of Medicine to prototype an inexpensive PCR device to test for HIV treatment efficacy.”

On how COSMOS helped prepare him: “COSMOS made the transition from high school to attending UCSD a lot easier. Having a jump start on knowing the ins and outs of campus life allowed me to get involved and meet people right away. COSMOS was also a determining factor in my decision to pursue a career in engineering by showing me the impact that

technology has on the world.”

On his future plans: “I am interested in applying my bioengineering education to both product design and entrepreneurship. My dream is to develop new products using mobile technology to monitor health that will help people take better care of themselves.”

His advice for fellow alumni: “The first and most important step is to find your passion. There is a lot of room for exploration within both science and engineering, so stay curious and get involved in opportunities to exposure yourself to new and exciting fields of technology!”

If you would like to be the next alumni profiled, just let us know!



Photos from 2011 alumni Emily Chen and Namrata Das

Send us your photos for the next issue!

Faculty Update: Lelli Van Den Einde

We'd also like to use the newsletter to let you know what's been going on with our wonderful faculty members. First up is Dr. Lelli Van Den Einde, who heads Cluster 4 - Earthquakes In Action. In addition to being one of our most dedicated faculty, Lelli teaches seven undergraduate courses in the Jacobs School's Structural Engineering department and advises the Society of Civil and Structural Engineers (SCSE), a student group that competes in national and regional competitions, building bridges and concrete canoes.

On her current research: "My prior research was in the area of seismic design of bridges, performance based earthquake engineering, and design of composite civil structures. In my current position, I have transitioned into research related to methods to improve engineering education. I am very interested in incorporating technology into the classroom such as Clickers or hand held smart phones to engage students during lectures. I am also interested in methods to education our students in engineering ethics and academic integrity. I

care deeply about student learning and am willing to try lots of different strategies in the classroom."

Why she got involved with COSMOS: "I have always loved outreach to K-12 students to introduce them to the possibility of an engineering career. I must say that my two years with COSMOS has been amazing. The students that come through the program are so amazing. Not only do they have strong academic ambition, but they really grow a lot by living away from their parents and meeting other students who have similar interests and goals as they do. And although I am always excited to hear that one of my COSMOS alumni goes into Civil Engineering or any engineering field, I always tell my students that even if their participation in COSMOS tells them 'engineering is not for me' then it was worth it because they learned something about themselves."

On the benefits of COSMOS: "Students learn not only how rigorous college can be, but the experience living on their own

for the first time and the challenges of balancing academics with the social aspects of college. Students specifically learn about UCSD's campus, the resources available such as the library, and feel comfortable for college in general because they were able to experience it on a smaller scale."

Her advice for alumni still in high school: "Keep focused and don't lose sight of your goals. It is ok to be undecided about what you want to do with the rest of your life. People change their career paths multiple times during their lives as new opportunities present themselves. Just try to figure out what it is that you are passionate about and continue to pursue it."

Keeping in contact: "I have written letters of recommendations for several of my cluster alumni but once they go to college, a lot of them get busy. Cluster 4, please let me know how you guys are doing and where you end up! I am very interested in keeping in touch."

**"Cluster 4,
please let me
know how you
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Recruitment Season Is Here!

We're gearing up for next summer and we need your help! Our alumni are by far our best ambassadors and recruiters, so we're counting on you to send us your friends, relatives, classmates... and your teachers, too!

This year we're going to hold a recruitment contest: just give a COSMOS presentation in class or at a club meeting and we'll

put your name in a drawing for a \$75 Visa gift card! To enter, give your presentation and then have a teacher or advisor send an email (from a school email account) to cosmos@ucsd.edu by January 31, 2012 to let us know you did it.

For recruitment materials, go to: <http://cosmos.ucsd.edu> Click on the "Prospective Students" link at the top of the

homepage to find our Resources for Recruitment, including links to our videos, our flyers, and a Talking Points document that can help with your presentation.

If you're in or around San Diego County and you'd like to have one of us come to your school, go ahead and send us an email at cosmos@ucsd.edu or call us at 858-822-4361.

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on Facebook! Link up
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