

UNIVERSITY OF MINNESOTA

Dentistry

FOR ALUMNI OF THE SCHOOL OF DENTISTRY

SPRING/SUMMER 2018

14TH ANNUAL RESEARCH UPDATES

Informing the Profession

Inside Alumni Profile ■ Unexpected Collaborations ■ Informing the Profession



PHOTO BY STEVE WOIT

from the Dean

Dear Colleagues,

Since our last issue of *Dentistry* magazine, I have been appointed dean of the School of Dentistry, a position I will hold through the end of calendar year 2019. It is a distinct privilege and honor for me, and I assure you that I will make every effort to live up to the confidence that has been placed in me.

With that thought in mind, I'd like to call your attention to a few highlights in this issue of *Dentistry* magazine that I believe provide important insights into our everyday life at the School of Dentistry.

On these pages, we explore the integral role that mission-oriented research and scholarly efforts play in our day-to-day work. These are stories of bench research, collaborations with industry and interprofessional colleagues, advances that improve the lives of senior citizens, research opportunities provided to our students, and new insights into our understanding of dental decay and paths to cancer.

Our cover story, for example, is about our 14th annual *Dental Research Updates*. This day-long program each spring is one of our very favorite programs. It gives us an opportunity to meet and share with our community examples of the research being conducted by faculty, staff and students throughout our school. This year, our keynote speaker was Dr. Robert Nadeau from the Division of Oral and Maxillofacial Surgery. He provided an important overview of dentistry's role in a current health crisis, as well as steps we have taken in our own clinics to address the problem. The story also reports on other exciting investigations by our faculty, as well as those student researchers mentored in the donor-supported *Summer Research Fellowship Program*.

Another article highlights a proud moment. Our Minnesota Dental Research Center for Biomaterials and Biomechanics (MDRCBB) is a unique public-private research collaboration that brings together academic and industry scientists to explore and discover. We are proud to share the news that one of our research partners—3M scientist Dr. Sumita Mitra, who conducted her research in collaboration with the MDRCBB—was inducted into the 2018 National Inventors Hall of Fame in Washington, DC, for inventing the first dental material to include nanoparticles.

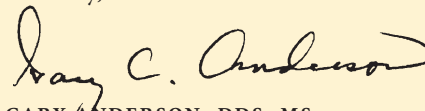
Please also take a look at the following stories: Dr. Stephen Shuman is at it again with a couple of inventions that will improve the lives of the elderly and disabled (page 3). Dr. Dina Moussa, one of our many talented graduate students, received international recognition for her scientific investigations mentored by Dr. Conrado Aparicio (page 15). And the important work of Dr. Lou Mansky on a cancer causing virus is also described (page 16). Dr. Sven Gorr, our former associate dean for research, is back in the lab working on developing a new antibiotic (page 16). And, of course, you can read about a new insight into dental caries (page 2).

The accomplishments of faculty, alumni, staff and students are outlined in *People* and *Class Notes*. The stories of our alumni of the year award winners—Hiwet Ephrem and Dr. Cheryl Anderson-Cermin—and the recognition of my good friend and colleague Dr. Brent Larson—are honors most deserved.


The stories that mean the most to me in this issue are about two people who give much more than they receive, one whose contributions span the years and one whose career is just getting started. One news item announces that Ms. Sue Elm, my very dear friend and long-time colleague at the School of Dentistry, was recognized by the University with the President's *Outstanding Service Award* for her dedication and service to us all. The other story is about Dr. Michael Brooks who came to us as a dental student intent on giving back and is now off-and-running in his role as director of the dental clinic at the NorthPoint Health & Wellness Center, providing care for the underserved. I am so proud of them both.

Please enjoy the read and stop in to say hello the next time you are on campus!

Sincerely,



GARY ANDERSON, DDS, MS
Dean

 Like us on Facebook!

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PHOTOS BY SCOTT STREBLE


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The University's mission, carried out on multiple campuses and throughout the state, is threefold: research and discovery, teaching and learning, and outreach and public service.

Dentistry is published two times a year for the alumni and friends of the University of Minnesota School of Dentistry. We welcome suggestions and feedback. Please contact *Dentistry* magazine, School of Dentistry, University of Minnesota, 15-136A Moos Tower, 515 Delaware Street SE, Minneapolis, MN 55455 or email kante008@umn.edu. For more information about the School of Dentistry and its programs, refer to the Web site at www.dentistry.umn.edu.

This publication/material is available in alternative formats upon request. Direct requests to Claudia Kanter, School of Dentistry, Department of Marketing and Communications, kante008@umn.edu, 612-625-0402.

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News Bites

U-M Researchers Document New Process that May Exacerbate Tooth Decay

In a new study published in *Applied and Environmental Microbiology*, an interdisciplinary team of University of Minnesota researchers found some bacteria that absorb and accumulate phosphate from saliva may play a role in tooth decay.

The study suggests dental plaque contributes to dental decay by removing phosphate from the mouth and altering the chemistry of saliva. This is significant

phosphate minerals, similar to the make-up of the mineral portion of our teeth, to form or dissolve through the absorption or the release of phosphorus from inside their cells. These bacteria store the phosphorus as a long-chain polymer known as polyphosphate.

In this new study, University of Minnesota researchers show that dental plaque contains abundant bacteria that absorb phosphate from their surroundings and store it inside the cell as polyphosphate, a process that may exacerbate tooth decay.

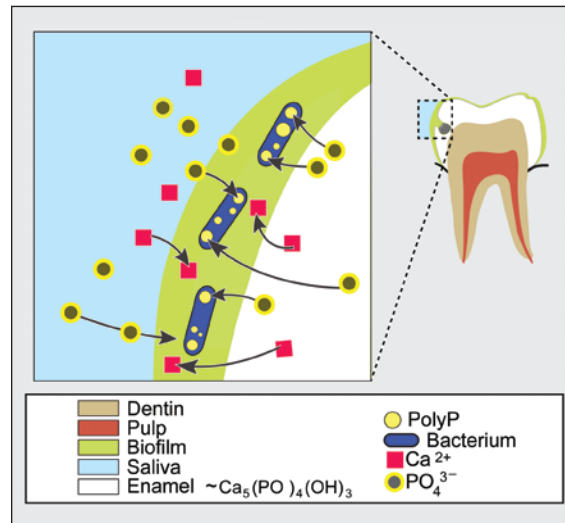
“Making this breakthrough required bringing together ideas and approaches from diverse scientific disciplines, from oceanography to dentistry,” said Jake Bailey, associate professor with the Department of Earth Sciences.

Researchers believe it could help shape the development of future oral hygiene products or treatment approaches to reduce tooth decay.

“Future work will need to be conducted to understand the factors that control when and why these bacteria take up phosphate and how their presence impacts overall oral health,” said Robert Jones, associate professor with the Division of Pediatric Dentistry.

“I am hopeful that our collaboration could lead to new and alternative approaches to combating and managing oral disease,” said Ashley Breiland, lead author and researcher with the Department of Earth Sciences.

Funding was provided by the University of Minnesota Office of the Vice President for Research through the Minnesota Futures grant.



because previous research focused solely on the role of bacteria in tooth decay through the production of acids from sugars.

Knowing that low concentrations of soluble mineral ions, such as phosphate, in the mouth can accelerate dental decay, researchers from the School of Dentistry's Division of Pediatric Dentistry and from the Department of Earth Sciences in the College of Science and Engineering asked if oral bacteria themselves can substantially change mineral ions in their local surroundings.

It's a question that was sparked by recent research in marine environments that shows bacteria can cause calcium

New Dean

Gary C. Anderson, DDS, MS,

a tenured faculty member in the Department of Developmental and Surgical Sciences, Division of Pediatric Dentistry, has been named dean of the University of Minnesota School of Dentistry for a fixed-term beginning March 26, 2018, and continuing to December 31, 2019. He previously served as interim dean following the departure of Leon Assael, DMD, who retired from his position as dean in August 2016.

In announcing the appointment, Executive Vice President and Provost Karen Hanson acknowledged Anderson's



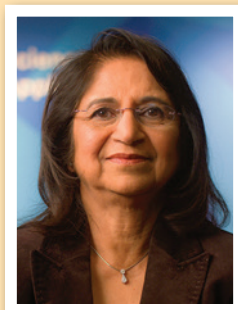
outstanding leadership as interim dean and expressed confidence in his continued leadership in planning to enhance academic and clinical excellence, operational efficiency, budgeting and investment, school climate, and private practice arrangements. She also announced her intention to launch a national search for the next permanent dean during spring semester 2019, for appointment in 2020.

CELEBRATING AMERICAN INNOVATION AND A RESEARCH PARTNER

Sumita Mitra, PhD, was inducted into the 2018 *National Inventors Hall of Fame* in a ceremony that celebrated “the world’s foremost inventors and their contributions to society.”

The former 3M researcher was recognized for inventing the first dental material to include nanoparticles, Filtek™ Supreme Universal Restorative. The composite filling material mimicked the beauty of natural teeth and exhibited superior mechanical properties. Dr. Mitra developed the dental material with a multidisciplinary team—which included scientists in the dental school’s Minnesota Dental Research Center for Biomaterials and Biomechanics (MDRCBB).

The MDRCBB was established as a public/private partnership, pairing the dental school’s research expertise with industry experts for the purpose of creating new technologies, products and services. 3M was a founding partner,



Dr. Mitra was the 3M industrial director for nearly ten years, and faculty-emeritus William Douglas, BDS, MS, PhD, was MDRCBB’s first academic director. He and recently-retired Ralph DeLong, PhD, DDS, MS, were among Mitra’s research collaborators on the composite filling investigations that utilized the center’s robotic mouth (ART).

A production team visited the dental school’s biomaterials lab last fall and produced a video tribute to Dr. Mitra that was shown at the induction ceremony.

Dr. Mitra is the holder of 98 U.S. patents and their international equivalents, and is one of just 15 *Hall of Fame* inductees honored on May 3 at the National Building Museum in Washington, D.C. William Douglas and Alex Fok, PhD, the current MDRCBB director, were in Washington to congratulate her on behalf of the School of Dentistry.

On National TV

The Big Ten Network (BTN) visited the School of Dentistry in November 2017 to film aboard the UCare Mobile Dental Clinic as part of its video



story about research, outreach projects and ‘cool things’ happening on the University of Minnesota campus. The video was broadcast on-air and is posted on the BTN website.

Driven

The School of Dentistry is gearing-up for a fundraising initiative to help drive the school’s commitment to enhancing the student experience and ensure the powerful impact of the School of Dentistry for generations to come. Investments will increase student support through scholarships; drive research innovations by enhancing leading-edge scientific progress; reduce disparities in oral health care delivery; and ensure state-of-the-art dental education by making strategic improvements in digital dentistry. *Watch for more information by mail.*

Opioids

Harold K. Tu, MD, DMD, associate professor and director of the Division of Oral and Maxillofacial Surgery, was appointed to the new, federal Pain Management Best Practices Inter-Agency Task Force. Formed by the U.S. Department of Health and Human Services, the task force is charged with proposing updates to best practices and recommending solutions to gaps or inconsistencies in managing chronic and acute pain.

Explore Dentistry Open House

High school and college students explored their interests in dental careers at a Saturday academy-style event at the School of Dentistry on May 19. Forty-five high school students and 80 college students toured stations hosted by student ambassadors of the American Student Dental Association, the Student National Dental Association and the Minnesota Student Research Group, as well as representatives of the dental, dental therapy and dental hygiene education programs. The stations included: a presentation about oral health, panel discussions about dental careers, lab simulation hands-on projects, head and neck examinations, and tours of the biomaterials and fluoride research labs.

Defensive Line *to the* Front Line

Dr. Michael A. Brooks, Jr. ‘walks the talk’
on the field, at work, and in life.

BY TERRI PETERSON SMITH

It’s hard to imagine anyone further removed from his childhood than Dr. Michael A. Brooks, Jr.. Growing up in Key West, Florida, he sold mangoes and Spanish limes to tourists outside of the Ernest Hemingway house. Part African-American, Native American and Hispanic, Brooks thrived in a large, close-knit family with aunts, uncles, and cousins aplenty.

He blossomed as an ‘A’ student in high school. And, he was a force on the football field—a pro-sized six-foot-three, 230-pound tackling machine, coveted by college programs all over football-crazed Florida.

Yet Brooks had other ideas. When a football coach from Concordia University in St. Paul made a recruiting visit to his high school, Brooks made a point of talking to him. A small faith-based school at the opposite end of the country appealed to his independent streak. So did the coach’s emphasis on student athletes. “I told him I’m a star defensive end with a 4.0 GPA. I should be right up your alley.” Brooks was exactly that and he packed his bags for Minnesota.

Finding a New Field

At Concordia, Brooks again thrived athletically and academically. As a senior in 2008, he was captain of the football team and awarded Concordia’s “Top-4” award, given annually to four student-athletes who demonstrate the highest standards of sportsmanship and superior character in every aspect of their lives.

But it was his classroom prowess that set his future. After starting out as a business major, he did well enough in his science classes for a biology professor to take him aside and ask if he had thought of a career in the sciences.

“I hadn’t thought of it, but my mom and grandmother were both nurses. As a child, I spent a lot of time around the hospital after school and I was impressed by the gratitude of patients and how medical professionals were such respected members of the community.” Dentistry held particular appeal because he saw how few people received dental care in his Key West community. He also knew he had the work ethic for success in dental school. “I was always taught that if you put in the work, you get back the reward.”

At Concordia, he found not only a career path but also his future wife, Jessica, a Minnesota native and fellow student who is now the marketing manager at the Minnesota Children’s Museum. They have two girls ages four and six. “Football brought him here; I kept him here,” she says.

That was lucky for the School of Dentistry. Says Naty Lopez, PhD, MEd, associate professor (Department of Primary Dental Care) and assistant dean for admissions and diversity, “Michael Brooks’ reputation preceded him. Pre-health advisers from his school approached me during a meeting to tell me a most wonderful student was going to apply and that he would make an excellent dental ☺

Michael A. Brooks, Jr.



**“You just have to
meet people where
they are and bring
them along.”**

— MICHAEL A. BROOKS, JR., DDS



Dr. Michael A. Brooks, Jr. (L) and James Moore, LDA, at NorthPoint Health & Wellness Center Dental Clinic.

PHOTOS BY SCOTT STREBLE

student and dentist. When I finally met him, I was not disappointed. He was everything they said he was. He was smart and funny, a ‘gentle giant’ as his high school students would call him.”

Dental school was also a good fit for Brooks. “I liked the school’s commitment to community outreach,” he says. Brooks received a Dean’s scholarship and a summer research fellowship. He excelled academically and at the same time taught high school students in *Saturday Academy*, the School of Dentistry’s admissions pipeline program funded by the Health Resources and Services Administration. Twenty-four high school students from underrepresented community groups in Minneapolis attended science and dental simulation classes two Saturdays a month.

Says Lopez, “Michael held the students’ attention as he creatively presented topics and drilled them about new things they learned. He was an effective teacher, simplifying concepts and making learning enjoyable. The students just loved Michael; they looked forward to their Saturdays with him.”

Brooks is still active in the School of Dentistry’s outreach efforts. In May, he was a guest presenter at the dental school’s *Exploring Dentistry Open House* for high school and college students. “Talking to kids you never know what ideas you’ll spark,” he says.

He Looks Like Me

Just imagine the impression that Brooks makes on his young patients at NorthPoint Health & Wellness Center on Penn Avenue North in Minneapolis where he is director of the dental clinic. NorthPoint is a multi-specialty medical, dental and mental health center and human service agency where many

“The decision Dr. Brooks made to practice in a community clinic demonstrates his commitment to ‘give back’ to the community...”

— NATY LOPEZ, PHD, MED
ASSISTANT DEAN FOR ADMISSIONS
AND DIVERSITY

patients are without insurance or receive medical assistance. The dental clinic waiting area resembles a mini United Nations.

Brooks leads a visitor on a tour of the clinic with 16 operatories, 13 dentists, a staff of 52 and plans for expansion. Yet as he strolls through the clinic, talk turns from the pleasure of directing an excellent facility to the deeper reasons he chose NorthPoint. Brooks had four job offers

and the NorthPoint job paid the least but he was attracted to the clinic’s level of community engagement. Says Lopez, “The decision Dr. Brooks made to practice in a community clinic demonstrates his commitment to ‘give back’ to the community, especially to the underserved. He could have worked elsewhere but he chose to work where he is most needed. His excellent work was recognized when he was made director of the clinic very early in his career.”

Brooks teaches his patients about the importance of dental health to overall health and longer life, raising their ‘dental IQ.’ He’s also an influential role model. Many of his young patients express surprise when they meet him. “They look at me and ask ‘Are you the dentist?’ Then they turn to whoever brought them and exclaim, ‘He looks just like me.’”

With his patients he’s a coach, too, who seeks to impart the values and philosophy that have made him successful. As he works, he injects a bit of casual conversation about life and making good personal choices. “You just have to meet people where they are and bring them along.”

Football may have brought him north but it was merely the kick off to Brooks’ career. Long after his time as a defensive end, he’s still making an impact. ☉

Unexpected Collaboration

Dentistry partners with engineering to develop new devices for the elderly.

BY KELLY MCCRIMMON

Stephen Shuman, DDS, MS, never imagined he'd be working with aerospace engineers on oral health issues. But the associate professor in the School of Dentistry works with them on a regular basis. He's collaborating with a local aerospace research company, ASTER Labs, to create new dental devices to help the elderly maintain their oral health and function.

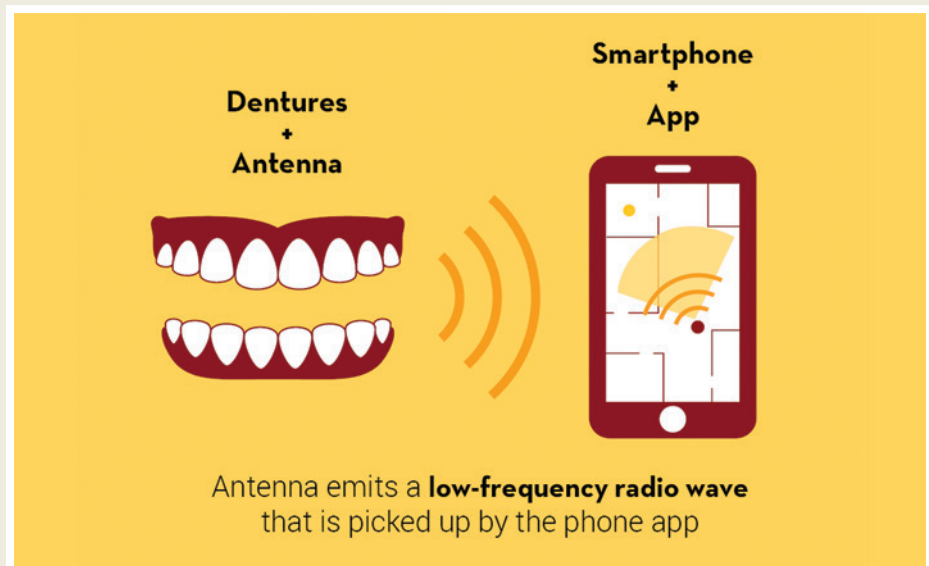
ASTER Labs primarily focuses on research for advanced initiatives in the aerospace industry. With cuts in space funding, the company considered other sectors for technology and transferred development, and settled on health care. They first worked on an automated toenail clipper that addressed one of the usually simple tasks restricted by old age. ASTER approached Shuman to expand the focus into other areas.

With more than 30 years of experience in geriatric dentistry, Shuman understands the problems faced by seniors, as well as the rising interest in how to support older or disabled adults.

Together, Shuman and ASTER Labs are working on two major dental devices projects: a denture-locator system and an automated tooth-brushing system.

Denture-locator System

"One of the most frequent problems we see among older adults in long-term care settings is lost dentures," Shuman said. "Dentures are misplaced regularly, maybe lost in the sheets or wrapped up in napkins on meal trays and tossed away."



He noted this problem is even more prevalent among cognitively-impaired seniors who are more prone to forget items. The loss of dentures is both emotionally and financially draining.

The team is using ASTER's expertise in global positioning systems (GPS) to create a small, passive antenna to place inside a denture.

"If a GPS system can tell me that my car is close to an upcoming turn, why can't it find a lost denture in a nursing home?" Shuman said.

The system would employ a cellphone app to activate the antenna and locate the lost dentures. This app could be used by caregivers, nursing home staff or others. It could also be applied to other items in the future.

"This technology would also be especially helpful for hearing aids, which are

smaller than dentures and also quite costly to replace when lost," he said.

Automated Toothbrush

Another common issue with the elderly is maintaining good daily oral hygiene.

"As people grow older, disabilities can make it harder to properly use a hand-held toothbrush and visit the dental office regularly," Shuman said.

With this problem in mind, Shuman and his colleagues are developing an insertable mouthpiece with automated bristles for cleaning the teeth. A prototype is in the works, which will be tested and reviewed by older adults and caregivers before moving on to a clinical trials phase.

"The key is making this a long-lasting device that can help seniors maintain their independence," he said. ☉

14th Annual Research Updates:

Informing the Profession

A compelling sense of purpose.



BY RICHARD BRODERICK

The opioid crisis is one of the worst, if not the worst, drug crises that's ever affected

America. Forget crack. Forget weed. Opioids, in one form or another, cause an average of 164 deaths a day—40 percent of those from an overdose of *prescription* drugs like Hydrocodone. 164 deaths a day!

On March 2, 2018, Robert Nadeau, DDS, MD, shared the inconvenient facts behind America's opioid epidemic with 300 academic and practicing oral health care professionals at the dental school's 14th annual *Dental Research Updates*.

The keynote speaker positioned dentists at the front lines of both the problem and solution to the opioid epidemic, and noted:

"Dentists are the number one prescriber of opioids for young people ages 10 to 19. And legitimate opioid use before high school graduation is independently associated with a 33 percent increase in the risk of future misuse after high school.

"Are you worried?" he asked.

Nadeau, a clinical associate professor in the dental school's Division of Oral and Maxillofacial Surgery, was one of



PHOTOS BY SCOTT STREBLE

10 investigators who reported on the School of Dentistry's research initiatives that address some of the most vexing challenges in oral and craniofacial health and beyond.

The all-day program showcased research on topics as diverse as opioids, regenerative endodontics, salivary diagnostics, anti-biofilm dentin, bone biology, telementoring, and the future of dental MRIs. There also was a presentation on investigations that led to a key discovery by school researchers—recently reported in the *Journal of Virology*—that could have implications for developing a strategy to stop the spread of the deadly HTLV1, a virus that currently plagues Australia and the world.

“The School of Dentistry's research program is an important part of its education, research and service mission,” says David Bereiter, PhD, interim associate dean for research, “We conduct research that informs the profession and the world, and that helps bring current scientific insights into the classroom, clinics and dental practices.”

Leading the Way

At first I was a skeptic, I admit,” confesses Nadeau, who reported on the work of a team of investigators who monitored the opioid prescription behaviors practiced in the dental school's U-M Dental Clinics. Nadeau and his colleagues found that not only were opioids being routinely distributed but that, in following up with patients who'd received these meds, there were medicine chests and/or kitchen cabinets filled with drugs that had not been taken.

“They were being stored but not locked up,” he says. “That made us very uncomfortable to say the least” since it meant that the pills might be shared with others, stolen, sold or otherwise misused—some of the many paths that contributed to America's current opioid crisis.

Nadeau shared the school's new evidence-based, mandatory opioid prescribing protocols that call for the use of NSAIDS and acetaminophen, alone or in combination, as the first-choice treatment for pain of dental origin. The new protocols limit the number of opioid prescriptions and the number of pills per prescription, especially when dealing with adolescent patients. “University dentists now prescribe about 70 percent fewer opioids than before,” he said, “and

also cut the number of pills from 18 to 15 for those who went on to receive the drug.”

In his talk, Nadeau called the new protocol a “learning process” both for providers and patients. But a review of post-treatment comments indicated little negative response from patients.

“This is an example of how the University is leading the way,” observes Nadeau.

In addition to prescriber education and dramatically reducing the number of opioids ‘out there’, Nadeau notes that the school is educating and graduating young dentists with a new way of thinking about pain management.

Mentors and Mentees

For David Nedrelow, DDS, MS, the dental school's annual *Dental Research Updates* event says a lot about what the school and profession are all about.

After completing a double minor in materials science and oral biology, and a major in biomedical engineering, he followed his interests into dental school where he participated for two summers in the school's donor-supported *Summer Research Fellowship Program*. The program provides incoming and current dental students the opportunity to conduct research under guidance of a faculty mentor and to present a poster on their findings at *Research Updates*.

Nedrelow's student investigations were mentored by biomaterials researcher Conrado Aparicio, PhD, and by Wook Jin Seong, DDS, MS, PhD, who was investigating a novel scaffolding required to augment deficient bone and anchor dental implants. Today, Nedrelow is an adjunct assistant professor in the School of Dentistry and a postdoctoral associate in the University's program of biomedical engineering, College of Science and Engineering.

He studies the periodontal ligament, that connective tissue layer that forms the link between the tooth and bone and wraps around the root of every tooth, the only one in the body that contains nerves and blood vessels throughout all of its tissue. Its role, he explains, is adaptive: if it's missing for whatever reason, teeth will rise to fill the gaps. Why and how remains a mystery.

Influenced by positive mentoring relationships during his dental school

days—and again with Victor Barocas, PhD, head of the lab where he currently conducts his investigations—Nedrelow became a mentor to first-year dental student Kishore Damodaran, one of the poster presenters at this year's research day event.

“Being a mentor was an exciting and rewarding experience,” he explains. “I got to know Kishore very well, puzzling over technical questions in the lab, making an apparatus to test the ligament and getting lots of good questions out of the work.”

For his part, Damodaran also found the relationship rewarding and intellectually challenging.

“The hands-on mechanical testing needed for the project was new to me,” he says.

‘New’ is also a word that first-year dental student, Thomas Vincent, uses to describe his research experience. Vincent studied the relationship between ☺



PHOTO BY SCOTT STREBLE

**“Research Updates is...
a day in which we
share some of the best
of who we are and what
we do to the benefit
of our communities
and beyond.”**

— DAVID BEREITER, PHD
INTERIM ASSOCIATE DEAN FOR RESEARCH



PHOTO BY SCOTT STREBLE

Student Posters

*Unless otherwise noted, mentors are School of Dentistry faculty.

Parnia Behinaein (D1)

Mentor: Alisha Aagesen—MinnCResT Fellow
Polyphosphate and Transcriptional Changes During Persister Formation in *Mycobacterium tuberculosis*.

Jordan Bolger (D2)

Mentor: Raj Gopalakrishnan, BDS, PhD
Downregulation of CD44 Expression in HPV(+) Epithelial Dysplasias and HNSCC

Grayson Cole (D2)

Mentor: William Rush, PhD—Health Partners
Periodontitis, Diabetes, and Smoking as Risk Factors in Implant Failure

Eva Counsell (D1)

Mentor: Estephan Moana-Filho, DDS, MS, PhD
Comprehensive Quantitative Sensory Testing of TMD Patients and Controls

Kiana Cullinan (D1)

Mentor: Mark Herzberg, DDS, PhD
Impact of Two GCN5-Related Acetyltransferases on *Streptococcus Gordonii* Biofilms

Kishore Damodaran (D1)

Mentor: David Nedrelow, DDS, MS
In vitro Osmotic Swelling of the Periodontal Ligament

Grant Dye (D1)

Mentor: Conrado Aparicio, PhD
Ion Release and Antimicrobial Properties of Preventive Agents

Josh Eggebraaten (D3)

Mentor: Vladimir Leon Salazar, DDS
Longitudinal Study of Maxillary Subsinus Alveolar Bone in Canine-Impaction

Brandon Karels (D1)

Mentor: Conrado Aparicio, PhD
Biomimetic intrafibrillar mineralization of collagen membranes with strontium-substituted hydroxyapatite

Mason Kim (D2)

Mentors: Laurence Gaalaas, DDS, MS, and Don Nixdorf, DDS, MS
MRI of Fluid Flow Inside Teeth Using Custom Head Phantom

Austin McCullough (D1)

Mentors: Conrado Aparicio, PhD and Sven-Ulrik Gorr, PhD
Bactericidal Activity and In Vitro/Vivo Toxicity of Antimicrobial Peptide D-GL13K

Hannah Morgan (D1)

Mentor: Donald Simone, PhD
R-Flurbiprofen Attenuates Hyperalgesia in a Model of Sickle Cell Disease

Hallie Schley (D1)

Mentor: Julie K. Olson, PhD
Targeting Activated Microglia During Chronic Pain

Patrick Steck (D2)

Mentor: Mark Herzberg, DDS, PhD
Role of LPXTG Proteins in Biofilm Formation of *S. gordonii*

Sheba Vincent (D2)

Mentor: Naty Lopez, PhD, MEd
A community assessment of oral health knowledge, beliefs and behaviors of Lower Sioux youth in Minnesota: A Qualitative Study

Thomas Vincent (D2)

Mentor: Priscilla Flynn, DDS, MPH
Impact of Acculturation On Oral Health of Somali Refugees In Minnesota

Chad Wagner (D2)

Mentor: Robert Nadeau, DDS, MD
Effect of an Opioid Prescribing Protocol on Provider Prescribing Behavior

Xue Wang (D2)

Mentor: Prokopios Argyris, PhD
S100A8 and S100A9: HPV Targets in Intraoral Preneoplasia and HNSCC

Lauren Whitehurst (D2)

Mentor: Eric Jensen, PhD
Localization of Class II Histone Deacetylases throughout Osteoclast Differentiation

Galina Yakovlev (D2)

Mentor: Arina Stepanov, PhD—Public Health
Investigating the effect of PEITC, a natural chemopreventive agent, on the tobacco carcinogen-induced DNA damage in oral cells

acculturation and oral health among the 60,000 Somalis living in Minnesota. Mentored by Priscilla Flynn, PhD, MPH, a professor in the Division of Dental Hygiene, and Dr. Abdulkadir Shire of the Somali Life Center, the Nigeria native studied information from 11 area day care centers with heavy concentrations of Somali children.

“Tooth decay in Somali newcomers is rare—much lower than for Somalis born in the U.S.,” Vincent observes.

Presentations



KEYNOTE:

ROBERT NADEAU, DDS, MD

Opioids & prescribing protocols.



ANA FUSU (D4)*

Cascat presentation: Regenerative endodontics.

DENTAL RESEARCH UPDATES

Within five years, however, rates of decay in Somalis born in Somalia and those born here even out.

“Acculturation has a significant impact on dental health,” he says, “Young children have lower rates but the longer they are here, the more those rates rise.” Ultimately, the goal, he says, is to see how well Somali mothers can be educated about oral health, including the need to bring their children for dental care.

Both students and mentors find the experience of research collaboration and presentation rewarding. “I think one of the most important things about research day is what it says about the dental school’s priorities,” observes Nedrelow. “It’s a place where students and clinical practitioners can see what role research plays in our profession and how they can get involved.”

Driven to Discover

Since its inception in 2005, *Dental Research Updates* has been directed by the dental school's associate dean for research. In recent years, Sven-Ulrik Gorr, PhD—a basic scientist who recently developed an antimicrobial peptide that defeats drug-resistant bacteria—held that job. Next year, David Bereiter, PhD, the school's new interim research dean, will plan the event. Bereiter investigates the peripheral and central mechanisms of craniofacial pain, with particular emphasis on ocular pain and pain referred to the temporomandibular joint region.

Both Gorr and Bereiter have presented at past research days, mentored student researchers, and enthusiastically support the event.

program. And feedback, she says, is always “incredibly positive.”

This was especially true of investigations like the ones presented by Laurence Gaalaas, DDS, MS, and Cyndee Stull, MDH.

Incredibly Positive Feedback

Laurence Gaalaas is a School of Dentistry alumnus with a master's degree in oral and maxillofacial radiology from the University of North Carolina. Now a clinical assistant professor in the School of Dentistry, his presentation focused on the growing use of MRI in dentistry, including the potential for both the development of a direct, visual representation of tooth vitality/blood flow in the entire human dentition and for the detection of pulpal disease before irreversible injury

entirely to women. It wasn't until 2011 that the vaccine was recommended for boys, who are at greater risk for HPV-positive oropharyngeal cancer.

“The point of my research was to find out if professionals were talking to patients about this kind of cancer and about the vaccine. And the fact is they are not,” she says. “Provider recommendation is the strongest influence on vaccination. Dental providers can easily play a role in oropharyngeal cancer prevention by communicating with patients about HPV and advocating for the vaccine.”

A Sense of Purpose

High performance organizations are driven by a compelling sense of purpose and a challenging vision.



NELSON RHODUS, DMD, MPH

Salivary diagnostics.



DINA MOUSSA, BChD, MS, PHD CANDIDATE*

Anti-biofilm dentin.
(See page 15)



ERIC JENSEN, PHD

Novel regulators of osteoclast formation & function.



MEGAN O'CONNELL, BSDH

Telementoring: interest for dental care of children with special care needs.



LAURENCE GAALAAS, DDS, MS

Imaging in development, Dental MRI.



JOSE MALDONADO-ORTIZ, PH.D. (D4)*

Human cancer viruses.



CYNDEE STULL, MDH

HPV-related oropharyngeal cancers and the HPV vaccine.



MASSIMO COSTALONGA, PH.D, DMD

From bug to bone with immunity in between.

*Graduated/degree conferred May 2018

Says Bereiter, “*Research Updates* was created as a way to share with members of the practicing community information about the breadth of productive basic, clinical, social sciences and translational research taking place at the dental school. It's part of the School of Dentistry's commitment to exploration and outreach,” he says. Each year, presenters have included a distinguished range of investigators, with a keynote speaker not always from the University but talking about topics germane to the dental profession.

Though the planning process is time-consuming, the outcome, according to Gorr and others, is a great community event.

“I think the broader dental community continues to be astounded by what we do and what we're working on,” says Jo Peterson, PhD, director of the dental school's continuing dental education

occurs. It was, in fact, a presentation that wowed the audience.

Another speaker with practical and potentially life-saving applications was Cyndee Stull, MDH, director of the Master of Science in Dental Hygiene Program. Stull presented research findings that explored current practices, knowledge and attitudes among Minnesota dental providers about the human papillomavirus (HPV) and vaccine.

“HPV is the main cause of oropharyngeal cancer,” she says. While oral cancer associated with traditional risk factors is on the decline, HPV-positive oropharyngeal cancers are increasing, now out-pacing HPV-positive cervical cancer. “It is hard to see and detect—it's at the back of the throat—and there are no precursor lesions as with other oral cancers,” she says.

The HPV vaccine was introduced in 2006, but its use was confined almost

“Our mission,” says Bereiter” is to advance health through scientific discovery, innovative education, and the highest quality care for all communities. And our vision is to lead the profession into the future of comprehensive health care.”

It is this focus that drives the school to infuse its curriculum with evidence-based instruction and to provide student research experiences. It is the reason the school supports scientific investigations that add to the body of knowledge that informs the profession and the world, and the reason that insights are shared with students and the scientific and practicing communities. “*Research Updates* is one of the important ways that we advance all parts of our mission,” says Bereiter. “It is, quite simply, a day in which we share some of the best of who we are and what we do to the benefit of our communities and beyond.” ☉

2017 Community Report

The charts below represent the unaudited revenue sources and expenses of the School of Dentistry for fiscal year 2017.

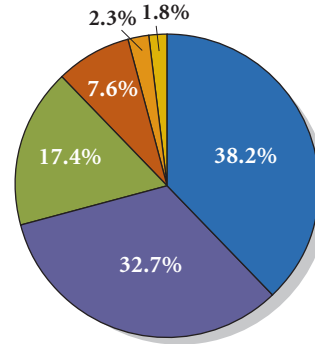
REVENUES & EXPENSES

Revenues

Tuition and Fees	\$	29,902,463
Clinics	\$	25,610,390
State Funding Allocation	\$	13,739,558
Research	\$	5,940,393
Gifts and Endowed Earnings	\$	1,783,195
Indirect Cost Recovery	\$	1,389,916
Total	\$	78,365,915

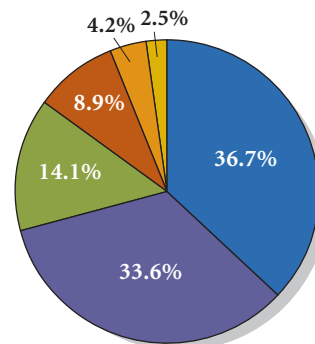
Expenses

Instruction	\$	27,455,324
Clinical Activity	\$	25,103,494
University Overhead & Support	\$	10,560,860
Research Activity	\$	6,684,416
Administration and Development	\$	3,138,975
Student Services and Scholarships	\$	1,858,802
Total	\$	74,801,871



Revenues

- Tuition and Fees
- Clinics
- State Funding Allocation
- Research
- Gifts and Endowed Earnings
- Indirect Cost Recovery



Expenses

- Instruction
- Clinical Activity
- University Overhead & Support
- Research Activity
- Administration and Development
- Student Services and Scholarships

Financial results for the fiscal year ended June 30, 2017, show marked improvement over the prior year. These results are due in large part to significant cutting of expenses in areas both general and strategic, and to tuition increases. Like many research intensive public dental schools, the University of Minnesota School of Dentistry continues to invest in research that will drive the discovery of new dental treatments and technologies, while facing multiple years of declining state support.

As one of the state's largest safety net providers with more than 100,000 patient-visits per year, the challenges imposed by declining state support (as a percent of budget) are compounded by reimbursement rates for services provided to public program patients that are consistently among the lowest in the nation.

The cost of achieving our tripartite mission of research, education and service must be balanced against the funding challenges facing dentistry and higher education today.

In fiscal year 2017, revenues exceeded expenses by \$3.5 million, reversing a deficit trend of several prior years. The school made tough decisions to focus its resources and raised tuition modestly, while holding salaries level for faculty and professional staff. With continued fiscal restraint and prudent decisions on investments in personnel and infrastructure, the School of Dentistry is facing a positive financial future.

Note: A change in accounting method this year resulted in different category totals for expenses and revenues in FY2017. FY2016 totals were restated in this report to reflect the new methodology.

Revenues Notes

Total revenues for the School of Dentistry increased \$1.5 million for the fiscal year ended June 30, 2017, as a result of increases in tuition and research funding. State funding decreased slightly, while clinical revenue declined significantly due to poor financial results related to external clinics with high public program payer populations.

Research revenues increased by \$500,000 in FY2017 over the prior year, owing to newly awarded NIH grants.

State Operating and Maintenance (O & M) funding received by the School of Dentistry, was held constant by the central University. State funding as a percentage of overall revenue continues to decline. In absolute dollars, funding declined slightly to \$14.0 million (which includes a \$2.0 million allocation to replace MERC funding eliminated by the state legislature in 2012) from \$14.2 million in FY2014. Tuition

and fees continued to widen their gap over state funding support. This trend was in evidence across the entire University. Student debt levels are an increasing concern. Although our institution has seen no decline in applicants, national applicant levels to dental schools declined slightly this past year.

Indirect Cost Recovery revenues connected to direct research revenues increased to \$1.8 million from \$1.6 million in FY2016.

Tuition and Fee revenues increased \$1 million (3.5% for resident students and 5.0% for nonresidents) FY2017, which both maintains tuition levels at the middle of the tuition range for publicly supported Midwestern dental schools and at an amount that offers significant financial advantage over private dental school tuition levels.

Gifts and Investment Returns included in operational results increased slightly from FY2016 to FY2017. These amounts do not include gifts to the School of Dentistry managed by the University of Minnesota Foundation, which are still invested with the Foundation.

Expenses Notes

Total expenses for the School of Dentistry decreased by \$5.4 million in FY2017.

Instructional expenses decreased \$1.1 million, primarily as a result of cost saving decisions to delay or not replace faculty and staff who left the school.

Clinical expenses were decreased by \$2.4 million, in part resulting from decreased clinic volume, but largely due to significant cost cutting and efficiency measures.

Research expenses declined slightly, but more as a result of timing between sponsored projected ending and new projects beginning.

University Overhead & Support increased slightly. This category includes the School of Dentistry's pro-rata portion of such University-wide expenses as facilities management, libraries, central administration, technology and research administration, and compliance.

Administration and Development expenses decreased \$1.7 million largely resulting from cost cutting measures taken as a result of the prior year's financial results.

Scholarships and Student Services remained stable at \$1.9 million.

— Joel Heuschele, CPA, MBA
Chief Financial Officer

2017-18 SCHOOL STATISTICS

Paid Faculty Appointments*

	Full Professor	Associate Professor	Assistant Professor	Total
Tenure/Tenure Track	20	28	3	51
Research Track	0	1	3	4
Clinical Track	2	17	39	58
Adjunct	22	33	79	134
Total	44	79	124	247

*As of October 2017.

Student Enrollment | Fall Semester 2017

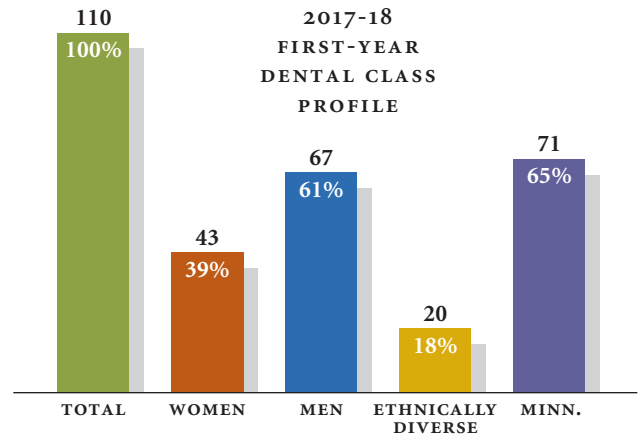
Dental Hygiene, BS	47
Dental Hygiene, Master Degree	25
Dental Therapy, BSDH/MDT	21
DDS	428
Advanced Education & Graduate Programs	97
Program for Advanced Standing Students	32
Total	650

2017 Graduates

Dental Hygiene-Baccalaureate Program	27
Master of Dental Hygiene	6
Doctor of Dental Surgery	115
Professional & Graduate Degrees Awarded	36
Dental Therapy	7
Total	191

2017-18 FIRST-YEAR DENTAL CLASS PROFILE

Total Number of Applicants 1,173*
Class Size 110



Average GPAs

Overall GPA	3.66
BCP (Bio, Chem, Physics) GPA	3.60
Science GPA	3.60

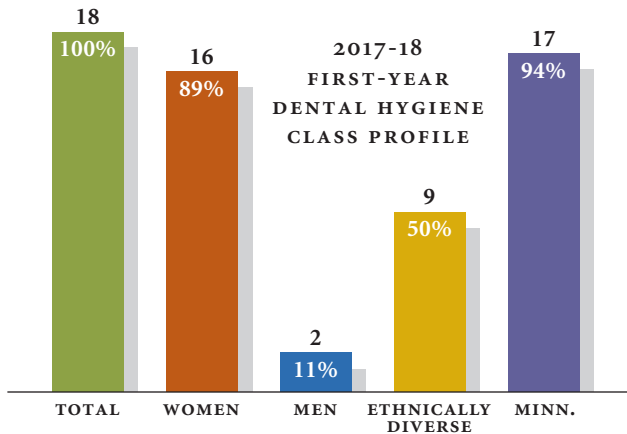
Average DATs

Academic Average	20.40
Perceptual Ability	20.78
Total Science	20.09
Reading	21.62

*These figures represent AADSAS calculations.

2017-18 FIRST-YEAR DENTAL HYGIENE CLASS PROFILE

Total Number of Applicants 108
Class Size 18

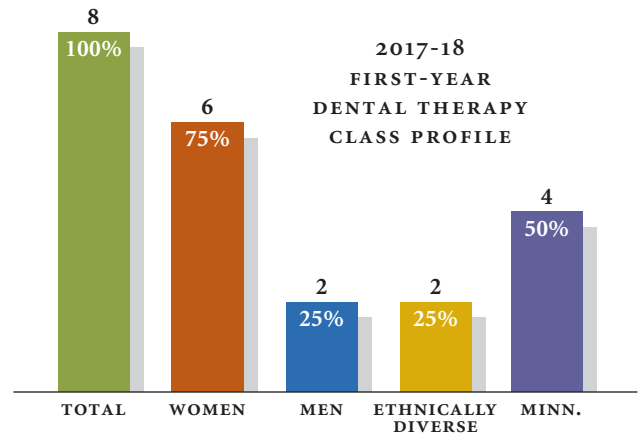


Average GPAs

Overall GPA	3.30
Science GPA	3.05
Prerequisite GPA	3.31

2017-18 FIRST-YEAR DENTAL THERAPY CLASS PROFILE

Total Number of Applicants 76
Class Size 8



Average GPAs

Overall GPA	3.14
Science GPA	3.14
Prerequisite GPA	3.13

Brent Larson Receives Century Club Professor of the Year Award

Brent E. Larson, DDS, is a bit of an urban legend. The claim (by others) that he went through dental school ‘without ever taking notes’ is beyond our ability to confirm. What can be confirmed is his passion for teaching, learning, research and dental practice.

He is, in fact, described by colleagues as “one of the best teachers in the school” and by students, as an exceptional speaker with an ability to get difficult points across with clarity and to do so while holding the attention of student audiences for hours.

In recognition of his outstanding service and contribution to the education, research and service mission of the School of Dentistry, Dr. Brent Larson was named *Century Club Professor of the Year*. The award is the dental school’s highest honor. Larson accepted the award at a reception held on April 27, 2018, in conjunction with the Minnesota Dental Association’s *Star of the North Meeting*.

“Brent is an exceptional educator,” says Gary Anderson, DDS, MS, dean of the School of Dentistry, who presented Larson with his award before a room filled with School of Dentistry alumni, faculty, staff and students. “He elicits discussions, often challenges students to think unconventionally or from a new perspective, and always requires that students provide evidence-based rationales for their treatment plans.”

Brent E. Larson is a professor and director of the Division of Orthodontics, and a practicing orthodontist in Rochester, Minnesota since 1990. He graduated Summa Cum Laude from Gustavus Adolphus College, earning a bachelor’s degree in chemistry. He earned his doctor of dental surgery from the University of Minnesota in 1981, graduating first in his class, and joined the U.S. Airforce in 1982. Over the next nine years, he completed a general practice residency, practiced general dentistry for three years, earned a certificate and a master’s degree in orthodontics at the University of North Carolina at Chapel Hill, and practiced orthodontics. He served as chief of orthodontics and quality assurance coordinator at Torrejon Air Base in Spain.

Prior to joining the School of Dentistry faculty, he was at Mayo Clinic, as a senior associate consultant and later (1993-97) as consultant and director of the Mayo Clinic Orthodontic Program. He spent some time in private practice in Rochester, and then joined the University of Minnesota

School of Dentistry faculty (part-time) as a clinical associate professor (1998-2004).

In 2004, he became a full-time associate professor, was granted tenure in 2011 and promoted to full professor in 2017. He currently directs the School of Dentistry’s Division of Orthodontics and previously served as the program director for the Advanced Education Program in Orthodontics.

In these roles, Larson has advised or mentored more than 100 students.

His current research and publications focus on issues related to advances in orthodontic treatment and imaging technologies, and he lectures extensively throughout the state and country on these and related topics.

He’s also served as a member of University committees on information technology and bioinformatics, as well as on variety of School of Dentistry search, strategic planning,

budgeting, and information technology committees.

His service to the profession extends, as well, beyond campus. He was president of the Minnesota Association of Orthodontists and of the Midwestern Society of Orthodontists. He currently serves as president of the American Association of Orthodontists (AAO), after service as a member or chair of association committees too numerous to mention and as an association trustee.

Dr. Larson received the School of Dentistry Alumni Society’s 2011 *Distinguished Alumni Award*. He was appointed chief consultant to the U.S. Air Force Surgeon General for the specialty of orthodontics in 2012.

In May 2018 he was honored with the *Jarabak Memorial International Teachers and Research Award* given by the AAO Foundation.



Brent Larson

A Really Great Week

Dina Moussa, BCHD, MS* had a really great week. Within days of presenting the keynote address at the annual meeting



of the American Association for Dental Research (AADR) in Florida, she received a letter informing that she'd won a prestigious award and an invitation to address the inter-

national community of dental and oral health researchers in London.

In July, she will present her research titled "Antimicrobial Hydrophobic Dentin Hinders Biofilm Growth at Tooth-composite Interface" at the 2018 meeting

of the International Association for Dental Research (IADR). She travels there as one of just six in the world to receive the *2018 International Association for Dental Research (IADR)—Colgate Research in Prevention Travel Award*.

The award and recognition is impressive in and of itself, but all the more so because Moussa is a graduate student. An NIH-funded fellow in the School of Dentistry's Minnesota Craniofacial Research Training (MinnCResT) Program, she is pursuing her PhD in oral biology.*

The award is given to one investigator from each of the IADR's six international regions. Dina's research placed first in the North American Division, which includes the United States, Canada and Mexico.

The Colgate award is given to outstanding young investigators to encourage

them to undertake research in the prevention of oral disease and to facilitate their presentation of this work to the international research community. The award includes funded travel.

Moussa conducts her research in the dental school-based Minnesota Dental Research Center for Biomaterials and Biomechanics (MDRCBB) under the mentorship of Conrado Aparicio, PhD. Aparicio is an associate professor in the Department of Restorative Sciences at the University of Minnesota School of Dentistry and the MDRCBB deputy director. Moussa's research project is part of Aparicio's NIH-funded project "A Novel Peptide-enhanced Class-V Dental Restorative System with a 3-tier Fortification."

**PhD conferred May 2018.*

Celebrating Accomplishments

The School of Dentistry held its 2018 Commencement Ceremony in Northrop Auditorium on May 11. Included among the graduates were 115 new doctors of dental surgery, 45 recipients of advanced education degrees (master and PhD) and/or certificates, seven dental therapists who received master's degrees, and 33 dental hygienists (27 who received a bachelor of science degree and six who earned a master of dental hygiene degree).

U.S. Senator Amy Klobuchar provided welcoming remarks. "You are going out into a world that is truly changing, a world that can be chaotic, but a world that needs you," she said. Sharing humor and comments about challenging times, student loans, politics and her personal life, the Senator talked about believing in science and our country, taking risks, working hard, and "the passion of this generation for making our world a better and healthier place." She referred to the 2016 locker room decision by the Chicago Cubs—to abstain from blaming one another for errors and to work together (win or lose)—that led to their extra-innings rally and first World Series



championship in 108 years and said, "The message: Some of us will go through our careers...focused on ourselves, thinking about the next rung of that ladder. Others will go

through our careers with our heads up, as part of something bigger than ourselves, alert and aware, embracing differences, looking (at) that collective interest of what it means to be in society today."

Reminding graduates of their oath

to provide for the health, dignity and protection of all members of society, she said, "Choosing to help others and to improve the world around you, that only happens with all of you."

School of Dentistry Research News

KEY DISCOVERY MAY HELP FIGHT CANCER

Researchers in the School of Dentistry-based Institute for Molecular Virology (IMV) have made a key discovery that



Louis Mansky

could have important implications for developing a strategy to stop the spread of a highly infectious virus currently spreading among remote areas of central Australia.

Infection rates for the human T-cell leukemia virus type 1 (HTLV-1) are reportedly exceeding 40 percent among adults in those communities. HTLV-1, the first human cancer virus discovered, can cause leukemia and lymphoma.

Louis Mansky, PhD, director of the IMV, and his team have been investigating how HTLV-1 produces particles that

can spread to other cells in the body. As recently reported in the *Journal of Virology*, the researchers created mutations in HTLV-1's main structural protein (called Gag) and investigated how these mutants affected the production of HTLV-1 particles. The spread of HTLV-1 from cell to cell requires virus production, which is critical for establishment of infection in the body.

Mansky and his team discovered that a key region in the HTLV-1 Gag protein had critical amino acid residues required to produce virus particles.

"By creating these mutants, we gained new insights about how the structure of the Gag protein is critically important in making new virus particles," said Mansky, the lead author of the study and Masonic Cancer Center member.

HTLV-1 is transmitted through sexual contact, blood transfusion and from

mother to child by breastfeeding. Along with being a carcinogen, the virus can lead to other serious health conditions and cause a chronic progressive disease of the spinal cord. In this study, Mansky's team also found that the key virus protein used to produce a HTLV-1 virus particle is assembled in a manner distinct to that of related viruses like HIV.

"HTLV-1 is poorly understood and this is an important step to a better understanding of how it infects people and spreads," said Mansky. "Further research is needed to understand the molecular nature of how HTLV-1 virus particles are produced from infected host cells. In doing so, we will be able to better apply this knowledge toward creating strategies to prevent HTLV-1's spread."

Funding for this study was provided by the National Institutes of Health.

ANTIMICROBIAL PEPTIDE DEVELOPED TO DEFEAT DRUG RESISTANT BACTERIA

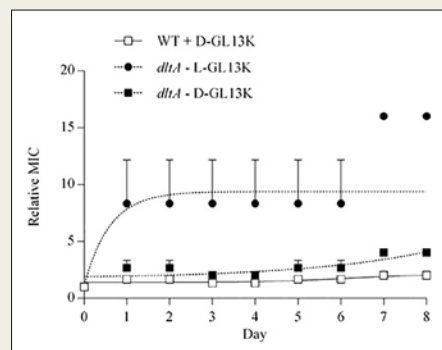
At a time when bacteria are increasingly developing an ability to stand up to antibiotics, U-M School of Dentistry scientists have developed an antimicrobial peptide that kills drug resistant bacteria without causing new resistance behaviors. The new peptide is effective against bacterial biofilms, which are responsible for dental plaque and have been estimated to affect 80% of bacterial infections in the body. It also kills vancomycin-resistant Enterococci, drug-resistant bacteria that are associated with infections of blood, urinary tract, heart valves and brain in susceptible individuals.

The results of their research were reported in March 2018 in the peer reviewed journal *PLOS ONE*.

"The ability of many bacteria to defend themselves against the benefits of antibiotics is a global health threat," says Sven-Ulrik Gorr, PhD, principle investigator and co-author of the article. Gorr is a professor in the dental school's Division of Basic Sciences. "Our new antimicrobial

peptides might represent an alternative treatment for killing bacteria, and one that may be less susceptible to bacterial resistance."

Gorr's new antimicrobial peptide is based on the sequence of the human



salivary protein BPIFA2. "It's long been recognized that human saliva contains a host of antimicrobial proteins that are thought to control the growth of bacteria invading the oral cavity," says Gorr. "However, the chemical functions that allow that to happen are not fully understood."

Gorr's team first sequenced the BPIFA2 gene in 2001 and has been studying it ever since. In 2008, he was successful in decoding the BPIFA2 structure to produce the antimicrobial peptide GL13K. He and colleague Conrado Aparicio, PhD, were able to incorporate GL13K into a novel coating used for dental implants and are now testing its effectiveness in preventing infections, the most common cause for implant failure. It's an application with the potential for use in a broader category of medical devices and implants, such as those used for hip and knee replacement surgery.

In collaboration with the University's Clinical and Translational Sciences Institute and Center for Translational Medicine, Gorr's team is now exploring future clinical uses of the new peptide. Promising early data show that the peptide has low toxicity and can be effective in an infection model, when applied as a topical antibiotic ointment.

People



Heather Conrad

70-plus year history of the board.

Heather Conrad, DMD, MS (Restorative Sci-Prosthodontics) was elected Examiner-Elect of the American Board of Prosthodontics. She is the second woman to hold this position in the



Kacie Crowell

about and eventually become involved—as dental professionals—in the federal legislative process and the formulation of public policy as it relates to academic dentistry.

Third-year dental student **Kacie Crowell** is the 2018 ADEA/Sunstar Americas, Inc./Jack Bresch Legislative Intern. The internship in Washington, D.C. is designed to encourage students to learn



Sue Elm

University and to the patients, students and faculty of the School of Dentistry and U-M Dental Clinics. Ms. Elm was introduced to the University's Board of Regents at its May 11, 2018 meeting, and honored by University of Minnesota President Eric Kaler at a recognition event on June 14, 2018.

Sue Elm, CDA, LDA (U-M Dental Clinics—Clinic Manager) received the *President's Award for Outstanding Service* in recognition of her exceptional service to the

Mark Herzberg, DDS, PhD (Diagnostic/Biological Sci-Basic Sciences) was elected vice president of the American Association for Dental Research (AADR) at the association's annual meeting in Fort Lauderdale, Fla, March 21-24, 2018. Herzberg directs the dental school's NIH-funded Minnesota Craniofacial Research Training Program (MinnCResT).

Leadership Transitions

In a June 6, 2018, email to faculty and staff, Dean Gary Anderson announced the following appointments, noting that transition plans will be finalized over the summer. The appointments follow the announcement that Dr. Todd Thierer, Director of Clinical Affairs, will leave the School of Dentistry in September 2018 to pursue new opportunities.

Paul Olin, DDS, MS (Restorative Sciences-Prosthodontics) is named interim associate dean for clinical affairs. Dr. Olin has served the school in a variety of leadership roles, including a term as associate dean of clinical affairs. He currently serves as interim chair, Department of Restorative Sciences and has played an important role in the dental school's implant program.

Heather Conrad, DMD, MS (Restorative Sciences-Prosthodontics) is named interim chair of the Department of Restorative Sciences. Dr. Conrad currently directs the Advanced Education Program in Prosthodontics and will continue in this role as she assumes her new responsibilities.



Mike John

Brent Larson, DDS, MS (Developmental/Surgical Sci-Orthodontics) was elected president of the American Association of Orthodontists. Larson directs the dental school's Division of Orthodontics. (See pgs. 14 and 22)

Mike John, PhD, DMD, MPH (Diagnostic/Biological Sci-Oral Medicine, Diagnosis & Radiology) was appointed editor-in-chief for the *Journal of Evidence-Based Dental Practice*.

the ADEA Annual Session Planning Committee. Dr. Self (Primary Dental Care-Dental Therapy) received the award for his leadership of the country's first dental school-based education program for dental therapists. Dr. Tu (Developmental/Surgical Sci-Oral and Maxillofacial Surgery) received the award in recognition of his efforts to help shift attitudes and policies about opioid prescribing behaviors in the dental office.



Scott McClanahan

Keith Mays, DDS, PhD, Karl Self, DDS, MBA, and Harold Tu, MD, DMD, received *2018 Chair of the ADEA Board of Directors Citations*. The honor recognizes individuals and institutions for significant contributions to the American Dental Education Association's (ADEA) mission, especially during the 2017-18 academic year. Dr. Mays (Restorative Sci) received the award for his leadership as chair of

Scott McClanahan, DDS, MS (Restorative Sci-Endodontics) was installed as the 2018-19 president of the American Board of Endodontics.



Cyndee Stull

Cyndee Stull, MDH (Primary Dental Care-Dental Hygiene) is appointed director of the Master of Science in Dental Hygiene Program.



Galina Yakovlev

“Investigating the effect of PEITC, a natural chemopreventive agent, on the tobacco carcinogen-induced DNA damage in oral cells.” Yakovlev conducted her research as a participant in the dental school's donor-supported Student Summer Research Fellowship Program.

Galina Yakovlev (third-year dental student) was awarded second place in the highly competitive SCADA competition for her poster



A Letter from the President

As I approach the end of my second year as President of the University of Minnesota, School of Dentistry Alumni Board, I will share some thoughts.

A wise teaching of the Dalai Lama is this: "When you talk, you are only repeating what you know; but when you listen, you learn something new."

The alumni board is taking that lesson to heart. We are listening to what our students and alumni and faculty say about their relationship to the School of Dentistry. We are always looking for ways to encourage communication and opportunities to learn how to support alumni and students in new ways. And we are excited that we are expanding the alumni board, including students to bring fresh ideas forward. My belief is that understanding and enhancing the student experience is where we will begin to build a stronger alumni society.

Our "Cap and Gown" program continues to be an extremely successful and rewarding endeavor, allowing alumni to contribute to a student's (or students') graduation costs. It provides an early connection between students and alumni.

The alumni society continues to support continuing education but in a new format. CDE will be available "on demand" with podcasts and YouTube videos for alumni wherever they are. We are hearing that groups of dentists and their teams and specialists are coming together for the programs and social time as well in their communities.

I am confident that our alumni board will continue to listen and learn and develop new ideas for connecting students and alumni in meaningful ways. It has been my honor to represent the alumni at various events, celebrations, awards banquets and Dean's Board of Visitors sessions.

In the wisdom of Anne Frank: "No one has ever become poor by giving." Thank you to the alumni society to give me an opportunity to give in my own way.

A handwritten signature in black ink that reads "Mary Pariseau".

MARY PARISEAU, D.D.S., '84
President, School of Dentistry Alumni Society
www.dentistry.umn.edu/alumni

Time for a Class Reunion?

The Alumni Office can help. Contact Erin Strong Elliott (612-626-6884 or estrong@umn.edu) to request current mailing labels for your classmates, promote your reunion via email, and receive Gopher spirit items and prizes for your event.



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100

1919 DENTAL HYGIENE 2019

Save THE Date

Dental Hygiene Program's
100th Anniversary Celebration
October 19, 2019

Award-Winning Alumni

Hiwet Ephrem: Distinguished Dental Hygiene Alumna



Hiwet Ephrem

Hiwet Ephrem, MSDH, RF, has a strong and beautiful character and lives her life in accordance with a secure set of personal ethics that guide her both professionally and personally. There are many who say that her success as a leader of the School of Dentistry's Team Care Clinic can only be replicated by 'cloning Hiwet.'

Hiwet Ephrem is a clinical assistant professor in the Department of Primary Dental Care at the University of Minnesota School of Dentistry. She joined the faculty as a dental hygiene educator in 2000, after more than 25 years of experience in team-based care and restorative expanded functions in both private and large group settings. In 2015, Ms. Ephrem developed and applied her experience and research in a team-based delivery care model in the dental school setting. She continues to incubate the model, along with the cohort of U-M dental faculty, staff and students.

The recipient of six teaching awards, she is the go-to faculty member sought out for her fairness, ability to get things done, and her advocacy for both students and patients. She is involved as a course director in multiple undergraduate courses and as a clinical instructor for dental, dental hygiene and dental therapy students. A master mentor and role model, she encourages her students to both practice to the full extent of their education and training, and to work together in support of patient-based care.

Beyond the classroom and clinic, her thoughtful contributions add dimension and depth to the growth, creativity, success and goal accomplishments of her students through long-standing memberships and advising of committees related to dental hygiene admissions, scholastics, curriculum, international student affairs and global perspectives in dentistry.

Cheryl Anderson-Cermin: Distinguished Dental Alumna



Cheryl Anderson-Cermin

Cheryl Anderson-Cermin, DDS, is deeply committed to her community, lifelong learning, and to sharing her skills and talents to help others.

After graduating from dental school ('86), Dr. Anderson-Cermin completed residencies in general dentistry and orthodontics (at Harvard and Boston University), and a surgical orthodontic fellowship at the University of Texas S.W. Medical School in Dallas. During this time, she demonstrated a new pre-surgical orthodontic appliance for children born with cleft lip and palate. In 1991, she was named director of orthopedic surgery at the S.W. Medical School in Dallas.

In 2001, she established a private practice in orthodontics in her hometown of St. Croix Falls, Minn. She refined and improved upon the design of her appliance—a device that, over time, reduces the severity of the cleft lip and palate and aids in feeding. The palate aid is now used throughout the U.S. to enhance the care of infants who have cleft lip and palate and contributes to optimal surgical outcomes.

For almost three decades, she has traveled the world with LEAP Global Missions to teach providers and parents how to care for children born with cleft lip and palate. The temporary palate aid she designed—applied with denture adhesive and a tape on the upper lip—makes it possible for children to feed more easily and gain weight, and to survive. She also is an international lecturer in the area of orthodontic management of the cleft palate and craniofacial patient.

Closer to home, Anderson-Cermin teaches pediatric dentistry residents at Gillette Children's Specialty Healthcare in St. Paul, where she started the orthodontic program 16 years ago. She serves on a variety of civic and medical boards, is a founding member of LEAP, and is president of the Minnesota Association of Orthodontists.

We are excited to launch a new program for the alumni community!

In partnership with the School of Dentistry's offices of alumni relations and student affairs, we're inviting alumni to come back to campus to talk about their experience in dental school with current students, and to share exciting employment opportunities in the dental community.

This program is unique and offered only to the alumni community. We know that current students will benefit from the knowledge and expertise practicing alumni can share and the variety of dental practice opportunities available to young professionals.

Do you want to participate? Here is what we are asking alumni to talk about:

1. *Talk about yourself! What was dental school like for you? How did you decide to practice where you do? What led you there? What would you do differently? What advice do you have for current students?*

2. *What is it like to work at your practice? What should a student keep in mind when deciding if a practice opportunity is a good fit? Are there any current openings in your practice?*

All sessions are offered over the lunch hour, from 12:05 p.m. to 12:50 p.m. The day of the week depends on the schedules of the individual speaker and students. Alumni can provide lunch for students, but providing lunch is optional, and not required of participating alumni.

Sign up here: z.umn.edu/LunchLearn

We will do our best to accommodate each request, but we want to provide students with diverse opportunities throughout the year.



Questions? Contact:
Erin Elliott
Director of Alumni Relations
estrong@umn.edu

Hats off to you!

Graduation caps and gowns were once again donated to the Class of 2018 thanks to the generosity of the donors listed below. Graduation is the final step of our students' education program. Since 1997, alumni and donors have made donations to underwrite the cost of caps and gown for graduating students, while simultaneously welcoming them into the profession. The Cap & Gown Graduation Fund also supports other graduation activities, including senior recognition awards

(named after Drs. Mellor Holland, Kathleen Newell and Karl Self), and senior recognition banquets. On behalf of the alumni society and the Class of 2018, thank you! If you would like to make a donation in honor of the Class of 2019, use the enclosed envelope or make an online gift at www.give.umn.edu to the Dentistry Cap & Gown Graduation Fund (#8902).

Dr. Laura Aeschlimann
Dr. Jeffrey Amann
Anderson Dental
Mrs. Roberta Anderson
Dr. Gary Anderson
Dr. Cheryl Anderson-Cermin
Dr. Kirsten Andrews
Arnold Orthodontics PA
Dr. Wendy Ziman Bach
Dr. Bashar Bakdash
Ms. Mary Bandt
Ms. Sarah and Dr. Joseph S. Basile
Dr. Robert Beattie
Dr. Robert Beaumont
Dr. William Becker
Dr. Bruce Beier
Dr. Stephen Bejarano
Dr. William Bellamy
Dr. Glenn Benson
Dr. John Beyer
Dr. Har Bhangoo
Dr. Bernard Borkon
Dr. Christopher Browning
Dr. Todd Calder
Dr. Peter Cameron
Dr. Scott Carlson
Dr. Lisa Cashin Jernell
Dr. Bret Claybaugh

Dr. Sandra Cole Wilkinson
Dr. Robert Conlin
Cuskey Building
Partnership LLC
Dakota Smiles PLLC
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Dr. Geetha Damodaran
Dr. Andrew De La Garza, Jr.
Dr. Ralph DeLong
Dr. David Ditch
Dr. David Dungey
Dr. Scott Durand
Dr. Frederick Eichmiller
Dr. Laura Eng
Dr. Roger Ettel
Dr. Raymond Evans
Dr. Ronald Evenson
Dr. Gerald Fields
Ms. Heidi Fletcher
Dr. Brent Florine
Dr. Jeffrey Fox
Dr. Patrick Foy
Dr. Raymond Garland
Ms. Rita & Mr. R. James
GarniJoe Gibilisco
Dr. Joseph Gibilisco
Dr. Daniel Goede
Dr. Susan Gross
Dr. Lawrence Gunner
Dr. Michael Harrison

Dr. Cody Henriksen
Dr. Paul Hensel
Dr. Thomas Hickey
Dr. Arnold Hill
Dr. Tim Holland
Dr. Heidi Hurlley
Inglis Orthodontics PLLC
International College of Dentists-MN Chapter
Dr. Thyra Jagger
James River Dentistry
Ms. Sara Johnson
Dr. Kirby Johnson
Dr. Becky Johnson
Ms. Kimberly Johnson
Dr. Dennis Johnson
Dr. Thomas Johnson
Ms. Joyce Rude Johnson
Jones Family Dentistry
Dr. Jennifer Kaatz
Dr. Gene Kelley
Dr. George Kinney, Jr.
Dr. Ramesh Kuba
Dr. Woojin Kwon
Lake Country Dental Ltd
Lake Minnetonka Orthodontics PA
Lancaster Dental Care PC
Le Center Dental Clinic LLC
Dr. Erin Lehmann

Dr. Julie Leshner
Ms. Janet and Dr. David Linde
Dr. Scott Lingle
Dr. David Lipschultz
Dr. Stephen Litton
Dr. Gloria Lopez Franco
Maple Street PC
Dr. Jennifer Marker-Johnson
Dr. Tanner McKenna
Dr. Tammy Meister
Metro Dentalcare
Metropolitan Endodontics
Dr. Carol Meyer
Dr. Gregory Mihm
Dr. John Mike
Dr. James Miller
Minnehaha Falls Family Dental
Dr. Michael Monti
Dr. Randy Moseng
New Horizons Dental LLC
Dr. James Nickman
Nicollet Station Dental P A
Dr. Hugh Norsted
Northern Endodontic Associates Ltd
Dr. John Ofstehage
Dr. Jeff Olson

Dr. Jeffrey O'Neil
Dr. Mary Owen
Dr. Mary Pariseau
Dr. Lloyd Pearson
Dr. Natalie Peterson
Dr. Thomas Pink
Ms. Maria Pintado
Prairie Ridge Orthodontics
Dr. James Purdy
Range Family Dental
Dr. Chad Rasmussen
Dr. Kimberly Rauk
Dr. Carmen Conceicao Dias Real
Dr. Michael Rohrer
Dr. Michael Ryhn
Dr. Daniel Sampson
Sandstone Dental Office Ltd
Dr. Joel Schieck
Dr. Charles Schmidt
Dr. Herbert Schulte
Ms. Joan R Schwartz
Dr. Robert Schwegler
Dr. Thomas Seidelmann
Dr. Kent Shirley
Dr. Stephen Shuman
Dr. Heather L. Skari
Dr. Thomas Smyth
Dr. Lowell Sorenson
Dr. Drew Spencer

Dr. James Spitzmueller
Ms. Ali Suehle
Dr. Paul Thai
Mr. Bruce & Ms. Merry Jo Thoele
Dr. Anita Thomas
Dr. Michael Till
Tronsgard & Sullivan DDS PC
Dr. Thomas Turry, PA
Dr. Douglas Vayda
Dr. Brett Veerman
Dr. Kami Wallner
Ms. DeAnn Walters
Dr. Charles Watkin
Ms. Andrea Welch
West Range Dental Care
Westview Dentistry PLLC
Drs Williams & Wimmer PA
Dr. John Withrow
Dr. Larry Wolff
Dr. Donald Yee-Yick
Ms. Jennifer & Mr. Jerald Yoneji
Dr. Lisa Young
Dr. Barbara Zajicek-Daggett
Dr. Michael Zakula
Dr. James Zenk

Class Notes

Please submit brief notices about milestone events and activities to: U of M School of Dentistry, Alumni Relations (attn: Erin Strong Elliott), 515 Delaware St. S.E., 15-136 Moos Tower, Minneapolis, MN 55455 or estrong@umn.edu.

Dentistry is published two times a year. Deadlines for submission are: Spring issue: January 1; Fall issue: July 1. Please note: Dentistry cannot publish birth and marriage announcements.

1944

Palmer B. Abramson (D.D.S.), St. Louis Park, Minn., (formerly of Duluth), died March 8, 2018. He served as a Captain in the U.S. Army during WWII and practiced dentistry in Duluth for more than 40 years.

1947

Frank Heck (D.D.S.), Chisholm, Minn., died February 4, 2018, at age 95. He was a WWII veteran, serving in Fort Hood, Tex., who was recalled to active duty in 1951 as a battalion dental surgeon in Korea. After the war, he was stationed at the U.S. Army Hospital Dental Clinic at Fort Riley, Kansas. He received the World War II Victory Medal, the American Defense Medal, the Asiatic-Pacific Theater Medal, and the Korean War Service Medal. He practiced dentistry in Chisholm for 37 years, after which time his daughter-in law continued the practice for another 27 years.

1952

Edwin Bard (D.D.S.) died June 20, 2017. Bard served during World War II and received the Distinguished Flying Cross, Purple Heart, Air Medals, and French Citation in recognition of his service. Bard enrolled in the School of Dentistry after the war, and began his private practice in Jacksonville, Fla.

1953

Roscoe P. Hylton (D.D.S.) died January 16, 2018. He retired from the Navy and taught in the School of Dentistry's patient clinics in the 1970s.

Ronald L. Albright (D.D.S.), New Ulm, Minn., died February 21, 2018. After service in Korea and Japan with the U.S. Army Dental Corps (1954-56), he moved to New Ulm where he practiced dentistry for 43 years. He served on a variety of community boards and committees, and was active in organized dentistry at both the district and state dental association levels. After his retirement in 1996, he volunteered at the New Ulm Medical Center.

1954

John "Jack/Jake" Edmund (D.D.S.) died February 13, 2018. A St. Paul native, Edmund graduated from Cretin High School in 1948 and pursued his dental degree two years later. He served as a captain in the Air Force stationed in Cheyenne, Wyo., then opened his private practice in Highland Park, Minn. Edmund loved baseball and played for Dick Siebert during his undergraduate years.

1955

David Remes (D.D.S.), Northfield, Minn., died September 12, 2017, at age 87. Remes was fond of saying that he never got his "M," but he did get his D.D.S. The New Prague native spent his freshman year playing football for the U-M, then focused on his dental studies. After service as a U.S. Air Force captain stationed in Rapid City, S.D., he established his dental practice in Northfield, Minn., where he served the town for 45 years. His heroes, he said, were everyday people who took care of themselves and their families. He returned to the School of Dentistry for several years to teach, was a Life Member of the School of Dentistry Century Club, and served as president of the Minnesota Board of Dentistry (1996-2000).

Fred Tidstrom (D.D.S.) died March 22.

A lifetime resident of Ashland, Wisc., Tidstrom joined the U.S. Navy after dental school, then returned to Ashland where he practiced dentistry (while continuing to serve in the Navy Reserves until his retirement in 1973 at the rank of Commander). He served on many area/state boards, committees, and service organizations, and received the Wisconsin Dental Association *Community Service Award* (1998) and *Lifetime Achievement Award* in 2000. He was an adjunct professor for both Marquette University and the University of Minnesota schools of dentistry, and mentored four preceptors in his dental practice.

1957

Fahey DuWayne Law (D.D.S.) died January 2, 2018. As a young man, he worked the family dairy farm and at an icehouse, the stockyards and a foundry that punched out military parts. In 1946, at age 17, he was a Navy medic on a ship that carried out World War II clean-up operations and Japanese prisoner of war transport from China to Okinawa. The G.I. bill helped fund his University of Minnesota chemistry degree. He served again in the Korean War as a Navy hospitalman, then graduated from dental school and set up practice in Glenwood, Colo. He believed television would "turn us all into village idiots" and chose to learn from his reading, classes and service experiences.

He studied health care daily and took classes, handcrafted furniture and jewelry, did volunteer dentistry both in-office and in Siisoguichi, Mexico, skied cross-country and climbed Capitol Peak several times. He also was active in civic service, the Knights Templar, fundraising to support corneal transplants, and the dental school on the Anschutz Medical campus in Denver.

Ronald E. Geistfeld (D.D.S.), Tucson, Ariz., died May 16, 2018. He served in the Army as Captain of the Dental Corps, then moved to



Ronald E. Geistfeld

Northfield, Minn. in 1959, where he started his family and dental practice. He joined the U-M School of Dentistry faculty in 1970 and championed small group learning, informed consent, dental student membership in the Minnesota Dental Association (MDA), and the creation of the Student District Dental Society. He chaired Operative Dentistry (1978-86), during which time he was involved with organizing/developing the school's biomaterials program, restructuring the graduate program, organizing the operative dentistry clinic program into six group clinics, increasing emphasis on the timeliness of patient care, and introducing performance logic concepts to the faculty. He was named clinical director in 1973. He also was a member and leader of more than 19 professional associations (1957-1988), including the ADA and MDA Scientific Sessions Committees.

John Starr (D.D.S.), Little Falls, Minn., died April 16, 2017. Starr served in the Army Dental Corps (1957-60) stationed at Fort Sam Houston in San Antonio, Tex., then joined Falls Court Dentists in Little Falls where he practiced until his 1992 retirement. He was an adjunct professor for the School of Dentistry (early 1980s). He also was an avid golfer and downhill skier, owned and drove old cars, spent his winters in Arizona, and was active in his community Lions Club and church.

1958

John Sagehorn (D.D.S.) died July 25, 2017. He attended Bismarck Junior College and finished his undergraduate degree at the University of North Dakota. He practiced dentistry in Long Lake, Minn., for more than 50 years.

1962

Jacob "Jack" Bergstedt (D.D.S.) died August 28, 2017. Bergstedt and his wife owned and operated the A&W in Cloquet, Minn., a job that helped fund his dental education. He lived in Golden Valley, Minn., and then moved to Esko, Minn. A lifelong learner and outdoor enthusiast, he was passionate about medical missionary work for the Apostolic Lutheran Church, dentistry, woodworking, entrepreneurship, philanthropy and his family.

1964

Robert Rydell (D.D.S.) died September 13, 2017, at age 79. Rydell practiced oral surgery for 31 years. He was president of the Minnesota Society of Oral and Maxillofacial Surgeons and taught for many years at the U-M School of Dentistry. He retired from dental practice in 1999 and remained physically active, competing in 5K and 20K races along with a half marathon. He also served on the Adult Education Board of Normandale Lutheran Church and the Ten Mile Lake Association in northern Minnesota.

1967

Chester "Chet" Hegstrom (D.D.S.), Onamia, Minn., died October 24, 2017. Hegstrom was a dental corpsman in the U.S. Navy. Following his honorable discharge in 1959, he graduated with honors from the School of Dentistry and practiced for 32 years in Edina, Minn. During this time he also taught at the the School of Dentistry, was active in the Minnesota Academy of Gnathological Research, the Minnesota Dental Association's Scientific Sessions Committee, the St. Paul Speakers Bureau, and the International College of Dentists. He started an Investment Club and loved to sing, play the guitar and cribbage, and directed a singing group called the Notables.

Steve Litton (D.D.S.), Golden Valley, Minn., received the *James E. Brophy Distinguished Service Award* from the American Association of Orthodontists (AAO) in May for his contributions to the AAO and its membership, and to the profession.

1968

Hold the Date: 50-year Reunion. September 7, 2018. Watch for more information. Contact: Drs. C.C. Anderson and/or Barry Godes.

1969

George J. Kinney, Jr. (D.D.S.), Woodbury, Minn., was featured by *Woodbury* magazine in the article "Bettering Dental Care Locally and Nationally," which highlighted his career and accomplishments.

1976

Ned Windmill (D.D.S.), Stillwater, Minn., was the official Super Bowl Dentist on-call to respond to players' oral health needs during the 10-day Super Bowl festivities. A story about Dr. Windmill aired on the Twin Cities' ABC affiliate KSTP on January 28, 2018.

Mary Porto (D.H.) died May 13, 2017. She graduated from Hill Murray High School in 1975 and immediately pursued a dental hygiene degree, then worked as a dental hygienist and a certified nursing assistant.

1978

Lisa Fortin (D.H.) died on January 22, 2018. She practiced dental hygiene for 30 years and was a member of Sigma Phi Alpha during her dental hygiene education. She loved cheerleading, skiing, swimming, and horseback riding during her high school and college years.

1979

James Zenk (D.D.S.), Montevideo, Minn., was named the Minnesota Dental Association's (MDA) *2018 Guest of Honor* in recognition of his 35+ year career at the forefront of community engagement and leadership at the highest levels of the profession. A role model to new dentists and an advocate for rural practice, he's hosted an evening for dental students to introduce them to life and practice in rural communities and brought three young dentists into his practice, mentoring them into ownership positions. He founded and chaired the MDA Rural Dental Health Committee, and was instrumental in the launch of the Rice Regional Dental Clinic in Willmar as a community advocate, an advisory board member, and as a volunteer adjunct faculty member. He also served as president of the West Central District Dental Society, MDA Trustee and president, and as ADA 10th District Trustee.



James Zenk

1980

Gary Anderson (D.D.S.), St. Paul, Minn., was named the Minneapolis District Dental Society's *2018 Guest of Honor*, in recognition



Gary Anderson

of his service to the district and his career in academia, clinical research, and dental practice. Anderson was appointed dean of the University of Minnesota School of Dentistry for a fixed-term beginning

March 26, 2018 and continuing to December 31, 2019. More than 25 alumni joined Dean Gary Anderson for a brunch in Sun City, Ariz., on February 18, 2018.

1981

Brent Larson (D.D.S.) received the prestigious *Louise Ada Jarabak Memorial International Teachers and Research Award*. The annual award by the American Association of Orthodontists (AAO) Foundation recognizes excellence in teaching and research. This is the first time a University of Minnesota faculty member has received this award and is evidence of the increased national and international visibility of the U-M orthodontic program. Larson currently serves a one-year term as AAO president.

1982

Michael Kurkowski (D.D.S.), St. Paul, Minn., received the Minnesota Dental Association's (MDA) *2018 Outstanding Service Award*, for



Michael Kurkowski

his tireless and exemplary service to the profession. Kurkowski currently chairs the MDA Constitution, Bylaws and Ethics Committee. He is a past MDA Speaker of the House, and past member of the association's Dental

Marketplace Committee, the Minnesota Dental Foundation Board of Directors, and the MDA Resolution Review Committee. He's served as president (1995) of the St. Paul District Dental Society (SPDDS) and a member of its Executive Council, as well as a member and chair of the SPDDS ethics, foundation, Midwinter Meeting, and peer review committees. He's been a delegate to both the MDA and American Dental Association's (ADA) Houses of Delegates, and currently serves on the ADA Council on Ethics, Bylaws and Judicial Affairs. In 2014, he received the SPDDS *Outstanding Service Award*.

1983

Hiwet Ephrem (D.H.) received the School of Dentistry Alumni Society *2017 Distinguished Dental Hygiene Alumna of the Year Award* (See p. 19).

John Lueth (D.D.S.), Bemidji, Minn., received the Minnesota Dental Association's (MDA) *2018 Humanitarian Service Award* for his commitment to improving access to dental care for at-risk populations, particularly those residing in northwestern Minnesota. He worked tirelessly to help found the nonprofit Northern Dental Access Center (NDAC), coordinating efforts with the Rotary Club which was an early sponsor

of the clinic that opened in 2009 and is now funded by more than 25 organizations. Lueth served as the NDAC president for seven years and remained on its board of directors until recently. Dr. Lueth also was president of the Northwestern District Dental Society, a delegate to the MDA House of Delegates, and an MDA trustee. He served on the MDA



John Lueth

Editorial Advisory Board, and was executive editor of *Northwest Dentistry* journal. He also served on the former MDA Community Services, Public Relations, and Rural Healthcare Committees, and on the Dental Education Committee.

1984

Brad Bekkedahl (D.D.S.), North Dakota State Senator from Williston and finance commissioner on the Williston City Commission since 1996, is appointed by Governor Doug Burgum to participate on a 15-member task force to evaluate the governance structure for North Dakota's Higher Education system.

Karl Self (D.D.S.), Minneapolis, Minn., received a 2018 Citation from the Chairman of the American Dental Education Association Board of Directors for his field-shaping leadership of the U-M School of Dentistry's Program in Dental Therapy and the dental therapy profession in Minnesota.

1986

Cheryl Anderson-Cermin (D.D.S.) received the School of Dentistry Alumni Society 2017 *Distinguished Dental Alumna Award* (See p. 19).

1994

Patrick Tepe (D.D.S.), a general practitioner in Verona, Wisc., is president-elect of the Wisconsin Dental Association (WDA).



Patrick Tepe

Dr. Tepe was a trustee for the WDA's Southwest Region 5 and has served on all Board of Trustees standing committees. He's a past-president of the Dane County Dental Society and was both an alternate and delegate to the American Dental Association House of Delegates. Dr. Tepe is a volunteer dentist for the WDA Foundation's Donated Dental Services and Mission of Mercy programs, as well as *Give Kids a Smile*, and is a volunteer dentist with the Madison Dental Initiative-Salvation Army Clinic.

1995

David E. Stark (D.D.S.—Endodontics), has accepted a full-time position as clinical professor and special lecturer in endodontics at the College of Dentistry in Saskatoon, Canada. In private practice in Saskatoon since 1995, he has, for as many years, lectured in endodontics and supervised in the endodontic clinics at the University of Saskatchewan's dental school.

2004

Monique G. Wood (D.D.S.) practices full-time at Park Dental Lakeville, Minn., (effective January 2018). Wood has been practicing dentistry with Park Dental since graduation and worked, most recently, at the group's LaSalle Plaza practice in downtown Minneapolis.

Marika J. (Middag) Stone (D.D.S.), Bend, Ore., died tragically December 30, 2017, at age 38, when she was struck while cycling by an intoxicated driver. Middag grew up in northwest Montana and then southeast Alaska, where she graduated as co-valedictorian with her twin sister from Ketchikan High School. She also graduated with honors from Willamette University. After dental school, she completed an Advanced General Dentistry Residency in San Antonio, Texas and was in private dental practice at Mill Point Dental, in Bend, Oregon, since 2007. She was a devoted mother, excellent dentist, and an avid cyclist/athlete who enjoyed any and everything to do with her children and family. She had an exceptionally kind heart shown by her daily regard and empathy toward those less fortunate. She never paused in consideration of others; instead, she just reached out to fill the need.

2010

Adam Ostby (D.D.S.—Orthodontics) joined the team at Ballweber Orthodontics, in Helena Mont., which will now be called



Ballweber-Ostby Orthodontics. A board certified orthodontist, Ostby graduated from the University of Iowa School of Dentistry in 2008. He has a special interest in airway/sleep apnea and related orthodontic treatments.

2011

Jeffrey Remakel (D.D.S.), St. Louis Park, Minn., received the Minnesota Dental Association's (MDA) 2018 *New Dentist Leadership Award*.



Jeff Remakel

A student leader and the recipient of numerous alumni and leadership awards during dental school Remakel joined the MDA as a first-year dental student, and was elected class president in 2011. Currently, Dr. Remakel chairs the MDA Membership Committee and serves on the Membership Committee of the Minneapolis District Dental Society (MDDS). He is a member of the MDA New Dentist Committee; helps organize and run new dentist events for both the MDDS and the MDA; is dental director of the Dental Sleep Program at Park Dental in Saint Louis Park and is a member of its Laboratory Work Group; volunteers at the *Minnesota Mission of Mercy*; and is a speaker at the University of Minnesota School of Dentistry's new dentist panels. Additionally, Dr. Remakel has volunteered at *Give Kids a Smile* events and, from 2012-2016, served as a MDDS delegate to the MDA House of Delegates.

2014

Paul Cortez (D.D.S.) joined the *All About Smiles on Main Street* dental practice in Pipestone, Minn. Dr. Cortez said the type of dentistry he's practicing is what he was doing previously for a community health clinic in Yankton, S.D., and before that, in Alcester, S.D., a town of fewer than 1,000 people. "I've worked in rural clinics since I graduated," he said. "I like it; I like the atmosphere." Dr. Brian Hatch, who joined *All About Smiles* in 2014 is, today, sole owner of the clinic.

2015

Stephanie Zastrow (D.D.S.) started her term as president of the Resident Organization of the American Association of Oral and Maxillofacial Surgeons (OMS) in October 2017. She also was appointed to the board of the OMS Foundation.

Paul Leeman (D.D.S.) joined Hanneman Dustrude Dental of Oshkosh, a practice established in 1982 by Drs. Mike Hanneman and Karen Dustrude. A strong believer in the philosophy of lifelong learning, Leeman received post graduate training in smile design, surgical techniques and jaw pain treatment.

EventsCalendar

AUGUST 2018

August 15-17
Orientation

SEPTEMBER 2018

September 7-8
Minnesota Mission of Mercy

All day
Minneapolis Convention Center
Minneapolis, Minn.

For information and to volunteer:

Vicki Capistrant
(800) 950-3368
mnmom@mndental.org

September 13-15
North Dakota Dental Association Annual Meeting
Bismarck Event Center

Alumni Reception:
September 14
Breakfast
Time and Location:
To be determined

September 14
White Coat Ceremony
2:00 p.m.
Northrop Auditorium
University of Minnesota
Minneapolis Campus

September 24
Faculty and Staff Retreat
Noon to 4:30 p.m.

September 27
Student Networking Event
5:00 p.m.
McNamara Alumni Center
University of Minnesota
Minneapolis Campus

For information:
(651) 631-9845

September 29-October 6
Homecoming Week

U of M Day of Service:
September 29
9:00 to 11:00 a.m.
The Food Group
8511 54th Ave. N.
New Hope, Minn.

UMAA Alumni Awards:
October 4

Parade:
October 5

Homecoming Game:
October 6
2:30 p.m.
TCF Bank Stadium
Minnesota vs. Iowa Hawkeyes

OCTOBER 2018

October 8-13
American Association of Oral and Maxillofacial Surgeons
McCormick Place West
Hilton Chicago
Chicago, Ill.

Alumni Reception:
To be determined

October 18-22
American Dental Association Annual Meeting
Honolulu, Hawaii

Alumni Reception:
To be determined

October 27-30
American Academy of Periodontology Annual Meeting
Vancouver, BC

Alumni Reception:
To be determined

For information:
Dr. Massimo Costalonga
costa002@umn.edu

October 31-November 3
American College of Prosthodontists Annual Session
Baltimore, Md.

Alumni Reception:
November 1
6:00 p.m.
Baltimore Marriott Waterfront
Lobby—for dinner

For information:
Dr. Heather Conrad
conr0094@umn.edu

NOVEMBER 2018

November 6
ASDA Vendor Fair
TCF Bank Stadium
Minneapolis, Minn.

For information:
(612) 767-8400



For more information

Except where noted, you can obtain further information on the events listed and/or request disability accommodations by contacting:

Erin Strong Elliott
Alumni Relations
(612) 626-6884
estrong@umn.edu

To stay informed about events at the University of Minnesota, see the Twin Cities Campus Event Calendar at www.events.tc.umn.edu

CDE Courses

Discount Available

School of Dentistry Alumni Society members are eligible for discounted continuing education. Members may receive a 10 percent discount for "lecture only" courses offered through the University of Minnesota School of Dentistry. (This discount applies to School of Dentistry Alumni Society members only and not their employees.)

*See smile.umn.edu for updates.

AUGUST 2018

Mini-residency in Prosthodontics: Advances and Innovations in Restorative and Implant Dentistry
August 9-12, 2018

53rd Annual Dental Assistants' Seminar: Creating Your Purpose-driven Career & Life
August 10-11, 2018

Local Anesthesia Refresher: A Hands-on Review
August 24, 2018

18th Annual Oral and Maxillofacial Surgery Review
August 25-26, 2018

SEPTEMBER 2018

Annual Fall Dental Hygiene Seminar: A Road Map to RDH Life/work Balance
September 7, 2018

Three-appointment Dentures: A Hands-on Workshop
September 7-8, 2018

12th Annual Robert J. Feigal Symposium: New Horizons in Children's Dental Care
September 14, 2018

Oral Cancer: Detection, Treatment and Post-therapeutic Management
September 21, 2018

Contemporary Removable Partial Dentures: A Lecture & Hands-on Program
September 21-23, 2018

Mastering Digital Full-mouth & Panoramic Radiographic Techniques
September 22, 2018

Travel & learn: Lisbon, Portugal
September 25-October 2, 2018

Fall Mandatory & Core Training for the Entire Dental Team
September 28, 2018

OCTOBER 2018

Your Team's Complete 3-ring Binder for OSHA, Safety & Infection Control
October 5, 2018

Gingival Displacement and Soft Tissue Management: A Training Program
October 6, 2018

Digital Workflow: Concepts, Equipment, Materials, Skills and Economic Considerations
October 12-13, 2018

Mini-residency in Pediatric Dentistry
October 12-14, 2018

Mini-residency in Geriatrics and Long-term Care for the Dental Team
October 17-20, 2018

Orthodontic & Periodontal Esthetics
October 17-20, 2018

Next Generation Smile Esthetics for the Dental Team
October 19, 2018

Nitrous Oxide/Oxygen Inhalation Sedation: A Training Program
October 19-20, 2018

Office Oral Surgery: A Guided Experience for the General Dentist
October 22-23, 2018

NOVEMBER 2018

Winter Dental Assistants' Seminar: Today's Dental Assistant – Leader, Doer, Trendsetter
November 9, 2018

Anterior Composite Artistry: Seminar & Workshop
November 16-17, 2018

DECEMBER 2018

Winter Mandatory & Core Training for the Entire Dental Team
December 7, 2018

For more information

For more information, to register for classes and/or to request disability accommodations, contact:

Continuing Dental Education

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Save the Date!

OCTOBER 18 - 22, 2018

University of Minnesota School of Dentistry Reception
for Alumni and Friends in conjunction with the ADA 2018,
America's Dental Meeting in Honolulu, Hawaii



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