



COSMOS UC San Diego

California State Summer School for Mathematics and Science

Alumni Newsletter Spring 2013

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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Send us your photos or story for the next issue!



Contact us:
cosmos@ucsd.edu

Visit our website:
cosmos.ucsd.edu

COSMOS 2013

Interest in attending the COSMOS program continues to grow every year, and this year was no exception. 545 applications were completed for 164 student openings. Faculty have difficulty choosing between all the highly qualified applicants-what an amazing group of students! The accepted students tend to be older (more 11th graders), mostly from California (two out of state attending), equal in gender (M/F) and 43% are receiving financial assistance. The most requested first choice clusters were C8 (Tissue Engineering)-171; C1-Computer Programming-96; C2-Robotics-81; and C7-Tensegrity Structures/Red Blood Cells-80. Six of our RA's are returning, including our SRA, Omead Arami. COSMOS alum Anusha Pasumarthi (C7 '10) and Sachi Pitkin (C1 '10) joins us as COSMOS Cluster Assistants.

Important Upcoming Dates

COSMOS UCSD 2013 program

Sunday, July 7 - Saturday, August 3

COSMOlympics –Friday, July 12. COSMOS Alumni judges needed! Email us if you are interested at cosmos@ucsd.edu.

COSMOS Alumni In The News!

Congratulations to you all! Send us your news and updates at cosmos@ucsd.edu

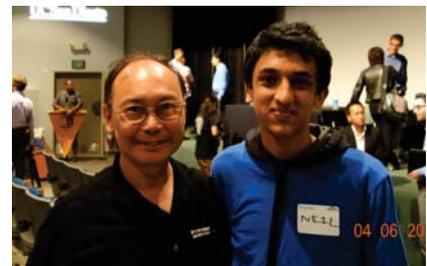
PJ LOURY, COSMOS '08 has just received the Jacobs School 2013 Undergraduate Student Leadership Award! Congratulations!

JACK TAKAHASHI—Intel Talent Search Finalist 2013, COSMOS '11

Jack Takahashi identified a previously unknown signaling relationship that may be the cause of pulmonary hypertension for his medicine and health Intel Science Talent Search submission. Jack is a skilled musician (he plays the alto sax, flute and piano) and a composer, who has written a flute concerto for a full symphony orchestra. He is also an award-winning photographer and president of the photography club at Lynbrook High School in San Jose.



CORINA STICKEL—COSMOS '12, C2 at UCSD Triton Day 2013



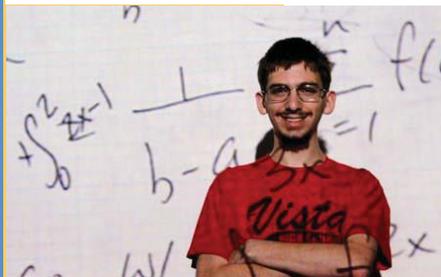
NEIL GANDHI—COSMOS '11, C2 at UCSD Triton Day 2013 (with UCSD COSMOS Director Charles Tu

EVAN BODELL—Eagle Scout, COSMOS '11

Evan Bodell (C2 '11) became an Eagle Scout in August 2012. His Eagle Project restored the Chickadee Trail at Huddart Park. His crew cleared about 1.5 miles of trail and restored it to an ADA compliant trail. Evan has attended 5 years of summer camp and completed a Fifty Mile backpack trip through Yosemite's Grand Canyon of the Tuolumne in the summer of 2008. He plays ultimate Frisbee and badminton, and competes in flyball racing with his dog Snickers. He is a lifetime member of TechShop and participant at the annual Maker Faire. He enjoys travel and has journeyed to 22 countries and looks forward to pursuing his studies next year in computer science or engineering.



Alumni In The News continued:

**ALLAN GARRY—Math Whiz—
COSMOS '12, C2**

Although Allan didn't win the contest, he held his own. He was one of two contestants that had not competed at the national level before this. He was on the front page of the San Diego Union-Tribune, local Channel 8 5pm news and the competition's website.

As a toddler in the bathtub, Allan taught himself to add and subtract using a collection of toy boats. As a child he would add up random numbers - in books and on clocks and signs. Allan's mother stopped asking him for the time because his replies required math: Instead of "four o'clock," it would be "two squared." He is a math whiz! In January, San Diego hosted the world's largest math conference. About 7,000 gathered at the San Diego Convention Center for the 2013 Joint Mathematics Meetings. Allan was one of 10 students from across the country who earned a chance to compete for \$10,000 in "Who Wants to be a Mathematician?", a game show-like contest that was held at the convention. Allan was the only individual from San Diego County who qualified for the competition. "I've always been good at math, but the test was hard. I was surprised I made it in," Allan said. Wondering if you're good enough for the contest? A 10-question test given to applicants included these math problems:

- What is the area of an n-sided regular polygon with perimeter p that is circumscribed about a circle of radius r? (Answer: $pr/2$.)
- Two fair, six-sided dice are tossed. What is the probability that the sum (of the spots showing on top) is a prime number? (Answer: $5/12$.)
- How many times from noon until midnight are the continuously moving hour and minute hands of an analog clock at an angle of 180 degrees? (Answer: 11.)

Allan hasn't finalized his career choice, but he's pretty sure his college major will be math, physics or engineering. "I've pretty much liked math since I was a little kid. I don't know why, but it's fun," he said.

**GSDSEF (Greater San Diego
Science and Engineering Fair
NEWS
San Diego, March 2013****WESTON BRAUN—
COSMOS '11, C5**

Won several awards at the GSDSEF. He also qualified for the International Science and Engineering Fair which was held in Phoenix in May. Here are the awards he won:

- Sweepstakes Award
- Fred H. Rohr Science Award
- Senior INTEL ISEF Trip Sweepstakes
- American Society of Heating, Refriger, A/C
- American Society of Materials International
- Armed Forces Commun. and Electronics ---
- Assoc. General Atomics Fusion Education Outreach Award
- IEEE
- Marine Technology Society
- Regional U. S. Air Force
- USAF 362nd Recruiting Squadron

NOA GLASER—COSMOS '11, C1

Won several awards at the GSDSEF. Here are the awards that she won:

- Senior AFCEA Sweepstakes
- Regional USAF
- SDSC Computational Science Award
- Biophysical Society
- AFCEA (Armed Forces Communication and Electronics Association) Sweepstakes award

**KAVYA RAMIKRISHNAN and
JAMES NAJERA—COSMOS '12, C6**

Presented at the GSDSEF and represented UCSD COSMOS. Both students received First Place Awards and have been invited to the California State Science and Engineering Fair. Since they both were from out of the San Diego area, they were able to qualify for the San Diego fair by having COSMOS as their school and our UCSD COSMOS Teacher Fellow, Shirley Miranda, as their adviser.

**Intel ISEF (International
Science and Engineering
Fair) NEWS—
Phoenix, May 2013****WESTON BRAUN—
COSMOS '11, C5**

Intel Engineering: Electrical and Mechanical; 2nd Award, "FPGA-Based Controller for High Frequency Induction Heating".

**CHRISTINE TALENS—Student,
COSMOS '10, C8**

Three summers ago, at the UCSD campus, my RA, Robyn, and my Cluster surprised me with a Tiramisu birthday cake and a neuroscience book entitled *Musophilosophia*. With this book and Robyn's enthusiasm about Cognitive Science,



I was inspired to explore the field of Neuroscience. So much that I chose it as my major! Today, I am in my 2nd year of a 3 year B.S. program in Cognitive Psychology and Neuroscience in Jacobs University Bremen, Germany. Moving to Germany, by myself, was altogether amazing. Being thousands of miles away from parents, I was overwhelmed by the exciting feeling of freedom (e.g. partying, German beer). Along with this freedom, however is the duty of taking care of yourself. My German bank account, health insurance, and Residence Permit, were all arranged by myself and these official documents were mostly written in formal German, not English. Nonetheless, I learned to deal with these challenges. In COSMOS I learned the skills to live independently and that they applied to larger responsibilities in college. It's been 2 years since I have been to the U.S., but I still keep in touch with my COSMOS friends and they are still as close to me as family. I do miss my home and California, but I am enjoying my time abroad. Traveling opportunities here are unending. I have been to the Netherlands and will be going to Italy this winter for a Neuroscience internship. If anyone will be around Europe, please stop by and say hi! And again, thank you to COSMOS for the inspiration and the skills you have given to me to be where I am today.

**CONNOR TOM—
COSMOS '13, C5**

American Association of Physics Teachers and the American Physical Society, "Time Resolved Optical Study of the Surface States of Topological Insulator Bi₂Se₃".

LIANG ZHOU—COSMOS '10, C6
ASU New American University Provost Award, "Determining Combinatorial Sums Using Roots of Unity".

Alumni in the News continued:

NOA GLASER-Computer Awards, COSMOS '11, CI

It has been almost two years now and I still miss COSMOS. I am very excited to share with you some awesome news: Recently, I received my first national award in Computing and attended my first Hollywood red carpet event.

1. National Winner of the 2013 NCWIT Award for Aspirations in Computing.

Recognized for computing-related aspirations and for demonstrated, outstanding aptitude and interest in information technology/ computing, solid leadership ability, academic history, and plans for post-secondary education. The winners were honored in the Bank of America Technology Stars of the Future Showcase and Awards Ceremony at Bank of America's headquarters in Charlotte, North Carolina, on March 9, 2013. Bank of America sponsors the national award for aspirations in Computing; local affiliate awards are sponsored by Microsoft, the Motorola Solutions Foundation, Google, and more than 300 local organizations.

2. S.E.T. (Science, Engineering and Technology) Awards.

I showcased my team robot (I am the founder and captain of a FIRST robotics team) in the Entertainment Industries Council S.E.T. Awards which honors depictions of Science, Engineering, and Technology in television shows, movies, and multimedia. The S.E.T. Awards are sponsored by Boeing, Lockheed Martin, Northrop Grumman and aircraft engine maker Rolls-Royce. The Nov. 15 ceremony, held at the Beverly Hills Hotel, recognized films and TV series for bringing attention to the S.E.T. fields. Among the presenters were Bill Nye the Science Guy; Shia LaBeouf (Transformers); Dolph Lundgren (The Expendables); Nolan Bushnell (Atari Founder); Jim Kelly (Astronaut); Rick Stephens (Boeing Senior VP). As part of the student innovation exhibitions, I presented a robot, videos and research poster to science experts, consultants, industry executives and famous Hollywood actors and directors. Attached are my pictures with Richard Stephens, the Senior Vice President of Boeing, and Bill Nye the Science Guy.



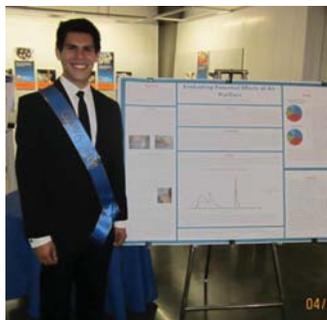
GORDON LEADERSHIP CENTER AWARD DINNER - Great Hall UCSD

The UCSD Jacobs School Gordon Engineering Leadership Center Award Dinner was attended by the Center's Co-Directors, Frieder Seible and Ingolf Krueger, Executive Director, Ebonee Williams, invited students and guests in March, 2013. The keynote speech was given by Irwin Zahn, successful business entrepreneur and founder of the Moxie Center at UCSD. Graduating UCSD student and Gordon Fellow P.J. Loury, COSMOS '08, received a Gordon Leadership award. Other attending COSMOS students who are Gordon Fellows were Riley Yeakle, COSMOS '08, Anusha Pasumarthi, COSMOS '10, and Julia Yang, COSMOS '12. The Gordon Center recognizes the top project team from each COSMOS cluster every summer, providing certificates and cash awards to these students, as well as naming them High School Gordon Fellows.



11th ANNUAL COSMOS NOBEL LAUREATE DINNER - California Science Center, Los Angeles-April 2013

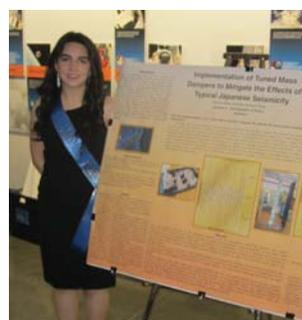
The COSMOS UC Office of the President hosted the dinner under the wings of the space shuttle Endeavour, COSMOS 2012 students below were invited to present their project poster to attending Nobel Laureates and distinguished guests. The keynote speaker for this special evening was astronaut Dr. Garrett Reisman, who served aboard Endeavour, Atlantis, Discovery and the International Space Station.



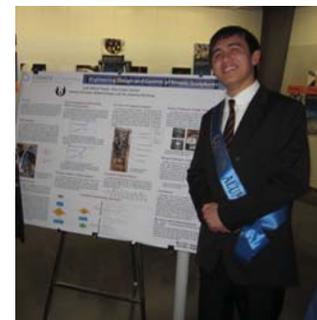
Angel Lara, Cluster 3



Casey Takahashi, Cluster 1



Mariana Valdez, Cluster 4



Matthew O'Hagan, Cluster 2

Faculty Update: Saura Naderi

During COSMOS, Saura serves in a faculty position for Cluster 1: Computers in Everyday Life.

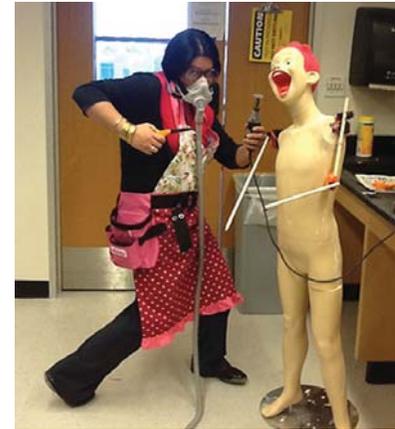
It was shaping up to be just another typical week for Saura: She'd prepped robotics kits for her engineering classes, given advice to an engineering undergraduate about what servos she should buy for her senior design project and met with members of the Junior National Society of Black Engineers chapter for San Diego to review the chapter's bylaws. A message she received was the first hint her week would be something extra special. The message, from Lovella Cacho, Saura's colleague read: "You're one of the top 10 up for UC San Diego Employee of the Year Award." Lovella had nominated Saura for the award, and she'd been selected to be honored at an upcoming ceremony with Chancellor Pradeep Khosla. Naderi and she was floored. Two days later, Naderi found herself onstage at the Manchester Grand Hyatt as she was handed the prestigious Athena Pinnacle Award for Education, beating out eight other high-caliber nominees from around the county at the 15th annual awards ceremony. Naderi had been nominated



for her work as the founding director of the myLab Program, which combines engineering, art and technology to give hands-on experience to UCSD undergraduates and K-12 students in underserved areas of San Diego. "Saura has infused energy and excitement into my classroom by providing a hands-on real-world project that I would not otherwise be able to do," said Shirley Miranda, a computer science teacher at Morse High School. "Students are able to take what we've learned in the classroom and not only apply it, but experience what engineers do in the lab for both hardware and software development. Students are excited to see her

"...especially my parents have been instrumental to the success of what I most love to do: helping others"

and can't wait to continue work on their Arduino projects. She has made an invaluable impact on their lives and creating future engineers." Since graduating from UCSD with a BS in engineering in 2007, Saura has made a name for herself as an emerging leader in STEAM (Science, Technology, Engineering, Arts, Mathematics) education. Her annual Girls' Hat Day Workshop pairs women engineers from ViaSat with girls ages 7 to 14, and, last year, culminated in a fashion show where the girls modeled the animatronic hats they had created. Saura also helped found the Junior National Society of Black Engineers chapter for San Diego and works closely with the San Diego Science Alliance's BeWISE, Qualcomm's QWise (Women



in Science and Engineering) and ViaSat's VPartners. She's also brought national attention to the university in the form of a television reality show, the SyFy network's Robot Combat League. Saura served as one of a dozen 'robo techs' on the show earlier this year, partnering with mixed martial arts fighter Amanda Lucas (daughter of director George Lucas) to control a super-sized robot and compete for a \$100,000 prize. Saura said she feels fortunate to have the support of so many people within the university and the larger community, and noted, in particular, the influence of her mentor, Anne O'Donnell, director of the Corporate Affiliates Program for the UC San Diego Jacobs School of Engineering. "Anne nurtured and guided me from the beginning of my career," added Saura, "but all of the people who have touched my life, especially my parents have been instrumental to the success of what I most love to do: helping others."

From thisweek@ucsandiego, May 2013

FROM OUR EMAIL BAG.....

"Thank you for keeping in touch! I attended COSMOS at UCSD during the summer of 2007. I have changed my major and interests three times and I am currently a Senior at UCSB graduating with a Bachelor's Degree in Political Science and Spanish and will hopefully be attending San Diego State University in the Fall of 2013 to complete a Masters in Executive Business Administration."

Sandra Cobian



Joseph Chin

JOSEPH CHIN, COSMOS '12, Cluster 2 started a Robotics Club at his downtown LA magnet high school after attending the COSMOS program last summer. After qualifying, he participated in the FIRST Tech Competition as the only member of his school's team due to the lack of robotic equipment and student interest. Other teams loaned him parts during the competition and he won the Judge's Spirit Award for his hard work and efforts. Fourteen students at his school were inspired to join the club after his success. They would like to continue the club and compete, but it is difficult with only two Lego Mindstorm sets and one Tetrix set. Joseph would like for club members to be able to build and program the robots, but the resources at his school are limited. If you would like to help Joseph and his team build their club's robotic resources, email us at cosmos@ucsd.edu.

AVNEESH KOHLI, COSMOS '08, C1, will be graduating from UC Berkeley, May 2013 and will be working for Microsoft in Seattle on Office for Mac.

Keep in touch! Enjoy your summer and look for our next issue in Fall 2013!

UCSD COSMOS is on Facebook! Link up with us at:

www.facebook.com/ucsdcosmos