UC San Diego Jacobs School of Engineering

DEA STUDENT CENTER SUARTERLY NEW SLETTER

VOLUME 2. ISSUE 1. SUMMER 2015

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TRAIN

Photo: Freshman Summer PrEP 2015 Cohort, Photo credit: Renn Darawali



Name: Jennifer Tran

Major: Computer Science

Year: Third

Involvement: IDEA Scholar & SCSE



Name: Rachel Miller Major: NanoEngineering Year: Second Involvement: IDEA Scholar, NETS, SHPE, & SWE

SUMMER PROFILE 001

What have you been up to this summer?

I received a grant from the Center Research Association's Distributed Research Experience for Undergraduates Program and am currently doing research in the Informatics Department at UC Irvine under Gillian Hayes. We are exploring the use of wearable technology to improve the recovery of children with concussions. Our formative work reveals issues of patient adherence to recovery regimens and communication with their healthcare providers. To address these issues, we use sensors in the Microsoft Band to monitor their physical activity and we offer instructive therapy through our mobile ap plication. Future work will include working closely with the local children's hospital and testing our prototype in a clinical setting.

How was the experience?

My experience conducting research has been filled with meeting insightful people and learning a lot from them. Aside from learning technical things like web development, mobile development, data analysis, and machine learning, I have also learned how to balance work, school, and life. I have a deeper understanding of what my personal goals are and how to achieve them.

Any advice for other students who may be interested in doing what you did? Be persistent, be humble, be kind.

SUMMER PROFILE 002

What have you been up to this summer?

I spent my summer at Harvard University as a research intern in Dr. Marko Lončar's lab for NanoOptics. I was given this opportunity via the Research Experience for Undergraduates (REU) and the National Nanoscale Infrastructure Network (NNIN), both funded by the National Science Foundation (NSF). My work was in optimizing a process that will be employed in the creation of advanced scanning probe microscopy and other Nano Electro Mechanical Devices (NEMS) or nano opto-mechanical devices. I was trained in clean room usage, wet bench protocol, sputtering systems, reactive ion etching tools, electron-beam deposition tools, scanning electron microscopy, and metrology tools.

How was the experience?

This was definitely one of, if not the best, summer of my life. I learned a lot about nano fabrication, sample imaging, nano optics, opto-electro-mechanical interactions, and how graduate students live and work. Outside of lab, I lived and worked with people from all over the country and all over the world in various fields. They all taught me little pieces of their culture and who they were, and in turn teaching me a lot about who I was and who I wanted to become. It is exciting to know that once the work I did is employed to create a full device that I will be working on writing and publishing a research paper with my graduate student mentor Young-Ik Sohn, my PI Dr. Marko Loncar and others in the group.

Any advice for other students who may be interested in doing what you did?

It doesn't matter what year you are, always put your name out there and go after what you want in the field. If you are really passionate about a certain area, talk to people who are in the field and communicate your passion.



Name: Nico Montoya Major: Mechanical Enginering Year: Fifth Involvement: IDEA Scholar, Triton Rocket Club



Name: Sara Masjedi

Major: Structural Engineering

Year: Third Involvement: IDEA Scholar, SWE

SUMMER PROFILE 003

What have you been up to this summer?

I completed my 6th engineering internship at Lockheed Martin Space Systems in Sunnyvale, CA (bay area) working on propulsion systems (rocket motors) for the THAAD missile. THAAD is a current operational US Army's ballistic missile defense system. I will not be returning to school this fall quarter as I will be going on to my 7th (and hopefully final) internship at SpaceX in LA working on propulsion, building their liquid rocket engines.

How was the experience?

It was amazing, it was my first production program and first program working for the Army. I got to work on rocket motors, my engineering love, for the entire summer. I was able to learn the process of what it takes to keep a production line of missiles going, how to solve problems on the fly so as to not stop production, and researching future efforts to constantly evolved our product baseline.

Any advice for other students who may be interested in doing what you did?

Ask me if you have questions! Besides that be passionate about something and go after it. Don't be afraid because you think you may be under-qualified, just do what excites and you will learn as you go.

SUMMER PROFILE 004

What have you been up to this summer?

I have been interning with NAVAIR North Island to identify candidates for additive manufacturing based on a list of over 200 in-house parts that are used in a machine that tests avionics for F-18 jets. My team and I have identified over 60 parts that can use 3-D printing technologies as opposed to traditional manufacturing processes. We have used CAD software to model and redesign parts, and then print and test them. Our goal was to create a candidate guide that outlines what parts and sub-assemblies can be 3-D printed, what redesigns are necessary, and what materials would be compatible with the part, among other things. At the end of the internship, we will present our work to several engineers, employees, and the Executive Officer of the US Navy.

How was the experience?

Working on this project was a great experience because I was able to work in a team and contribute to a real world engineering problem. I learned a lot about 3-D printing, materials, and overall engineering work during this internship.

Any advice for other students who may be interested in doing what you did?

I would advise other students to be prepared to apply to internships early. The application for this particular internship closed before Fall Quarter even ended last year, so be prepared to fill out the application during the quarter.



Name: Elsie Valera Major: Environmental Enginering Year: Third Involvement: IDEA Scholar, Global Engineering Brigades



Name: Ivan Torres

Major: Mechanical Engineering

Year: Fourth

Involvement: IDEA Scholar, SHPE

SUMMER PROFILE 005

What have you been up to this summer?

As a part of Global Engineering Brigades, I went to Honduras for a week and worked with local engineers, community members and other engineering students to help design a portable water system for the community of Las Cañas in Choluteca. I also worked as a Summer PrEP Leader helping 50 incoming Engineering freshmen to the resources and opportunities UCSD has. I worked with current UCSD students and staff to create a sense of community within these students in order to ease their transition into UCSD and more specifically the Jacobs School of Engineering. Lastly, I was a mentor for the Triton Summer STEM Academy. The program is meant for LA and San Diego high school students. It brings them to UCSD in order to get them interested in applying and attending the university as well as interested in studying a STEM field.

How was the experience?

All three experiences were very rewarding and therefore reaffirmed my goals of becoming a mentor and connecting my major to public health and social justice. From going to Honduras, I learned about a perfect way to use engineering knowledge to help developing communities. At the same time I learned how passionate I am about this kind of engineering and how certain I am it is this kind of engineering I want to pursue.

Any advice for other students who may be interested in doing what you did?

[On projects abroad] Do it! The fact that you get to travel, learn with friends, and help a community while simultaneously building up your academic career is really a unique experience. It is a lot of money so fundraising should be a priority.

SUMMER PROFILE 006

What have you been up to this summer?

I conducted undergraduate research under Professor Joanna McKittrick with mentoring from Ph.D Grad Research Assistants Steven E. Naleway and Michael B. Frank. I was a member of the CAMP 2015 Summer Research Program and presented at the Summer Research Conference at UCSD. Research was in regards to the observation of ice crystal growth during freeze casting with clathrate hydrates in order to determine the physical mechanism responsible for creating enlarged porous structures in final freeze casted scaffolds.

How was the experience?

It was very eye-opening and insightful. It allowed me to realize that there are many opportunities readily available for us as IDEA scholars. I learned many useful hands-on skills, tips on how to do well on the GRE, how to appropriately and clearly present my research, working as a team member, while also taking the lead on a project.

Any advice for other students who may be interested in doing what you did?

I advise that they should become involved as soon as possible and seek out internships/research opportunities immediately in order to develop their skills and mentality toward becoming not only a well-rounded engineer, but also a well-rounded individual.

CONGRATULATIONS TO RECIPIENTS OF THE 2015 BOEING-IDEA SCHOLARSHIP

The BOEING-IDEA Scholarship is awarded annually to IDEA Scholars who demonstrate technical experience, academic achievements, extracurricular involvement, and a commitment to the ideals of inclusion, diversity, excellence and advancement. In addition to a monetary stipend, the scholarship includes a potential summer internship with BOEING.

Congratulations to the following engineering students, who are the 2015 recipients of the BOEING-IDEA Scholarship:

Jose Banuelos, Structural Engineering Maya Bello, Computer Science Sebastian Bommer, Mechanical Engineering Shang-Chun (Andrew) Chiang, Chemical Engineering Jose Garcia, Aerospace Engineering

Josef Griedel, Aerospace Engineering

Joanne Ly, Chemical Engineering Alexes Macedo, Computer Engineering Kimberly Nguyen, Chemical Engineering Madeline Ocampo, Mechanical Engineering Lorenzo Page, Electrical Engineering David Perez-Aguilar, Chemical Engineering



9TH ANNUAL JACOBS RING CEREMONY



On Saturday, June 13, 2015, the Jacobs School of Engineering was proud to ring nearly 500 graduating seniors at the 9th Annual Jacobs Ring Ceremony. The Ring Ceremony is the culminating moment in an engineering student's career where they take the leap from student to professional, receiving a ring and taking an oath of ethics to uphold the professional integrity throughout their

entire career. Each year, a handful of students and faculty are recognized for their significant achievements. This year's winners were:

DEPARTMENT OF BIOENGINEERING AWARD FOR EXCELLENCE IN LEADERSHIP AND SERVICE



Gillie Agmon

Gillie starts at Stanford University in the Fall to begin a PhD in Bioengineering



Jared Kehe

Jared will be attending the Massachusetts Institute of Technology in the Fall to begin his PhD in Bioengineering

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING AWARD FOR EXCELLENCE IN LEADERSHIP



Jennifer Lu

Jennifer starts a Master's program in Computer Science at Stanford University in the Fall

DEPARTMENT OF ELECTRICAL & COMPUTER ENGINEERING AWARD FOR EXCELLENCE IN LEADERSHIP



Kristoffer Wilkerson

Kristoffer now works at Tortuga Logic, a local hardware security startup



DEPARTMENT OF MECHANICAL & AEROSPACE ENGINEERING AWARD FOR EXCELLENCE IN LEADERSHIP

DEPARTMENT OF NANOENGINEERING AWARD FOR EXCELLENCE IN LEADERSHIP



Bao Chi Vo Ngo

Bao is now an Associate Process Engineer at Fluor in Orange County and plans on pursuing a Chemical Engineering M.S. in Berkeley's Product Development Program in Fall 2016

UNDERGRADUATE COMMUNITY AND DIVERSITY AWARD



Katherine Liu

Katherine begins a PhD program at the Massachusetts Institute for Technology in Mechanical Engineering in the Fall

DEPARTMENT OF STRUCTURAL ENGINEERING AWARD FOR EXCELLENCE IN LEADERSHIP



Kayse Sheppard

Kayse was an IDEA Scholar and plans to work in engineering design for public projects



Rocio Peña

Rocio plans on pursuing a career related to her interest in materials and earn a master's degree in material science

PROFESSOR OF THE YEAR AWARD



Dr. Justin Opatkiewicz

Dr. Opatkiewicz was nominated by our graduating seniors as the most outstanding professor of the past academic year, for the second year in a row! #DEDICATION #SWAG



UNDERGRADUATE STUDENT

Renn Darawali

Renn will continue her studies here at the Jacobs School pursuing a Master's Degree in Mechanical Engineering where she hopes to make significant contributions to solar energy research

FRESHMAN PREP 2015

















TRANSFER PREP 2015

















WHERE ARE THEY NOV? SPOTLIGHT ON RECENT JSOE GRADUATES

SPOTLIGHT NO.] NAME Anthony Millican MAJOR Aerospace Engineering CLASS OF 2015 STUDENT INVOLVEMENT Society of Hispanic Professional Engineers (SHPE)

What you are up to now?

I am in a PhD program at Virginia Tech, funded on a Teaching Assistantship. I'll be TAing for the senior aerospace lab class. I start classes/work tomorrow! Formally, I'm supposed to TA for 20 hrs/wk, and I'm also enrolled in two classes (advanced aerodynamics, and vehicle dynamics and control). I will also be attending research meetings for 3 different professors/labs this semester as I search for a PhD advisor, project, and funding that lets me focus on class and research.

What advice/insight do you have for current engineering students at JSOE?

Take some time to daydream (maybe not in class!) and think about your own "big picture." Start broadly and then come up with actions that will help. What do you want to do when you graduate (work, grad school, something different)? What do you need to do to make that happen? Do you need research/internship/work experience? What kind? Ok, where can you get that? Is there a professor with a cool lab you can talk to, a specific job or program that will help with that? Ok, how do you make yourself a good candidate for this cool lab, job or program?

Anything else about yourself you'd like to share?

It's ok if you aren't an "ideal" candidate right away; in one quarter, you can change that. Change your study habits, find a friendly faculty mentor (dine with a prof is great), and/or reach out to the IDEA center if you need to improve your GPA. I had a 2.6 GPA after my first two quarters and was ready to give up. But I chose to do what I had to do to succeed. I have never been the "ideal" candidate, but I have always been a fighter. Sometimes, that's the most important thing.

OTLIGHT NO. 2

NAME

Kimberly Wang

MAJOR **Bioengineering CLASS OF** 2015 STUDENT INVOLVEMENT

Society of Women Engineers (SWE)

What you are up to now?



This past July, I started working as a Research Associate at Gilead Sciences in Oceanside, CA. I work in Process Development where I develop cell-based assays for testing the potency of drugs in clinical trials

What does the IDEA Student Center mean to you?

It's a great resource with advisors and faculty who really want you to succeed and can help you do so. The care and attention they give to each and every student means a lot. The Society of Women Engineers could not do without the IDEA Student Center!

What advice/insight do you have for current engineering students at JSOE?

Cherish your time in college! It's a work-life balance and you want to be able to discover yourself during this time. College will be over before you know it and you will want to have learned a lot before it's over.

POTLIGHT NO. 3

NAME Ismael Munoz MAJOR Bioengineering **CLASS OF** 2015 **STUDENT INVOLVEMENT** Tau Beta Pi

What you are up to now?

I am currently a research technologist in Dr. Drummond-Barbosas lab studying the effect of neuromodulators on oogenesis. I've been in charge of this project at Johns Hopkins since July 2015.

Did you work in any labs or conduct research while a student at JSOE?

Professor Todd Coleman's lab working on optogenetic system and rat behavioral paradigm for 4yrs.

What advice/insight do you have for current engineering students at JSOE?

There is no exact formula for success and success is often only vaguely defined. If you strive for excellence you will create your own definition and continuously achieve it as it is a moving target. Never give up and remember to rest and live your life.

UC San Diego Jacobs School of Engineering

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Photos: Freshman PrEP 2015 Credit: Joanne Ly

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