

# EXPLORATIONS

in Dental Research

## Spring Issue 2018

### Outreach with Roger Mraz

Turn to **page 5** to learn more about Roger and his outreach travels-- debunking research myths and spreading the research spirit one undergraduate institution at a time!

**UCSF** School of Dentistry

JOHN C. GREENE SOCIETY

Written by: Eric Hsu, Anne Marie Jeng, Jonathan Han



### UCSF at the AADR Conference

Written by Eric Hsu '20



Over 40 UCSF students and faculty attended the 47th Annual Meeting of the AADR (American Association for Dental Research) in Ft. Lauderdale from March 21st to 24th. Attendees from both national and international dental schools were in attendance to showcase their work.

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# PRESIDENT'S *Message*



Hello John C. Greene Society Members!

Spring is upon us! We here at JGS have many events and activities planned for the quarter. But first, a quick recap of what JGS has been up to Winter quarter.

I am pleased to announce that 24 first year dental students have been selected to be a part of the UCSF Summer Dental Student Research Fellowship! This program would not be possible without support from our sponsors including the UCSF School of Dentistry, Associate Dean for Research Dr. Thomas Lang, Chair of the UCSF Summer Dental Student Research Fellowship Dr. Lisa Chung, Program Administrator for the Office of Graduate and Research Affairs Roger Mraz, among many others. This year we will be sponsoring various projects ranging from basic biology, to public health issues, as well as clinical translational research. Winter quarter saw a rebirth of the "Evidence Based Dentistry Journal Club" elective. Led by Michael Chen, Wilson Ng, Rebecca Kim, students presented clinically relevant research papers to their peers in the presence of a faculty moderator. Students were pushed to analyze and question the evidence behind common dental procedures. Dr. Shaun Abrams worked in conjunction with the Orthodontics Club in order to hold a case study workshop with Dr. Alice Goodwin. This workshop detailed unique orthodontic cases involving craniofacial abnormalities. Lastly, UCSF had a strong showing at AADR Annual Meeting this year. Many predoctoral students, post-docs, and faculty members were in attendance. Members of the UCSF community presented posters, oral presentations, and keynote addresses to world renowned experts in the field. The John C. Greene Society received two awards this year for having the "Most New AADR Student Members in 2017-2018" and for having the "Highest Percentage of New AADR Student Members in 2017-2018". These accomplishments would not be possible without the full support of the faculty and student body.

Looking forward to Spring Quarter, JGS will be organizing another elective. This spring quarter elective is designed to help the Summer Research Fellows practice their oral presentation skills as well as familiarize them with the scientific literature associated with their summer research project. More details will be released once the Spring Quarter begins. JGS will also be holding another case study workshop, this time in conjunction with the Periodontics Club. I am personally looking forward to the ADEA and JGS Faculty Appreciation Night. It will be a night of celebration to honor faculty members and staff who make our education at UCSF School of Dentistry truly a pleasure. Last but not least, JGS will be recruiting new board members for the coming 2018-2019 school year! It is my pleasure to serve as president of the John C. Greene Society. If you have any questions or comments regarding research here at UCSF please refer to our Facebook page ("John C. Greene Society" on Facebook), website ([www.jgsucsf.edu](http://www.jgsucsf.edu)), and via email ([JGS@ucsf.edu](mailto:JGS@ucsf.edu)).

Sincerely,

A handwritten signature in black ink that reads "Duy Bui". The signature is fluid and cursive.

Duy Bui | John Greene Society

# DDS, PhD student Ramin Farhad

Written by: Eric Hsu '20



*Ramin Farhad is a current first year DDS, PhD student. He did his undergrad at CSU Fullerton where he double majored in Biology and Music. Additionally, while in undergrad, he did research abroad in both Thailand and Argentina. Needless to say, Ramin's resume is impressive and it was a pleasure getting to know more about him through this interview.*

## What is the first year curriculum of a DDS/PhD student like?

The courses associated with the PhD curriculum are significantly different than those offered at the dental school. We take fewer courses, and we have exams at a lesser frequency, however some are perhaps more vigorous. We are not required to memorize facts, but rather trained to ask the right question(s) and to understand how to answer them using an appropriate experimental design. Then we are expected to carry this knowledge skill set into the clinical world after finishing dental school, to bridge the gap between basic science research and clinical shortcomings. The ultimate goal is to work on translational research projects that focus on addressing current clinical needs by providing new therapeutic modalities. My weeks include working 40-60 hours a week in lab while focusing on the coursework as well.



## Sounds like you are very busy, do you still make time to play piano or attend concerts?

While in undergrad, I used to practice piano for an average of 6 hours a day. Considering my current busy schedule, I am attempting to put in a few hours a week. Nevertheless, I still listen to a copious amount of classical music, teach piano, and attend classical music concerts once or twice a month.

## What areas of research do you find yourself inclined to thus far?

I have found my particular area of interest to be in cancer biology and therefore have geared all of my rotations in projects involved in studying head and neck cancer. Currently, I am rotating in the laboratory of Dr. Rosemary Akhurst. I am working on the cancer immunotherapy project in the lab, where we are trying to tweak the immune system to recognize and attack the tumors more aggressively.

## How did you come across your opportunities to do research abroad come about?

Two of my undergraduate research scholarships allowed me to conduct research in Argentina and Thailand. These scholarships were offered by the Minority Health and Health Disparities International Research Training (MHIRT) and Louis Stokes Alliance for Minority Participation (LSAMP) research programs at my undergraduate institution, California State University, Fullerton. My work in Argentina involved molecular cloning in pursuit of inhibiting antibiotic resistance in a strain of multi-resistant *Klebsiella pneumoniae*, utilizing anti-sense technology. I engineered a recombinant plasmid that contained external guide sequences, which were aimed at silencing a gene associated with amikacin resistance. The goal of this project was to extend the life of amikacin, an important antibiotic used in nosocomial infections. Lastly, my project in Thailand was focused on creating an innovative way to combat dormant HIV-infected cells by performing computational studies on drug-enzyme interactions. The goal was to find potential targets from the pool of all FDA-approved drugs that would inhibit the histone deacetylase 8 (HDAC8) enzyme, which is largely responsible for promoting the dormant stage of HIV infection by deacetylating specific sites within the human DNA where the HIV genome is inserted. If HDAC8 is inhibited, the infection could theoretically be entirely eradicated when cells exit dormancy and patients are then placed under a combination of other anti-HIV drugs.





### Given your extensive research background, why did you decide to pursue dentistry?

To complement my experiences in the world of science, I utilized music to foster creativity and as an instrument of personal reflection. Nevertheless, my life has always revolved around science and it has been my intention to pursue a career in either healthcare or research. I view dentistry as the ultimate melting pot of my diverse academic experiences. I am pursuing the DDS/PhD route to effectively combine my interests in both clinical dentistry and research, and I hope to focus my efforts into making an impact in shaping the future of oral healthcare.

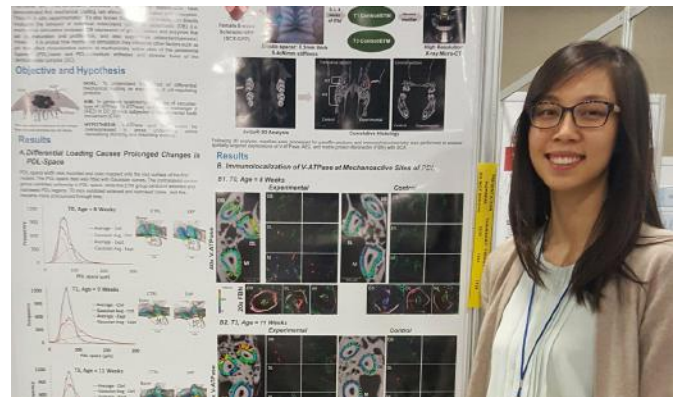
## UCSF at the AADR

*(continued from cover page)*

According to Jonathan Gao (D2), one of the most memorable experiences of the AADR was networking with other students from different schools. "Getting to know other students from other schools and learn about their projects was my favorite part of the conference."

Hailey Taylor (D3), Michael Ngyuen (D2), and Wilson Ng (D2) gave oral presentations to AADR attendees. According to Micahel Ngyuen, "Giving an oral presentation on my research was a fantastic experience. Having the opportunity to share my findings with experts in oral & maxillofacial surgery research and engaging in thought provoking conversations afterwards was definitely worthwhile."

UCSF took home numerous awards at the conference. The John Greene Society was awarded: the most new AADR student members for the 2017-18 membership year, and for highest percentage of new AADR student members relative to school enrollment. Bronwyn Hagan (D3) won third place in the Student Competition for Advancing Dental Research and its Application in the Basic and Translational Research category, and Megan Do (D1) was awarded an AADR Student Research Fellowship. Faculty awards included: Dr. Grayson W. Marshall, the Irwin D. Mandel Distinguished Mentoring Award; Dr. Daniel Fried, 2018 Burton Borgelt/SCADA Faculty Advisor Award; and Dr. Yogalakshmi Rajendran, 2018 AADR William B. Clark Fellowship.



# Outreach with Roger Mraz

*Written by*

*Anne Marie Jeng '20*

The transition into dental school is often wrought with many misconceptions. For some, the misconception is a career in research must be sacrificed in exchange for a dental one. For others, it's believing research to be strictly confined to a rigid world of lab coats and flasks. Roger Mraz of UCSF's Office of Graduate and Research Affairs is well-acquainted with the UCSF student population and is familiar with such long standing delusions. As one of core facilitators of the UCSF's Summer Dental Student Research Fellowship Program, he takes personal interest in introducing new research opportunities to students. One of the most effective ways to achieving this, he considers, is through outreach.

"We meet students all the time that have a real passion for research but feel they have to give it up when they go to professional school. Students need to know it's ok to pursue research on a short-term

San Francisco, San Francisco State, University of the Pacific in Stockton, Cal State Eastbay, and the University of Southern California.

Each outreach event begins with Roger's presentation, which focuses on research opportunities as part of the dental school experience and opportunities as part of the DDS/PhD program. It is followed by personal testimonials from students who have experienced each respective program and concluded with a Q&A session. After all is said and done, however, the underlying message Roger hopes to leave the students with is that of the research spirit.

"Yes, I talk about the research opportunities at UCSF. But when I'm on the road, I'm also selling the idea of stepping outside your comfort zone if you've never done research before and, if you do have experience, going to a new level. My talk is about inviting people to think outside the box, to



**"My talk is about inviting people to think outside the box, to engage in ideas that are outside of their normal experience, and why it might be beneficial for their long term career goals and personal satisfaction."**

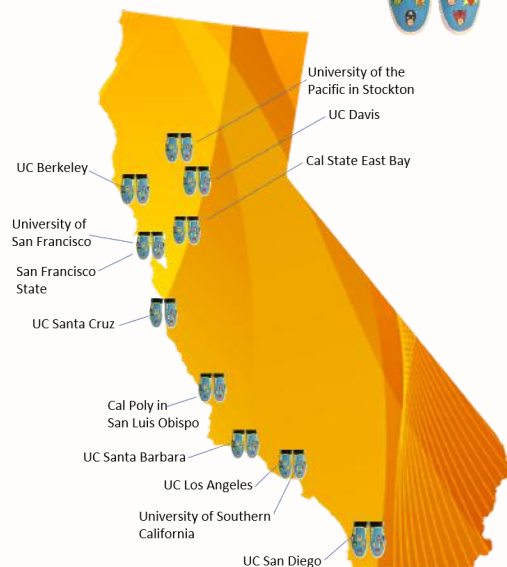
basis and even a long-term one. The answer to removing these misconceptions is with outreach. To get the word out to undergraduate institutions."

Roger began his outreach program three years ago at the UC Davis Health Conference and, since then, has expanded his program to twelve schools throughout California— UC Berkeley, UC Davis, UC Los Angeles, UC San Diego, UC Santa Cruz, UC Santa Barbara, Cal Poly in San Luis Obispo, University of

engage in ideas that are outside of their normal experience, and why it might be beneficial for their long term career goals and personal satisfaction."

The continued success of the outreach program stems from Roger's dedication to students and his drive to eliminate research misconceptions that may limit the scope of what students believe they can do. With the large success garnered from this program, there is a high potential of seeing this program expand to schools outside of California in the near future.

Following Roger's Footsteps





# AADR Nominees

Five students participating in summer research were selected to compete for the AADR Student Research Fellowship

*Interviewed by Jonathan Han '21*

## Will Lee



"This summer I'm going to be working with Dr. Apollonio and Dr. Kearns. They both focus on industry influence on public health policy and I will be focusing on the tobacco industry's history of interactions with the American Dental Association back in the late 1960s and early 1970s. What I look forward to most is uncovering how industry influence may have affected the outcome of a specific research program of the ADA."

## Megan Do



"Under the mentorship of Dr. Jeffrey Bush, I will be exploring how axon patterns are formed during secondary palate development and its candidate regulators. I'm looking forward to this project because there is currently nothing known about the guidance molecules that regulate axon patterning in the secondary palate. Failure of secondary palate fusion results in cleft palate, which can lead to difficulties in correctly and safely anesthetizing patients due to variations in axon patterning. I'm also enthusiastic about the prospect of possibly representing UCSF at the AADR Annual Meeting next year in Vancouver!"

## Paul Asfour



"I would like to take this time to thank everyone who has supported me in this endeavor, especially my mentors, Dr. Tamara Alliston, Dr. Richard Schneider and Dr. Daniel Chu. My project will focus on understanding the molecular components that determine jaw size and shape. I am very excited to take part in this project that will potentially have a significant impact in dentistry. I know this summer fellowship will afford me many fulfillments and enriching events. I am proud to say that I, alongside my great colleagues, will be representing UCSF at the AADR National Competition. Thank you so much!"

## Alex Kryger



"My mentor Dr. Chelsea Bahney received her PhD from Oregon Health & Sciences University. I will be working with her at the Orthopedic Institute of the San Francisco General Hospital, researching the use of polymeric microstructures loaded with NGF and their ability to enhance endochondral bone repair. I'm looking forward to working in a wet lab and obtaining real hands-on research experience!"

## Niloufar Mohajerani



"My mentor this summer is Dr. Cynthia Darling. Dr. Darling's lab is mainly focused on developing new optical methods and technologies for imaging dental caries and provide a means of minimally invasive diagnostics. I hope by end of this summer, I will be able to identify the wavelengths of near-infrared lights that are best suited for screening early caries lesions. These lesions are difficult to detect using conventional radiography techniques.."

## AADR STUDENT ADVOCATE OF THE YEAR

# LINDA KIM

*Interviewed by Anne Marie Jeng '20*

Linda Kim is a third year dental student at UCSF and a past participant of the Summer Dental Student Research Fellowship Program. As the former president of JGS, she championed advocacy and served as UCSF's Regional Representative for the National Student Research Group. In this interview, she speaks about her passion for Advocacy Day and her experiences attending it a second time.

### What motivates you to attend Advocacy Day?

I'm motivated to attend Advocacy Day because I believe advocacy is a very important aspect of our profession and for the advancement of dental research. Lawmakers have limited resources and face many competing demands from lobbyists. Although the benefits provided by dental research are immense, such as improved oral health care and job creation, they can be delayed and intangible compared to shorter-term benefits from other interests. Dental providers, trainees, and researchers are more educated in their profession than legislators, and thus it's important for dental, and oral and craniofacial research communities to be part of advocacy.

To me, advocacy means being a voice for those who will benefit from dental research. It is important to communicate to policymakers not only how funding dental research positively contributes to the overall health and well-being of the American people, but also how it can ease the economic burden oral conditions place on our society.

### Dental-related or not, what are some local, state, or federal issues you care about?

The opioid crisis and gun violence are two issues I care about. I grew up in Singapore where gun ownership is nonexistent and drug use is heavily regulated. The government works closely with community groups, parents, and teachers to educate youth and the general public on the consequences of drug abuse and enforces tough laws and penalties for unlawful possession or carrying of firearms. Thus, when I first moved to the states, it was heartbreaking for me to see so many tragic stories of individuals who were victimized and affected by what could have been preventable.

### What were the topics covered during your visit to Washington D.C. this year? Any advances from last year?

The 2018 Advocacy Day featured Representative Mike Simpson, NIDCR Director Martha Somerman, and Dr. Raymond Dionne, who provided an update on the opioid crisis and dental research's role. We also heard from patient advocates who shared their stories of living with diseases with oral manifestations such as pemphigus vulgaris and Sjögren's syndrome. Their stories were powerful examples of how impactful dental research is in our society.

We had tremendous success in our advocacy efforts last year. The Trump Administration initially proposed to cut \$17.9 billion from non-defense discretionary spending to offset the Administration's military supplemental request and the proposed wall along the Mexican border in the 2017 fiscal year (FY17). The proposal specifically sought to cut \$1.2 billion from the National Institutes of Health (NIH) by reducing research grants. AADR and the Friends of NIDCR issued a statement opposing this proposal and urging Congress to reject it. The efforts of the AADR community did not go unnoticed by Congress. In fact, Congress rejected the Administration's proposal to cut NIH by \$1.2 billion in FY17, and instead provided a \$2 billion increase from the FY 16 level for the National Institute of Dental and Craniofacial Research (NIDCR). This clearly underlines the importance of advocacy and why we should continue our efforts in being the voice of our dental profession and patients.



*Photographed by the AADR (top photo) and Hoorshad Fathi-Kelly (bottom photo)*

### Last but certainly not least, congratulations on winning this prestigious award!

Thank you. I am honored to have received the award and would like to share it with those at AADR who have been actively engaged in advocacy and government affairs. I highly encourage everyone to learn more about the intersection of dentistry, research, and policy, and get involved with AADR's advocacy efforts!

# UCSF School of Dentistry

## Global Oral Health

### Community Partnership and Student Research Fellowships



#### What are they?

Global Oral Health Community Partnership: One-year fellowship designed to support a team of one or more dental students working in collaboration with at least one faculty mentor and a local community partner. The fellowship provides support for the project and career development in clinical research methods.

Global Oral Health Student Research Fellowships: One-year fellowships designed to support mentored global oral health research performed by individual dental students or dental residents at UCSF. This year, the fellowship projects will build toward a potential in-country capstone experience in Kenya.

#### What are the goals of the program?

- Generate educational opportunities for student engagement in accountable, sustainable partnerships that promote the oral health of communities.
- Strengthen partnerships between the SOD and local community organizations that are invested in oral health promotion and seeking to add a research or evaluation component to new or existing projects.

#### More info

The program is intended to support evaluative or investigative projects, not to support one-off dental care delivery, “mission” trips, or “outreach.” The project needs to do more than track how much service was delivered - it should strive to add new knowledge to inform and strengthen future projects. Partnerships with agencies or organizations connected to the community of interest are highly encouraged to increase impact and to avoid creating parallel or competing systems. Acceptable project types include, but are not limited to, program evaluation (process or outcome evaluation), needs assessment, or epidemiologic research.

For questions, please email  
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 pictured)  
 Historian: Jessica Ho

## Newsletter Editors Notes

As our final newsletter to the UCSF community, we would like to thank you for taking time to read our newsletter. Being the voice for our dental research community has been a challenging but rewarding process. Every year, the newsletter team sets the bar higher for ourselves to ensure we deliver quality content to our readers. It has been our honor and privilege to serve as your newsletter editors this past year!



Jonathan Han ('21), Eric Hsu ('20), Anne Marie Jeng ('20)

Best,  
 JGS 2017-18 Newsletter Editors in Chief  
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