THE UNIVERSITY OF WASHINGTON DENTAL ALUMNI ASSOCIATION VOL. 49, NO.2

DentalAlumninews

FALL 2023

Unlocking innovation

Our research programs are driving innovation in science, clinical care and policy, while training the next generation.

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DentalAlumninews

THE UNIVERSITY OF WASHINGTON DENTAL ALUMNI ASSOCIATION FALL 2023

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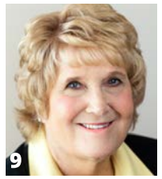

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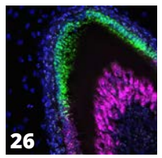

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Online: dental.washington.edu/alumni-friends/connect/magazine

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Critical needs must still be met

Hello Fellow Husky Dental Alumni,

As I begin my second year as the UW Dental Alumni Association President, I am excited for another year of meaningful engagement with our alumni and growth in the size and impact of our association. Together, we continue to build valuable relationships and contribute to our community in significant ways.

Over the past year, it's been a privilege to witness the high level of engagement and leadership from Dean Ritter within the School, particularly his involvement with the Dental Alumni Association. This spring alone, Dean Ritter was involved with our Washington state dental societies, met with key stakeholders and major foundations and attended several national conferences. We look forward to many more opportunities to engage with the Dean in the future.

In this issue of the magazine, I am pleased to share the newly approved UW Dental Alumni Association logo. The new logo gives our association an updated and refreshed look. It shows our affiliation with the UW, but it also clearly reflects our identity as the School of Dentistry alumni organization. The logo was officially ratified at the April Alumni Board meeting and it is debuting in this magazine. You will soon see it in all of our alumni communications.

As I mentioned above, the association is focusing efforts on increasing our membership this year, particularly among our more recent graduates. I'm pleased to report we have two recent alumni serving as committee Chairs for the association: Courtney Lang ('22), Chair of the "New Dentist Committee"; and Micah Bovenkamp ('20), Chair of the "Practice Opportunities (POPS)" event. We hope to see many more recent alums participate as members and get involved in our social and philanthropic events. There is a place for you in the alumni association!

In fact, if you graduated from the School of Dentistry any time in the 2000s (2000 to 2023), we want to extend a special invitation for you to attend the "**Classes of the 2000s Alumni Reunion Party**," taking place at the Burke Museum on **Friday, Jan. 19, 2024**. This is going to be a terrific event you won't want to miss, so be sure to mark your calendars! More details are on page 27 and you will receive further information later this fall.

Please remember that the single most important thing you can do to sustain our association is ensure your dues are up to date. Dues are the basis of the DAA annual budget, which makes everything we do possible. Our annual DAA Endowed Scholarship and Faculty Awards and our roster of events would not be possible without your help. Even if your membership lapsed in recent years, please join us again. Not only will you benefit, but your support is paramount in our ability to give current (and future) students the same support you had while you were a student.

Please also consider making a gift to support our School and students. Dean Ritter has asked the Office of Advancement and Alumni Relations to continue its focus on the **Campaign for Clinics** and the **Dean's Fund for Excellence** during this academic year. You can make a gift by visiting dental.uw.edu/give or responding to one of the appeals you receive throughout the year.

In addition to the Classes of the Reunion Party, I hope you will join us at our many alumni events this year. As chair of the Ernest M. Jones Memorial lecture, I'll use this opportunity to invite you to save the date of March 22, 2024 for this wonderful event.

Finally, as you know, our Advancement and Alumni Relations team is an integral part of the success of the association. I would like to take a moment to recognize a longstanding member of that team, Steve Steinberg, who recently retired. Steve's experience as the UWSOD Director of Communication was felt across the organization, but especially as editor of the Dental Alumni News. A heartfelt thanks to Steve for keeping our alumni abreast of the news at our School throughout his tenure of more than 14 years.

As always, the Alumni Association welcomes your involvement. Please feel free to reach out to anyone on the Advancement and Alumni Relations team, listed on page 4 of this magazine, with questions or thoughts about engagement.

OLEG SHVARTSUR ('11)
UW Dental Alumni Association President

Scan to join or renew your membership!

Our team is here for you

Our Office of Advancement, Alumni Services, and Continuing Dental Education works to help you support and stay informed about our School of Dentistry, connect with one another, and assist you in your professional development. We're always happy to hear from you!

RANDY NEWQUIST
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Randy, who has been at the UW since 1986, was our longtime Director of Alumni Services before becoming Assistant Dean in early 2018 and leading our office. He oversees our School's fundraising operations and also remains closely involved in Dental Alumni Association activities.

DOUG DAY
Associate Director of Advancement
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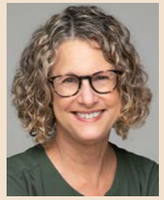
Doug started at our School in 2016 after extensive experience in corporate sales and working with non-profits in fundraising and philanthropy. He assists our alumni, faculty, and friends in their philanthropy with a focus on major gifts and planned giving, and also helps alumni to increase their level of engagement with the School.



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Debbie joined our team in July 2020, a few years after relocating from the East Coast. She brings extensive experience in alumni relations and fundraising to our School. While in NYC, Debbie worked at NYU School of Law and Barnard College in positions centered around donor engagement, fundraising, stewardship and alumni relations.

SARAH MARTIN
Advancement Coordinator
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Sarah came to us in 2016 a few months after starting at the UW in Gift Services. Before that, she spent 10 years at the Kansas Historical Society in her home state, managing the National Register of Historic Places program. An architectural historian and public historian by training, she also works part time as a consulting historian throughout King County. In our office, her roles include tracking gift activity, managing donor lists and supporting fundraisers.

MAGGIE HELSEL
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Maggie started at the School in 2021 as the Director of Marketing, and moved to our team in spring of 2023 to assume the role of Interim Director of Marketing and Communications. Now she oversees the various communication channels of the School, including the Dental Alumni News, and supports the office of the Dean and Office of Advancement with communication.

SALLY GEE
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Sally started at our School in 2002 working for Pediatric Dentistry, then moved to CDE a year later. She lived in France for nearly two years after graduating from the UW, then came home and worked for a printing software firm. As CDE director, she plans new courses, maintains accreditation, oversees marketing, and develops course ideas based on industry needs, participant requests, and dental organization partnership possibilities.

JOY PARK
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Joy started with us as a UW student assistant majoring in anthropology in 2007, then became a CDE temp, then a full-time office assistant and later program coordinator. She assists in CDE program planning, dealing with logistical details and compiling course materials, and monitors the CDE registration system.

JETHRO SWAIN
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Jethro joined our team in the spring of 2021 as a UW senior majoring in Journalism and Public Interest. Since graduating, he has continued to work with our team to expand the School's social media presence. Jethro manages the School's Facebook, Twitter and Instagram accounts, and writes stories for the Dental Alumni News and posts for the School's website.

Greetings, Alumni!

This September marked my first anniversary as Dean of the School of Dentistry. Throughout this time, I have been privileged to see the many contributions students, faculty, staff and our partners make every day in our region to advance oral health, dental education and oral and craniofacial research. I am grateful for the warmth with which I was welcomed at the School, and I am enormously honored to count myself as a member of this community.

We've had a very productive year here at the UWSOD. As you'll read in this issue of the Dental Alumni News, our research programs continue to grow, generating exciting innovations and disseminating knowledge broadly to the scientific and dental communities. The UW has been a research powerhouse and I am proud of our research programs for their hard work and overall contribution to the School of Dentistry's global reputation.

This year our research programs increased extramural research funding for a third year in a row, with over $11 million for fiscal year 2023. This is more than a 200% increase in funding compared to fiscal year 2019. I am also pleased to report our faculty had a strong presence at the two major oral health research meetings this year: the American Association for Dental, Oral and Craniofacial Research (AADOCR) in Portland, Oregon; and the International Association for Dental, Oral, and Craniofacial Research (IADR) in Bogotá, Colombia. We also had a vibrant Research Day in February, held at the UW HUB and the Health Sciences Building. In addition to presentations by our own faculty, students and trainees, the keynote addresses were presented by Dr. Rena D'Souza, NIDCR Director, and Dr. Mari Ostendorf, Vice Provost for Research at the UW. This was a great opportunity to highlight our research and share in the excitement it is generating.

We recently received the UW's approval to establish a new research center: the Clinical Oral Microbiome Research Center (COMRC). Led by one of our outstanding researchers, Dr. Jeffrey McLean, the COMRC will bring together multiple faculty from several oral health specialties and departments to promote collaborative research between basic scientists, clinical researchers and translational research faculty, covering areas including mucosal immunity and microbiology, and providing access to the next generation of sequencing and point-of-care studies through multicenter clinical trials. These are indeed exciting times for research at the UW.

In addition to research endeavors, this academic year will be full of activity at our School. Our self-study for the November 2024 Commission on Dental Accreditation (CODA) site visit is well underway. This is an "all hands on deck" effort that will require tremendous focus and energy to demonstrate that our School is strongly positioned for re-accreditation. To that end, we will have a mock site visit in February 2024 and therefore need to have final self-study drafts for the mock site visitors soon. In addition to being an accreditation requirement, this self-study is a great opportunity to review our workflows, operations and quality improvement processes.

In the next few weeks, we plan to unveil our new strategic plan, a bold vision for our School's future and for advancing oral health care in our region. As you know, the plan was built with input from our School community and important partners, including our alumni. I thank all of you who participated in interviews, surveys and strategic priority work groups. We're excited to share this plan with you.

I look forward to continuing a productive partnership with our engaged alumni throughout this exciting new year. Thank you for your support!

Sincerely,

Dean André Ritter, DDS, MS, MBA, PhD

Professor and Dean

WE'RE WAITING
TO HEAR FROM YOU.

When was the last time you dropped us a note about what you've been up to? That long, huh?

Your classmates want to know. So take a few minutes and send us an email or snail mail. Tell us about career, family, retirement, travels, hobbies, marriages, kids, awards, honors … whatever you'd like to share. Photos are always great, too!

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REGULAR MAIL: **Dental Alumni News, Box 357137, Seattle, WA 98195-7137**

Dr. Linda Edgar set to tackle ADA presidency

For Dr. Linda Edgar, a frenetic year is about to get even busier.

Since winning the American Dental Association (ADA) presidency-elect last October, Dr. Edgar ('92) has conducted a whirlwind national series of visits with ADA component units and other dental groups. Scarcely a day has gone by when she hasn't popped up on Facebook after another meeting to hear dentists' concerns that will help inform her yearlong presidency, which began in October.

Slated to be the first UW dental graduate to hold organized dentistry's most prominent office, she set forth her goals in a speech to the ADA House of Delegates last October. She focused on three big themes: "connect, collaborate, communicate."

"I believe to grow the ADA and keep the profession strong, we must do these things better," she told the Dental Alumni News this spring. "We must connect with our members so they feel that ADA is a big organization that feels like a small organization and has a personal connection with our members, so they really feel they are listened to and their opinion matters. It should be there to help dentists when they need us the most, whether that be through our wellness or mentor programs or the close to $2 million a year ADA spends to help states with insurance laws.

"We need to get back to the personal touch of helping each other. We are hard-wired to connect with other humans and help each other. That is when we are the happiest."

As for collaboration, she noted her 30-year record of service elsewhere in ADA, as president of the Academy of General Dentistry and on our School's Dean's Club Board of Trustees: "I have seen the power of groups coming together for a cause. I would love to see all our dental groups, all our specialty organizations and the Department of Education and dental supply corporations come together and support education to the public.

"If we all come together, we could bring forth programs like Lessons in a Lunchbox, created by (pediatric dentist) Dr. Winifred Booker for second- and third-graders to encourage nutritious eating and brushing during the day. We could also encourage children to enter the dental field by putting a little white coat on a first grader, taking their picture and saying, 'You too can be a dentist or hygienist or assistant.'"

Discussing communication, she said, "We need to tell our ADA story better and answer the question, 'What does ADA do for me anyway?' Just imagine for a moment if there were no tripartite ADA!

"During Covid, ADA had an entire Science, Legislative and Practice Council fighting for protocols to keep you safe. Our legislative team fought for PPE and for loans to keep you open and put together a tool kit to help you reopen safely. We spend $10 million a year on science to develop new products and guidelines and we test every product you use in your practices to help your patients stay safe. ADA spends countless hours and over $2 million a year to help states with legislation on insurance issues.

"We have recently heard the question, 'What dollar value does the ADA give me?' I would like us to do a better job communicating this answer."

Dr. Edgar urged ADA members, "Let's care for each other, educate each other, support each other and continue to strengthen our profession by coming together and talking to non-members about how vital it is to join and keep the profession in which some of them are investing over $400,000 strong for their futures."

Finally, Dr. Edgar shared two of her favorite quotes: "Many baby steps can make one giant footprint" and "It is amazing what you can accomplish when you don't know what you can't do." Now she is about to take a giant step into the future and is clearly primed to accomplish a great deal.

Team receives NHI grant to further study responses to plaque

Dr. Shatha Bamashmous

By Alden Woods
UW News

Like many of life's challenges, it turns out that dental plaque is all about how you respond.

A team of microbiologists, immunologists and periodontists in our School are expanding upon their recent discovery that people's gums respond to plaque with three distinct types of inflammation. The team has received a $2.7 million grant from the National Institutes of Health (NIH) to better understand each of those responses.

One of the main responses to bacteria in plaque is a new type that UW microbiologist Dr. Jeffrey McLean, Associate Professor in Periodontics, with a joint appointment in Oral Health Sciences and an adjunct position in the Department of Microbiology, calls "slow responders." That discovery added new depth to the field's understanding of gingivitis.

Left untreated, gingivitis can lead to periodontitis, which has been linked to an increased risk of heart, lung and other systemic diseases.

Gingivitis research could also deepen our understanding of inflammation in the rest of the body, says McLean, which can be difficult to study in real time.

"We think eventually, knowing someone's responder type could also relate to their response to other things. Even, potentially, the virus that causes COVID," says McLean. "If you're a certain type of responder, you might have that response to other viral infections, too."

The team will use their grant to explore the specific mechanisms that control gingival inflammation. Researchers will identify the specific bacteria, fungi, viruses and metabolites associated with different responder types. Then they will attempt to understand what causes such vastly different inflammation responses.

"We don't know if it's your prior history or if that's your response type. Those are the questions we will try to answer eventually," says McLean. "By knowing there are three major response types, we can now dig in and find out what makes them different and the basis of why they're responding differently."

That research will rely upon the time-tested model of experimental gingivitis — the only model that allows researchers to create, and immediately reverse, inflammation in healthy human subjects. Participants will undergo a full dental cleaning, then stop brushing several of their teeth for 21 days. As plaque builds up and inflammation sets in, researchers will take samples from both sides of the mouth. After three weeks, participants will receive another cleaning and the inflammation will recede.

Previously, scientists believed there were two types of responses to plaque below the gumline. Some people's gums responded to plaque with strong, swift inflammation and redness, while other people's gums had a more muted response.

In 2021, the researchers discovered a third type of response. They showed that some people accrue dental plaque much more slowly than others. Once that inflammation kicks in, however, slow responders' gums become just as inflamed as the strong responders' gums. The researchers also found unique molecular signatures in the other responder types.

These discoveries opened a path to developing treatments and products specifically designed for different response types. For example, a toothpaste that replicates the bacterial conditions found in slow responders' mouths could help strong responders stave off gingivitis.

Knowing your specific responder type might also change how you maintain good oral hygiene. For instance, slow responders may not need to visit a dentist as often as people with stronger, quicker inflammation responses.

Those discoveries garnered the 2022 American Academy of Periodontics' Clinical Research Award.

This new trial will be led by principal investigators Dr. McLean and Dr. Rich Darveau, Professor of both Periodontics and Oral Health Sciences, with co-investigators Dr. Diane Daubert ('82, Perio. '17), Associate Teaching Professor, Periodontics and Dr. Yung-Ting Hsu, Clinical Assistant Professor, also Periodontics. The trial will be conducted with clinical site investigators Marilynn Rothen, Clinical Associate Professor, Oral Health Sciences and Mary K. Hagstrom in the Regional Clinical Dental Research Center in the Health Sciences Building. The award, from the National Institute of Dental and Craniofacial Research, includes collaboration with the University of Texas Health Science Center at San Antonio.

UW-developed dental lozenge could provide permanent treatment for tooth sensitivity

By Alden Woods
UW News

Over 30 years of dentistry, Dr. Sami Dogan (Pros. '12) has treated just about every kind of tooth ailment. Cavities are simple to fill. Dental implants have become routine. But there's one problem, he says, that annoys even the most experienced dentists: hypersensitivity.

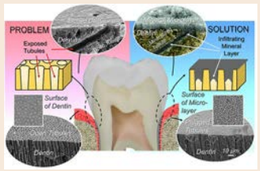
"We see patients with hypersensitive teeth, but we can't really help them," says Dr. Dogan, Professor of Restorative Dentistry. "We have all these repair options available in the market, but they're all transient. They focus on treating the symptoms and not addressing the root cause. I see my patients after a couple of weeks, several months, again coming to my practice complaining about the same issue."

So a few years ago, Dr. Dogan began working with a team of UW materials engineers who had set out to develop a natural protocol to rebuild lost tooth minerals, which they believed could also become a permanent fix for this painful condition. Their solution, unveiled this winter in the ACS Biomaterials Science & Engineering, builds new mineral microlayers that penetrate deep into the tooth to create effective, long-lasting natural protection.

The ultimate goal, says Dr. Dogan, is to provide easily accessible relief for the millions of adults worldwide who suffer from tooth sensitivity.

The body has no way to repair or regrow worn enamel, which is the only non-living tissue in the human body. To reverse that loss, the UW researchers designed their solution to be molecularly biomimetic, meaning it closely resembles the molecular processes by which the body develops teeth.

At the heart of that process is a peptide derived from the larger protein amelogenin. Named sADP5, the specifically tailored peptide grabs onto calcium and phosphate ions and uses them to build new mineral microlayers.



"Our technology forms the same minerals found in the tooth, including enamel, cementum and dentin alike, which had dissolved previously through demineralization and caused the sensitivity," says lead author Dr. Deniz T. Yücesoy, who began this work as a postdoctoral researcher at UW and is now an Assistant Professor at the Izmir Institute of Technology in Türkiye. "The newly formed mineral microlayers close the communication channels with the tooth nerves and then hypersensitivity shouldn't be an issue for you."

The peptide can be integrated into nearly any type of oral health product. In preclinical trials, participants received a dental lozenge the size of a cough drop, with a core of calcium and phosphate coated in a layer of peptide-infused flavoring. Researchers have also designed peptide-based formulations including mouthwash, dental gels, tooth whiteners and toothpaste.

"There are lots of different design and delivery methods," says Dr. Hanson Fong, Assistant Teaching Professor of Materials Science and Engineering and co-author of the paper. "The most important thing is the peptide, the key ingredient in the given formulation, and it's working."

This research was conducted in the Genetically Engineered Materials Sciences & Engineering Center (GEMSEC) under the direction of Dr. Mehmet Sarikaya, a Professor of Materials Science and Engineering and Director of GEMSEC. Other authors include John Hamann and Eric Hall from the Department of Materials Science and Engineering. The research was funded by the National Science Foundation, the Washington State Life Sciences Discovery Fund, UW CoMotion Gap Funds and Restorative Dentistry's Spencer Funds.

Campaign for Clinics Update

Last year, we reached out to our community with a plea to come together for the Campaign for Clinics (C4C): Chairs.

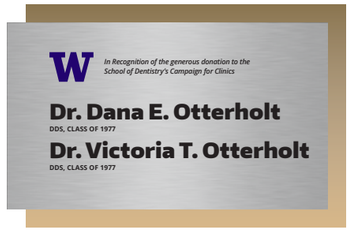
Between now and the new year, we are focused on replacing the remaining 72 chairs located in the D2, Predoctoral Endodontics, Dental Urgent Care and Pediatric clinics. These new chairs will provide greater comfort for our patients and more flexibility for our students doing procedures.

"Few dental schools can compete with the University of Washington in the research and community service opportunities available to our students," says Dr. Susan Coldwell, Associate Dean for Student Services and Admissions. "However, when applicants visit our school, they often overlook these strengths and focus on our outdated facilities. The Campaign for Clinics will help us upgrade our facilities to match the caliber of our institution."

Recognition opportunities are still available for gifts of $25,000 or more, which can be paid over five years and will be recognized with a commemorative plaque displayed in one of our clinics. Our first set of donor plaques is now hanging in B350.

Please consider making an online gift at giving.uw.edu/CampaignforClinicsChairs; by scanning the code below; calling Dentistry Advancement at 206-685-9350; or emailing uwsod@uw.edu.

You'll hear more about the next phase of Campaign for Clinics in the spring, when we turn our attention to the D1 simulation lab and implementation of new digital dental technology.



More infrastructure updates

The School recently outfitted the D1 Simulation Clinic and D2 Clinic with 115 new, fully functional stools for student and faculty use. With a handful of old stools left to replace, we hope to fit every clinic with new stools by next year.

School co-hosts 11th International Conference on Ethics

The 11th International Conference on Ethics, an annual gathering of leading thinkers and experts from diverse fields, was held at the School this past spring. This is the second iteration of the conference to be co-hosted by the School.

Chaired by Dr. Subrata Saha of Restorative Dentistry, the conference provides a platform for thought-provoking discussions and in-depth exploration of pressing ethical issues in biology, engineering and medicine. With a lineup of distinguished keynote speakers, this year's event offered attendees valuable insights into critical ethical considerations.

One of the standout keynote speakers at this year's conference was Dr. Rena N. D'Souza, Director of the National Institute of Dental and Craniofacial Research (NIDCR) at the National Institutes of Health (NIH). Dr. D'Souza described the many types of projects and future emphasis areas supported by the NIDCR, with an extramural budget of roughly $50 million per year. She also emphasized the ethical and professional duties of oral health professionals in providing care for those in need, particularly patients with mental health and drug dependency.

Dr. David Chambers, an esteemed educator at the University of the Pacific, delivered an illuminating talk on altruism. Dr. Chambers pointed out that it is a characteristic of groups, not individuals, and it emerges as a pattern of relationship over many actions. The theories of altruism can be used to explore why professions such as dentistry are losing public trust and membership.

Dr. Rena N. D'Souza delivers the keynote address at the 11th International Conference on Ethics

The conference also featured Dr. Thomas Budinger, a renowned physician and researcher from Lawrence Livermore Laboratory and the University of California, Berkeley. Dr. Budinger discussed the many effects of low-dose ionizing radiation during the first few weeks of life, when a pregnancy may not be known. He emphasized the importance of zygote age, fetal age, dose rate and repair development and suggested that physicians need to reevaluate the advice given to potentially pregnant patients before they undergo abdominal X-rays.

In addition to the keynote lectures, speakers from Canada, Mexico, China, Croatia and India presented on related topics. The UW was well-represented, with seven presenters from various departments.

Over the two-day conference, guests were treated to a banquet that provided an opportunity to reflect on the subject matter and forge connections with fellow participants.

Dr. Ludovic de Carle honored as the 2023 Wands Fellow

Dr. Ludovic de Carle, a second-year Prosthodontics resident, is the 15th recipient of the David H. Wands Fellowship in Graduate Prosthodontics.

This fellowship, one of the School's top academic awards, encourages recipients to devote part of their time to teaching prosthodontics upon completion of their three-year residency.

Dr. de Carle spent most of his childhood between his birthplace of London, England and Rome, Italy. While attending international baccalaureate high school in Rome and discovering many of his classmates planned to go abroad for college, he set his sights on attending school in the U.S. He was accepted to Loyola University in Chicago and in 2012 stepped foot in the country on his first day of freshman orientation.

Though Dr. de Carle had contemplated a career in medicine or dentistry, he entered his undergraduate studies with an open mind and willingness to explore his options. "I am the kind of person who takes my time deciding which path to take," he says. "My grandfather was a dentist and a huge inspiration for me, but it wasn't until I was halfway through college that I finally decided to pursue dentistry."

After graduating from Loyola with a degree in biology, he was accepted to NYU's School of Dentistry. He earned his DDS degree and continued in NYU's International Implant Fellowship program. At the end of his first fellowship year, his interest in prosthodontics piqued.

"I tend to pursue subjects that are a bit outside of my comfort zone," says Dr. de Carle. "Prosthodontics was intriguing and somewhat unknown, so I was drawn to it. Of course, studying the new and unfamiliar comes with its challenges, but so far, it's led me on an interesting and rewarding professional path."

Now in his second year at the School, Dr. de Carle is working on a research project that is charting new territory: mandibular incisor dimension. He hopes to discover the minimum tooth size a crown or veneer can predictably be placed without failure. No research exists on this specific topic and that's an exciting place for Dr. de Carle to be.

"Dr. de Carle has been a highly performing resident since his first month in the program," says Dr. Van Ramos, Associate Professor of Restorative Dentistry and Director of the Graduate Prosthodontics Program. "I'm excited for him as he begins his journey into the specialty of prosthodontics. He has the potential to not only be a great clinician, but also a great teacher, which is what this fellowship award is really all about."

Dr. de Carle is grateful for the opportunity to continue developing his interests and skills at the School and hopes to inspire other students and residents to do the same. "This award is certainly unexpected and I am honored to have been selected as the 2023 Wands Fellowship recipient," he says.

Dr. David Wands established his first prosthodontic fellowship in 1995 at the University of Maryland School of Dentistry with a gift of $100,000. He established a second fellowship in 1998 at our School with an initial gift of $100,000, which was matched by the university.

Dr. Wands graduated with honors from the University of Maryland's Baltimore College of Dental Surgery in 1967. He then served seven years in the U.S. Public Health Service, where he completed a hospital internship and his MSD degree in Prosthodontics at our School. He returned to the UW in 1974 to teach in the prosthodontic program, where he was an associate professor for six years. In 1980, he established a prosthodontic practice in Olympia, Wash., and continued teaching for many years as an affiliate associate professor at the School. He recently was honored as an affiliate professor here.

Dr. David Wands

He is a Life Member of the Academy of Prosthodontics and Pacific Coast Society for Prosthodontics. Having retired from private practice in 1992, he enjoys being a master gardener and a devoted saltwater and freshwater angler.

Third-year student Jennifer Tang named to the Husky 100

Jennifer Tang, a third-year student at our School of Dentistry, has been named to the 2023 cohort of the Husky 100, the UW announced.

The Husky 100 annually recognizes 100 undergraduate and graduate students from the Bothell, Seattle and Tacoma campuses who are making the most of their time at the university. Students are evaluated on the basis of applying what they learn to make a difference on campus and in their communities, as well as their capacity for leadership and commitment to an inclusive community.

Tang, a Seattle native, graduated from the UW in 2015 with a Bachelor of Science in biology (molecular, cellular and developmental) and a minor in global health. She received a Bachelor of Applied Science in Allied Health-Dental Hygiene from Seattle Central College in 2020 and entered the School of Dentistry that summer.

"The UW has helped me grow from a pre-dental student to a leader in the dental field," says Tang. "Becoming a member of the Husky 100 has provided me with an opportunity to reflect on my Husky experience, while sharing the impacts I have made in my community."

Tang's history of service is extensive. She serves as co-president of the Oral and Maxillofacial Surgery Interest Group, pre-dental co-chair for the UW chapter of the American Student Dental Association, president of Husky Health Bridge and media manager for the UW chapter of the American Academy of Developmental Medicine & Dentistry (AADMD). She is also a student lead for the School's outreach at Seattle Union Gospel Mission's dental clinic, where she regularly volunteers as a dental hygienist during her school breaks.

"My leadership positions have allowed me to use the knowledge from my undergraduate and graduate courses to create effective dental outreach events and an impact on my community," says Tang.

"Throughout her schooling Jennifer has continuously volunteered her time to alleviate suffering in others," says Dr. Sue Coldwell, Associate Dean for Student Services and Admissions, who nominated Tang for the Husky 100. "Jennifer is resilient and focused on a long-term educational trajectory. She intends to make a difference."

The combination of leadership activities and what she has learned in school are helping pave the way for Tang's future success as an oral and maxillofacial surgeon.

"My dentist sparked my childhood dream of becoming a dentist," says Tang. "I was inspired by the way he was able to diagnose and treat pain related to the eruption of molars. I was fascinated by the way a tooth could have such a significant impact on a person's overall health. My experiences with assisting with wisdom tooth extractions ignited my love for oral and maxillofacial surgery."

Tang plans to enroll in an oral and maxillofacial surgery residency program and continue her volunteer work with Seattle Union Gospel Mission's dental clinic. Then after a few years, she would like to participate in the Washington State Dental Association's mentor program.

For the time being, Tang is fully immersed in her endodontic clerkship clinical rotation and enjoys competing with the Husky Wushu — a performance-based martial arts team — with whom she has won several awards.

EVERYONE *for* **VETERANS**
at the **UW**

Everyone for Veterans program expands dental service outreach in the state

Everyone for Veterans (E4V), a nonprofit program that provides free dental care to combat veterans and their spouses and children, has expanded its services to include anyone who has completed at least one enlistment period and been honorably discharged. This means approximately 31,000 low-income veterans in Washington state are now eligible, regardless of combat experience.

E4V grew from a program founded by Dr. Theresa Cheng (Perio '85), who in 2008 began providing free dental care to several combat veterans and their spouses at her private practice in Issaquah, Wash., after reading a Seattle Times article about a woman and her 22-year-old son who was seriously wounded in Iraq. Dr. Cheng immediately saw that the veteran community was greatly underserved concerning dental services, so she contacted some colleagues who eagerly agreed to provide the same pro bono services at their clinics. E4V became a 501c3 in January 2017 and has developed into an award-winning nonprofit partnered with an extensive network of pro bono dental providers.

Dr. Cheng, a retired periodontist and affiliate School of Dentistry faculty member, was the recipient of the 2021 American Dental Association Humanitarian of the Year Award and the 2017 Washington State Outstanding Service to Veterans Superior Award from the Governor's Veterans Affairs Advisory Committee.

The E4V program at the UW was launched in 2020 as a pilot initiative, with the aim of treating veterans and their families at the School's teaching clinics. Building upon a long-standing commitment by the School to serve underserved populations in Washington state, E4V has become an integral part of its mission.

"Our goal with this program and policy shift is to provide more opportunities for equity and access to the veterans we serve," says Jessica Elwell, Executive Director of the E4V organization, which refers veterans to the School for treatment. "By dramatically increasing our targeted population, we have seen a 543% increase in applications compared to this time last year."

While the impact on each veteran is immeasurable, the financial resources required to sustain and expand the E4V program are substantial. The clinical rate to treat one veteran with basic services is approximately $3,500. Nearly half of these patients need advanced treatment from the School's specialty clinics, which propels the costs substantially higher.

There is a waiting list of veterans who wish to receive care and the clinics need your help. **Please consider making a donation** so more veterans can receive the dental care they urgently need and deserve. Our ability to provide treatment without cost is entirely dependent on the contributions we receive.

Make a gift for Veterans at giving.uw.edu/DentistryforVetsatUW or scan the code:

MOMENTS

509 Day in Spokane

May 9, 2023

UW President Ana Mari Cauce and Dean André Ritter visited with the Dentistry RIDE students at the Catalyst Building in Spokane. In the afternoon, Dean Ritter had lunch with several alumni from the Spokane area. [Dr. Ashley Ulmer, Dr. Jim Sledge, Dr. Dale and Carol Ruemping, Dr. Katie Hakes and Dr. Jacklyn Eliassen.] In the evening there was a reception for 150 alumni and friends, who heard remarks from President Cauce and Dean Ritter. Following the reception, Dean Ritter addressed the Spokane District Dental Society meeting.

Dean Ritter and faculty with RIDE students in Spokane.

OKU Dental Honor Society Sigma Sigma Chapter banquet

May 25, 2023

The OKU banquet returned after a three-year pause. Dr. Alireza Sadr kicked off the evening at Ivar's Salmon House with the president's message, followed by Dean Ritter's remarks as the invited speaker.

Eight outstanding students from the classes of 2024–2026 received scholarship awards. In addition, Dr. Theresa Cheng and Dr. James Newman were inducted as honorary member and faculty member, respectively. The inductees from 2020, 2021 and 2022 who did not have an induction ceremony were acknowledged during the event.

Dean's Club Dinner

May 6, 2023

The 37th Annual Dean's Club Dinner was held at the Bell Harbor International Conference Center. Drs. Mark Grace and Carrie York were the masters of ceremonies for the event. It was a wonderful evening as the School of Dentistry celebrated a great year. Dr. John Kois received the Distinguished Alumnus Award and our former Dean, Dr. Gary Chiodo, received the Dean's Club Honorary Lifetime Member Award.

Hooding Ceremony

June 3, 2023

Congratulations to the Class of 2023!

A Night at the Mariners

July 14, 2023

Alumni, faculty, staff and students from the School watched the Mariners take on the Detroit Tigers and enjoyed the beautiful weather and fireworks.

Department of Orthodontics Reunion

Aug. 18–20, 2023

The Department of Orthodontics hosted an alumni reunion weekend at Suncadia in Cle Elum and more than 90 alumni participated. Graduates of all ages were there, dating as far back as the Class of 1968. Counting the friends and family in attendance, the group was close to 180 people. The three-day reunion included 12 hours of Continuing Dental Education seminars, social receptions, dinners and golf and pickleball tournaments.

Class of 2025 White Coat Ceremony

Aug. 26, 2023

The Class of 2025's White Coat Ceremony took place at Kane Hall, marking a momentous milestone in their dental journeys.

Alumni Golf Event

Sept. 8, 2023

The UW Dental Alumni/Pierce County Dental Society Golf Tournament was held at Washington National Golf Course in Auburn, Wash. There were 72 participants and 14 sponsors in attendance on the beautiful, sunny afternoon. Overall, the event was a great success and a big thanks to all who came out!

The Class of 2005 team won "Best Dressed" and was a big hit with their Hawaiian outfits. Aaron Cahoon won the "Closest to the Pin" on hole #8 and Travis Hackney ('05) won "Longest Drive" on hole #4.

Counter-clockwise from top left: The team of Scott Cahoon ('76), Chris Cahoon, Aaron Cahoon and Scott Taylor took first place with a score of 52. Second place went to Sam Hinz, Raymond Kao, Jason West and Jordan West with a score of 55. Third place went to Travis Hackney ('05), Ryan McNamara ('05), Tom Vo ('05) and Lane Meyer ('05) with a score of 56.

JOMS Editorial Board Meeting

April 23, 2023

A group with UW affiliations, all of whom are on the Journal of Oral and Maxillofacial Surgery Editorial Board, gathered for a photo at the April board meeting.

From left: Dr. Leon Assael, Editor-in-Chief Emeritus; Dr. Mark Egbert, Vice President-AAOMS, AAOMS Board of Trustees; Dr. Thomas Dodson, Editor-in-Chief; Dr. Jasjit Dillon, Section Editor for Pathology; Dr. Seenu Susarla, Editorial Board member; Dr. Brian Christiansen ('13), Editorial Board member; and Dr. Michael Han (OMS '15), Editorial Board member.

Bruce R. Rothwell Teaching Awards

Sept. 26, 2023

Four of our outstanding faculty were presented with the Bruce R. Rothwell Teaching Award, the School of Dentistry's highest faculty honor. Dr. James Newman and Dr. Alireza Sadr were presented with the Rothwell Distinguished Teaching Award for innovative and distinguished teaching. Dr. Beatrice Gandara and Dr. James Johnson were presented with the Rothwell Lifetime Achievement in Teaching Award for outstanding teaching based on their years of service at the School. Representing the Rothwell family at the presentation were his niece, Molly Rothwell and his grandnephew, Kevin Rivera.

Dr. Jacqueline Wong accepted the Rothwell Award on behalf of Dr. Gandara. Dr. Mark Drangsholt ('84) presented the awards.

UW Alumni Football Brunch and Game

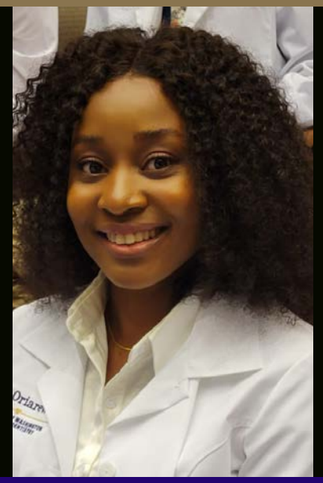
Sept.9, 2023

The Dental Alumni Association's annual football brunch and game in the Portage Bay Cafe. Sponsored by the Washington Dentists' Insurance Association, the event was filled with alumni and their families, who were gifted with perfect weather.

Dean André Ritter addressed the group and 2016 alumnus Dr. Brendan Lopez, a former Husky football player, gave a rousing pre-game speech. The Class of 2003 celebrated its 20th reunion at the event. Festivities concluded with a raffle before everyone walked to Husky Stadium to watch the Dawgs win!

Elleigh Bates

Dhara Patel



Efe Oriarewo

Serena Xu

Juman Al-Haddad

Noor Momi

Rebecca Ochoa

Women in Dentistry

Ever since the School of Dentistry started admitting significant numbers of women in the 1970s, it has been committed to continuing this growth. In 1978, women accounted for only 11% of dental school graduates across the country and in 2018, 50% of graduates were women.

Our School is pleased to announce that two-thirds of the first-year Class of 2027 are women. This is a momentous milestone and we want to share the thoughts of some of our student leaders and faculty from various classes who are carrying that torch.

Zahra Ali

Rhianna Dooley

Anastasia Williams

Natasha M. Flake

Elleigh Bates ('23) – Coming from a small, rural town with limited opportunities, I hope to be a role model to the younger female generation and show them how much women are capable of.

Dhara Patel ('23) – Growing up, I did not see women in a professional career like dentistry that often. When I started dental school in India, most of the department heads were female. From the moment I began working with them, I knew I could do what they did.

Efe Oriarewo ('24) – Family is a huge part of my life and the women in my family have demonstrated that it is possible to have a thriving career and a happy family. I aspire to serve in a similar capacity to guide younger females who have made similar choices that I have.

Serena Xu ('24) – As a female dentist, I strive to incorporate empathy and understanding into every patient encounter to ensure that I am listening to my patients and developing the best treatment option for each patient.

Juman Al-Haddad ('25) – I know that even though there are many amazing women in the dental field, it is still difficult for us to have equity in the workforce. I want to represent women and my culture, so those who share a similar background know that there is a place for them in this field.

Noor Momi ('25) – Women, especially women of color, are underrepresented in professional fields and are often viewed as less capable than their male peers. I want to be a part of a generation of female dentists that work with each other to strengthen skills, eliminate barriers and bias toward female providers and are leaders at the forefront of all the new changes in dentistry.

Rebecca Ochoa ('25) – Being a woman in dentistry is important because it brings diversity and a unique perspective to the profession, allowing us to better address oral health disparities and improve patient care.

Zahra Ali ('26) – I strongly believe in diversity and believe that the dental field is male-dominated. Throughout my journey I had moments of self-doubt, but seeing women of minority backgrounds inspired me to keep going.

Rhianna Dooley ('26) – Being a woman in dentistry is a great honor because historically this field didn't consist of many women or minorities and I am a proud Afro-Latina woman.

Anastasia Williams ('26) – Being a woman in dentistry is important to me because I get to help show others that women are just as capable to be providers and that our potential is not capped off as assistants/hygienists or mothers.

"We have amazing women who come to UWSOD from a variety of backgrounds, composing a class with diverse experience and talents. Our female students are accomplished students, athletes, scientists, artists, parents and caregivers. They are fantastic clinicians who are held in high regard by classmates, faculty, staff and patients. Our female students go on to residencies, specialties and practice in private practice, community health, academia and the military. I am proud of our female students and I am excited to see the impact they will have on the profession and the public."

Natasha M. Flake, DDS, PhD, MSD
Associate Dean of Predoctoral Clinical Education and Operations

Stem cell-derived organoids secrete tooth enamel proteins

The advance is seen as a critical first step toward novel treatments to repair and regenerate teeth.

By Michael McCarthy
UW Medicine Newsroom

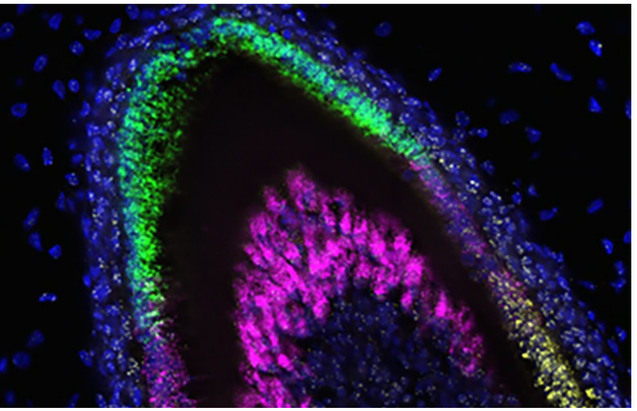
Organoids have now been created from stem cells to secrete the proteins that form dental enamel. A multidisciplinary team of scientists from the UW led this effort.

"This is a critical first step to our long-term goal to develop stem cell-based treatments to repair damaged teeth and regenerate those that are lost," said Dr. Hai Zhang, Professor of Restorative Dentistry and one of the co-authors of the paper describing the research.

The findings were recently published in Developmental Cell. Ammar Alghadeer, a graduate student in Dr. Hannele Ruohola-Baker's laboratory in the UW's Department of Biochemistry was the lead author. Dr. Ruohola-Baker, Associate Director of the Institute for Stem Cell and Regenerative Medicine, headed the project.

When tooth formation is complete, ameloblasts die off and the body has no way to repair or regenerate damaged enamel. Consequently, teeth can become prone to fractures or subject to loss.

To create ameloblasts in the laboratory, the researchers first had to understand the genetic program that drives fetal stem cells to develop into these highly specialized enamel-producing cells.



In this lab image of a developing incisor, colors identify which genes are being expressed at each stage of development. Photo courtesy of UW Dental Organoid Research Team

To do this they used a technique called single-cell combinatorial indexing RNA sequencing (sci-RNA-seq), which reveals which genes are active at different stages of a cell's development.

This is possible because RNA molecules, called messenger RNA (mRNA), carry the instructions for proteins encoded in the DNA of activated genes to the molecular machines that assemble proteins. That is why changes in the levels of mRNA at different stages of a cell's development reveal which genes are turned on and off at each stage.

By performing sci-RNA-seq on cells at different stages of human tooth development, the researchers were able to obtain a series of snapshots of gene activation. They then used a sophisticated computer program called Monocle to construct the likely trajectory of gene activities that occur as undifferentiated stem cells develop into fully differentiated ameloblast.

"The computer program predicts how you get from here to there, the roadmap, the blueprint needed to build ameloblasts," says Dr. Ruohola-Baker.

With this trajectory mapped out, the researchers, after much trial and error, were able to coax undifferentiated human stem cells into becoming ameloblasts. They did this by exposing the stem cells to chemical signals that were known to activate different genes in a sequence that mimicked the path revealed by the sci-RNA-seq data. In some cases, they used known chemical signals. In other cases, collaborators from the UW Medicine Institute for Protein Design created computer-designed proteins that had enhanced effects.

In the course of conducting this project, the scientists also identified for the first time another cell type, called a subodontoblast, which they believe is a progenitor of odontoblasts, a cell type crucial for tooth formation.

The researchers found that together these cell types could be induced to form small, three-dimensional, multicellular mini-organs, called organoids. These organized themselves into structures similar to those seen in developing human teeth and secreted three essential enamel proteins: ameloblastin, amelogenin and enamelin. These proteins would then form a matrix. A mineralization process that is essential for forming enamel with the requisite hardness would follow.

Dr. Zhang says the research team now hopes to refine the process to make an enamel comparable in durability to that found in natural teeth and develop ways to use this enamel to restore damaged teeth. One approach would be to create enamel in the laboratory that could then be used to fill cavities and other defects.

Dr. Ruohola-Baker points out that another more ambitious approach would be to create "living fillings" that could grow into and repair cavities and other defects. Ultimately, the goal would be to create stem cell-derived teeth that could replace lost teeth entirely.

Dr. Ruohola-Baker says teeth are an ideal model for working on the development of other stem cell therapies.

"Many of the organs we would like to be able to replace, like human pancreas, kidney and brain, are large and complex. Regenerating them safely from stem cells will take time," she says. "Teeth on the other hand are much smaller and less complex. They're perhaps the low-hanging fruit. It may take a while before we can regenerate them, but we can now see the steps we need to get there.

"This may finally be the 'Century of Living Fillings' and human regenerative dentistry in general."

In addition to researchers from the Department of Oral Health Sciences, scientists from the UW's Brotman Baty Institute, the UW Allen School of Computer Science and Engineering, Seattle Children's Research Institute, Institute for Protein Design, the Department of Engineering in the UW College of Engineering Bioengineering, the Departments of Biochemistry, Comparative Medicine & Pediatrics and Genome Sciences, all at the UW Medical School, and the SRM Institute of Science and Technology, Chennai, India, contributed to the study.

Past, Present and Future

By Dr. Donald Chi, PhD

Research is an integral part of the School of Dentistry's identity and research excellence is critical to dentistry's standing among the health professions and within the broader university. Furthermore, research drives clinical innovation, gives dental students an appreciation for lifelong learning and improves patient care.

Although research was part of the original mission of the School, research productivity and quality surged in the 1960s, supported through state and federal investments in science. By the 1980s the School was a research powerhouse and maintained this strength for nearly 30 years. The glory days led to a period of quiescence, planning and rebuilding, from which the School emerged, in large part through the collective efforts of its amazing faculty, staff and students. Today, the School is well-positioned to reassume its role as a global research leader and to continue addressing contemporary scientific and clinical challenges.

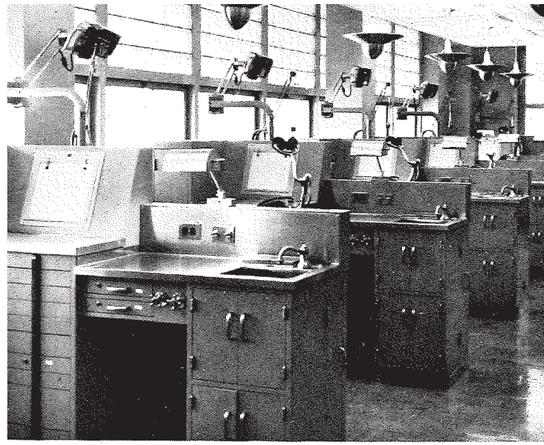
The Past

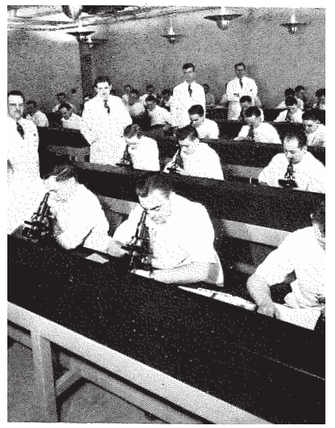
After World War II, large state-level investments catalyzed scientific research at the School. Research-intensive professors were hired to teach dentistry and also apply for federal research grants through agencies like the National Institutes of Health (NIH). These grants were valuable because they supported research aimed at solving problems in dentistry, especially those with societal implications. For instance, untreated dental caries and periodontal disease were barriers to troop readiness, thereby highlighting dental disease prevention as a national security priority. Grants also paid faculty salaries, freeing up funds for the School to hire additional faculty and staff. Equally important, federal grants came with indirect costs — additional funds beyond what is needed to conduct the project itself — that went to the institution to cover the core costs of doing research, such as building labs, paying for utilities and ensuring proper ethics approvals for studies.

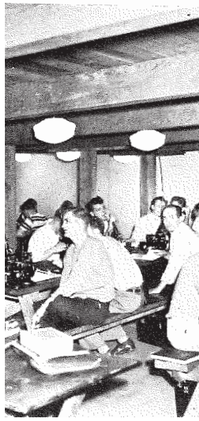
State-level investments fueled successful faculty efforts to secure more federal grant support. From the 1970s to the early 2000s, the School was buzzing with science. For example, in 1985 and 1986, the furthest back that online NIH grant databases go, three faculty members were funded: Drs. Roy Page, Samuel Dworkin and Peter Milgrom. They subsequently went on to receive the American Dental Association's Norton M. Ross Award for Excellence in Clinical Research, the highest clinical research honor in dentistry, in 1998, 2005 and 2012, respectively. The School was ranked as high as third in 2002, 2005 and 2008 in research funding from the National Institute of Dental and Craniofacial Research (NIDCR). But this did not last.

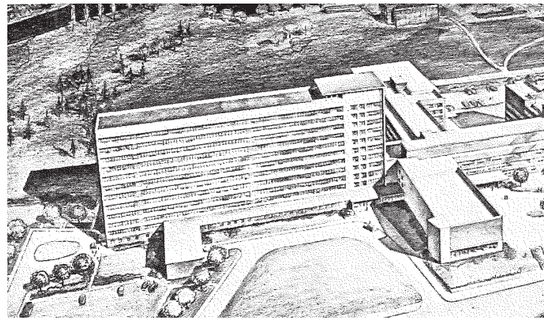
One significant change was recession. During the 1980s, state legislatures across the U.S., including our own in Olympia, began divesting from universities. State budget cuts hampered the ability of the School to continue investing in science. Research-intensive faculty hired in the 1960s and 1970s were entering retirement and were not replaced. In some cases, state funding earmarked to replace faculty was used to pay for the growing operating costs of the dental school. To address the research faculty shortage, the School hired faculty who were expected to raise their entire salaries from outside grants. At first this approach worked, but the Great Recession of 2007–09 led to federal belt tightening and fewer grants, which caused labs and research programs at the School to close. Many productive faculty went to financially stronger institutions or left dental research completely. The School dropped out of the top 10 NIDCR list in 2012 and bottomed out at 29th in 2018.

In the early 2020s, School leaders made the decision to turn things around. The process of rebuilding included strategic hiring, pilot grants and investments in facilities. These steps were temporarily overshadowed by the School's financial problems, but succeeded.





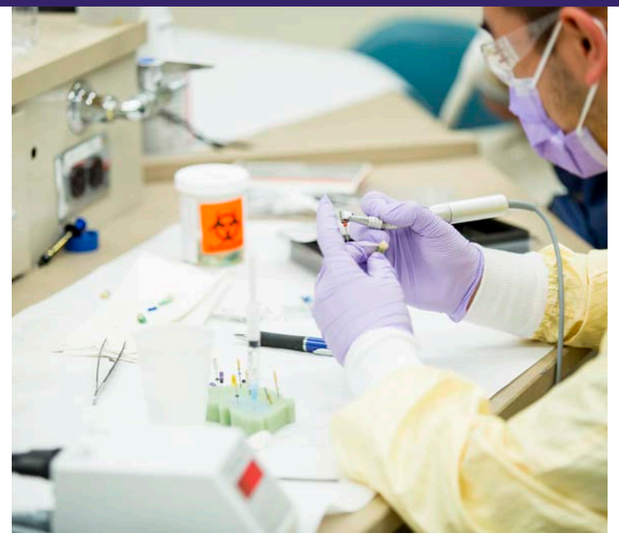


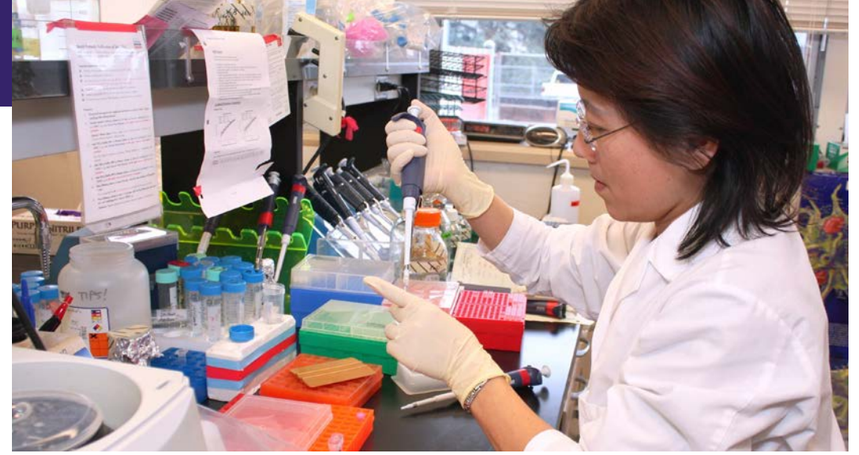


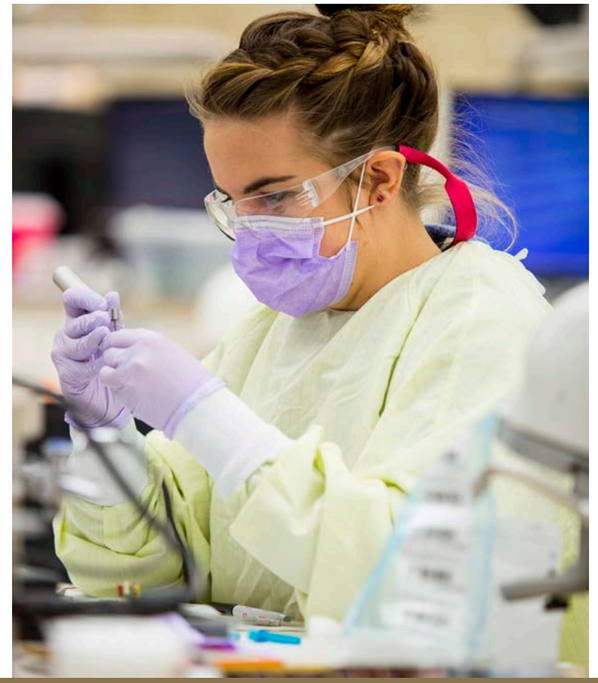
The Present

Research at the School is on an upward trajectory. Total research grant funding was $7.6 million in fiscal year 2023 — a three-fold increase from fiscal year 2019. About 90% of research funding was from a federal source like NIH. The faculty research portfolio is diverse. Recent highlights include: a multi-year NIDCR grant awarded to Dr. Jeffrey McLean and colleagues to study gingivitis (see page 10); Dr. Sami Dogan's (Perio '12) collaboration with the School of Engineering to develop a lozenge that permanently fixes tooth sensitivity (see page 11); and Dr. Hai Zhang's work with Dr. Hannele Ruohola-Baker in the UW Institute of Stem Cells and Regenerative Medicine to guide cells to regenerate tooth enamel (see page 26).

Under the leadership of Dr. Douglas Ramsay, the T90/R90 training grant from NIDCR was renewed for a third cycle. This grant is a critical source of funding for PhD students, postdoctoral trainees and DDS/PhD students. The School currently has six DDS/PhD students who are studying to become clinician scientists. Moreover, the Summer Research Fellowship (SURF) Program, which has been going strong for over 25 years under the leadership of Dr. Linda LeResche and Dr. Whasun Oh Chung and currently Dr. Donald Chi, is our premier predoctoral research training program. This year SURF supports mentored research projects for six rising second-year dental students. Mini Lin, a third-year dental student — one of last year's SURF participants — won a Bloc Travel Award to attend the 2023 American Association of Dental, Oral and Craniofacial Research (AADOCR) meeting in Portland, Ore. Teddy Dong, a second-year dental student, will represent the School at the 2024 AADOCR Dentsply/Sirona SCADA Competition in New Orleans.







The Future

It is an exciting time for discovery at the School. Our faculty will continue to attract resources used to help uncover new knowledge aimed at improving the health of patients and populations. This knowledge, in turn, will be shared with the broader scientific community through publications that drive innovations in science, clinical care and policy. Equally important, faculty will continue to disseminate cutting-edge knowledge to predoctoral dental students and postdoctoral residents in classrooms and clinics, which results in clinician trainees with early access to scientific advances in dentistry that will improve clinical care. The faculty will also continue to train clinician scientists who are our profession's future teachers, explorers and healers.

The School will prioritize metrics to evaluate the impact of our research beyond grants dollars and publications, policies to reinvest in and retain research talent and attracting new talent to build on our strengths. These efforts will help the School maintain and enhance its role as a leader in dental research. Most important, these efforts will ensure that the scientific efforts of students and faculty at the School have a lasting impact on the patients and communities that look to us for answers that can improve oral health.

RESEARCH SPOTLIGHTS

Dr. Zi-Jun Liu, *Research Associate Professor, Orthodontics, Adjunct Research Associate Professor, Oral Health Sciences*

The tongue base is the primary locus for adipose tissue accumulation in the oropharyngeal region and its resultant volumetric increase is likely a major player in obstructive sleep apnea (OSA), a serious breathing disorder affecting 20% of the population with significant morbidity and mortality. It is unknown how the tongue base and other oropharyngeal structures respond to these volumetric changes and to what extent the tongue tissues are capable of regeneration after surgical injury or infiltration of adipose tissue. Therefore, my research team is currently working on a comprehensive project supported by NIDCR in our well-established adult normal and obese minipig models to: (1) ascertain how tongue base behavior subserves respiration and swallowing; (2) evaluate how volumetric changes of the tongue base affect respiration, swallowing and spatial relationships of oropharyngeal structures; and (3) assess healing after volumetric changes of the tongue base and establish whether satellite cells in the tongue base enable myogenesis to repair muscle function. The ultimate goals of this research project are to reveal the underlying mechanisms of various oropharyngeal disorders, such as dysphagia and OSA, and to provide appropriate and validated large animal models with these disorders for testing the emerging interventions to treat these disorders clinically.

Dr. Jeffrey S. McLean, *Associate Professor, Periodontics*

The goal of my research program has been to gain an understanding for the molecular basis of bacteria interactions within the oral microbiome, as well as bacteria-host interactions and further develop innovative methodologies, tools and integrated "omic" based approaches with wet-lab cultivation work on oral communities to understand and ultimately translate this fundamental knowledge to the overall benefit of human health. Our team has extensive experience in combining multi-omic approaches, such as temporal resolved metatranscriptomic analysis in parallel with metabolomics profiling, to reveal the homeostatic mechanisms of oral microbial communities. A major area of research is on understanding the role of unique ultrasmall oral bacteria that our group discovered. We are also conducting clinical studies focusing on the mechanisms underlying the variation in human inflammatory responses to oral plaque bacteria leading to gum disease (gingivitis and chronic periodontitis), which has links to overall systemic health and potentially susceptibility to inflammation.

SURF:

Enhancing research skills for a comprehensive dental career

The Summer Research Fellowship program, commonly known as SURF, is the School of Dentistry's gateway research opportunity for predoctoral students. Over the past 25 years, the program has connected students interested in developing research skills with the School's strongest research faculty members.

Dr. Courtney Lang ('22) presents her findings during Research Day.

Students enroll in the program during the spring of their first year and dedicate three months of full-time work over the course of 12 months. They begin by discussing research opportunities with their preceptor before submitting a letter of intent and a proposal for their project. Upon project approval, students work with researchers from across the UW to garner skills and insight that fuel their projects. They finish by presenting at the School's annual Research Day at the start of the calendar year.

"Taking on a research project teaches you to be a critical thinker," says Dr. Donald Chi, who directs the program. "The entire process — from finding and collaborating with a mentor, collecting and analyzing data, writing up results and presenting your findings to a sometimes-critical audience — encourages students not to take things at face value, but to question and be critical about things."

Dr. Chi's enrollment in the SURF program was the starting point for his acclaimed career in oral health research, which led him to the role of Associate Dean for Research at our School.

"I participated in SURF as a dental student. It was perfect for me because there was no DDS-PhD program at the time. This was the only way I could get research experience and ultimately, it's what guided me toward getting a PhD," says Dr. Chi. "This was the experience that helped me figure out what I wanted to study after graduating from dental school."

Now, as a faculty member, he helps students find their own passion for research.

Dr. Sy Nakao ('16) participated in the SURF program in 2013. Mentored by Dr. Chi, he discovered research interests about topics outside of oral health. His project studied nationwide emergency department data to see if there was any statistical correlation between patients diagnosed with autism and a greater usage of the emergency department for dental purposes. He found no correlation, but came away from the experience with a wealth of knowledge.

"Working with Dr. Chi, I realized that when a lot of people read research articles, they look at the summary and then go into the results and discussion, but really, as a scientist, you want to read into the methodology and see if it's correct," says Dr. Nakao. "You can have the best or most stunning results and great discussion about why the results are the way they are, but if they are based on a methodology that isn't sound and can't be duplicated, or if the statistics aren't there or aren't statistically significant, then all of that means nothing."

Dr. Nakao now works in various clinics for the Hawaii State Department of Health, primarily seeing patients with intellectual or developmental disabilities.

"In my project I had to learn what autism is," says Dr. Nakao. "Before, I had heard the term and I had an idea of what it was, but I learned much more about it and other developmental and intellectual disabilities, which helps me today with the patients I see.

"It's interesting how life kind of pulls you one way, and how the project was kind of a precursor and a foreshadowing of what my life was going to be," he says.

Students are finding the SURF program to be an essential element of their postgraduate experience in terms of exposure to research.

RESEARCH SPOTLIGHTS

Dr. Fritzie Arce-McShane, *Assistant Professor, Oral Health Sciences*

Chewing and swallowing problems are common among older adults and people with neurological conditions like stroke, Parkinson's disease (PD) and Alzheimer's disease (AD). These issues have a severe impact on the overall quality of life. In our laboratory, we study how the brain controls the movements involved in eating and drinking and how these processes are affected by learning, aging and disease. Our research focuses on three main areas: (1) understanding how the brain controls tongue movements, its adaptation to the shape of the mouth and food and its coordination with the jaw for safe and efficient feeding; (2) investigating how the sensorimotor regions of the brain process sensations from the teeth, palate, tongue and jaw during feeding; and (3) exploring the relationship between PD/AD-related dementias and changes in brain's activity and communication between regions involved in cognition and oral sensorimotor functions. Our ultimate goal is to enhance our understanding of the principles and mechanisms underlying crucial oral motor functions. This knowledge will contribute to better assessment and treatment of orofacial pain, neuralgias and sensorimotor disorders through cortical therapies or brain-controlled prosthesis.

"For many, research is a privilege that can only be accessed during dental school," says second-year student Sydney Kim, who has been working on her project this past year. "The SURF program can be a preview to research if you are thinking about pursuing a specialty, but it can also be an opportunity for you to find out if research just isn't for you, which may be the case for some."

For the year prior to enrolling in the School of Dentistry, Kim worked in the Ruohola-Baker lab, part of UW Medicine's Department of Biochemistry, under Dr. Sesha Hanson-Drury (DDS/PhD '20), herself a past SURF participant. The experience solidified Kim's interest in research. In her first year, Kim was accepted by the SURF program and the DDS/PhD track, two of the School's major research opportunities for predoctoral students.

Since submitting her SURF proposal last December, she has spent many hours conceptualizing her project, experimenting and collaborating with other researchers.

"Not only am I building an arsenal of basic molecular biology techniques that are invaluable to someone interested in bench research, but I am also learning how to become an investigator that deals with failures and roadblocks," says Kim. "I know that in the future, this time I spent wrestling with my project will become the foundation for the kind of scientist I grow into."

Kim will present her project at Research Day this winter, an event that third-year student Chao "Teddy" Dong recently participated in.

"SURF helped me develop critical thinking to analyze complex problems, evaluate evidence and develop well-reasoned arguments," says Dong. "Upon completing my study, I got familiar with presenting the research findings through reports, presentations, posters and the publication process. Balancing research work with other school commitments requires strong time management skills to ensure study progress, and I appreciate all the support I received from school faculties, staff and administrators."

Dong recognizes that engaging in research can translate directly to patient care by helping clinicians make well-informed decisions and offering innovative solutions to dental challenges. By learning how to grapple with complex research concepts, clinicians can help patients better understand their oral health conditions and treatment options, which can lead to improved patient engagement and compliance with recommended treatments.

"By joining our SURF program, you're not just engaging in a short-term project," says Dong, "you're setting the foundation for a successful academic and professional future. The skills you develop, the knowledge you gain and the connections you make will open doors you might never have imagined."

For those who know they want to have a career in research down the line, SURF offers a premier opportunity to move toward that goal. Sometimes though, the best form of education is trying new things and seeing what sticks.

"I was introduced to the SURF program the first few weeks of dental school during Early Clinical Immersion," says Dr. Courtney Lang ('22). "SURF was presented as the principal research opportunity for dental students. As an eager first-year, I was excited to jump in and take advantage of all the opportunities the dental school had to offer, and I am so glad I did."

Currently a second-year resident in the Graduate Endodontics Program, Dr. Lang has been using her SURF experience to help her grow as a clinician and researcher.

"The skills developed and lessons learned from writing my initial research proposal, collecting and analyzing my own data and presenting and publishing my SURF project, undoubtedly made my transition into a research-heavy residency a smoother one," she says.

Dr. Lang admits that adding the SURF program to an already long list of requirements as a first-year dental student can be daunting. However, she encourages anyone who's interested to give it a shot.

"If you have any interest, big or small, or are unsure, meet with a couple of potential mentors with research interests in topics you find intriguing. You will surprise yourself with how easy it is to become energized and motivated after talking with the brilliant and passionate faculty at the School of Dentistry," she says.

All of the research faculty who Dr. Lang worked with during her time in SURF were great, she said, but she credits her mentor with guiding her through the entire experience.

"My project, from inception to publication, would not have been possible without the knowledgeable, incredibly patient and amazingly talented clinician and teacher Dr. Chi," she says. "My growth as a researcher, as well as all my associated SURF accolades are owed to him."

Dr. Lang's sentiment resonates with other SURF alumni.

"Dr. Chi was a really great mentor who kept me focused," says Dr. Nakao. "Of the professors that I look back on from the SOD, [he] is definitely up there for teachers who made an impact on my life in dental school and outside."

Typically, six to 12 students enroll in the SURF program each year. Dr. Chi is looking for ways to expand that to closer to 20 students, which may involve opening the program to non-first-year students, including incoming dental students who could get started before their classes begin.

The SURF program can surely be seen as an extra responsibility on top of an already rigorous dental school schedule. Those who take on the added challenge are gifted with invaluable research advice and a foundation for critical thinking skills they will use no matter where their dental journey takes them.

"My hope is that we're planting critical thinking skills in all participants, so that at the end of the day they're stronger, better dentists," says Dr. Chi. "If you have scientific sensibilities and you know how to read the literature and apply it to patient care, you're going to end up, in the end, providing the best patient care that you can."

RESEARCH SPOTLIGHTS

Dr. Donald L. Chi, *Associate Dean for Research, Professor, Oral Health Sciences*

Tooth decay continues to be the most common childhood disease and disproportionately affects low-income, disadvantaged and minoritized children. My research program focuses on: (1) understanding the causes of inequities in oral health; and (2) developing and testing innovative sociobehavioral intervention aimed at reducing inequities. I have three main lines of research. I am interested in understanding why parents are refusing topical fluoride offered to children during dental checkups. Another interest is elucidating the links between tooth decay and respiratory illness in children with cystic fibrosis. I am also evaluating on a community-based intervention that seeks to reduce sugared fruit drink intake in Alaska Native children. The long-term goal of my work is to develop scalable programs and policies that give underserved and medically vulnerable children the opportunity to benefit from optimal oral health.

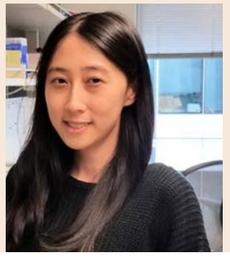
Dr. Robert A. Cornell, *Professor, Oral Health Sciences*

Orofacial cleft (OFC), which includes cleft lip, cleft palate or a combination of the two, is among the most common structural birth defects evident at birth. While the environment contributes to the etiology of OFC, genetic predisposition also plays a major role. There are two major gaps in our understanding the genetic underpinnings of OFC. First, less than half of the heritable risk for OFC has been assigned to specific genes or loci. To address this knowledge gap, we are identifying the genes encoding key transcriptional factors governing development of facial structures (for instance, oral epithelium, neural crest and neural crest derivatives), as these genes are strong candidates to harbor mutations that cause OFC. The second knowledge gap is that among the many DNA variants that are associated with risk for OFC, very few that directly affect such risk have been identified. We use genome engineering to evaluate how common DNA variants affect an individual's risk for OFC. Our long-term goals are to identify the genes that underly risk for orofacial cleft and to learn how coding and non-coding variants in these genes contribute to the pathogenesis of orofacial cleft.

PhD students propel OHS research

The School of Dentistry has a long, storied history of top-notch researchers. One of the engines that produces those researchers is the Department of Oral Health Sciences (OHS) PhD program. Led by Graduate Program Director Dr. Robert Cornell, this year-round curriculum currently has 14 enrolled students.





Dr. Claire Mills, Dr. Priti Mulimani and Dr. Yan Ting (Blair) Zhao (OHS '22).

While there are many OHS faculty and postdoctoral students involved in and leading projects, the graduate students are the stalwarts of the majority of the department's research labs.

OHS recruits students with diverse backgrounds and with different levels of dental and educational training. There are students with DDS degrees, dental hygiene degrees and four-year college degrees, in addition to those who were members of the dual-degree DDS/PhD program from the beginning.

The eight-year DDS/PhD program is designed for students committed to an academic or research career in dentistry and dental research. Only offered by a handful of schools nationwide, the program is now in its 19th year at the School of Dentistry and accepts just one new student each year.

One of the six students on the track, Dr. Claire Mills, recently completed her sixth year. "My long-term goal is to be an academic clinician-scientist who treats patients in the clinic and runs an independent research laboratory," she says, "so the DDS/PhD track at the UW greatly appealed to me because of the integration between clinical and research training, which will prepare me for my chosen career."

Dr. Mills is mentored by research faculty at the Fred Hutchinson Cancer Research Center for her project, which aims to identify early genetic changes happening in oral cancer, as well as which changes increase the risk of recurrence.

"During my clinical DDS training, I was involved in the dental management of a patient with oral cancer and was inspired to pursue research in this field given the limited treatments available," says Dr. Mills. "During my PhD training, my clinical knowledge improved my experimental design of early-cancer genetic changes, through developing better controls and accessing better-quality tissue samples."

Working alongside the DDS/PhD students are their fellow PhD graduate program students, one of whom is Dr. Priti Mulimani. She is an orthodontist studying how individual periodontal cells contract, and how that information can potentially be used to help cells grow and repair damaged tissues in the mouth.

"I love getting my PhD training in the Department of OHS due to the astounding number of interdisciplinary collaborations and connections it facilitates for me," says Dr. Mulimani. "Here I receive opportunities and support to explore various avenues relevant to my research interests and to design a customized research project that best suits my goals with the help of expert PhD mentors and advisors."

Unlike Dr. Mulimani, Dr. Yan Ting (Blair) Zhao received her PhD in 2022 without having gone through dental school.

"My career goal is to become a research scientist to investigate tissue [and tooth] regeneration and develop treatments for oral diseases with vascular dysfunction," says Dr. Zhao. "The OHS program offered courses that enriched my knowledge of oral tissues and diseases, which I needed for my research interests."

During her time in the Department of OHS, Dr. Zhao conducted a study to investigate how blood vessels regenerate and maintain stability. She utilized AI-based design proteins to explore the molecular processes involved. By studying these proteins, she sought to understand how signals are transmitted in the body and how they contribute to the formation of strong connections between blood vessels and improve vascular functions.

The ultimate goal of this study is to find ways to control blood vessel growth and improve the prevention and treatment of vascular diseases. "The department's faculties are experts in oral medicine and dentistry, which provided the right guidance for my project," says Dr. Zhao, who is currently in postdoctoral training in the area of regenerative dentistry.

These students are just three examples of the great minds working on ground-breaking research at the School of Dentistry. In order to maintain this level of recruits, the Department of OHS relies on funding from their training grants.

The principal source of funding for graduate students comes from the National Institutes of Health in the form of either the T90 training grant or through PI-led research grants. Beyond that there are opportunities for individual fellowship awards.

"Funding is the limiting factor that determines how many graduate students we can train in the Oral Health Sciences graduate program," says Dr. Cornell. "Contributions from alumni of the School of Dentistry dedicated to this purpose could make the difference."

RESEARCH SPOTLIGHTS

Dr. Diane M. Daubert *('82, Perio '17), Associate Teaching Professor, Periodontics*

As dental implants have become a standard of care for tooth replacement, all dental professionals are faced with patients seeking implant treatment and then requiring a lifetime of implant maintenance. As more implants are placed, there is an increased prevalence of peri-implant disease. My research interests involve multiple clinical projects evaluating risk factors for peri-implant disease, including bacterial and specific host factors. I also work on the investigation of the effect of different methods of implant debridement on titanium surface properties and the effect of titanium particles on the peri-implant microbiome. The long-term goal of my work is to help create risk assessment tools to reduce peri-implant disease prevalence and to provide clinicians with guidelines for successful maintenance of periodontal and peri-implant health.

Dr. David Dean *('10, Oral Med '14), Clinical Associate Professor, Oral Medicine*

Oral complications in oncology can have a profound effect on cancer treatment and quality of life during survivalship. My research partners closely with clinician-scientists in Heme-Oncology and Oral Medicine at Fred Hutchinson Cancer Research Center in Seattle and Dana-Farber Cancer Institute in Boston to evaluate short- and long-term oral complications of hematopietic cell transplantation. Current projects seek to characterize: (1) the long-term oral health effects of chronic graft versus host disease in transplant survivors; and (2) the potential effects of the oral microbiome on oral mucositis severity. Long-term goals are to elucidate risk factors for oral complications to optimize preventive interventions and to inform advocacy efforts for medical necessary dental care.

DeRouen Center spans the globe in oral health research and education

The Timothy A. DeRouen Center for Global Oral Health has been acting on its commitment to increase oral health education, access, research and capacity across the globe ever since its inception ten years ago. In that time, members of the DeRouen Center have fostered relationships with partners in Kenya, Thailand and Peru and refugee centers in Washington state. Here's a look at the projects thus far.

The NIH D71 grant team at the Obama Children's Hospital in Kisumu, Kenya.

Kenya

The main focus of the work in Kenya is to improve the quality of life of communities affected by HIV through integration of oral health within existing HIV research and care capacity. "We take great pride in all the work we have accomplished in the short time we have been collaborating with our Kenyan colleagues," says Dr. Ana Lucia Seminario, Director of the DeRouen Center and Associate Professor in the Department of Pediatric Dentistry. "Our strategy is to increase capacity in oral health and HIV research by training the future generation of Kenyan oral health researchers."

The DeRouen Center's Kenyan collaborators include prominent oral health researchers from the University of Nairobi, Moi University in Eldoret and Maseno University. Two examples of the ways the DeRouen Center has been able to expand the research capacities of these universities are their National Institutes of Health (NIH) D71 and R21 grants.

The D71 grant, known as an International Research Training Planning grant, aims to identify a pioneer generation of oral health researchers, create a network of mentors and develop an educational program for long-term training in oral health and HIV. The R21 or Exploratory/Developmental Research grant assesses the extent to which HIV infection influences the occurrence and progression of oral diseases among HIV/AIDS in Kenyan children. It also creates research capacity in global oral health by expanding current lab infrastructure for sample analysis.

Thailand

The goal of the DeRouen Center's work with partners at Thammasat and Khon Kaen universities in Thailand, with whom the School has collaborated since the 1990s, is to increase capacity in oral health research across Southeast Asia.

Dr. Timothy DeRouen (right) with colleagues in Thailand.

Since the partnership began, the DeRouen Center and Khon Kaen University have been using two International Research Training grants (NIH D43) to develop clinical and public health research training in oral health.

Khon Kaen's recent planning grant (NIH D71) will create a new training program in oral health research methods to be developed according to regional needs. "Through this project, we assess the need for, and structure of, advanced oral health research training programs in the region," says Dr. Seminario. "Research training capacity of the host institutions are strengthened through faculty training in mentorship and development of online and onsite course modules."

Peru

Since Dr. Seminario is Peruvian and completed her dental training at the Universidad Peruana Cayetano Heredia (UPCH) in Lima, the ties between the DeRouen Center and Peru run deep.

RESEARCH SPOTLIGHTS

Dr. Greg J. Huang, *Professor and Chair, Orthodontics, Adjunct Professor, Oral Health Sciences*

Dr. Huang has had a long career in clinical research. The overall theme for his research is studies that will improve the evidence base for the orthodontic profession. He has conducted all kinds of clinical studies, from randomized trials to case series, and he has been funded by NIDCR, AAOF, private industry and UW grants. Some of his most impactful investigations have assessed third molar management, anterior open bite treatment, aligner therapy, white spot lesions and stability of orthodontic therapy.

The NIH D71 TABASAMU team in Mombasa, Kenya.

Dr. Ana Lucia Seminario

Recently, the DeRouen Center and UPCH collaborated with the Peru Oral Health Directorate to develop a program to improve capacities in the implementation and development of oral health programs within Peruvian public institutions.

The High Priority, Short-Term Project Award grant (NIH R56) is currently being implemented in Peru by UPCH. The grant aims to establish evidence between the association of alcohol-use disorder and oral health in men who have sex with men with HIV. It also looks to strengthen electronic systems of care by enhancing research capacity for future intersectional research on oral health and HIV.

Washington

The state of Washington ranked second nationwide for the number of refugees admitted in 2020.

Working alongside the UWSOD, the DeRouen Center's goal is to integrate oral health within comprehensive medical care that refugees receive soon after resettlement in Washington. Currently, seven clinics are approved by the DOH to conduct oral health assessments.

The DeRouen Center's first article on refugees, centered around migration and dental utilization, was accepted for publication in Pediatric Dentistry. The study uses ZIP codes to analyze internal migration and utilization rates, showing that the more refugees moved internally within Washington state, the lower they utilized dental services. The DeRouen team presented their findings at the International Association of Dental Research in Bogota, Colombia in June.

The DeRouen Center also is working toward becoming a World Health Organization (WHO) Collaborating Center. To do so, an institution must be invited or designated by WHO after several years of carrying out jointly planned activities.

Accomplishing this would allow the DeRouen Center to help shape oral health resources in the United States, in terms of information, services, research and training.

"For the DeRouen Center, obtaining a WHO Collaborative Center designation will not only enhance our work by creating infrastructure for oral health research in low- and middle-income countries, but it also will enhance our mission of improving quality of life by promoting collaboration and inclusivity in oral and craniofacial research that impacts global health," says Dr. Seminario.

Here at the School, the DeRouen Center is developing a global oral health track for students. DENTEL 520 Global Oral Health has been offered since 2018. This spring quarter elective course gives an overview of global oral health inequalities and the burden of oral diseases worldwide.

The newest course, DENTSL 652 Advanced Global Oral Health: From Theory to Action, began this summer. This selective course enrolls up to five students and provides hands-on experience in current global oral health projects.

"We have been given a generous gift of $25,000 from a donor with the purpose of sending the 2023 enrolled five students to Kenya for a week to work on individual oral health research projects," says Dr. Seminario.

Establishing a selective course in global oral health marks the progress the DeRouen Center has made. It has grown from the simple vision of Dr. Timothy DeRouen, who wanted to expand the School of Dentistry's power for good to the whole world, to now training global oral health researchers of the future. The DeRouen Center will continue to build upon its 10 years of impactful research and community outreach as it looks toward the future.

"We're very excited about the direction the DeRouen Center is going in," says Dr. Seminario. "The people we collaborate with, and our team at the Center, are all very excited about the projects we are working on and the changes they are going to make with our partnering institutions. I'm excited to see the impact on our communities they will have."

Learn more about the DeRouen Center at: https://research.dental.uw.edu/derouencenter.

Dr. Seminario (right) with a colleague at Centro de Investigaciones Tecnológicas Biomédicas y Medioambientales in Lima, Peru.

RESEARCH SPOTLIGHTS

Dr. Xuelian Grace Huang, *Clinical Instructor*

Dental caries is a prevalent but preventable oral disease. My research program focuses on: (1) Novel anti-caries catalysts metal titanates to modulate the virulence of cariogenic biofilms; (2) The role of oral arginolytic bacteria on the initiation and progression of radiation caries. I have three main lines of research: (1) the antibacterial mechanisms of gold titanate in oral biofilm; (2) explore metal titanates with stronger antibacterial activities; and (3) the composition and metabolism shift of the oral biofilms with radiation therapy, especially the change of arginolytic bacteria. The long-term goal of my work is to develop effective dental materials to prevent dental caries and effective strategies to prevent radiation caries.

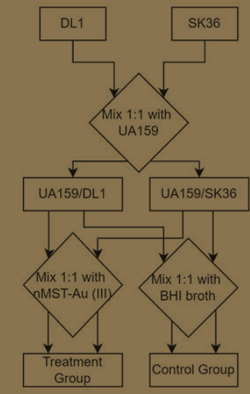


Fig 3. Flowchart of the experiment in Fig 2B

Dr. Sumita Jain, *Acting Assistant Professor, Periodontics*

Periodontitis continues to be a serious inflammatory disorder affecting the gums and leading to tooth loss. My research focuses on Porphyromonas gingivalis, a sub-gingival bacterium closely associated with periodontitis. This bacterium is highly adept at evading the innate immune system, leading to survival in diseased sub-gingival sites and contributing to subsequent microbial dysbiosis, increased bacterial load and chronic inflammation. We investigate lipopolysaccharide (LPS), a bacterial macromolecule that forms the outer layer of the outer membrane. The lipid A portion of LPS is the ligand recognized by the innate immune receptor TLR4, which, in the case of P. gingivalis, is modified to a structure that is inert for TLR4 stimulation, hence evading the powerful TLR4 response. Our goals are to investigate: (1) LPS genes required for modification, including their expression patterns during disease; and (2) the contribution of lipid A structure towards formation of outer membrane vesicles (OMVs). The long-term goal is to better understand P. gingivalis pathogenesis in order to devise diagnostic tools and therapeutic measures for controlling periodontitis.

The importance of behavioral and social research in dentistry

By Cameron L. Randall, PhD

Just about every time I travel by plane, the chitchat with the stranger sitting next to me goes something like this:

Fellow passenger: *"And what kind of work do you do?"*

Me: *"I'm a psychologist and I've got a really cool position as a professor in the dental school at the University of Washington."*

Fellow passenger: *"A psychologist? In a dental school? How does that work?"*

And every time, after I describe my research projects and the topics I teach dental students and residents, my fellow passenger says, "Oh, that makes a lot of sense!" And almost always, they go on to tell me about their own experiences with dental fear, their spouse's TMD pain, the amazing way their child's dentist approaches dental visits, an oral health habit they are proud of or something of the sort.

To many people, the behavioral and social sciences may not seem immediately relevant to dentistry. However, scratching the surface just a bit reveals how intricately linked behavioral and social factors are to our oral health. Take the most common conditions addressed by dentists: caries, periodontitis and many oral cancers. These diseases are among the most burdensome globally. They are also, in large part, a function of behaviors such as diet, oral hygiene practices, smoking and vaping, dental attendance, and adherence to dentists' treatment recommendations.

Of course, behaviors or "lifestyle factors" are strongly influenced by social determinants of health, like socioeconomic position (including employment and income), housing security, (healthy) food security, education, access to healthcare, social connection and discrimination and stigma. Thus, oral health researchers have recently described caries, periodontal disease and some oral cancers as noncommunicable diseases (NCDs) because they are related to modern lifestyle and the social determinants of that lifestyle. These oral health problems share many common risk factors with other NCDs, such as cardiovascular and metabolic diseases, diabetes and cancer. Addressing NCDs requires addressing lifestyle and the social factors that influence lifestyle.

Because oral health is a function of individual behavior and social determinants of health, the behavioral and social sciences are uniquely positioned to address preventable oral health problems. Moreover, insights from behavioral and social science research can also inform best practices for communication between dental providers and patients, pain management, strategies for dental fear and anxiety, providers' guideline adherence, practice management and healthcare leadership, workforce wellness, community outreach initiatives and dental education research. All of this is increasingly important in the age of comprehensive, person-centered healthcare, especially as the landscape becomes more complex. Relevant behavioral and social science disciplines include psychology, communication studies, anthropology, sociology, economics and political science.

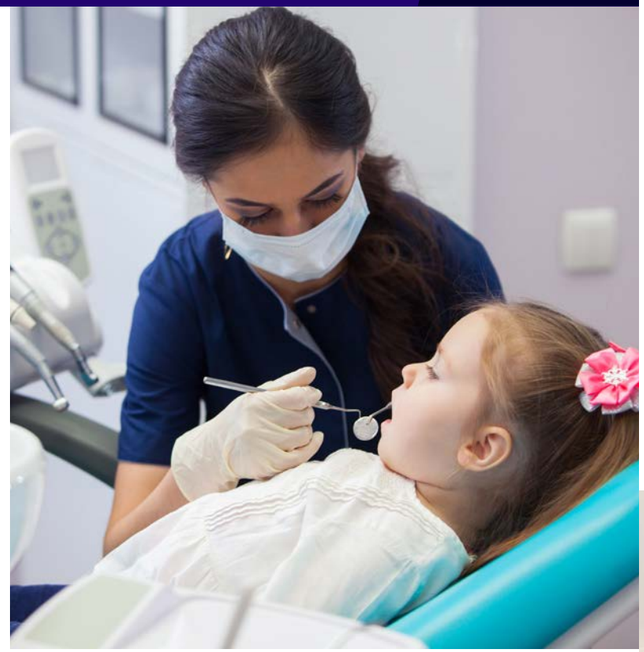
Oral health and dental education researchers have appreciated the link between the behavioral and social sciences and dentistry for decades. That appreciation was fully embraced early on at our School of Dentistry, which once boasted the greatest number of psychologists on a dental school faculty. They worked with other behavioral and social scientists and dentists on studies about acute and chronic pain, dental fear and anxiety, motivational interviewing for oral health, care for children with special healthcare needs, community-based interventions for dental public health and dental education, among other important topics.

Some of these studies were the first of their kind, ushering in a wave of related work by researchers around the world. And some of these studies remain among the most cited in the field. Over several decades, our researchers received numerous large grants and prestigious awards for this work, hosted many visiting scholars in the field from around the world and led relevant scientific groups in the International Association for Dental Research and other professional societies. For that, our School has a well-earned, strong reputation in the behavioral and social oral health sciences.

RESEARCH SPOTLIGHTS

Dr. Tracy Popowics, *Associate Professor, Oral Health Sciences*

Periodontal inflammation may occur to different degrees during an individual's lifespan due to changes in oral care, periodontal disease, systemic disease or other health problems. Such inflammatory processes may affect the maintenance of periodontal tissue necessary to support the tooth during chewing. My research focuses on: (1) developing two-dimensional and three-dimensional models of the periodontal ligament (PDL) that can be used to understand the effects of inflammation on PDL cell functions and tissue mechanics; and (2) understanding how tooth loads are transmitted through the PDL and promote homeostatic and regenerative processes. Specific projects that I am working on include in vitro and in vivo studies. Three-dimensional in vitro models of the PDL have been engineered using human PDL cells in a collagen gel that is suspended between silicone posts. These models are used to assess the separate and combined effects of tensile loading and inflammatory factors on tissue stiffness. The in vivo studies include the novel application of fiber optic sensors to measure strain within the PDL of pig incisors during orthodontic tipping forces. The long-term goal of this research is to design techniques for PDL regeneration that are sustainable throughout the inflammatory conditions that may occur across an individual's lifespan.



It is an exciting time to be building upon this legacy. A growing appreciation of the role of social determinants of health and the understanding of oral diseases such as NCDs have renewed global interest in the behavioral and social oral health sciences. In the United States and globally, there has been a new surge of research in the field, as well as application of that research in dental education and community outreach. Some of this was prompted by the 2020 Behavioral and Social Oral Health Sciences Summit and last year's Consensus Statement on Future Directions for the Behavioral and Social Sciences in Oral Health, which were led by a team that included then-faculty member Lisa J. Heaton, PhD, and me. These initiatives involved many past and present faculty and trainees.

My lab is contributing to the global effort with current studies and scholarly activities focused on dental pain, dental care-related fear and anxiety, oral health behaviors and health disparities, behavior guidance in pediatric dentistry, dental providers' implementation of evidence-based pain assessment and other clinical practices, the integration of mental and oral health, behavioral science training in dental education and workforce wellness. Also contributing to the global effort is Dr. Donald L. Chi, PhD ('06), Professor of Oral Health Sciences and Associate Dean for Research, who is leading studies on fluoride hesitancy, toothbrushing in adolescents with autism and a community-based behavioral intervention to reduce sugar-sweetened beverage consumption, among others. And numerous School trainees across departments are completing master's theses or other projects focused on behavioral and social issues.

Behavioral and social research and its application are essential for improving the practice of dentistry and the oral health of our communities, as well as dental education and the lives of dental providers. It is a privilege to be engaged with this work at the School of Dentistry, where collaborative efforts have the potential to drive a longstanding legacy well into the future.

Cameron L. Randall, PhD, is Assistant Professor in the Department of Oral Health Sciences. He led the development of the Consensus Statement on Future Directions for the Behavioral and Social Sciences in Oral Health and was a contributor for the recently released NIH report, Oral Health in America. He is President-elect of the International Association for Dental Research's Behavioral, Epidemiologic and Health Services Research Group and on the editorial boards for Community Dentistry and Oral Epidemiology and JDR Clinical and Translational Research.

RESEARCH SPOTLIGHTS

Dr. Douglas S. Ramsay, *Professor and Chair, Oral Health sciences, Professor, Orthodontics and Pediatric Dentistry*

My lab has been studying drug tolerance. In brief, drug tolerance occurs when the effect that follows a drug administration diminishes with repeated use of the same amount of drug, or conversely, when a drug's dose must be increased over repeated administrations to maintain the same level of effect. There are many compelling reasons to investigate drug tolerance such as: (a) the clinical importance of maintaining a drug's effectiveness; (b) understanding why drug tolerance, drug withdrawal and drug dependence often co-occur during addiction; and (c) how drug overdose can result from failing to sufficiently activate the mechanisms that mediate drug tolerance. My research focuses on the behavioral and physiological responses that compensate for a drug's pharmacological effects and how individuals differ in making those responses. The long-term goal of this research is to advance our knowledge and understanding of the pathogenesis, prevention and treatment of drug addiction.

Active grants in fiscal year 2023

Assessing safety and efficacy of low dose rapamycin for healthy longevity
Principal Investigator: An, Jonathan Y.
Originating Sponsor: Impetus Grants

Geroscience approach to reverse periodontal disease
Principal Investigator: An, Jonathan Y.
Originating Sponsor: Molecule AG

Efficacy of a novel tooth whitening agent
Principal Investigator: Chan, Daniel C. N.
Originating Sponsor: CAO Group, Inc.

Washington's novel approach: improving access to integrated oral health care for medicaid populations living in rural dental hpsas
Principal Investigator: Chi, Donald L.
Originating Sponsor: Health Resources and Services Administration

Developing topical fluoride hesitancy measures for causal modeling and intervention research
Principal Investigator: Chi, Donald L.
Originating Sponsor: National Institute of Dental and Craniofacial Research

Oral disease risk in individuals with cystic fibrosis: consistent messaging in provider communication
Principal Investigator: Chi, Donald L.
Originating Sponsor: National Institutes of Health

Oral diseases in adolescents and young adults with cystic fibrosis: identifying risk factors and oral health promotion strategies, respiratory outcomes, and oral-respiratory mechanisms
Principal Investigator: Chi, Donald L.
Originating Sponsor: National Institute of Dental and Craniofacial Research

Simulation research to predict consequences of adult dental Medicaid cuts
Principal Investigator: Chi, Donald L.
Originating Sponsor: CareQuest

Washington's novel approach: improving access to integrated oral health care for medicaid populations living in rural dental HPSAs
Principal Investigator: Chi, Donald L.
Originating Sponsor: Health Resources and Services Administration

Bond strength of titanium copings to IFDPs
Principal Investigator: Chung, Kwok-Hung
Originating Sponsor: American College of Prosthodontists Education Foundation

Dissecting the transcriptional network governing differentiation of periderm
Principal Investigator: Cornell, Robert A.
Originating Sponsor: National Institutes of Health

Functional tests of non-coding DNA variants associated with risk for orofacial clefting
Principal Investigator: Cornell, Robert A.
Originating Sponsor: National Institutes of Health

Genomic and functional analysis of irf6 target genes in orofacial cleft pathogensis
Principal Investigator: Cornell, Robert A.
Originating Sponsor: National Institutes of Health

Refining the genetic and genomic architecture of nonsyndromic orofacial clefts
Principal Investigator: Cornell, Robert A.
Originating Sponsor: National Institutes of Health

Regulation of the melanocyte lineage by the ap2 transcription factor family
Principal Investigator: Cornell, Robert A.
Originating Sponsor: National Institutes of Health

Host response and stannous and other cations' modulation of lps induced inflammation-a follow-up in vitro study on the delayed gingivitis study
Principal Investigator: Darveau, Richard P.
Originating Sponsor: Colgate-Palmolive Company

Long-term oral health outcomes in the chronic gvhd consortium
Principal Investigator: Dean, David
Originating Sponsor: National Institute of Dental and Craniofacial Research

Calculator for length of use of bisphosphonates (club)
Principal Investigator: Dodson, Thomas B.
Originating Sponsor: National Institutes of Health

Rural special care oral health outreach program: dental education in the care of persons with disabilities-rural program
Principal Investigator: Espinoza, Kimberly
Originating Sponsor: Washington State Department of Social and Health Services

Running strong for American Indian youth
Principal Investigator: Gandara, Beatrice K.
Originating Sponsor: American Indian Youth Running Strong, Inc.

Characterization of sodium dependent phosphate transporter 2 signaling in hard tissue mineralization
Principal Investigator: Walczak, Philip
Originating Sponsor: National Institute of Dental and Craniofacial Research

Neurosensory outcomes with plate-rich fibrin use in sagittal split osteotomy
Principal Investigator: Han, Jesse
Originating Sponsor: Osteo Science Foundation

American association of orthodontists foundation
Principal Investigator: Huang, Greg J.
Originating Sponsor: American Association of Orthodontists Foundation

Metal-titanates, novel anti-caries catalysts for modulating the virulence of cariogenic biofilms
Principal Investigator: Huang, Xeulian
Originating Sponsor: National Institutes of Health (NIH)

Regulation and impact of lipid A modification in the pathogenesis of porphyromonas gingivalis
Principal Investigator: Jain, Sumita
Originating Sponsor: National Institute of Dental and Craniofacial Research

HCA ABCD match 2021-2023
Principal Investigator: Kim, Amy Sung-Ok
Originating Sponsor: U.S. Department of Health and Human Services

Zimmer biomet education grant fy 21-23
Principal Investigator: Kronstrom, Mats H.
Originating Sponsor: Zimmer Biomet

Shared reading intervention for children with oral clefts
Principal Investigator: Leroux, Brian
Originating Sponsor: National Institute of Dental and Craniofacial Research

The tongue base in respiration and swallowing
Principal Investigator: Liu, Zijun
Originating Sponsor: National Institutes of Health

Resolving oral bacteria interactions with a high-throughput low-cost single-cell transcriptomics approach
Principal Investigator: McLean, Jeffrey S.
Originating Sponsor: National Institutes of Health

Commensal modulation of peri-implant microbiome dysbiosis via veillonella parvula
Principal Investigator: McLean, Jeffrey S.
Originating Sponsor: National Institute of Dental and Craniofacial Research

Domestication and characterization of tm7 - the most elusive oral phylum
Principal Investigator: McLean, Jeffrey S.
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Impact of saccharibacteria and their bacterial hosts in periodontal and inflammatory diseases
Principal Investigator: McLean, Jeffrey S.
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Mechanisms underlying the variation in rate and levels of gingival inflammatory responses among the human population
Principal Investigator: McLean, Jeffrey S.
Originating Sponsor: National Institute of Dental and Craniofacial Research

Reanalysis of human experimental gingivitis clinical samples
Principal Investigator: McLean, Jeffrey S.
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Map for child health: using social networks to improve child health and oral health
Principal Investigator: Milgrom, Peter M.
Originating Sponsor: National Institutes of Health

Silver diamine fluoride: novel addition to the prophylactic bundle for dental management of radiation-induced dental caries in oral and pharyngeal cancer patients
Principal Investigator: Milgrom, Peter M.
Originating Sponsor: Texas A&M University

HCA ABCD match 2023–2025
Principal Investigator: Nelson, Travis M.
Originating Sponsor: U.S. Department of Health and Human Services

Interdisciplinary special needs access network
Principal Investigator: Nelson, Travis M.
Originating Sponsor: Health Resources and Services Administration

Edge endo laser study
Principal Investigator: Paranjpe, Avina
Originating Sponsor: Edge Endo, LLC

Comprehensive training in interdisciplinary oral health research
Principal Investigator: Ramsay, Douglas S.
Originating Sponsor: National Institutes of Health

Predicting addictive vulnerability to alcohol: initial sensitivity, tolerance, allostasis and self-administration
Principal Investigator: Ramsay, Douglas S.
Originating Sponsor: National Institute on Alcohol Abuse and Alcoholism

Identifying the relationships between acculturation, oral health literacy and health behaviors in Hispanic parents
Principal Investigator: Randall, Cameron L.
Originating Sponsor: International Association for Dental Research

Implementation of evidence-based pain assessment in pediatric dentistry
Principal Investigator: Randall, Cameron L.
Originating Sponsor: National Institute of Dental and Craniofacial Research

Montana innovations in prevention
Principal Investigator: Roberts, Frank A.
Originating Sponsor: Health Resources and Services Administration

Montana oral health workforce activities for prevention
Principal Investigator: Roberts, Frank A.
Originating Sponsor: Health Resources and Services Administration

Pipeline and training for health professionals
Principal Investigator: Roberts, Frank A.
Originating Sponsor: Health Resources and Services Administration

UWSOD Regional Affairs & RIDE distance learning and telemedicine 2021-24
Principal Investigator: Roberts, Frank A.
Originating Sponsor: US Department of Agriculture

UWSOD Regional Affairs distance learning and telemedicine 2022-25
Principal Investigator: Roberts, Frank A.
Originating Sponsor: US Department of Agriculture

Dynamics of hiv-infection, oral innate immunity and the development of oral diseases in children
Principal Investigator: Seminario, Ana Lucia
Originating Sponsor: National Institutes of Health

Vitamin d and alcohol use disorder on progression of dental disease in msm with and without HIV (vita)
Principal Investigator: Seminario, Ana Lucia
Originating Sponsor: National Institutes of Health

Accuracy of 3d printed complete arch implant analogue models
Principal Investigator: Sorensen, John Alan
Originating Sponsor: American Academy of Fixed Prosthodontics

Clinical evaluation of variolink esthetic & adhese univversal for posterior ceramic restoration cementation
Principal Investigator: Sorensen, John Alan
Originating Sponsor: Ivoclar Vivadent, Inc.

Tele-Oral Medicine Pilot Project (TOMPP)
Principal Investigator: Taylor, Stuart
Originating Sponsor: Dental Trade Alliance Foundation

Faculty Updates

RETIREMENTS

Dr. Beatrice Gandara of Oral Medicine and **Dr. Dolphine Oda** of Oral Pathology in the Department of Oral and Maxillofacial Surgery retired from the School during the past academic year, after many years of service and leadership.

PROMOTIONS

Promotions for faculty as of July 1 include:

Dr. Kimberly Espinoza to Clinical Professor, Dental Pathway and **Dr. Stuart Taylor** to Clinical Associate Professor, Dental Pathway, both of Oral Medicine. In Restorative Dentistry, **Dr. Van Ramos** and **Dr. Martin J. Anderson** to Teaching Professor. **Dr. Jeffrey S. McLean** to Professor of Periodontics and Oral health Sciences.

Receiving promotions to Clinical Associate Professor: **Dr. Andrew Nalley** of Oral Medicine; **Dr. Derrick Wang** of Endodontics; **Dr. Luciana Safioti** and **Dr. Bobby L. Butler** of Periodontics; **Dr. Pollene Speed McIntyre**, **Dr. James E. Newman Jr.** and **Dr. Ahmad A. Marashi**, all of Restorative Dentistry; and **Dr. Roozbeh Khosravi** of Orthodontics. **Dr. Kirk Boettcher** was promoted to Affiliate Assistant Professor of Restorative Dentistry.

The School welcomed a new full-time Clinical Assistant Professor of Oral and Maxillofacial Surgery, **Dr. Zahid Lalani**, in April.

Dr. Lalani is a Diplomate of the American Board of Oral and Maxillofacial Surgery and National Dental Board of Anesthesiology and a Fellow of the Royal College of Surgeons of England and Ireland. He completed his training in oral and maxillofacial surgery at the University of Texas Health Science Center at Houston and trained in India and the United Kingdom prior to that. He completed his doctoral studies in molecular biology with an emphasis on wound healing as part of a joint residency/PhD program. Before joining the oral and maxillofacial surgery team at the University of Washington, he was in private practice in Houston for 19 years.

Dr. Claudia Mariela Vera Reyes joined the Department of Oral Health Sciences from Lima, Peru as a Visiting Scholar for four months last winter, as part of the study team evaluating the pharmacokinetics of silver diamine fluoride in young children. The study was based in the Center for Pediatric Dentistry and headed by **Dr. Travis Nelson**, Professor and Chair. Dr. Vera Reyes is an investigator on a clinical case series study of the effectiveness of a new silver diamine fluoride gel in preschool children (Kiru Poderoso) being conducted by Professor Tania Padilla Cáceres of the National University of the Altiplano, Puno, Peru and our School's Emeritus Professor **Dr. Peter Milgrom**. The studies are affiliated with the School of Dentistry Regional Clinical Dental Research Center, part of the UW's Center for Translational Health Sciences.

The Department of Restorative Dentistry recently honored four of their affiliate faculty members for providing the department with 25 or more years of service. Receiving this honor were **Dr. Roy Carlson**, **Dr. Ya-Pei Chang**, **Dr. Randall Maebo** and **Dr. Richard Tucker**.

Dr. Sami Dogan (Pros '12) of Restorative Dentistry concluded the first clinical phase for his project, "Whitening Tablets for Daily Dental Care," sponsored by Procter & Gamble. He is in the process of receiving supplemental funds.

Dr. Natasha Flake of Endodontics began her term as President-elect of the American Association of Endodontics (AAE). **Dr. Avina Paranjpe** (Endo '09) began her term as Vice President of the American Board of Endodontics (ABE).

Dr. Ivy Lin of Oral Surgery was inducted as a fellow of both the Pierre-Fauchard Academy and the Academy of General Dentistry.

Dr. Cameron Randall of Oral Health Sciences received the AADOCR Delta Dental Institute Oral Health Equity Research Award, presented at the American Association for Dental, Oral, and Craniofacial Research Annual Meeting in March in Portland, Ore. The award includes a $25,000 grant for the research project "Identifying the Relationships between Acculturation, Oral Health Literacy, and Health Behaviors in Hispanic Parents." Dr. Randall will lead the project with Co-Principal Investigator Dr. Tamanna Tiwari from the University of Colorado.

Dr. Marilynn Rothen of Oral Health Sciences received the 2023 International Association for Dental Research (IADR) Colgate Oral Health Research Award at the June meeting.

Dr. Ali Sadr of Restorative Dentistry was a keynote speaker at the 7th International Congress on Adhesive Dentistry (IAD) and Turkish Society of Restorative Dentistry at Selçuk University in Konya, Türkiye in June.

Dr. Subrata Saha of Restorative Dentistry was appointed to the Biomedical Engineering Society Awards Committee and placed on the prestigious Athanasiou Award subcommittee. The Athanasiou Award recognizes achievements of an individual who has made outstanding contributions to the field of biomedical engineering with particular focus on translation. These include significant research contributions in translational bioengineering and/or development of new products in biomedical engineering.

Dr. Pollene Speed McIntyre of Restorative Dentistry was invited to serve as a Board member of The McKinney Center for Community & Economic Development. The center serves members of Seattle's Central District community.

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The UW School of Dentistry relies on the annual contributions from our many Business Partners to support our students, faculty, and programs. In turn, we encourage our alumni and friends to support these organizations and institutions that give so generously to our School.

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Profile in Partnership

Permanente Dental Associates forges lasting relationships with students

Long-time Gold-level Business Partner Permanente Dental Associates (PDA) is a pioneering dental group that uses a person-centered culture of health and care in all aspects of its business.

Since 1974, PDA has contracted exclusively with Kaiser Foundation Health Plan (KFHP) to operate and jointly manage the Kaiser Permanente Dental Care Program. This program is unique to Kaiser's northwest region, which encompasses Oregon and Washington. PDA operates 21 dental offices ranging from Longview, Washington to Eugene, Oregon.

Dr. Cyrus Lee, a highly experienced general dentist who last year became the CEO and Executive Dental Director of PDA, oversees the entire provider group of Kaiser Permanente Dental Northwest.

"We believe in, and are centered around, our patients, but we understand the best resource we have in centering around our patients are our people," says Dr. Lee. "In other words, we believe our people have to be well in order to do good work. Our mission is better lives through total health, starting with a smile."

PDA has been recognized as having the healthiest employees in Oregon and Washington by Healthiest Employers® multiple years in a row. PDA also stands out as a dental group practice, in that it is owned by its dentists, most of whom are shareholders.

Part of PDA's mission is to increase its visibility at dental schools to demonstrate the advantages of its model and the long-term career opportunities it offers. In 1999 PDA joined forces with the School of Dentistry to establish the UW Longview Dental Clinic. This collaboration allows pre- and post-doctoral students to provide comprehensive dental care on a quarterly basis, benefiting diverse patients in the community. PDA contributes attending dentists, while Kaiser Permanente supplies the facilities and necessary resources. The program also provides valuable experience and mentorship opportunities for dental students.

"It's important for us to share who we are with more dental students," says Dr. Lee. "The long-term trends show more dental students are considering group practice and so being more visible in dental schools is something we've intentionally been doing since I came into this role."

Dr. Cyrus Lee

PERMANENTE DENTISTRY®
Permanente Dental Associates

PDA has been supporting the School in a variety of ways to connect with students along their dental education journey, including sponsoring events such as the Dean's Club Dinner, White Coat Ceremony for third-years and gift bags for fourth-years. PDA also provides the annual Permanente Dental Associates Recognition Award, a $1,000 scholarship given to five fourth-year students who plan to enter postdoctoral programs.

"Our model is for our people, our dentists, to stay with us their entire career," says Dr. Lee. "That's not something that's conveyed well in a print ad or something like that. You have to take the time, to build relationships and use multiple touch points to convey that message, which is why we're looking at being a bit more visible to dental students as they journey through UW."

Class Notes

DDS Class of 1950

Dr. Lester Schikle, Pasco, Wash., turned 100 in July. He was a WWII veteran and graduate of the School's first class.

Orthodontics Class of 1971

Dr. John E. Grubb, Escondido, Calif.: Dr. Grubb was selected for the 2023 Dale B. Wade Award of Excellence in Orthodontics by The American Board of Orthodontics.

Class of 1978

The women of the class of 1978 held a "hen" party to commemorate their 45th reunion. All are doing well; most are retired. staying active and enjoying their time. A few are still working or are pursuing other passions, such as art and writing. We are working on raising funds to name an operatory in honor of our class. This was the first class at the School of Dentistry to have a large number of women (18 out of 92).

Orthodontics Class of 1977

Dr. Henry W. Fields, Jr., New Albany, Ohio: Dr. Fields was selected for the 2023 Earl E. and Wilma S. Shepard Distinguished Service Award by The American Board of Orthodontics

Class of 1979

Dr. Kim Norberg, Puyallup, Wash., traveled to Tecpán, Guatemala last spring with a 49-member team of volunteers to treat patients. The team saw 652 patients, providing procedures including 150 scale and root planings, 150 composite and alloy fillings, 25 Boston University-style root canals, 50 stainless-steel crowns, 50 pulpotomies, 400 surgical extractions and 200 whimsical face paintings — a value of roughly $454,000.

The 2024 trip will occur in the last week of April and the trip will be planned in November of this year. Interested volunteers can contact Dr. Kim Nordberg for more information at kimnordberg6@gmail.com.


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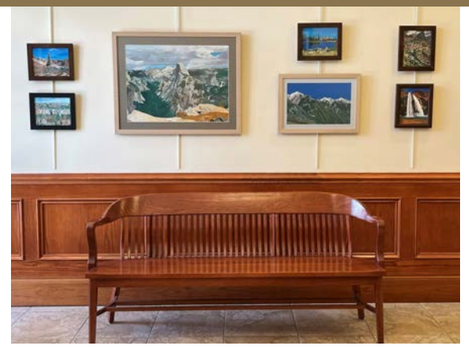


Class of 1980

Dr. Richard Engar, Holladay City, Utah: Dr. Engar was selected by Holladay City as the Artist of the Month for August for his watercolor paintings and his museum.

Class of 2003

Dr. Lina Kim, Seattle, Wash.: I have two practices in the vibrant neighborhoods of Laurelhurst and Magnolia that include a dynamic and cohesive team who shares my dedication to delivering exceptional dental care. Our focus is ensuring each patient receives top-notch treatment and feels genuinely valued and understood, reflecting my core belief that building enduring relationships with my patients, centered on preventive care and oral health, is paramount.

Beyond managing my practices, I'm committed to extending quality dental care to underserved communities. I've worked in the Odessa Brown Children's Clinic within the Seattle Children's Hospital for the last 17 years. Additionally, I'm involved with non-profit communities such as Real Escape From the Sex Trade (REST), Utopia — an LGTBQIA+ community — and CHW — Coalition for Migrants and Refugees.

One of my recent accomplishments is the launch of Floss Boss Mobile, an innovative mobile dental clinic. This endeavor addresses the gap between oral hygiene and accessibility, enriching patient lives through comprehensive dental care.

Outside of my professional realm, I find joy in various races. I've participated

in 5 half marathons and this year completed my first Seafair office triathlon with my office dentists and staff participating. I also enjoy cheering my 17-year-old daughter and 15-year-old son, who both play basketball for Bellevue High School.

Class of 2016

Laurianne Sakai, North Bend, Wash., On March 15, 2023, my husband, Jason, and I welcomed our first baby girl. She was 6 lbs., 11 oz. and 19.5 inches long. We named her Aria Joy Kim! It has been such a joy being parents. Aria is currently sleeping 12–13 hours each night! It has been so fun to watch her grow and smile. After 3 months of leave, I am now back at the office seeing patients and so blessed to have family members watching Aria while Jason and I are working.

Reunions

Class of 1963

The Class of 1963 had its 60th reunion at Tsillan Cellars in Woodinville, Wash., hosted by classmate and winery owner Bob Jankelson. The venue was excellent as we reconnected with memories of dental school with classmates and wives. For those who missed the outing, we plan to meet again next year.

Class of 1967

The Class of 1967 likes to gather every six months to catch up and share memories. On June 28 they had lunch in a conference room in the Plaza Cafe. Ten members of the class attended. Fun was had by all!

Class of 1983

The Class of 1983 held their 40-year celebration. More than half of the graduating class attended the event at the Activity Center behind the dental school. The gathering served as a poignant reminder of the exceptional bond shared between classmates throughout the years. The class plans to gather again for their 45-year reunion.

Class of 2013

The Class of 2013 celebrated their 10-year reunion, enjoying a family brunch at Ivar's Salmon House and bowling at The Garage in Capitol Hill.

We are saddened to note the passing of classmates, colleagues and friends.

DR. JOHN P. ANDERSON
ORTHODONTICS CLASS OF 1955

Dr. John Paul Anderson, a longtime resident of Beaverton, Ore., and later of Sisters and Bend, Ore., passed away on Jan. 2, 2023. He was 95.

He practiced orthodontics for decades in Beaverton, where he was regarded as one of the nicest and most cheerful people in the region. He loved Central Oregon and moved there with his family when he retired.

Dr. Anderson is survived by his son, Eric; and grandchildren Kyle, Lauren, Gabe, Catherine and Courtland.

DR. GENE H. WILSKIE
CLASS OF 1958

Dr. Gene Harlan Wilskie of Bothell, Wash., passed away on Aug. 2, 2023. He was 89.

DR. RONALD R. BECHTOLD
CLASS OF 1963

Dr. Ronald Roy "Ron" Bechtold died on Nov. 19, 2022. He was 89.

He was born on Aug. 30, 1934 in Bigfork, Minn., to Helen and Roy Bechtold. He practiced dentistry in Shelton, Wash., Kwajalein, Marshall Islands and Tukwila, Wash. He enjoyed hiking, hunting, scuba diving and his family.

Dr. Bechtold is survived by his beloved wife, Sharon; sons Craig (Lesia) and Bret (Natalie); and grandchildren Calista, Thor, Brandon, Amelia and Brod..

DR. MICHAEL A. CLARKE
PERIODONTICS CLASS OF 1970

Dr. Michael A. Clarke died on May 21, 2023. He was 86.

He was born on May 29, 1936 in Fresno, Calif. He lived in a number of communities in California in his youth and attended UCLA.

He attended the University of California San Francisco School of Dentistry, earning BS and DDS degrees. Shortly after receiving his dental degree, he joined a group dental practice in Oakland. He was drafted to the U.S. Army and was stationed at Fort Ord, Calif., for two years, caring for military personnel in the dental clinic.

Dr. Clarke practiced general dentistry in Hollister, Calif., for two years and returned to school to become a specialist. At the UW, he completed his Periodontics training and earned an MS in pathology. He taught at the University of Southern California School of Dentistry, the University of the Pacific School of Dentistry in San Francisco and the Dental Health Program at Chabot Community College in Hayward, Calif.

Dr. Clarke is survived by his wife, Jeanine; four daughters; three grandchildren; four great-grandchildren; and his brother and sister.

DR. PATRICK M. HOGAN
CLASS OF 1974

Dr. Patrick M. Hogan died peacefully surrounded by his family on May 31, 2023 due to pancreatic cancer. He was 74.

He was born on Oct. 25, 1948 in Seattle to Raymond and Kathleen Hogan. He graduated from Mercer Island High School in 1966. He graduated cum laude from the UW.

After dental school, he spent three years as a captain in the U.S. Army Dental Corps at Fort Bragg, North Carolina, earning the Army Commendation Medal. He began his practice at the West Seattle Dental Center in 1977.

During his 46 years practicing dentistry, Dr. Hogan taught at the School and participated in West Seattle Rotary and numerous dental study clubs, including the Renaissance Study Club.

He was a "founding father" of Hoopaholics Basketball Camp, which benefits Childhaven. He retired from dentistry in 2020 and he and his wife moved to Bainbridge Island, Wash.

Dr. Hogan is survived by his wife, Jan; children Kelly (Scott) Johnston, Kyle (Chandler) Udo and Kacey (Evan) Lugar; grandchildren Jane, George, Bennett, Emerson, Ella and Clare; and brother Tim (Candy).

DR. GEORGE D. BECK
CLASS OF 1977

Dr. George Douglas "Doug" Beck of Woodinville, Wash., passed away after a short illness on April 9, 2023. He was 70.

He was born to George Lauren "Bud" Beck and Mary Louise Beck of Ketchikan, Alaska, on May 11, 1952. He graduated from Ketchikan High School in 1970 and received a BS in biology at the UW.

He completed a General Practice Hospital Residency through Marquette University, the Veterans Administration Hospital and the Milwaukee County Medical Center, all in Milwaukee, Wis. After associating with other dentists for three years, which included running the Dental Residency at Methodist Hospital in Madison, Wis., he and his wife returned to the Pacific Northwest. He established his private practice in Mill Creek in 1981, practicing there for 39 years, until retirement in August 2020.

Dr. Beck was on the board of directors of Washington Dental Service (Delta Dental) for 16 years and the Washington Dental Service Foundation (Arcora). He served as president of the Snohomish County Dental Society, board member of the Snohomish County Dental Foundation and chair of the Washington State Dental Association Committee on Dental Benefits.

Dr. Beck is survived by his wife, Linda; mother Mary; brother Steven; and sister Katy Beck, her husband, Brian Chopp and their daughter, Laura. He was preceded in death by his father.

DR. WILLIAM R. LARSON
CLASS OF 1977

Dr. William Reed "Bill" Larson of Salt Lake City, Utah died on June 14 after many years of cancer, lung disease and the coup de gras, COVID-19. He was 72.

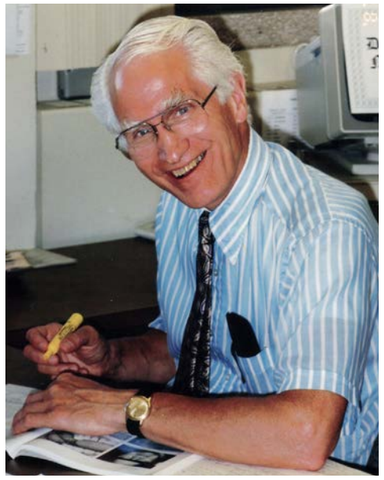
He was born on Jan. 31, 1951 to Reed Parkinson and Lennox Adamson Larson. After serving in the Japan Central mission, he met his wife, Robin Ririe, at the University of Utah. After marrying, the couple moved to Seattle for his dental training.

Dr. Larson served the Salt Lake City community as a dentist for over 40 years. He was a compassionate professional, regularly treating those in need while discreetly refusing compensation. He taught at the University of Utah dental school for 10 years and loved passing on his knowledge.

Dr. Larson is survived by his wife of 50 years, Robin; children Russell (Lisa), Scott (Gina), Katharine (Scott) Lee, Graham (Carly), Ellen (Gabe) Bush and Preston (Natalie); 19 grandchildren; and siblings Brent (Mary) and Eric (Lori). He was preceded in death by his sister and parents.

School Mourns the Passing of Dr. Robert H. Johnson

Dr. Robert H. Johnson was a beloved member of the School of Dentistry community. He graduated from dental school at McGill University in Montréal, Quebec, and went on to study Oral Medicine at Indiana University and Periodontics at our School ('71). Dr. Johnson taught at McGill University, the University of Kentucky and the University of Western Ontario, before being recruited as Chair of our Department of Periodontics in 1981.



Dr. Johnson had an illustrious academic career. Along with being Chair from 1981-1993, he served as Periodontics Predoctoral Director and course director of many predoctoral courses. He described his career as a "50-year love affair with teaching dental students." He absolutely loved instructing vibrant dental students and they adored him. He retired as Professor in 2007 and then, for a second time, as a Professor Emeritus in 2012. Admired and respected by students, Dr. Johnson gave his seventh and final School of Dentistry Investiture of Hoods address for the Class of 2012.

During his tenure at our School, Dr. Johnson penned an alumni newsletter titled The Gum Gardeners' Gazette, for which he authored entire articles in alliteration, using a different letter for each issue. We will miss his inciteful writing, which he said was read more widely than all his scientific and educational literature. So, in his own words: "Undoubtedly, my unique utterings usually were unorthodox, unconventional, unrecognizable, unreadable, untranslatable, unscientific, unreliable and unbelievable — but never unfriendly or unprofessional!"

In honor of his life, Dr. Johnson's family requests donations be made to the Robert H. Johnson Endowed Support Fund, benefiting students who excel in Periodontics at our School.

DR. BRIAN J. RUTHERFORD
CLASS OF 1980

Dr. Brian J. Rutherford passed away on Feb. 10, 2023 in Kirkland, Wash. He was 69.

He was born on Jan. 5, 1954 in Renton, Wash. His diehard interest in physical fitness and outdoor pursuits made him legendary among his friends and family. Before graduating from Renton High School in 1972, he raced for the Alpental and Crystal Mountain ski teams, setting the tone for a lifetime devotion to alpine skiing.

Four years after dental school, he co-founded Mill Creek Family Dentistry. In 42 years of private practice, his implant and cosmetic dentistry gave beautiful and confident smiles to patients whose lives were often drastically improved by his artistry and compassion.

He found peace and happiness in regular trips with his family to Sun Valley, Idaho, the Hawaiian Islands and the Rutherford family cabin on Washington's remote Stuart Island.

Dr. Rutherford is survived by his wife of 46 years, Michele; son Peter; and sisters Jerene (Jerry) Battisti and Marcia Rutherford. He was preceded in death by his parents.

DR. ALAN F. HAMAMURA
CLASS OF 1982

Dr. Alan Fumio Hamamura, Ret. Navy Captain, of Honolulu, Hawaii, died on July 5, 2023. He was 69.

During his active life, he married his beautiful bride, was a father and retired after serving his country for 23 years in the U.S. Navy Dental Corps. After retirement, he continued enjoying dentistry and served the local communities of Honolulu, Pearl City and Wai'anae. He also contributed to the education of the next generation of dentists at The Queen's Medical Center.

A kind, good-hearted man, he loved people and was well-loved by his patients.

Dr. Hamamura is survived by his wife, daughter, mother and brother.

Upcoming In-Person Classes

FRIDAY, MARCH 1, 2024
Anterior Aesthetics: Minimally Invasive for Maximum Impact
Greg Gillespie, DDS, and Kevin Brown, DDS
Lynnwood Events Center, Lynnwood, Wash.
7 hours
** This course is offered in partnership with Seattle-King and Snohomish County Dental Societies.*

FRIDAY, MARCH 22, 2024
Ernest M. Jones Memorial Lecture
*Title and speaker details coming soon
Kane Hall, UW Campus, Seattle
7 hours

FRIDAY, SATURDAY AND/OR SUNDAY, APRIL 12-14, 2024
Mastering Adult Minimal Sedation
Scott Dickinson, DMD; Mark Donaldson, PharmD; and Jason Goodchild, DMD
Friday – UW Center for Urban Horticulture, Seattle
Saturday and Sunday – UW Health Sciences Center, Seattle
7 hours each day

SATURDAY, APRIL 20, 2024
From Broke Dental Student to Dentist to the Stars to $1 Billion Exit
Jon Marashi, DDS and Michelle Blake, CPA
UW Health Sciences Center, Seattle
4 hours

FRIDAY, MAY 17, 2024
Actions and Algorithms for Medical Emergencies: How to Save a Life (Including Your Own!)
Daniel G. Pompa, DDS
Mountaineers Club, Seattle
7 hours

SATURDAY, JUNE 22, 2024
Law/Lewis Lecture in Pediatric Dentistry: Evidence-Based Update on Pulp Guidelines for Primary and Permanent Teeth
Jim Coll, DMD, MS
Woodmark Hotel, Kirkland, Wash.
5 hours

For numerous webinars on multiple topics from dental faculty across North America, please see the ACDE Webinar series, information at www.uwcde.com

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CDE Course Spotlight

FRIDAY, MARCH 1, 2024

Anterior Aesthetics: Minimally Invasive for Maximum Impact

The Annual Partnership Seminar between the Snohomish County Dental Society, UWSOD and Seattle-King County Dental Society is back!

Join **Drs. Greg Gillespie** and **Kevin Brown** at this all-day program at the Lynnwood Events Center.

Anterior Aesthetics is an ever-evolving landscape of different ways to approach proper treatment planning and workflow. Digital technology has greatly advanced the options for planning capabilities between patients, doctors and laboratories. Drs. Brown and Gillespie will highlight how to maximize these digital tools to enhance treatment planning options to make esthetic restorations as minimally invasive as possible, including the incorporation of clear aligner therapy. They will discuss intraoral scanning, digital photography, simulated outcomes, digitally printed models, imaging and software options, as well as how to put all these pieces together to make your final outcomes more predictable. Restorative material selection will be covered, including when to choose composite resin, lithium disilicate, zirconia or feldspathic porcelain in esthetic cases.

Learn more and register at **dental.washington.edu/continuing-dental-education.**

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Alumni calendar of events

FRIDAY, JAN. 19

Classes of the 2000's/
4th Year Party
7 – 10 p.m.
UW BURKE MUSEUM

TUESDAY, JAN. 30

Alumni Connections & Job
Opportunities Program
6 – 8:30 p.m.
THE HUB, NORTH BALLROOM

FRIDAY, MARCH 22

Ernest Jones Lecture
8:30 a.m. – 4:30 p.m.
UW KANE HALL

MONDAY, APRIL 15

DAA Full Board Meeting
6:30 – 8 p.m.
UW KANE HALL

MONDAY, APRIL 15

DAA Full Board Meeting
6:30 – 8 p.m.
UW KANE HALL

SATURDAY, MAY 4

Dean's Club Dinner
5:45 – 9:30 p.m.
MUSEUM OF FLIGHT, SEATTLE

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