Developmental Disabilities Patients
Expanding Dental Care
Written by Brianna Devito '18

One in six children in the United States is affected daily by developmental disabilities (DD), reflecting approximately 15% of the population and growing. When compared to non-disabled adults, DD individuals are significantly more likely to have fair or poor general health. Our current healthcare delivery for the DD population is narrow-reaching and deficient.

Caretakers of DD people face tremendous adversity accessing general and dental healthcare. The difficulty arises in finding a provider who is both comfortable treating the DD population and accepts state-funded health insurance, which is nearly impossible.

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Our Future with Evidence-Based Dentistry
Written by Morgan Nelson '19 from an Interview with Dr. Sophia Saeed

In the last few months, our D1 simlab schedule was altered to make room for the EBD lecture, to which many of our professors were required to attend. In order to make this event happen, 1-2 rows of clinic had to be closed every day that week in order to allow part-time faculty to attend. This 8 hour lecture series was offered Monday-Friday and was taught by two of the most preeminent speakers from the ADA. Faculty were officially presented with the concept of EBD, which is at its heart a philosophy of thinking critically about oral health care.

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Dear Readers,

Welcome to the new look of the JGS quarterly newsletter, Explorations!

We have big shoes to fill from our predecessors and are looking forward to another great year being involved in research, supporting each other and getting the word out about all of the exciting activities and accomplishments here at UCSF.

The theme will likely be the same every quarter that I have the honor to be at the helm of this newsletter: research through the storytelling format. Together we can accomplish great achievements, but there are so many individual, personal stories of failures and successes along the way- these are the articles I love.

Turning 30 recently helped me see how quickly time passes and how living a meaningful life involves looking outside of myself to embrace our shared experiences. The first year of dental school is an endeavor you do not understand unless you have lived it. Let's celebrate our successes and embrace our failures! Let's go explore new ideas and take responsibility for our education and futures!

Warmly,
Morgan Nelson | John Greene Society | Editor-in-Chief

PRESIDENT'S MESSAGE

Fellow John Greene Society members,

I would like to thank all members of JGS who made this past year a success. We proposed and successfully executed new initiatives, ranging from weekly journal club meetings to case study workshops where we featured cases from different specialties. These achievements were only possible thanks to your contributions and active participation.

In addition to these new initiatives, a record number of 23 pre-doctoral students were selected for the UCSF Summer Dental Student Research Fellowship Program. This program would not have been possible without generous support from its sponsors, including the UCSF School of Dentistry, our Dean of Research, Dr. Thomas Lang, Dean Perry, and many more whom we would like to extend our gratitude to.

As chapter president, my primary goal is for JGS to be the best resource for dental student research. We will continue to provide opportunities for student engagement in research through workshops and seminars to enrich your dental education. Also, we will build a website to help students find research mentors, events, and our quarterly newsletters.

Lastly, next year’s AADR conference will be in San Francisco. JGS is thrilled to warmly welcome fellow researchers from across the nation to our great city. We strongly encourage everyone to participate and volunteer at this event as it will be a great opportunity to network and share ideas with similarly motivated students.

Please contact me at any time with feedback or ideas for how we can take JGS to a new level of excellence. I am excited to work with everyone this year!

Linda Kim | John Greene Society | UCSF NSRG Chapter President
Ultimately, healthcare providers struggle to provide services for DD patients due to limited research addressing policy as well as resources for healthcare professionals. These shortcomings coupled with a lack of necessary armamentarium to care for DD patients contribute to the unfortunate reality that most DD adults over 21 lack access to routine dental care.

Studies have found that most general dentists do not feel adequately prepared by their pre-doctoral training. However, those who feel their training was more sufficient reported they were more likely to treat special needs patients. The study concluded that because access to care is a huge problem for special needs patients, revising dental curricula could potentially reduce this burden.

Currently, pediatric dentists possess the expertise most compatible for treating DD patients. Ideally, a pediatric dentist could provide lifelong care to their established DD patients. This, however, is unrealistic, as the American Academy of Pediatric Dentistry (AAPD) discusses in its Guidelines on Management of Patients with Special Health Care Needs (SHCN). The AAPD recognizes that SHCN patients have difficulty transitioning from pediatric to adult primary care since few providers are willing and able to appropriately manage these patients. So what happens to DD adults who age out of their pediatric dentist’s scope of practice?

Dentistry has finally achieved recognition as a public health measure in the Healthy People 2020 goals. Although this was a huge feat for the profession, the Healthy People dental goals still do not address oral health of DD people.

This conundrum begs the question – is the treatment of developmentally disabled adults who can no longer see the pediatric dentist a problem for public policy reform or for dentists? Is the advent of a sub-specialist to cater to the recondite needs of DD patients necessary, or must we reform our policies to allow pediatric dentists to continue to provide DD patients for their lifetime? The ADA does not recognize a niche in dentistry for DD patients, although evidence supports that DD patients require a unique approach to successfully receive care. Sub-specialty training focused on DD patients would encompass language and communication needs, treatment planning, and the provision for adequate home care.

Perhaps it would be wise to consider such a specialty or sub-specialty to allow more dental professionals to join the community of healthcare providers and policy-makers involved in changing the lives of DD patients.
On your way to simlab, right before turning left to go past Rich’s office, take a look at the bulletin. There you will find the 12 new competency statements for our school (it used to be 17!) This bulletin represents countless hours of faculty time, especially the work of Dr. Sophia Saeed, to perform background literatures searches, needs assessments, curriculum committee formation, town hall meetings, faculty retreats and eventual new methodology and point of view to carry our school into the current age of the critically-thinking dentist.

If we want to continue to enjoy our reputation as one of the premier educational sites in the country, the burden lies partially with us students, especially those involved in research, to stay informed on the curriculum changes occurring, to develop a strong voice and communicate with faculty and administrators, and to set the standard for classes of dental students to follow us about what kind of dentists and healthcare practitioners we want to be.

Hopefully, we students can see our time here at UCSF not just as a resource to use to better our own lives, but as an opportunity to contribute to a legacy that will continue long after we have laid down our handpieces…. or explorers. :)

Incorporating the Evidenced-Based Dentistry philosophy into our curriculum is the missing link between the research being done and the patients being treated here.

If we want to continue to enjoy our reputation as one of the premier educational sites in the country, the burden lies partially with us students, especially those involved in research, to stay informed on the curriculum changes occurring, to develop a strong voice and communicate with faculty and administrators, and to set the standard for classes of dental students to follow us about what kind of dentists and healthcare practitioners we want to be.

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This lecture also included hands-on computer training to teach faculty how to use sites such as PubMed and CASP. Furthermore, faculty members were taught on how to do literature search, levels of evidence and appraise a paper that best caters to a patient’s needs.

In the last two years, there has been an extensive push to update the dental school curriculum to reflect newer standards of critical thinking and EBD. Examples of this implementation can be seen in the pilot OSCE (objective structured clinical exams) taken by the D2s before entering clinic. The objective of these assessments is to determine that all D2s have the required skills to enter clinic, as well as to gauge what curriculum changes need to be made for the D1 & D2s.

What I as a student had never thought about is that when you create a curriculum for students, you also have to create a parallel training curriculum for faculty. If we are to uphold the high standards of our field, we must train to become lifelong learners, and not just regurgitaters of facts. We, regardless of age, need to have the skills, such as computer skills and familiarity with available resources, to be able to be lifelong learners. This is why programs like the faculty training are occurring, and why our professors have been mentioning that changes are ahead for us. Examples of how strong research finding has affected our curriculum has been to not use an explorer to probe a potential carious lesion. As some faculty have been practicing dentistry for close to half a century, it is understandable why it would be difficult to enact school-wide policy change at this point in their career. Thankfully, we have faculty like Dr. Graham who are excited about these changes and are preparing us, the D1s, so that we will be willing to change in the future.
I am ecstatic to share my research experiences and lessons with you! To start, I am corn-fed Midwestern, born and raised in Kansas, moved to Missouri for my undergraduate degree, and headed west for a goldmine of knowledge in San Francisco at UCSF to pursue my DDS. Today, I am back at UCSF finishing my fourth year. Last year I lived in Bethesda, Maryland. “Why?” I spent a year away between my clinical training years at UCSF to do research at the National Institutes of Health (NIH).

Specifically, I was apart of the NIH Medical Research Scholars Program (MRSP) and did research at the National Institute of Dental and Craniofacial Research.

Why did you decide to do this program?

I became interested in research during undergrad, spending two summers in a basic science research lab in Kansas City. In dental school I completed a summer of research and afterward found it hard to balance a basic science research project and dental school training. However, I wasn’t ready to leave the vibrant learning environment in the laboratory. I learned about the NIH MRSP at the American Association for Dental Research (AADR) conference, and realized it would give me the opportunity to dig deep into a research project and learn how to scientifically evaluate past, present, and future oral healthcare practices to improve patient care.

What is your research about?

In the past my research projects have focused on craniofacial development on mouse and duck models. At the NIDCR, I worked in laboratory of cell and developmental biology working with cell cultures. I researched the invasion and metastasis of oral cancer cells. The lab I joined, Dr. Ken Yamada’s lab, focuses on extracellular matrix and cell development. Upon entering, the lab had a few ideas to help me get started with the oral cancer cell lines, including evaluating their invasive capabilities and mechanisms responsible for their behavior. Working with cell culture helped me better understand the mechanistic principles of development.
What would you recommend for someone who is interested in going down your same path?

If you are interested the slightest bit in research, learning how to ask good questions, or pursuing a career in academia, apply for the NIH MRSP! It may seem daunting to take a year away from dental school, but any challenges you face and overcome will only make you a better leader and dental professional, regardless the path you choose. Ralph Waldo Emerson once said, “Do not go where the path may lead, go instead where there is no path and leave a trail.” Take advantage in exploring various career paths while you are in school, you have absolutely nothing to lose. I know it is hard to leave all of the friends you have made in your class, but you will continue to be close to your classmates, will make lasting friends during your year away, and also return to make more friends in your new class. You will definitely not have a shortage of interesting, loyal, caring, lifelong friends!

What’s next?

On June 9th you can find me walking across the stage at the San Francisco Davies Symphony Hall. June 12th I will be moving back across country. June 13th I start my residency training at Washington Hospital Center (WHC) in Washington, D.C. as a PGY1 Orthodontic resident. In addition to my training, I get to spend one day a week at Children’s National Medical Center participating in weekly craniofacial team evaluations and providing treatment to patient’s needing craniofacial grown modifications and early interceptive treatment. I am excited to begin the next chapter of my life and plan to continue to explore the mechanisms of craniofacial development throughout my residency and future career as an orthodontist.

As always, do not hesitate to contact me if you have any questions at molly.hague@ucsf.edu. Note: Article modified from ASDA Mouthing Off blog posted Feb. 25th, 2015
This year at 2016 American Association for Dental Research in Los Angeles, UCSF School of Dentistry had the great honor of having two students win top awards in prestigious research competitions. Among a competitive pool of PhDs and other driven student researchers, MyChi Nguyen ’17 won first place in the Junior Category for the Hatton Award and Wendy Fu ’18 won third place in the 2016 DENTSPLY/Caulk Student Research Group competition. Please join JGS in congratulating them with their accomplishments!

Interview with MyChi Nguyen

Tell us about your research

I work with an enamel protein called amelogenin. It’s the most abundant protein in the developing enamel matrix and is recognized to play an important role in directing the mineralization of enamel into highly organized apatite crystals. Our lab has found that amelogenin can self-assemble in vitro into nanoribbons, resembling the early apatite ribbons found in enamel. My particular project involves studying the effects that various divalent cations have on this self-assembly process. Elucidating this aspect of self-assembly may give us a better overall understanding of how amelogenin interacts with the inorganic matrix to form the highly organized architecture of enamel rods.

How did you learn about the research competition? How did you prepare?

I first learned about the competition from several other UCSF researchers who were finalists previously. After submitting an abstract and discovering that I was selected as a finalist myself, I prepared for the competition by rehearsing my presentation with my research mentors. I received numerous constructive feedbacks from them and felt thoroughly prepared when the time came for me to compete.

What was the competition like and what was your overall experience at 2016 AADR?

The Hatton competition is judged based on three components: a detailed, six-page abstract, an oral presentation, and a questions/answers period. I submitted my extended abstract for grading a few weeks before the actual competition. During the 2016 AADR meeting, I gave a ten-minute oral presentation of my project to a panel of three judges. The judges then had five minutes to ask me questions. Overall, the competition wasn’t too stressful, and I’m glad to have had the experience. The competition was earlier on in the week, so I had the remainder of the time to take part in the activities and events at the AADR meeting. I had a great time there, was inspired by many interesting research talks, and would wholeheartedly recommend the meeting to anyone interested in dental research.

What advice would you give to future candidates who would like to participate in these competitions?

I think the key to going into any competition with confidence is to understand the material that you will be presenting on inside and out. Remember that no one else knows your project as well as you do. You’re the expert. What helps me personally is thinking of the competition not as a competition, but as a means for me to get others interested in what I’m passionate about. You’ve worked hard on your project; go showcase your results!
I worked with Dr. Sarah Knox to study the autonomic nervous system in human and mouse embryonic salivary gland. My final project focused on the timing of sympathetic innervation during salivary gland development, and the neuronal influences driving progenitor cell proliferation.

How did you find your research mentor and project? How long have you been working on it?
I first learned about Dr. Knox’s research from Minerva Loi’s (D3) presentation at the 2014 Research Day. I remember thinking to myself, Wow, how cool would it be if I can do something like this?! So when I met Dr. Knox at the JGS Fall elective and saw how captivating her presentation was, I knew she was the mentor. Dr. Knox is amazing. She helped me brainstorm research ideas and guided me throughout the entire 3-month period I was in lab. And I am really happy with how my project turned out. Our study focuses were very novel, since the research on the role of sympathetic nerves is very scant. Also, I was very fortunate to have tissue sample of embryonic human and mice salivary glands, which are incredibly beautiful to look under the microscope!

How did you learn about the research competition? How did you prepare?
There was an option to participate in either the DENTSPLY/Caulk or the AADR Hatton Awards Competition, when we submitted our abstract for AADR/CADR Annual Meeting. I was selected for the DENTSPLY/Caulk competition, where I presented my research poster to a judging committee. To prepare, I first wrote out a script and tried to memorize it. This way, during my presentation I could concentrate on what I was saying, rather than remembering what to say next, and also make eye contact. I learned this from watching TED Talks. I also made sure that I completely understood my project and was able to explain each step behind it. Finally, a good night rest and a healthy breakfast helped me to stay clear-headed and confident during the competition!

What was the competition like and what was your overall experience at 2016 AADR?
14 finalists were selected for the competition, with 7 for basic science and 7 for clinical science. We each had 15 minutes (10 for presentation, 5 for Q&A) to present our research poster to a judging committee, which consisted of NRSG board members, in a closed room. I had a fantastic time at AADR! I felt especially proud to represent UCSF and also of the great accomplishments by my classmates and colleagues. The conference brought my classmates and me closer than we already were. Everyone was so supportive of each other and I was grateful that I could share this special memory with them.

What advice would you give to future candidates who would like to participate in these competitions?
Be confident! You are an expert on your field of research and just remember that! Your passion and personality will then come naturally through your presentation. And also enjoy your time at the conference – it’s really an once-in-a-lifetime experience!
This summer, the 23 2016 Summer Research Fellows will be coming together for a weekly student-run Summer Research Fellowship Journal Club. Each week two fellows will be presenting a research paper related to their field of study. This is an opportunity for their peers, mentors, and many others to be exposed to their research and its progress. Also, it will be a great opportunity for each fellow to practice presenting their literature and receive feedback from their peers. This year’s Summer Research Fellowship Journal Club coordinators are Grace Zhu and Taran Cheema.

but dental students know him as so much more - baker of creative birthday cookies with associated shameful Facebook pics, wearer of exceptional footwear or as someone who is always there for you. This award is given to someone who goes above and beyond in their job. He supported the current dental students and reaches out to prospective students. He runs Research & Clinical Excellence Day, not a small task!

Dr. Chaffee’s words about Roger perfectly encapsulate how we feel about him and how grateful we are for everything he does:

“What’s extraordinary about Roger is how clearly he cares not only about the quality of his work but also about the people whom he supports with his work: faculty, administrators and, especially, the students.”
I discovered my love for research during the two years I spent studying brain plasticity in the hippocampus at my undergraduate. My team’s project found that brain plasticity (learning) was substantially lower in a stressed mouse than in a control. We also found that the negative effects of stress were countered by exercise, and that stressed mice that had access to a rodent wheel had plasticity that was similar to the mice that were not stressed. This project helped me get my feet wet in the research world and when I was researching dental schools, my professor and mentor encouraged me to find a program that would allow me to continue doing research.

Coming to UCSF, the JGS summer fellowship program was something I knew I wanted to be a part of and I was mentored by Dr. Chaffee, Dr. Aamodt, and Dr. Orellana. In my summer project, I expanded my horizons to work in epidemiology and clinical research. I worked with a data set of almost 2,300 participants who had been examined and surveyed over the past two years from multiple trips to Mexico and Peru by UCSF researchers. There have been many studies that compare self-perception to doctor-perception of malocclusion but there are very few that look at Latino populations.

The summer research program has opened many doors for me, and I am even traveling abroad to present at an international conference over summer break with Dr. Orellana. They say it takes an army to raise a child, and I am happy to have the support of so many mentors at home and here at school that continue to guide me and help me take advantage of the opportunities life has to offer. Through research I have been able to harness my passion for learning why we do the things we do and how we can modify our practice in the future to better serve ourselves and more importantly those around us.
If you live in the United States for so long it’s difficult to imagine a world where we are not the center. Staying in Chengdu, China challenged this notion and presented me with a very different reality. Stroll down any given street and you can witness an age-old culture that still looms in the hearts of all the locals. Take a turn around a different block, and witness the youth paving the way into a generation of technology and modernism. This is exactly what inspired me to waste no time and soak in everything I could possibly

Initially, I really did not know what to expect, other than the fact that I would be in Chengdu experiencing the life of dental student at WCCS (West China College of Stomatology). However, I was excited to go to a different country and see how a different political and economic landscape can shape the dynamic between dentistry and research.

In many ways, I expected a stark contrasts between UCSF’s program and WCCS’s dentistry program. But this was not the case, and I saw many similarities between the two schools. Attending courses with local students and conversing with them in both Mandarin and English, I learned that China’s younger generation were the driving force of China’s scientific growth. Students both in the USA and China were driven by the ambition to be scholars.

In regards to curriculum and academic structure, I realized that dental schools in the United States promote students to self-learn through problem-based learning or online literatures, modules, and podcasts. In China, lecture-based learning is more prevalent. Furthermore, dental education in China is more of a sub-specialty of medicine, or “stomatology”. This explains the inherent differences and higher presence of oral maxillofacial surgery and craniofacial surgeries performed in China than in America.

Interestingly, American dentistry features more structured career pathways. Here, dentists engage in a full-time work, attend continuing training/education programs, belong to an association, gain legal status, and construct a code of ethics emphasizing quality of care. On the other hand, in China professional development is still considered primarily in the context of promotion or achieving a higher professional title.

In conclusion, Chengdu is an urban center and transportation hub for the entire Sichuan region of China. Furthermore, ambitious youth are driving forward scholarly discovery in many areas – just like at UCSF. It is therefore no surprise this city is at the forefront of Stomatology and dental education. I learned from this culturally rich but brief adventure that I will never truly understand all the idiosyncrasies that make China so unique. China is just too vast, too diverse and too old.
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Passing the Torch
Remembering Dr. John C. Greene
Written by Morgan Nelson ‘19

The members of JGS- the John C. Greene Society- would like to honor and memorialize the life of John C. Greene, our club’s namesake. From humble beginnings in Kentucky, Dr. Greene became an influential researcher around the world, a policy maker in Washington DC and a visionary academic. He passed away on October 13, 2016 at the age of 90. We would like to focus on his accomplishments here at UCSF, where he served as Dean of the UCSF School of Dentistry from 1981-1995.

After being an Admiral in the U.S. Public Health Service Commissioned Corps, and the Deputy Surgeon General of the United States (the highest-ranking dentist in the history of the U.S. government), Dr. Greene came to San Francisco to interview for the position of Dean at the dental school, which is when he developed his vision for the future of the dental school.

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Research & Clinical Excellence Day

Every October, UCSF School of Dentistry dedicates a day to celebrating the research accomplishments of our dental students and research trainees known as Research and Clinical Excellence day (R&CED). This year marks the 14th anniversary of this event, with over 400 attendees and more than 60 presentations. Poster and oral presentations were given throughout the day, and prominent speakers were brought in to share from their fields.

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Photo Credit: Elisabeth Fall
Dear John Greene Society Members,

I would like to thank all of you for contributing to JGS this quarter and fostering a positive research community here at UCSF. Our society has grown tremendously since being established in 2002, and continues to represent UCSF’s excellence in research.

Successful organizations are built upon strong foundations. JGS would not be where it stands today without Dr. John C. Greene’s devotion to research and his students. We were deeply saddened by the passing of Dr. Greene on October 13th, 2016 and wish to commemorate his lifelong accomplishments and legacy, which we proudly bear through JGS. We thank all those who have generously donated to JGS in his remembrance, and will ensure these contributions are dutifully used to enhance Dr. Greene’s vision for the organization.

Research and Clinical Excellence Day (RCED) continues to be one of our Fall Quarter highlights. We were honored to hear from Dr. Carol Summerhays (President of the American Dental Association) and Dr. Mark Kirkland (recipient of the Clinician of the Year Award), and to have faculty and colleagues present their case studies and research. RCED was especially meaningful to me as 23 of us participated as Summer Research Fellows and presented our work. We witnessed the culmination of months of experiments, data analysis, and preparation. Our research experiences enriched our education in evidence-based dentistry and our ability to think analytically. I highly encourage first years with even a slight interest in research to take the opportunity to perform summer research. It will help you grow professionally and catalyze valuable relationships with mentors. Furthermore, our work is more than educational; we tangibly contribute by advancing knowledge and developing new technology.

JGS’ primary goal is to provide the best resources for dental student research. This quarter we hosted the elective “IDS 186: Current Issues in Dental Student Research” where students heard talks from our faculty about the fascinating research conducted at UCSF. We will continue to host this elective next quarter and hope to see the same level of engagement! Additionally, we held a proposal workshop to prepare students for applying to the Summer Research Fellowship and AADR. Lastly, we launched a new website: www.jgsucsf.com, where you can find research and fellowship opportunities at UCSF and beyond, as well as information from our workshops.

Next, we have the IADR/AADR 2017 coming up in March right here in San Francisco! We are excited to be the host city and to share our research and experiences with students from all across the nation. We will implement an Advocacy Challenge, where students can join dental advocacy efforts on state and federal levels, and learn about legislature relevant to dental research. Last but not least, we will host a Clinical Case Study Workshop in which D3 and D4 students will share their clinical experiences with their colleagues.

As always, please contact me at any time with feedback or ideas, and stay tuned on jgsucsf.com and Facebook (“The John C. Greene Society”) for upcoming events!

Warm Regards,

Linda Kim | John Greene Society | UCSF LSRG Chapter President
Dr. Greene came to UCSF in 1981 when the school was dealing with many difficulties. The dental school was a million dollars in debt, the students were unhappy with the level of education they were getting in the basic sciences and only 71% of UCSF graduates had passed the state boards for clinic proficiency in 1980. He made rapid radical changes to almost every aspect of the way the dental school was run, by increasing emphasis of behavioral and public health components as essential to humanistic dentistry. He also decreased enrollment from 108 to 88 students with the aim to emphasize quality over production of numbers.

Dr. Greene also put a greater emphasis on understanding the basic biological sciences in order to diagnose and treat oral health problems. He emphasized providing good, comprehensive care, rather than just seeing patients in order to fulfill requirements for a certain number of bridges, fillings or crowns. He sought to raise the academic standard and scope of teaching by building a collaborative environment with other schools at UCSF and other dental schools and emphasized dental students being involvement in “meaningful research.”

Some of these changes, brought on so rapidly, were not always well-received, but under Dr. Greene’s leadership, the school was able to move forward.

In a few years, 90% of UCSF graduates passed the boards and the school became ranked third in the country. For these accomplishments, Dr. Greene credited the student body and “superstar” faculty, publishing research findings in quality journals and minority recruitment.

"I began to see the real potential for this to be the outstanding school in the country, perhaps in the world."

In speaking of the future of dental education, he stated that the challenges would be “to continue the trend to strengthen academic quality, to find the funding to sustainment what we have and to be able to attract the kind of people who are going to make it possible.” Regarding the future of dentistry itself, it was his desire that treatment
would continue to become more soundly based on science. He thought lasers would be used widely for the removal of caries, to reshape the tooth and for gingival surgery.

When asked what he would do for leisure after retirement, he stated that he would like to become reacquainted with his golf clubs, given to him when he retired as an Admiral from the Public Health Service after over 30 years of service.

Dr. John C. Greene lived a meaningful, influential life. He was the president of the American Board of Dental Public Health, the IADR and AADR. At UCSF, we know him as the person who was brave enough to have a strong vision for the future of our school and the perseverance to see those changes through in the face of numerous obstacles.

The John C. Greene Society, one of the most respected and vocal student research groups, proudly bears his name. In the last newsletter, we wrote about the most recent changes being made to the dental curriculum, which center around the inclusion of Evidence-Based Dentistry. In supporting the research-based changes being made in our curriculum, we are continuing the legacy of Dr. Greene, who embraced innovation: “Once you’ve stopped changing, you’re no longer a leader.”

This summer was the most challenging yet rewarding time of my life. With no prior research experience, I stepped into lab on June 13th and began my crash course in craniofacial biology and wet lab research. To say the least, this summer I had a lot of “firsts.” It was my first time isolating mouse embryos and embedding them in paraffin. It was my first time performing immunohistochemistry and H&E staining and imaging thousands of sections. Finally, it was my first time analyzing real data produced from our meticulously planned experiments. I am thankful to my mentor, Dr. Jeffrey Bush, and my Post Doc, Dr. Seungil Kim, who guided me throughout every step. They took the time to teach me every technique and troubleshoot with me when something inevitably went wrong, such as when I forgot to add the second immunohistochemistry marker or when I accidentally took perfect sections of the abdomen (oops!) rather than the secondary palate. I am fortunate to say that I have come a long way since those early days. Not only did I learn specific research skills this summer, I gained appreciation for research itself: the time, energy, and thought that goes into each and every experiment.

My research examined the role of apoptosis in secondary palate fusion. While apoptotic cells are always found in the midline seam, previous studies had not concluded whether or not programmed cell death was the mechanism responsible for palate fusion. Using a mutant mouse model, we unexpectedly found that apoptosis is not necessary and that mice lacking apoptotic pathways undergo normal palate fusion. Rather, it is likely that apoptosis is only a secondary consequence of our signaling or cellular processes driving palate fusion. The results from this project were both surprising and exhilarating, and it’s a thrill I won’t soon forget.
FROM DR. LANG:

As Associate Dean for Research in the School of Dentistry, one of my tasks is to help oversee the Summer Dental Student Research Fellowship Program. The opportunity to engage in research profoundly changes our students, whether they go on to pursue careers in private practice or assume positions in academic dentistry. Our Summer Dental Student Research Fellowship Program gives young men and women a chance to learn the methods, tools, and language of science from leaders in the field and embark on research in the areas they are most passionate about. This success of this program is key to the future of Dentistry, both in Research and in Clinical Practice, the former by creating a pipeline for development of Dental Clinician/Researchers and the latter for promoting the success of evidence-based practice in the Clinic. Thus, it is one of my goals to grow this program so that every qualified Dental Student who is interested will have the support to spend a summer working in one of our outstanding research labs, an experience that can make a difference over a lifetime.

In addition to supporting the Summer Research Fellowship, I also, together with several of my faculty colleagues, help oversee the Oral and Craniofacial Sciences Program. This long-running program trains our DDS/PhD and PhD students and is funded by the School of Dentistry, the UCSF Graduate Division and a T32 grant from the National Institute of Dental and Craniofacial Research. Because it provides the academic and financial framework through which graduate students engage with our research program, it is one of the engines of our School of Dentistry research program, which has been ranked #1 in the country for the past 24 years.

Another of my tasks as Associate Dean for Research is to help Dean Featherstone to provide the resources that our investigators need to be successful. This includes supporting seminars and symposia which foster scientific interactions, providing seed funding for projects that will one day mature into major studies supported by NIH and other agencies, and providing and maintaining research space that allows investigators to carry out their studies in state of the art research facilities.

Thomas Lang
Professor in Residence, Radiology and Biomedical Imaging
Associate Dean for Research, School of Dentistry
As the essential connection between oral and overall health is being understood more these days, R&CED presents some of the best oral health findings with which to make research-based changes for the future of healthcare. The National Institutes of Health funding testify to the importance of research at UCSF, with the School of Dentistry ranked first in NIH funding for biomedical research for the 26th year in a row, receiving $15.5 million in grants in 2015. UCSF overall ranked first among public schools receiving funding.

"Once again, I was inspired and energized by Research and Clinical Excellence Day," said Michael McMaster, PhD, committee chair. "The School of Dentistry community coming together for this special day, to celebrate our accomplishments and commitment to excellence in patient care, discovery and education, is something we should all be proud of."

Plenary speaker Carol Summerhays, DDS, president of the American Dental Association, spoke on "What It Means to Be America’s Leading Advocate for Oral Health." She addressed the future of dentistry in the U.S. for those of us entering the field in a few years time.

The Spotlight on Clinical Excellence featured Chirag Patel, DMD, MD, discussing "Oral and Maxillofacial Surgery in the Information Age: Two Case Presentations."
The Clinician of the Year award went to Mark Kirkland, DDS, associate dean for clinical affairs and director of the International Dentist Program. In his speech, "My Journey", he told humorous and poignant stories on his path to becoming a dentist.

Richard Schneider, PhD, was named Mentor of the Year. His mentor this last summer, Grace Zhu, spoke highly of his mentoring with her project involved in the quail-duck hybrid, the "quck." She thanked him for taking her under his "quck" wing.

Morning and afternoon oral presentations were moderated by Andrew Jheon, DDS, PhD. Presenters included Raymond Lee, Bronwyn Hagan, Tiffany Han, Taranvir Cheema, Alex Romash, Arvin Pal, Rebecca Kim and Grace Zhu.
AADR and Friends of NIDCR will visit Capitol Hill for Advocacy Day on Tuesday, February 28, 2017 to educate a newly elected Congress on the importance of dental, oral, and craniofacial research. This event will include a briefing on key issues, a training session, and individual and/or small group meetings with participants’ members of Congress and their staff.

Written by Linda Kim '19

Advocacy is crucial for the formation of policies that directly impact our profession by determining state and federal spending on biomedical research and oral health services. Such spending includes support for dental schools, subsidies for residency programs, reimbursement policies of public insurance programs, mandated benefits, and additional financial incentives (“Chapter 5: Expenditures and Financing for Oral Health Care. Improving Access to Oral Health Care for Vulnerable and Underserved Populations”. National Academies Press; 2011). Dentists need to inform legislators about the importance of these programs in order to best advance the health of the public. This is especially true for major new initiatives of broad societal importance that relate to our profession, such as Vice President Biden’s Cancer Moonshot.

Fortunately, dentistry is represented by some accomplished advocates in the legislative branch. This year, American Dental Association (ADA) member Dr. Drew Ferguson (GA), won election to the 115th Congress (“Four ADA members elected to Congress”. 2016. http://www.ada.org/en/publications/ada-news/2016-archive/november/four-ada-members-elected-to-congress. Accessed Nov 12th, 2016). Three other ADA members, congressional incumbents Drs. Brian Babin (TX), Paul Gosar (AZ), and Michael Simpson (ID) won re-election with significant majority votes in their respective districts. All four candidates are general dentists. Reps. Babin, Gosar and Simpson have been advocates for oral health and have sponsored numerous oral health bills.

Dental students are the future of the profession, so they too must be involved in advocacy. In fact, students have played a role in several policy changes that improved the education and practice of dentistry. These victories include getting scholarships administered by the National Health Service Corps and U.S. Armed Forces exempted from taxation, extending additional borrowing for health professions students in the unsubsidized Stafford Loan program, and passing Proposition 56 which raises California’s tobacco tax by $2 - a recent development that will save thousands of lives, save the healthcare system billions of dollars, and provide much more funding for Medi-Cal provider reimbursements (“Prop. 56 passes; major win for oral health”. 2016. http://www.cda.org/news-events/prop-56-passes-major-win-for-oral-health. Accessed Nov 12th, 2016).

Advocacy Day is a wonderful opportunity to visit our nation’s capitol, meet other students and professionals, and directly shape how the legislative agenda will affect dentistry. If you are interested in attending Advocacy Day, please contact me at linda.kim@ucsf.edu by December 12th, 2016. If enough students express interest, we will organize a group to go to Washington D.C together and represent UCSF’s dental student community!
Remembering Dr. Howard Barkan

Contributed by Ivy Vuong ’19

This past summer, we lost an enthusiastic mentor who has contributed a wealth of knowledge to public health research. UCSF students who had the immense privilege of working with Dr. Howard Barkan wanted to honor him and his work. Here’s what they had to say:

Priyanka Athavale
UC Berkeley UCSF Joint Medical Program, Year 1

“I feel so privileged to have had the opportunity to work with and learn from Howard Barkan throughout the past three years. I first met Howard over the phone, when I was advised to contact him to send me some data sets for my research project. What I anticipated being a brief and formal exchange of email addresses turned into a full hour of laughter. This introduction was characteristic of nearly every interaction Howard and I had for the next three years: Howard was a wealth of knowledge and made potentially stressful research experiences lighthearted and fun. From all-day tutorials about how to do various SPSS analyses to after-hours phone calls about how to troubleshoot confusing data, Howard was always ready and willing to help. Howard made my and so many other students’ research projects possible. I am so incredibly grateful for all of Howard’s support, guidance and inspiration.”

Madhurima Ganguly
UCSF School of Dentistry
ID4

“I have had the pleasure and honor of working with Dr. Barkan over the past couple of years while doing data analysis for the India Smiles project. I also worked closely with him for planning a separate analysis in Nepal to look at associations between early childhood caries and maternal caries risk. He was ever ready to help students in every way he could, and I remember his responsiveness to email even at odd hours. And speaking of email, he always signed off with a Namaste! Besides being so warm and friendly, he was extremely knowledgeable and I consider myself lucky to have gotten a chance to learn from him. He has always been a great mentor and will be surely missed.”

Ivy Vuong
UCSF School of Dentistry, D2

“My first memory of meeting Dr. Barkan was at a joint meeting with several other oral health project teams at UC Berkeley. He came to host a tutorial for undergraduates working on public health research and he immediately captured all of our various interests, unified our goals, and expressed to us how much our work could contribute to public health research. Since then, the Vietnam Tooth Project team has had the privilege of learning statistics under the guidance and inspiration of Dr. Barkan. Conducting research as an undergraduate student initially was extremely daunting to me. At the time, I felt that I did not have the toolkit and skills to use our data and translate it into meaningful analysis. Yet, Dr. Barkan was able to teach our cohort the basics and quickly transitioned into teaching us more intricate statistical tests. Earlier this year, Dr. Barkan was supportive and encouraging in helping me spearhead my own research project as a dental student. He was pivotal in teaching me to think critically by breaking everything down to the minute details. My interest in statistical analysis and public health research would have never been cultivated without the inspiration of Dr. Barkan. Dr. Barkan is not only a skilled statistician but also a passionate educator. He brought along his fun, unique charisma to every meeting and would always lighten up the meetings with so many of his jokes. I feel incredibly fortunate to have been able to know and to work with Dr. Barkan. He has contributed an immense amount of his expertise to oral health research among many of his other interests and truly a wonderful all-around person to know and to work with.”
Smart Retainers

Interview with Dr. Eric Castle, 3rd year orthodontics resident
Written by Sarah Pi ’19

Does this technology add to the thickness of the retainer?

It is a little bit thicker. You’re adding maybe two mm of thickness to the retainer. I’ve worn this myself. It’s definitely tolerable, bearable. It doesn’t affect speech that much more. It’s not as bad as you think, so I don’t see this as a barrier.

What results do you anticipate or hope to see from the upcoming pilot study?

We’re excited about that. We’ll be having five residents here wearing these for a week. Each of them will be loaned an ipod to use with the app already preinstalled on it. The pilot trial is just to confirm that the app is easy to use, we’re able to sync the data with no problems, that the retainers are really accurate and shows that the wear time that it recorded is the same as what [the residents] recorded in the log book. This is just to really confirm everything that we’ve been doing so far. If the results are very positive, which we feel they will be, then we’re going to move ahead with the clinical trial here in clinic, which we already have CHR approval for. That will be a larger trial, and we’re hoping for around 30 patients to be enrolled in that trial.

With the Bluetooth technology, would the smart retainer be able to last just as long as a regular retainer? Is this monitoring of progress temporarily aimed for maybe the first year following completion of treatment, or is this meant to be a lifelong commitment?

That’s another big part we’re working on. The important part that we’re concerned about is generally the first six months because that’s when we want patients to wear retainers full time…because that’s how long it takes for the bone and everything to adjust to the new tooth positions to get stability. We are trying to get it to last six months. After that, the retainer is still functional, but the battery will be dead. You would no longer get compliance tracking, but usually after six months, you go to night time only. At that point, patients will readily do that. We don’t have a problem with patients wearing these at night; it’s just at night.

How easy do you think it will be to train dentists to use this product, and what are some barriers you think will prevent them from participating in this program?

There are two retainers that are out there, but they’re not well accepted at this point. I think the reason for that is because you have to have a docking station, which is expensive, and the patient has to come in and sync this. Our retainer/appliance is different, and we think that’s going to make it a lot easier to implement for orthodontists to use because it’s much cheaper. When we mass produce these, the retainers themselves would only cost an additional $20 to make. It’s not that much additional cost, and you don’t need a docking station, or you don’t need anything different. There’s just a web page to use. The hurdles to implementing this in a practice are much easier.

What exactly is a smart retainer?

The idea of a smart retainer is to be able to monitor patient compliance with retainers, and also our hope is to incentify patients to wear their retainers. Often when we finish treatment, patients will get retainers, and usually in kids, they don’t wear them as often as they should, and sometimes this can lead to relapse of the teeth. Occasionally, this necessitates retreatment, which isn’t fun for anybody, so we really want patients to wear these retainers full time, usually during first six months. Right now, there’s no way really to monitor this other than having the patient come in and you’re looking to see if the retainer fits. There’s two retainers out on the market that do a similar thing – that is, they’re trying to track compliance, and they have a device inside that’s measuring wear time. However, with these appliances, they don’t have Bluetooth technology, so they’re relying on the patient to come into the orthodontists’ office to basically plug it into a USB port. That’s really a limiting factor because at that point, the patient’s already in your office, and you can take a look to see if they’re wearing it or not. We really want something that can real-time track these and not require the patient to come in as often for visits. That’s where our retainers our novel in that it’s using Bluetooth technology.

In addition to that, we’ve made an app. Right now, it’s on iOS. For ipods/iphones, you can get this app, and that’s what you’ll use with [the retainer]. The patient will sync the data that goes in the app, and that goes to the cloud database, which the orthodontist can then pull down at their computer in the clinic. In the future, we want to make the app more user friendly and make it kind of fun, where the patient will earn rewards – maybe points or different things – that they can then get prizes with if they reach a certain amount of wear time. That’s where we think that will also help out trying to incentify kids to wear their retainers more and not just tracking them.

How easy do you think it will be to train dentists to use this product, and what are some barriers you think will prevent them from participating in this program?

There are two retainers that are out there, but they’re not well accepted at this point. I think the reason for that is because you have to have a docking station, which is expensive, and the patient has to come in and sync this. Our retainer/appliance is different, and we think that’s going to make it a lot easier to implement for orthodontists to use because it’s much cheaper. When we mass produce these, the retainers themselves would only cost an additional $20 to make. It’s not that much additional cost, and you don’t need a docking station, or you don’t need anything different. There’s just a web page to use. The hurdles to implementing this in a practice are much easier.
Let's welcome the newest members of our board!

JGS Officers 2016-17
President: Linda Kim
Vice President: Arvin Pal
Secretary: Grace Zhu
Treasurer: Adel Ahn*
Communication Liaison: Corissa Chang
Journal Club Coordinators: Thomas Nguyen & Karena Craemer
Junior Journal Club Coordinator: Duy Bui*
Newsletter Editor-In-Chief: Morgan Nelson
Junior Newsletter Editors: Anne-Marie Jeng* & Eric Hsu*
D3 Rep: Caleb Tam
D2 Rep: Andrew Huang
D1 Rep: Shaun Abrams*

* new board member

Well, folks, that’s it for this issue. Thanks for reading and check us out on our new website: jgsUCSF.com.

Morgan Nelson | Newsletter Editor-In-Chief