Charting New Territory

Thank you for taking the time to read the second edition of the UCLA Dentistry bi-annual magazine. Before you dive into the pages of this issue, I would like to take the time to share several exciting announcements.

We passed our February site visit from the Commission on Dental Accreditation. In fact, we set a new standard. We are the only dental school in the Commission’s history to not have a single recommendation or suggestion for all of the accredited specialty programs that were reviewed. Accreditation happens every seven years, and although it can be stressful, it is a time for our school to shine. I want to thank everyone who was involved in the process. We wouldn’t be who we are without our dedicated staff, faculty, and students.

We officially launched our Community-based Clinical Education program at the beginning of March. Millions of Californians have a problem accessing oral healthcare. Our solution is to bring the dental school to the community through affiliated partnerships with federally qualified health centers and private practices that treat underserved patients. The program introduces our fourth year dental students to caring for vulnerable populations throughout Southern California. Students gain valuable clinical experiences through performing a wide array of services, including cleanings, fillings, dentures, and surgical extractions. My hope is that this program continues to build momentum, and that UCLA Dentistry is part of the solution of access to care through service-based learning.

Throughout the pages of this magazine, we introduce you to four alums who used their dental degrees to reach new horizons. We feature a first year student doctor who had to take a new perspective because of a vision condition, but he discovered that maybe it was the right perspective all along. We took collaborative research to new heights with the help of funding from the Center for Advancement of Science in Space. Finally, we look back at the last four years of the Centennial Campaign for UCLA. It’s been a long road, and we wouldn’t be at over 80 percent to reaching our $35 million goal without the donors who believe in our mission.

I look forward to charting even more new territory with help from UCLA Dentistry faculty, students, staff, alumni, and friends, by my side. If you have an idea for a story or just want to send us your thoughts about what we featured in this magazine, please email us at info@dentistry.ucla.edu. Your opinion and thoughts matter and are important to us.

Sincerely,

Paul H. Krebsbach, DDS, PhD
Dean and Professor
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Top left image: Access to oral healthcare is a challenge in California. UCLA Dentistry wants to be part of the solution. Top right photo: Dr. Naomi Ellison ’81, one of four alums featured, found a new career after her dental degree. Above photo, left to right: Drs. Ben Wu, Chia Soo, Kang Ting, and Jin Hee Kwak, make up the team that tested a break through osteoporosis therapy in zero gravity.
Imagine if the pain from a decaying tooth is so bad that you have trouble sleeping or you’re having difficulty eating and your access to dental care is severely limited. You find yourself without a dental home or dental insurance, so you endure the pain for as long as you can, but the pain is now affecting your mental and overall physical health. For millions of Californians, this is their reality.

The numbers are dismal for the Golden State. Over 54 percent of children have tooth decay by the time they start kindergarten, increasing to over 70 percent by third grade. It is estimated that school-aged children miss 874,000 days of instruction each year due to dental problems, costing districts $29 million due to a reduction in attendance rates. Roughly 65 percent of pregnant women don’t receive dental care during their pregnancy. In 2012, the latest data available, there were over 113,000 visits to emergency rooms due to preventable dental conditions.

Unfortunately, oral health is not perceived as an important component of overall health until pain occurs and coupled with inadequate access to healthcare, many Californians are left with nowhere to turn.

Professor of public health and community dentistry, Dr. Jim Crall, has spent the majority of his career working to improve access to care, focusing largely on children and pregnant women. In 2013, with funding from the child advocacy and grant-making organization, First 5 LA, Dr. Crall, and his UCLA-First 5 LA team set out to increase access to dental and oral health services for children ages 0 to 5 to reduce the risk of tooth decay. The team focused on underserved communities, which traditionally have large numbers of low-income Latinos and African Americans. Through relationships with 22 community clinics, more than 75,000 preschool-age children in Los Angeles County received dental and oral health care – 30 percent over the initial target.
Bringing the Dental School to the Community
“By redesigning how our affiliated community clinics were operating, we were able to successfully double, and in some cases, triple their capacity to serve patients,” said Dr. Crall. “Our work, through the First 5 LA partnership, improved how the community clinics delivered oral healthcare to young children, increased parents’ and caregivers’ awareness of the importance of oral healthcare for young children, and developed a sustainable community-based ‘dental home’ model for improving the entire system.”

Following the success and achievements of the UCLA-First 5 LA program, Dr. Crall’s team was selected as the lead entity for a Los Angeles-based dental pilot program under the Medi-Cal 2020 Dental Transformation Initiative. The program, which is administered by the California Department of Health Care Services, awarded funding to 14 programs throughout the state to expand preventive dental care and disease management for children enrolled in Medi-Cal, California’s Medicaid health care program. Through this initiative, UCLA and its consortium partners aim to improve oral health services for 500,000 L.A. County residents, ages 0 to 20.

The UCLA-led Dental Transformation Initiative entered the public phase this spring and focuses on three primary goals: using information technology to enhance the quality and continuity of care; developing new ways to expand preventive and disease management services within clinics, private practices, and community settings; and integrating oral healthcare services across dental, medical, and community providers.
“Our First 5 LA-funded work in Los Angeles revealed a much bigger problem that exists statewide,” said Dr. Crall. “Our UCLA-First 5 LA project and this new initiative with the Department of Health Care Services are important steps toward improving the systems that underserved Californians depend on to provide access to care, but much more remains to be done.”

According to the Centers for Medicare and Medicaid Services, only about one-third of California’s 6.1 million children and adolescents enrolled in Medi-Cal receive preventive dental care each year. Preventive services not only help maintain good oral health, but they also help reduce the need for costly treatment for tooth decay and cavities in hospitals and emergency departments. The California Healthcare Foundation found that the average cost of a preventive dental visit was only about one-third of the median cost of emergency treatment.

“Identifying the shortcomings in the operations at community clinics across Los Angeles County is just one piece of a much larger puzzle,” said Dr. Paul Krebsbach, dean of the UCLA School of Dentistry. “Several other barriers exist in California’s healthcare delivery system that need to be addressed before we can truly start to provide the care that everyone in this state should be receiving.”

One-third of California’s population is low-income and over half of the State’s children are covered by Medicaid. For those fortunate enough to have access to government-funded dental insurance, finding a dentist who accepts it can be difficult. Often times, the dentists who do accept their insurance do not have available appointments for weeks, if not months, ahead.

There aren’t enough providers practicing in federally qualified health centers, tribal clinics, dental service organizations, and private practices that treat underserved patients. Nationally, only 2 percent of the graduating dental workforce pursue a career in public health centers, roughly equating to 3,000 dentists serving 10 million people. By 2020, experts estimate that 40 million people will be in need of care, with a sizeable portion of those people living in California. Currently, it is estimated that 1.7 million California residents live in areas that have a shortage of dental care providers.

“To even come close to serving the oral health needs of the U.S. population, 20,000 dentists practicing in public health settings would be required — or almost seven times what we currently have,” said Dr. Bill Piskorowski, health sciences clinical professor of public health and community dentistry and associate dean for community-based clinical education.

Increasing Access to Care through Community-Based Clinical Education

With a goal of improving access to care, and introducing predoctoral students to the idea of a career in public health, UCLA Dentistry has launched a new program called the Community-based Clinical Education program (CBCE). “The premise for this model is simple,” said Dr. Piskorowski, the program’s director. “Instead of bringing the patients to the dental school, we will be bringing the dental school to the community.”
Starting in March, the dental school began sending a group of fourth-year predoctoral students to five community clinics located throughout Southern California, including San Fernando, Palm Desert, Northridge, Venice, and El Centro. The first group began a 2-week rotation where they performed a wide array of services, including patient education, cleanings, fillings, dentures, and extractions.

The School estimates that in the program’s first year, the D4 students will be able to treat roughly 9,000 patients through partnerships with public health centers and affiliated community clinics. The patient population that the CBCE program is targeting includes those living at or below 200 percent of the federal poverty level, those struggling with access to care, and those who are covered by Denti-Cal. By 2022, the goal is to be able to treat over 20,000 vulnerable patients and eventually grow the rotation from two weeks to eight weeks.

“The CBCE program is developing an ethic of caring that many don’t get to experience and allows our students to explore a non-traditional and rewarding career path,” said Dr. Lisa Nguyen, CBCE program administrator. “Our students can help tackle the access to care problem and help thousands of underserved patients while gaining experience that will help them to be successful in their careers post-graduation.”

This new model mimics a proven model from the University of Michigan (U of M) School of Dentistry’s Community-based Dental Education Program. In the past 10 years of the U of M program, the number of dental school graduates choosing to enter the public health field increased six times to roughly 12 percent of the last graduating class surveyed. The U of M model, which was launched and developed by Dr. Piskorowski, has been replicated several times over at dental schools across the country, all with successful results.

“An important feature of this model is that it is a self-supporting program,” said Dr. Krebsbach. “This is a win-win-win situation. Affiliated clinics gain the ability to see more patients. Our students gain valuable clinical experiences. Patients and the greater community experience improved overall healthcare.”

To ensure the quality of care at the satellite clinics is up to par with the dental school’s standards, an evaluation system has been put in place. Through a secure, cloud-based network, instructional preceptors and program administrators are in continual communication. The data generated will be used to improve patient care protocols and enhance the operations of affiliated satellite clinics.

“We hope to become a conduit of evidence-based information between experts and clinicians at remote locations. By enhancing education, we are improving systems and in-turn elevating the quality of dental care for vulnerable populations.”

– Dr. Bill Piskorowski
Health Sciences Clinical Professor of Public Health & Community Dentistry

We hope to become a conduit of evidence-based information between experts and clinicians at remote locations. By enhancing education, we are improving systems and in-turn elevating the quality of dental care for vulnerable populations.

1.7M
Number of California residents who live in an area that has a shortage of dentists

Among the many benefits and anticipated positive outcomes of the CBCE program is the collaborative care approach. Current knowledge shows that oral health is linked to chronic disease, such as cardiovascular disease and other systemic health disparities. By having dentists work alongside primary care givers at centers
with co-located services, providers can collaborate on cases. For example, sometimes symptoms appear in the mouth that only a dentist would spot, but the need for further assessment by a doctor is then required.

“Collaborative care is the future of healthcare delivery,” said Dr. Steve Lee, health sciences assistant clinical professor and CBCE program administrator. “This new program encourages both intraprofessional and interprofessional education and training, where our students are providing care within a health center and not just a dental clinic. They will be interfacing with dentists, dental hygienists, physicians, nurses, and social workers.”

Dr. Lee also chairs the Systems-Based Healthcare course that is offered at the dental school in conjunction with the David Geffen School of Medicine at UCLA and the UCLA School of Nursing. The course is required curriculum for all third year dental students.

New additions to the UCLA model that didn’t exist at the U of M model include teledentistry and telementoring, two technological advancements that have changed the way dentists treat patients and the way dentists interact with each other. Teledentistry is one solution for a lack of providers in a remote area. It allows for patients to receive services by non-dentist providers, such as registered dental hygienists in alternative practice, under the supervision of a dentist, physically located elsewhere.

“Telementoring can be helpful with specialized services, such as pediatric dentistry and hospital dentistry. Take a remote city like El Centro for example,” said Dr. Nguyen. “There may not be many pediatric dentists in the area, and the local general dentists may not feel comfortable providing the specialized care that toddlers and young children need. Telementoring allows a pediatric dentist from Los Angeles to guide a general dentist in delivering care to children in El Centro without physically being there.”

Photo: Dr. Bill Piskorowski discusses the clinical training benefits of providing care to the community through service-based learning.
We want to produce well-trained dentists who have a diverse portfolio of experiences. Our graduates will leave UCLA with the confidence and skills to take on any case that they are presented with, regardless of whether they go into public health or private practice.

– Dr. Paul Krebsbach
Dean

The CBCE rotation is meant to be the capstone of dental students’ careers and also a way to enhance the dental school’s current in-house training model. There is no better way to successfully transition dental students to real world scenarios than to provide hands-on experiences in the community.

“We want to produce well-trained dentists who have a diverse portfolio of experiences,” said Dr. Krebsbach. “Our graduates will leave UCLA with the confidence and skills to take on any case that they are presented with, regardless of whether they go into public health or private practice.”

This model has proven that organizations that embrace the academic thread, through partnerships with institutions of higher learning, can attain outcomes that are more predictable and more productive. UCLA’s ultimate goal is to develop an anticipated, sustainable program with proven positive outcomes that can be disseminated and adopted by dental schools across the country.

“We are finding solutions for people who can’t help themselves,” said Dr. Piskorowski. “The added benefit is that this program reminds our students why they got into healthcare in the first place.”

65%

Of pregnant women don’t receive dental care during their pregnancy

Thank you to Delta Dental of California for Supporting the Community

Funding to launch these complex projects can be challenging. Delta Dental of California, the state’s largest dental benefits provider, gave $1.5 million to help support UCLA student dentists to care for some of the most vulnerable patients in California. The gift is the largest that Delta Dental has ever given a dental school.

“Delta Dental and UCLA share a common goal, to broaden access to dental care for those who otherwise might go without. We are pleased to support the efforts of the community-based clinical education program at the UCLA School of Dentistry and, in doing so, the many patients and dentists who are so integral to the program.”

– Dr. John Yamamoto
Delta Dental’s Vice President of Professional Services
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Alums take dental degrees to
NEW HORIZONS

Dr. Adam Chen ‘83 & Dr. Doug Yoon ‘83
Dentists & Founders of XDR Radiology
UCLA Dentistry alums and business partners, Drs. Adam Chen and Doug Yoon, reflect on the momentous day when the two clicked over the esoteric questions that Doug had asked during an introductory course in the School’s main lecture hall in the Fall of 1979. But it wasn’t in dental school that the pair came up with the idea for their company XDR Radiology, it was much later in their careers.

Dentistry was something both of them were destined to do. Doug’s father, uncle, and several other family members were dentists, and Adam’s parents were determined to have a doctor in the family.

Following graduation, Adam went on to run a successful private practice. Doug followed his passion for research and conducted imaging experiments in the aerospace industry. In 1998, Doug left the firm he was working for and began conducting research at UCLA School of Dentistry under the leadership of Dr. Stuart White in the Section of Oral and Maxillofacial Radiology.

The deeper Doug delved into the work, the more frustrated he became with the dental imaging software that was on the market at the time. It was inefficient and expensive. He was still in contact with Adam and in 1999, the two began working on the first prototypes for their dental imaging software. Adam’s practice was the perfect “lab” for Doug to test his software.

“We saw a need for better software that could help dentists seamlessly pull-up radiographs of their patients at chairside,” said Adam. “Our goal was to help dentists do their job better and more efficiently. We were, and continue to be, dentist-centered and patient-focused. These are qualities instilled in us from our time at UCLA.”

After a few years of testing and refining their software, they began introducing it to practicing dentists. It was quickly accepted and adopted by the industry. With Adam’s deep understanding of a dental practice’s needs and Doug’s expertise in imaging, it was a match made in entrepreneur’s heaven.

After incorporating in 2003, there became a need for more structure. They brought on their third partner, a logistics expert, Joel Karafin, who they credit with helping them grow their ideas from a hobby to a company. Today, XDR’s software is utilized in dental schools, correctional facilities, hospitals, and nearly 5,000 clinics across the country. And Doug, Adam, and Joel didn’t stop at software; they went onto manufacture an intraoral X-ray sensor in 2013 and a camera in 2015, resulting in XDR becoming a nationwide leader in the dental imaging field.

“We owe a great deal of our success to UCLA Dentistry and especially to Dr. White,” said Doug. “He is the reason why I love radiology. He instilled in me the importance of doing things by the book. I can’t stress this enough – without UCLA, there wouldn’t be XDR.”

“I really want to encourage more dentists to go into business for themselves and to engage with UCLA Dentistry. It’s very empowering to start your own business. Don’t underestimate yourself or the resources available to you by virtue of being a Bruin. Just go for it.”

- DOUG YOON
“I never expected to become a dentist, let alone a community leader in organized dentistry and higher education,” said Dr. Naomi Ellison, Class of 1981. “Leadership opportunities find you and then you rise to the occasion.”

Naomi became interested in dentistry when she came across informational material about dental assisting programs during her undergraduate education. She was drawn to the field and decided to enroll in the program. After working for several years as a dental assistant and office manager, she knew in her heart that becoming a dentist was her future. With a strong science and biology foundation in her undergraduate work, Naomi was a viable dental school candidate. She applied to and was accepted into the Class of 1981 at UCLA School of Dentistry.

“I was overjoyed when I got into UCLA. I was impressed with the caliber of training that students received for the affordable price,” said Naomi. “And the selection of advanced training programs was another huge plus as it spoke to the caliber of the faculty.”

When Naomi entered dental school, she already had a few years of work experience and was able to use her slight age difference to her advantage. She found that leadership roles came easily to her, and she regularly led class projects and outreach events while also juggling the rigors of courses and clinic.

“Those first few years of dental school were challenging, but I believe it laid the foundation for leadership positions that came up later on in my dental career. UCLA teaches you how to be a dentist and a leader.”

Following graduation, Naomi chose to settle in Orange County, and was five years into working in private practice when she assumed a leadership role with the California Dental Association (CDA). As chairperson for CDA’s Council of Legislation, Naomi interfaced with representatives from the state of California, including Congresswoman Maxine Waters. For more than 25 years, Naomi was an instrumental leader with the CDA and served as a valuable advocate for organized dentistry. In fact, she spoke several times in front of California governor, at-the-time, Pete Wilson, about issues in the dental field.

Naomi’s advocacy work with the CDA eventually pushed her to be elected as chairperson of the board for The Dentists Insurance Company (TDIC), a dentist-owned insurance company. The firm, which was started by a group of CDA members in response to skyrocketing insurance premiums, only insures dentists. TDIC added workers’ compensation insurance later on.

“My position with TDIC was the biggest leadership role I had ever held,” said Naomi. “I was speaking in front of dental societies all across the state and country, consulting on multi-million dollar risk management portfolios, and routinely presenting in the boardroom of a fairly male-dominated field.”

With a desire to give back to her roots, Naomi reached out to UCLA School of Dentistry’s leadership to see what areas had the greatest need. Student scholarship and facility renovations were two areas that needed attention, to which she generously donated funds to support. She also found another way to give back. The dean at the time, Dr. Henry Cherrick, was in need of a strong leader to serve as the chairperson for the School’s board of counselors. She was just the individual he was looking for—passionate about the school and the profession.

“Leading the School’s board of counselors has been one of the most fulfilling roles I’ve ever held,” said Naomi. “It’s been an incredible honor to help provide counsel and drive the philanthropy that has helped turn my alma mater into one of the top dental schools in the country – THE top school if you ask me!”

Naomi’s career as a community leader does not stop at UCLA Dentistry’s Board of Counselors. She has served as director of the UCLA Foundation and is currently a member of the UCLA Centennial Campaign Cabinet as well as president of the Board of Directors for UCLA Women & Philanthropy.

“I feel fortunate to work with the UCLA community to help achieve the School of Dentistry’s vision for excellence in all that we do. UCLA and the profession of dentistry have given us all so much, and I am grateful for the opportunity to support this world-class institution.”
“Those first few years of dental school were challenging, but I believe it laid the foundation for leadership positions that came up later on in my dental career. UCLA teaches you how to think both in the role as a dentist and a leader.”

Dr. Naomi Ellison ’81
Dentist & UCLA Community Leader
from DENTIST to...

CEO

Dr. Steve Lee ’75

Dentist & Owner of Jessie Lord Bakery, Sweety Novelty, and Shine Foods
UCLA Dentistry alumnus and former practicing dentist, Dr. Steve Lee, Class of 1975, approaches his current profession the same way he approached his dental practice. “When my wife and I bought our first business in the food industry, I analyzed why it had failed for the previous owners – similar to examining a rotten tooth or tooth decay,” said Steve. “I went through the equivalent of the business’ patient records to learn why the business had failed. And then I created a treatment plan to bring it back to life.”

Steve practiced dentistry for nearly 20 years before switching to his current profession – an entrepreneur and business owner in the food industry. He is president and CEO of Jessie Lord Bakery, which supplies pies to major grocery store chains throughout the United States. He is also the owner of Monterey Park-based Sweety Novelty, an ice cream and frozen dessert manufacturer. “I’m very busy with pies during the holidays and with ice cream in the summer,” joked Steve. Being president of Shine Foods, a manufacturer of frozen Chinese dim sum dumplings, his third company, keeps him busy all year round.

As one of the first foreign-trained dentists to be admitted to the Professional Program for International Dentists at UCLA, Steve first became interested in UCLA after working alongside Dr. John Knutson, a founding professor at the dental school. At the time, Dr. Knutson was conducting research in Taiwan with the World Health Organization and Steve was a resident doctor at National Taiwan University Hospital. “I was happy in Taiwan being a dentist, but I began to have a thirst for more knowledge and the possibility of something different was planted in my head,” said Steve. Steve entered UCLA in 1972, and recalls being impressed with the intellectual curiosity displayed by his fellow student dentists. “In Taiwan, we accepted whatever information the professors shared without question. At UCLA Dentistry, we learned how to innovate and create knowledge.” Following graduation, he remained affiliated with the university through teaching in the Section of Restorative Dentistry at UCLA from 1975 until 1989, while also managing a practice in Santa Monica.

During this time, he and his wife, Tracy, kept busy raising three children; they never intended to own a bakery, let alone a dessert and dumpling business. “It’s a funny story of how I got into the food industry. Tracy loved Baskin Robbins so we applied for a franchise but they questioned our commitment to being a franchise owner since I was a dentist,” said Dr. Lee. “I guess we proved them wrong.”

Refusing to take no for an answer, Steve enrolled in an ice cream course at UC Davis in the Food Science and Technology Department. Applying his study skills and science coursework from dental school, he started making ice cream with Tracy on the weekends. This is how their first business, Sweety Novelty, was born in 1985. After growing the ice cream business, he continued to seek new challenges. In 1996, the couple learned of an opportunity to purchase a failing Asian foods company, Shine Foods, that made dumplings, and shortly after that acquisition, they took over Jessie Lord Bakery in 2003. Not only does Steve have an aptitude for dentistry, but he is also talented in buying and reviving failing businesses. Today, Jessie Lord Bakery produces and distributes 20 million pies per year to its customers.

“I believe I am successful because quality is at the heart of everything we do. When I was a dentist, I knew my patients would come back if I focused on providing the best care and creating a beautiful smile. In the food industry, I also focus on quality and aesthetics.”
If you had told Ethan Tencati that he would be pursuing a dental degree five years ago, he wouldn’t have believed you. Now, looking back at the series of events that brought him to UCLA, he feels lucky and is excited for the next three years at the dental school and his future profession.

Ethan spent the first 12 years of his life on an avocado farm outside Brisbane in Queensland, Australia. “It was very remote. The closest grocery store was an hour’s drive away. My high school had one of the lowest college acceptance rates in our state. It’s a bit surreal being at UCLA given my background.”

Ethan’s childhood dream was to become a fighter pilot. Immediately after high school, he joined the Royal Australian Air Force (RAAF) and attended the Australian Defense Force Academy where he earned a degree in aeronautical engineering. He went through five years of intensive training and simultaneously earned a Masters of Engineering degree in Space Operations. “Flying was my passion. It was the only thing I had ever wanted to do.”

In 2013, just two weeks before he would have completed his pilot training, he received the devastating news that he had a vision problem that would have affected his flying ability. “They hadn’t caught the problem earlier in my training, because I had performed well and progressed at the rate they expected,” the 26-year-old
recalled. “The nail in the coffin was when the RAAF consulted the U.S. Air Force to get their opinion. The U.S. Air Force never would have accepted someone with my condition. My career as a pilot was over before it even began.”

Following his prognosis, the RAAF offered Ethan a desk job, which he declined. He could have been a commercial pilot, but couldn’t ethically take on that responsibility. “As a fighter pilot, you’re responsible for your own life, but as a commercial pilot, you have 300 lives in your hands.”

If he couldn’t fly, Ethan didn’t see the point of staying in the Air Force. Around the time this happened, he met his future wife, an American from Huntington Beach, California. The couple dated long distance for four years, but in 2014, when they were married, Ethan made the move to San Francisco where he started a post-baccalaureate program at San Francisco State University.

“After leaving the Air Force, I was faced with the decision about what I was going to do for a living. I had lunch with a friend who was in dental school and the profession started to check the boxes that I desired,” said Ethan. “Team environment, interacting with people, and working for myself were all attractive aspects.”

In less than two years, Ethan completed the post-baccalaureate program, took the Dental Admissions Test, and applied to several California dental schools. In December 2016, he received an acceptance letter from UCLA. It didn’t take him long to make his decision. In September of the following year, he entered UCLA Dentistry as a part of the Class of 2021.

After leaving the military, Ethan felt a void that was hard to fill. The military had given him purpose and now, nearing the end of his first year of dental school, he has found a new direction. Ultimately, he may consider joining a private practice or working in academia. But for now, he’s enjoying being in a thriving metropolitan city where there’s opportunity around every corner.

“I feel like the biggest advantage I have is the perspective I’ve gained from my life experiences. In the military, you are surrounded by people who are always striving to be the best they can be,” said Ethan. “Dental school is a similar situation. It’s incredible being around so many brilliant people and in an environment where I’m constantly learning and being challenged to be my best.”
An estimated 54 million adults in the U.S. are currently at risk for osteoporosis and fractures. This number balloons to more than 200 million affected worldwide.

Osteoporosis is a bone disease that occurs when individuals start to lose bone mass and/or stop making bone, which leads to increased risk of fracture and mobility. For people with osteoporosis, quality of life can decline considerably and the financial burden can be devastating. Current FDA-approved therapies do little to prevent and treat the condition. Most therapies stop the process, yet none are able to grow bone. Furthermore, not a single therapy exists that addresses dental osteoporosis, which can lead to tooth loss, failure of implants, and loosening of dentures.

In 1996, Dr. Kang Ting, professor and chair of orthodontics at the UCLA School of Dentistry, made a landmark discovery of the protein NELL-1, which pushed osteoporosis therapy research forward decades. He found that the protein has a dual effect. It reduces the function of the cells that break down bone, and it jump starts the creation of bone growth in stem cells.

Re-enacting the onset of osteoporosis in a university lab is time-consuming and expensive. Dr. Ting and his NELL-1 collaborator, Dr. Chia Soo, professor of plastic and reconstructive surgery and orthopaedic surgery at the UCLA Health System, received a windfall in 2015 when they were awarded funding from the Center for Advancement of Science in Space (CASIS). The grant would help take their groundbreaking work to new heights. The pair would be able to send their osteoporotic mouse-models into space to test the NELL-1 therapy for the prevention of bone loss.
In space, bone loss significantly increases due to the lack of gravity. Without gravity’s pressure, astronauts can lose around 1.5 percent of their bone mass each month in space. This is 36 times as much as bone loss on Earth, which is 0.5 percent of bone loss per year after the age of 50. Therefore, space is an ideal testing environment for NELL-1’s effect on bone density and it could greatly increase the therapy’s development for human applications.

To prepare for the study, the duo called on Dr. Ben Wu, professor and chair of advanced prosthodontics at the UCLA School of Dentistry, who modified the NELL-1 molecule to make osteoporosis treatment possible in space. Dr. Wu is internationally recognized for engineering cells, proteins, and genes to promote repair and regeneration of hard and soft tissues. Dr. Wu’s team was able to chemically modify NELL-1 to stay active longer in the body. Also, they engineered the NELL-1 protein with a special molecule that binds to bone, so the molecule directs NELL-1 to its correct target. Dr. Jin Hee Kwak, associate adjunct professor of orthodontics at the UCLA School of Dentistry, was added to the team to act as a co-managing PI and also provide expertise on administering NELL-1 to target dental bones.

The team, along with dozens of residents at the dental school, worked around the clock to prepare for a summer 2017 launch. On June 3, 2017, 40 rodents were successfully launched into space, where they would live for the next four weeks at the International Space Station (ISS). Notably, this event marked the first time that American researchers brought back rodents from ISS that were all alive and healthy.

After living in microgravity and receiving NELL-1 injections, half of the rodents returned from space and landed in the Pacific Ocean off the coast of Baja California. That set of mice was transported back to UCLA where they continued to receive the NELL-1 drug for an additional four weeks. The remaining half of the rodents that stayed in the space station received an additional four-week dosage of the drug before being returned to UCLA later that summer.
Osteoporosis is a significant public health problem and can lead to a number of health issues and conditions, including immobilization, stroke, cerebral palsy, muscular dystrophy, spinal cord injury, and jaw resorption after tooth loss. Although the team is still compiling and analyzing data, there is promising evidence that NELL-1 can effectively combat microgravity bone loss. Later this year, the researchers plan to present their findings at two space research conferences. This study has significant translational potential for new insights into the prevention of osteoporosis as well as for the regeneration of massive bone damage that can occur in wounded military personnel.

This research is supported by extramural grants from the Center for the Advancement of Science in Space, the National Institute of Dental and Craniofacial Research, the National Institute of Arthritis and Musculoskeletal and Skin Diseases, the California Institute for Regenerative Medicine, and the American Association of Orthodontists Foundation. Additional intramural support is provided by the UCLA/Orthopaedic Hospital Department of Orthopaedic Surgery, the UCLA Division of Plastic and Reconstructive Surgery, the UCLA School of Dentistry, and the Eli and Edythe Broad Center of Regenerative Medicine and Stem Cell Research at UCLA.

### UCLA Dentistry Research Funding

**Total Grants by Funding Source**

- **49%** Federal $11,588,890
- **35%** State/Local Government $8,067,702
- **7%** Foundation $1,614,164
- **6%** Private/Industry/Clinical Trial $1,474,317
- **3%** Higher Education/Subaward $755,317

FY 2017 Total $23,500,390
In the last five fiscal years, the UCLA School of Dentistry continues to be among the top institutions to receive funding from the National Institutes of Health.

**National Institutes of Health Grants by Agency**

- **67%** National Institute of Dental and Craniofacial Research (NIDCR) $6,879,467
- **9%** National Center for Advancing Translational Science (NCATS) $977,588
- **9%** National Institute of Mental Health (NIMH) $879,497
- **6%** National Institute of Arthritis and Musculoskeletal (NIAM) $644,191
- **5%** National Institute on Alcohol Abuse and Alcoholism (NIAAA) $529,375
- **2%** National Institute on Drug Abuse (NIDA) $213,307
- **2%** National Cancer Institute (NCI) $184,223

**FY 2017 Total** $10,307,648
UCLA is celebrating a century of growth and achievement as a top-tier university and seeks to secure the institution’s future as a center for higher education where innovative teaching, groundbreaking research, and dedicated service advance the public good.

05.15.14
UCLA launches the Centennial Campaign. Countdown begins to 2019 – UCLA’s 100th anniversary. Key priorities for dentistry’s $35M campaign include boosting support for students and increasing endowments.

05.16.15
More than 500 guests come together to celebrate UCLA Dentistry’s 50th Anniversary at a black-tie gala in Century City, Calif.

07.20.15
The Shapiro Family, Ralph, Shirley, and their son, Peter, supports the establishment of the School’s 9th endowed chair, the United Cerebral Palsy of Los Angeles Endowed Chair in Special Patient Care – Dr. Eric Sung is appointed as the inaugural chair holder.

02.15.16
School remains committed to improving physical infrastructure. Renovation projects supported during the Centennial Campaign include the Orthodontics Clinic, the Endodontics Clinic, and the Oral and Maxillofacial Surgery Clinic.

10.29.14
Longtime UCLA Philanthropists, Bob and Marion Wilson, donate $2M for an endowed scholarship fund. Marks the largest scholarship donation the dental school has ever received.
Philanthropy is the greatest expression of optimism about the future. Thank you for your support in reaching our goal.

$35M Campaign Goal

86%

$30.2M Progress to Date

05.25.16
Dr. No-Hee Park, longest-serving dean at UCLA Dentistry, with Chancellor Gene Block, honored at a Centennial celebration by 300 members of the UCLA community. In his honor, $1.2M was raised to establish the Dr. No-Hee Park Awards for Excellence which will go to student scholarships.

07.25.17
School welcomed its first-ever Apollonian Society Co-Chair in Northern California, Dr. Mo Budak ’74. He is working to establish stronger alumni engagement and a giving presence in that region through the Apollonian Society, which has raised $1.5M during the Centennial Campaign to support the UCLA dental student experience.

10.05.17
School established its 10th and 11th endowed chairs – the Alumni and Friends Presidential Endowed Chair and the Alumni and Friends Oral and Maxillofacial Surgery Endowed Chair. The fundraising campaigns to support faculty recruitment and retention were led by Dr. Thomas Rauth ’73 and Dr. Howard Park, OS ’98, respectively.

01.16.18
Delta Dental of California awarded the dental school a $1.5M grant to support launching a community-based clinical education program. This is the largest grant ever given to a dental school by Delta Dental of California. Dr. Bill Piskorowski and Dean Paul Krebsbach sign one of the first agreements with an affiliated community clinic.
Centennial Campaign Honor Roll

The UCLA School of Dentistry wishes to recognize and thank the following individuals, corporations, and foundations whose extraordinary generosity and exemplary vision enable us to pursue our mission of excellence in teaching, research, patient care, and public service. Each gift is an investment in the future of the oral health profession.

Centennial Campaign Donors

Remarkable firsts and forward leaps have marked UCLA’s first 100 years. The Centennial Campaign for UCLA recognizes them and sets up the university for a second century of breakthroughs. Through their generosity, the donors below have made lasting contributions to the School of Dentistry by giving to student scholarships, endowed chairs, faculty research, patient care initiatives, and community dentistry.

Key

This honor roll lists all philanthropic commitments made to the School between July 1, 2012, and December 31, 2017. We generously thank those who have given before and after these dates. Donors’ academic degrees (at the Master’s level and above) are noted as recorded in the UCLA External Affairs database. Donors’ UCLA School of Dentistry degrees (DDS, MS in oral biology, PhD in oral biology, and certificates) are recognized by the inclusion of the class year in which they were conferred.

The Office of Development makes every effort to ensure the accuracy of this report. If you note an error or omission, please accept our sincere apologies and notify us by writing to the UCLA School of Dentistry Development Office, 10833 Le Conte Avenue, CHS 53-038, Los Angeles, CA 90095-1668; calling (310) 206-6063, or sending an email to development@dentistry.ucla.edu. For a full list of our Centennial Campaign donors, please visit our UCLA Dentistry website at www.dentistry.ucla.edu/give.

Certificate Abbreviations:

(A) Dental Anesthesiology  
(AEGD) Adv. Edu. in General Dentistry  
(AP) Advanced Prosthodontics  
(E) Endodontics  

(GP) General Practice  
(M) Maxillofacial Prosthetics  
(O) Orthodontics  
(OS) Oral Surgery  

(P) Periodontics  
(PD) Pediatric Dentistry  
(PO) Peds-Orthodontics Combined

$1,000,000 and above
Bien-Air USA, Inc.  
Cerebral Palsy Foundation  
Delta Dental of California  
Peter W. Shapiro  
Shirley L. Shapiro & Ralph J. Shapiro, JD  
Robert S. Wilson & Marion L. Wilson

$500,000 to $999,999
Colgate-Palmolive Company  
Frida A. Xhonga-Oja Trust  
Mitsui Chemical, Inc.  
Nanto, Inc.  
Phiten Co., Ltd.  
United Cerebral Palsy Spastic Children’s Foundation  
Ushio Electronics, Inc.

$100,000 to $499,999
The Ahmanson Foundation  
American Association of Endodontists Foundation  
Amgen, Inc.  
American Society for Laboratory Automation and Screening  
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Audrey J. Yoon, DDS ‘04, MS ‘08, PO ‘08 &
Joseph S. Yoon
Wesley N. Young, DDS ‘75 &
Dianne T. Young
Lawrence Zeng, DDS ‘08 & May Yang
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UCLA Napa Implant Symposium

June 9, 2018
State of the Art Restorative Dentistry in 2018

July 2-6, 2018
UCLA Hawaii Symposium 2018

Starts July 19, 2018
UCLA Aesthetic Continuum

July 28, 2018
Periodontal Surgery Workshop:
Pocket Reduction and Crown Lengthening

For more information or to register for a course, please visit dentistry.ucla.edu/CDE or call 310.206.8388.