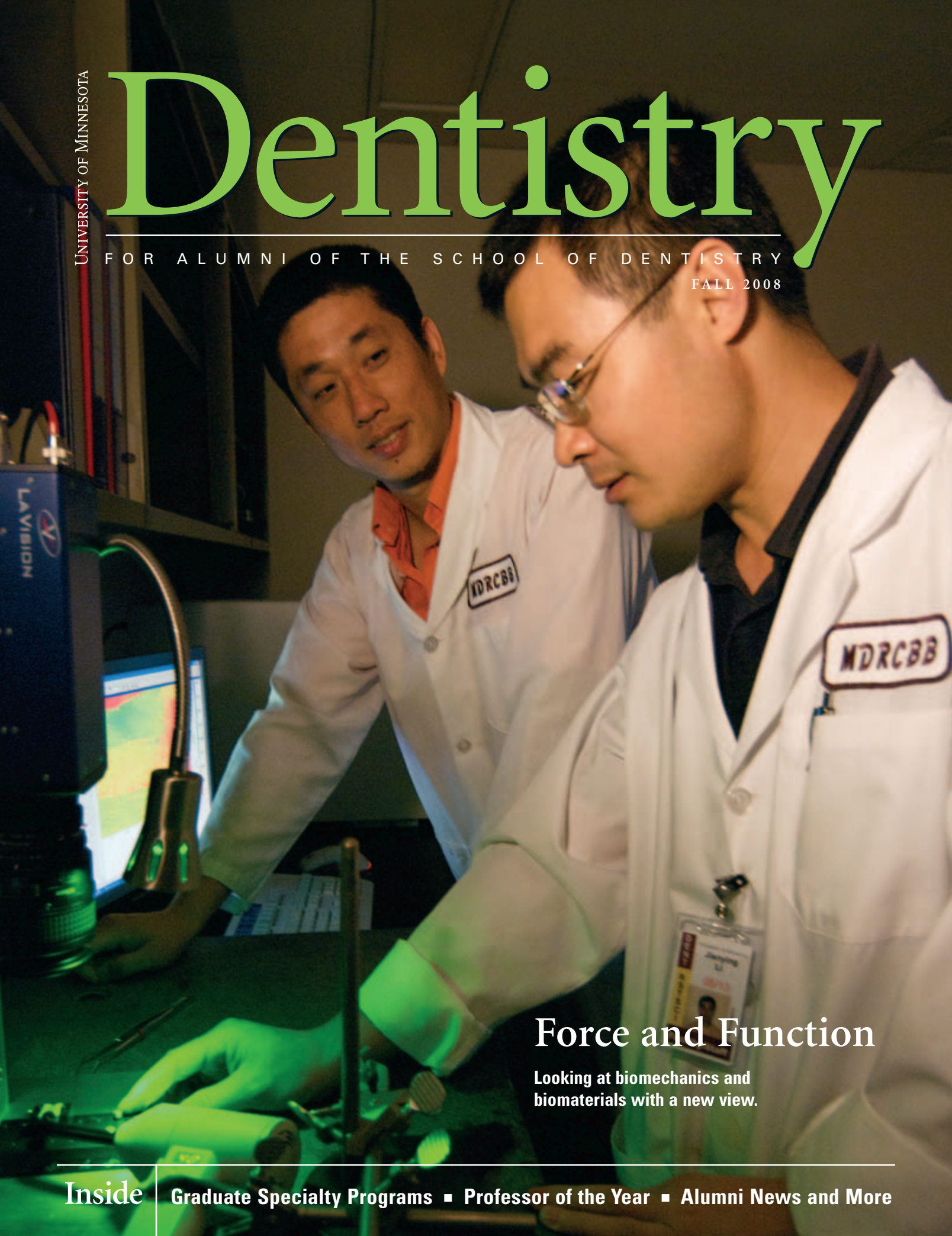


UNIVERSITY OF MINNESOTA

Dentistry

FOR ALUMNI OF THE SCHOOL OF DENTISTRY
FALL 2008



Force and Function

Looking at biomechanics and biomaterials with a new view.

Inside

Graduate Specialty Programs ■ Professor of the Year ■ Alumni News and More



from the Dean

PHOTO BY RICHARD ANDERSON

Dear Colleagues,

Although it's only been a few months since the last issue of our alumni magazine, we have some new and exciting information to share, along with stories about what's going on at the School of Dentistry. I hope you'll find the content interesting and that it will make you proud to be connected with the school.

For over a year, members of our state legislature have been supporting the creation of a new member of the dental team—a midlevel practitioner. It has attracted the attention of dentists from all over the state and around the country. To ensure our readers are accurately informed about what has transpired over the past few months, there's a brief review early in this issue.

There are also two featured articles that I hope you'll enjoy reading. The first describes how the school's specialty and graduate programs work together to meet the complex needs of today's patients. Emphasizing collaboration, faculty and residents capitalize on each other's special expertise to examine, diagnose, and treatment plan some of the most challenging cases presenting in our School of Dentistry clinics. They are provided with a host of new technologies to help them more thoroughly assess and treat patients in ways that, just a few years ago, were ideas on the drawing boards of clinical researchers.

The second article discusses the infusion of new talent and ideas into our center for biomaterials research. We recruited faculty from around the world with the backgrounds and interests needed to help solve clinical problems that have plagued us for decades, and they use advanced technologies, not traditionally used by dental scientists, to search for solutions.

Scattered throughout the magazine are stories about some of the special accomplishments and celebrations that have taken

place since our last issue. Most noteworthy is the recognition of our researchers, whose work was featured on the cover of the prestigious scientific journal *Structure*, and a visit by Major General Russell Czerw to award the Soldier's Medal to one of our senior dental students for his heroic efforts assisting victims of the I-35W bridge collapse.

Alumni and friends are also featured in this issue. We acknowledge both the historical importance of Century Club Life Members who began a tradition of private support for the school and the vision of Dean Emeritus Erwin Schaffer who initiated and championed that tradition for more than a decade. Although the Century Club is no longer active, we continue to recognize one faculty member each year and, last April at the Star of the North Meeting, presented the 41st Century Club Professor of the Year Award to Dr. Joel Rudney.

Please be sure to read the letter from Alumni Society President Dr. Elizabeth Rydell. The group has engaged our alumni in the affairs of the school and reached out to students so that they can appreciate and value the need to stay connected with the school after graduation. Following her letter, we recognize the generosity of alumni and friends who contributed to one of the Alumni Society's major events, the Cap and Gown Fund.

There's news, too, about your classmates and faculty members in the Class Notes section. We hope you'll discover something to bring back memories or prompt you to send in your own bit of news about what's new in your life or in the life of someone who graduated from our school.

Closing the issue is a catalogue of special events and continuing dental education programs scheduled over the next several months. I invite you to look it over to see if there's something that interests you. There's nothing worse than finding out too late about a program, reception, or meeting that you would have enjoyed.

Finally, I wish you all the best as you peruse this new issue of our alumni magazine. Thank you for maintaining your interest in our school and for being an informed graduate.

Sincerely,

PATRICK M. LLOYD, D.D.S., M.S.
Dean

Professor, Division of Prosthodontics

Contents

FALL 2008

www.dentistry.umn.edu



PHOTO BY SIMON HINCKFUSS

FEATURES

4 Complexity and Collaboration

In many cases, two (or more) disciplines are better than one.

BY TERRI PETERSON SMITH

10 Force and Function

Looking at biomechanics and biomaterials with a new view.

SPECIAL IN THIS ISSUE

13 Century Club Life Members

A tradition of private support for the School of Dentistry.

IN EVERY ISSUE

2 NewsBites

New midlevel dental providers, an award for heroism, and breakthrough research.

15 School News

Rudney receives Century Club Professor of the Year Award.

16 Alumni News

Distinguished alumni, class notes.

20 Events Calendar

Special events and opportunities you don't want to miss.

21 Continuing Dental Education Programs

Upcoming continuing dental education programs to enhance your practice.

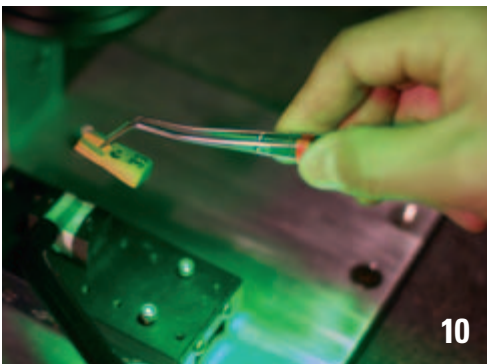


PHOTO BY RICHARD ANDERSON

4

10



PHOTO BY SCOTT STREBLE

15

On the Cover Alex Fok (*left*), director of the Minnesota Dental Research Center for Biomaterials and Biomechanics, works with research associate Jianying Li on an experiment to measure the shrinkage strain of a composite material during curing.

PHOTO BY RICHARD ANDERSON

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

The University of Minnesota is an equal opportunity educator and employer.
©2008 Regents of the University of Minnesota. All rights reserved.

UNIVERSITY OF MINNESOTA
SCHOOL OF DENTISTRY
www.dentistry.umn.edu

Patrick M. Lloyd
Dean

Claudia L. Kanter
Director, Marketing and Communications

Terri Peterson Smith
Editor

Sara Stone
Administrative Assistant

Pikala Design Company
Graphic Design

Richard Anderson
Scott Streble
Photographers

EDITORIAL ADVISORY COMMITTEE

Marie Baudek
Fred Bertschinger
Christine Blue
Laura Boland
Dr. Mark Herzberg
Douglas Magney
Annie Pennola
Lynda Young

SCHOOL OF DENTISTRY ALUMNI SOCIETY UNIVERSITY OF MINNESOTA ALUMNI ASSOCIATION BOARD OF DIRECTORS

OFFICERS

Elizabeth Rydell, '91 DDS
President

Stephen F. Litton, '67 DDS
Vice President

Carol Dahlke, '84 DDS
Secretary/Treasurer

Loren Taple, '89 DDS
Immediate Past President

BOARD MEMBERS

Sarah Basile, '99 DH
Bernard Borkon, '69 DDS
Susan Gross, '82 DDS
Tom Inglis, '78 DDS
Kim Johnson, '79 DH
Kristen Kenner, '84 DDS
Woojin Kwon, '02 DDS
Timothy Langguth, '73 DDS
Julie Leshner, '90 DDS
Gina Pfeiffer, '89 DDS
Clayton Sheppard, '85 DDS
Thomas Smyth, '00 DDS

DIRECTOR OF ALUMNI RELATIONS

Annie Pennola Pearson

STUDENT REPRESENTATIVES

Ben Hoelscher
Student Council Representative

Lorelle Eng
Dental Hygiene Representative

NATIONAL BOARD REPRESENTATIVE

University of Minnesota Alumni Association
Jo Ann Omlie, '80 DDS

News Bites

2008 Minnesota Legislature Authorizes Licensure of Midlevel Dental Providers

Work group convenes to determine parameters for supervision, education, scope of practice, and licensure.

When the 2008 Minnesota legislature adjourned in May, it counted among its most ambitious health care initiatives landmark legislation intended to ease dental access-to-care challenges for Minnesota's disadvantaged.

The new law directs the Board of Dentistry to authorize a person to practice as a midlevel dental provider (no sooner than 2011). It also directs the Commissioner of Health to create a work group to develop recommendations and propose legislation for the level of supervision, education, scope of practice, and regulation of this new provider.

The work group is directed to address: 1) recommendations that reflect the education and training required for a midlevel professional to provide a list of services previously provided only by a dentist, including the restoration and extraction of teeth; and 2) an implementation schedule that allows for enrollment of students in an oral health provider educational program by fall, 2009. The legislation also identified specific stakeholder groups as work group participants.

According to Patrick Lloyd, dean of the University of Minnesota School of Dentistry, the legislation was significantly different from the bill originally proposed, which called for services to be provided by a dental hygienist with advanced training. "This legislation authorizes the Board of Dentistry to create a new member of the oral health care team who will perform dental services under a dentist's supervision."

With the fall, 2009 deadline for program admissions pending, both the University of Minnesota and the Minnesota State Colleges and University (MnSCU) system announced intentions to launch educational programs for midlevel dental providers.

Next Steps

In preparation for the dental school's work group participation and in anticipation of its training program launch, a multidisciplinary contingent of six faculty members traveled to Prince Albert, Canada, in June to visit the dental therapist training program at First Nations University. The group also visited the University of Saskatoon College of Dentistry to learn about the dental school's role in educating dental therapists. Traveling with the group were the president and a trustee of the Minnesota Dental Association.

In July, the School of Dentistry led a 12-member delegation—expanded to include representatives of several other work group organizations—to visit a dental therapist training program in Dunedin, New Zealand. Dental therapists have practiced in New Zealand for nearly 70 years. In September, the group traveled to the United Kingdom, which has 18 dental therapist training programs, the majority of which are based in dental schools.

"We chose carefully which programs we visited," says Lloyd, "and selected those with long histories of training midlevel providers. We wanted to talk with people at each institution, tour their facilities, and gain first-hand knowledge of the level of supervision, educational programs, the scope of services provided, and the health care delivery systems in which these professionals treat patients."

An all-school forum held prior to each visit allowed students, staff and faculty to pose questions that might be asked, and a post-visit report was shared with the same group.

According to Lloyd, the challenge to the state's educational institutions now is

to design a teaching program without a (yet) defined level of supervision or scope of practice. "But we're talking about educating students to perform dentistry procedures. Midlevel providers may be a different type of provider, but the assessment skills, manual dexterity, and professional judgment required to perform these procedures has not changed," says Lloyd. "The School of Dentistry is the only institution in the state accredited to teach dentistry procedures. Dental skills are best taught in a dental school by experienced dental faculty using the same state-of-the-art technologies, facilities and proven curriculum used to educate dentists."

The School of Dentistry will present its curriculum and program proposal to the University's Board of Regents for approval this winter. The school expects to enroll its first dental therapist students in fall, 2009.

The Work Group

Creating something new from scratch is always a challenge. The 13-member work group convened in August and is meeting throughout the fall to complete its work by December 15. A report and draft legislation is due by January 15, 2009. On the agenda are discussions about everything from supervision to education and competencies, program accreditation, scope of practice, medications that may be prescribed and extractions that may be performed, the criteria for determining practice settings, outcomes assessment, and licensure and regulatory requirements.

Work group members include School of Dentistry representatives Dean Patrick Lloyd and Christine Blue, director of the Division of Dental Hygiene. Also included are representatives of the Minnesota Dental Association, the Minnesota Dental Hygienists' Association, the Board of Dentistry, MnSCU, the Minnesota Academy of Pediatric Dentistry, the Minnesota Safety Net Coalition, and the offices of the commissioners of health and of human services.

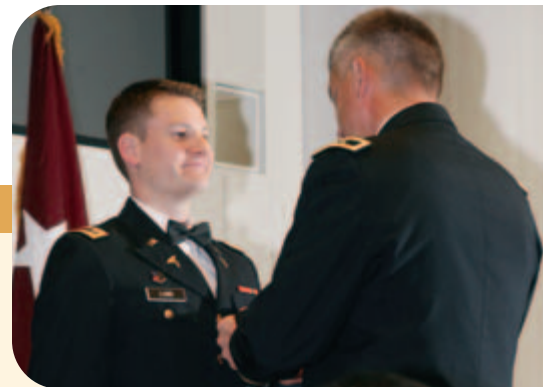
Dental Student Receives Army's Prestigious Soldier's Medal

Nathan Lund launched his professional career this spring with a newly-granted dental degree and a Presidential citation and medal for heroism.

Lund, a 2008 graduate of the School of Dentistry and a second-lieutenant in the Army Reserves, received the Soldier's Medal in recognition of heroic efforts on behalf of victims of the I-35W bridge collapse in Minneapolis in August, 2007. Lund and his wife Christine, a registered nurse, were among the first volunteers to reach the scene where they provided medical assistance and aided in the evacuation of victims.

"For those of you who are not familiar with this award, it's a very big deal," said Major General Russell Czerw, commander of Fort Sam Houston and the U.S. Army Medical Department Center and School, who presented the award. The Soldier's Medal is authorized by the U.S. Congress and awarded by the President to honor individual acts of heroism in non-combat situations.

The award ceremony was held May 1 in a campus auditorium filled with dental school classmates, staff and faculty. Christine Lund received a Star Note Citation in honor of her heroism.



Nathan Lund receives Soldier's Medal for heroism.

The general also addressed several comments to the assembled dental students: "At some time or another, being a dentist will be the most fun you have had in your life," he said.

Lund told the *Duluth News Tribune* and *ABC News* that he used what he remembered from an anatomy course dental students take with their medical student counterparts to help him assess the injuries of the six or seven people he treated. He told the *St. Paul Pioneer Press*, "I'm honored and humbled. To be recognized by the Army for something they consider heroic means an awful lot. But myself, I guess I don't really think of it as all that heroic. It was just the right thing to do." The Lunds also received national recognition when they were named *ABC News Persons of the Week* August 3, 2008.

Past recipients of the Soldier's Medal include Colin Powell, who received the award following a helicopter crash in Vietnam, and Pentagon personnel who assisted coworkers after the attack on September 11, 2001.

Never Before Seen Viral Details Pictured on Cover of *Structure*



When your research findings land on the cover of a prestigious scientific journal, you know you've done something special.

The cover illustration of the June 2008 issue of *Structure* features an article co-authored by researchers at the University of Minnesota School of Dentistry. The article by University of California-San Diego scientist Jinghua Tang and his Minnesota colleagues Dwight Anderson, Shelley Grimes and Paul Jardine highlights the first structural model of the complex bacteriophage phi29 virus, at sub-nanometer resolution.

Using a combination of cryo electron microscopy and 3-D reconstruction, never-before-seen details of virus architecture are revealed.

The complex arrangement of protein components of the virus are clearly demonstrated, as well as surprising distortion of the viral DNA, which is packaged under incredibly high pressure. Insights gained can be applied to medically relevant viruses such as herpes viruses and adenoviruses, providing an understanding of how these viruses assemble and infect cells.

This work is the result of an ongoing collaboration between researchers in the School of Dentistry's Department of Diagnostics and Biological Sciences and Institute for Molecular Virology, and the laboratory of Tim Baker at the University of California, San Diego.

Complexity and Collaboration

In many cases, two (or more) disciplines are better than one.

BY TERRI PETERSON SMITH

The practice of dentistry has become increasingly complex. Scientific advancements now offer the profession a host of developments to increase the diagnostic and treatment capabilities of dentists. We have greater insights into what causes illness, and an improved understanding of how to maintain oral health and general wellness. An aging and increasingly diverse patient population has altered disease patterns and treatment routines. And the explosion of scientific and technological advancements continually challenges the profession in both the classroom and the clinic. Included are advancements in dental materials; biomimetics and nanotechnology; the science of bone growth, stress forces and dental implants; information technology (cone beam CT scanning, CAD/CAM fabrication, virtual reality-based learning, and teledentistry); and more.

With new science, technologies, drug therapies, and dental procedures unheard of as recently as a decade ago, the dental school curriculum is evolving to accommodate new knowledge, and to provide

enhanced learning experiences for students. The complexity is especially apparent in the changes occurring in dental specialty practice. For example, “We’ve gone from dentures to implants,” says John Schulte, associate professor and co-director of

“It was an amazing experience to work with another specialty department. It is through the collaboration of multiple dental specialties that these complex cases can be treated to the highest standard possible.”

— BOBBY BIRDI

graduate prosthodontics. “And, dentists can now do wonders to correct congenital defects,” says Brent Larson, associate professor and director of the Division of Orthodontics. “We can take a handicap or disfigurement and make huge improvements in both function and appearance.”

It’s no surprise that such amazing outcomes require the collaborative input

of more than one dental discipline. At the University of Minnesota School of Dentistry, the experts are all available under one roof. For more than two decades, the school has offered specialty training in endodontics, oral and maxillofacial surgery, orthodontics, pediatric dentistry, periodontics and prosthodontics. Graduate programs in oral health for seniors and in TMD and orofacial pain round-out the dental residency programs. In addition, students may pursue advanced studies in oral biology, interdisciplinary training in craniofacial biology, and advanced programs in clinical research and biological sciences.

This collection of programs attracts a wide mix of patients and students, and provides a scope of advanced expertise

PHOTO BY SCOTT STREBLE



Prosthodontic resident Bobby Birdi (L) and periodontic resident Simon Hinckfuss.

needed to both manage complex interdisciplinary patient treatments and push the boundaries of modern science. The advanced education and graduate programs prepare specialists, future academicians and researchers for the profession, create an atmosphere of pride in each discipline, and foster collaboration among school students and faculty.

Interdisciplinary Teamwork

Working with a variety of other specialties is particularly important in the field of prosthodontics, which deals with complex restorative treatment. “We form relationships with all of the other dental disciplines,” says Schulte. “If we’re restoring teeth with complex crowns and bridges, the teeth must be aligned, so we

work with an orthodontist. If there are teeth with root canal problems, we work with an endodontist.”

Prosthodontic resident Bobby Birdi’s experience with one patient offers an example. The patient had advanced periodontal disease, with extensive bone loss. She had come to the School of Dentistry clinic in the hope that specialists there could restore her mouth to a functional and pain-free state.

Esthetics were also important. Birdi’s patient was young and active. She did not want dentures or something removable to replace her missing teeth. Instead, she hoped to have her teeth restored to resemble her natural teeth so she wouldn’t feel self-conscious about her smile. The answer: 15 implants. ☺

Updates and news from dental specialty and advanced education programs.

ENDODONTICS

■ While most U.S. endodontic graduate programs experienced recent decreases in the number of applications, U-M applications have remained constant. The program averages 80 applicants, interviews 12 to 14, and accepts four residents in the program each year.

■ Walter Bowles received a \$690,000 grant from the American Association of Endodontists (AAE), the largest research grant ever awarded by the AAE, to conduct a retrospective study of 10,000 patients to determine the factors that influence successful endodontic and dental implant treatments.

■ For the second year in a row, Minnesota’s endodontic residents earned top honors in the graduate student table clinic competition at the 2008 American Association of Endodontists Annual Session in Vancouver, B.C. The first-place award went to Kendra Boda and Michelle Mailliet for their presentation on “Maxillary Sinus Fungal Ball: Endodontic Implications.” Third-place award winners were Duane Van Nieuwenhuyzen and Jon Richards for their presentation, “Osteonecrosis of the Jaw and Bisphosphonates: Endodontic Considerations.”

ORAL BIOLOGY

■ Three students were named finalists in the 2008 AADR/Johnson & Johnson Oral Health Products Hatton Competition at the annual meeting of the American Association of Dental Research in Dallas, Texas. Rodrigo Giacaman, Anjalee Vacharaksa and Yu Lei were finalists, and Giacaman and Vacharaksa won first place in the post-doctoral and senior divisions, respectively.

■ Four students successfully defended their theses in 2007-08, adding the Ph.D. degree to their previous clinical dental credentials. Rodrigo Giacaman is now an assistant professor at the School of Dentistry, University of Talca, Chile. Yang Kang is now a postdoc and Ying-Lien Wu is now an adjunct assistant professor, both at the University of Minnesota School of Dentistry. Anjalee Vacharaksa is a postdoctoral fellow at the University of British Columbia.

■ In April '08, the program hosted its first open house for 31 pre-dent students at local universities and colleges. Colleges represented included the College of St. John's/St. Ben's, University of St. Thomas, St. Olaf College, University of Minnesota, Gustavus Adolphus College, and Winona State University.

ORAL HEALTH SERVICES FOR OLDER ADULTS (OHSOA)

■ OHSOA received a 2008 grant for \$225,000 from its community sponsors—the Amherst Wilder Foundation of St. Paul, and Walker Methodist Health Center, Minneapolis. The Walker Dental Clinic was awarded the Minnesota Health and Housing Alliance's 2007 Innovation of the Year Award.

■ Interprofessional clinical services and geriatric education at Walker Methodist Health Center involve School of Dentistry residents and faculty together with students and faculty from the University's schools of medicine, nursing and pharmacy.

■ *JADA* (July, 2007) published "The Application of Facial Expressions to Assess Orofacial Pain in Cognitively Impaired Older Adults" by former OHSOA grad student K.T. Hsu, with OHSOA and SOD faculty (S.K. Shuman, D.T. Hamamoto, J.S. Hodges).

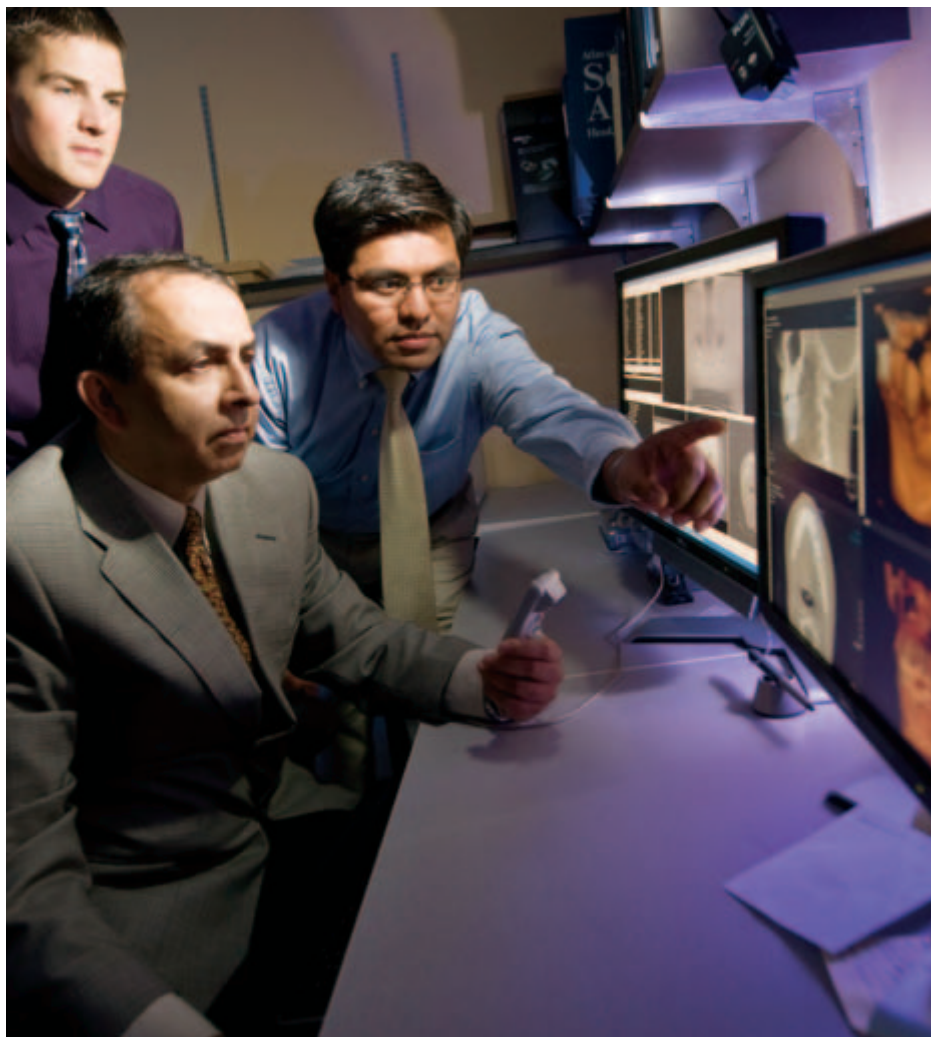
■ OHSOA graduated its first geriatric fellow to also receive a Ph.D. degree. Xi Chen received his Ph.D. in health informatics in July, 2008. His project, "Development of a Prognostic Index to Predict Tooth Survival for Older Adults," was conducted at Wilder Senior Dental Clinic. Chen is now on the faculty of the University of North Carolina teaching geriatric dentistry.

Such a challenging case required collaboration between dental residents in two advanced education programs and it took five months to complete. Says Birdi, "I worked hand-in-hand with senior periodontic resident Brian Fuller and both the graduate periodontics and prosthodontics faculties. We planned out the sequence of surgery, size and number of implants, implant location and angulation, and the soft tissue management issues. Dr. Fuller performed the surgical procedures and I performed the prosthodontic treatment."

He says, "In this case, we first extracted six teeth in the maxillary arch and immediately placed six implants, all in the same appointment. At the second appointment, we extracted 11 mandibular teeth (all of her remaining lower teeth) and placed nine

implants. She had three previous implants, bringing the total number of implants in the lower arch to 12." The result, Birdi explains, is that this patient will have the fit and function of permanent teeth. In addition, because dental implants help to stimulate the bone over time, further bone loss should be minimized.

Recently, the school acquired a cone beam scanner. Says Birdi, "We're using it now to get a very accurate 3-D image of the patient's anatomical structures prior to final treatment planning decisions and surgical course of action. We especially use it to help plan where implants will go, and to determine whether bone grafting will be needed. We are using this technology more often now with more complicated implant cases."



(L to R): Orthodontic resident Adam Ostby, Associate Professor Mansur Ahmad, and TMD/Orofacial Pain resident Vladimir Leon Salazar interpret a cross sectional image from a cone beam CT scan.

PHOTO BY SCOTT STREBLE



PHOTO BY SIMON HINCKELUSS

Periodontic and prosthodontic residents learn together about dental implants in this advanced surgical lab.

Creating the Culture

Not every patient requires such a complicated treatment plan, but it is the sort of case that crops up at the School of Dentistry where people turn for answers to the most complex dental problems. As a center of excellence for dental care

“If we’re restoring teeth with complex crowns and bridges, the teeth must be aligned, so we need an orthodontist. If there are teeth with root canal problems, we need an endodontist. We can’t practice without the service of other specialties.”

— JOHN SCHULTE

in the upper Midwest, the school offers the expertise of leaders in their specialties. Both patients and dental residents in the school’s specialty clinics and training programs benefit from that experience.

Larson offers another example, a young man in his early professional life who had congenitally missing teeth. Those teeth he did have were unusually small, so he felt self-conscious and never smiled in a way that showed his teeth. Says Larson, “We

could treat this patient with just orthodontics, but his teeth would still be too small. We needed to properly position his existing teeth and make them larger using veneers and crowns. We used dental implants to replace the missing teeth. Residents from orthodontics and prosthodontics worked together. In other cases, we might work with oral and maxillofacial surgery residents to place dental implants or do the surgery, if necessary, to reposition or normalize the jaw.”

Collaboration results in both professional and patient satisfaction. Says Larson, “The patient feels they’re getting the best treatment recommendations and making the best personal decisions about that treatment.” Larson was on the staff of the Mayo Clinic as program director for orthodontic training before coming to the University of Minnesota in 2004. It was there that he saw the benefits of collaborative care. “When I was in private practice, I realized how hard it is to collaborate on treatment. Dental practice is a busy environment and collaboration can require significant patient and practitioner time. But it’s often in the best interest of the patient.” That’s why he says that the culture of interdisciplinary collaboration must be established during training.

The School of Dentistry offers a unique opportunity to forge that collaborative mindset. With so many specialty and advanced education programs

- More than 150 applications were received for four positions in the 2008 training program.

- Third-year resident Dave Rupprecht traveled to Ecuador with the International Humanitarian Surgical Team to assist in providing cleft lip and palate care to the underserved. He and co-resident Betsy Misslet also joined program faculty members Pamela Hughes and David Basi in their travels to Guatemala with the same surgical team.

- OMS residents attended the AO/ASIF Basic Course in Minneapolis this past summer. Course faculty presented a “Resident Day” and invited residents from OMS, ENT and Plastic Surgery.

- The 2007 Annual Daniel E. Waite Lectureship featured a presentation by Andrew Herlich, who conducted an anesthesia simulation course for residents on the SimMan anesthesia simulator.

- Fourth-year residents Jen Beaudin and Rhys Strasia spent six weeks in Aberdeen, Scotland, training with the OMS Unit at the Aberdeen Royal Infirmary. This rotation, now standard for fourth-year residents, provides both an experience in managing head and neck cancer and exposure to a different health care delivery system.

ORTHODONTICS

- Minnesota is one of only a few dental schools with an Orthodontic Residents Endowment Fund. Started by alumnus Steve Litton (’67), the fund provides travel support for residents to attend several national meetings. This effort was recently profiled in the *AAO Bulletin*, the national newsletter of the American Association of Orthodontists.

- In an age when many orthodontic programs are having difficulty attracting and retaining faculty, three junior faculty members received competitive faculty development awards from either the AAO or AAO Foundation.

- Suzan Ekim was named director of the Advanced Education Program in Orthodontics in 2007. She is a 2003 graduate of our program and has been a member of the faculty since that time.

- Plans are underway for the launch of a campaign to support an endowed fund for the Division of Orthodontics.

PEDIATRIC DENTISTRY

■ Ron Grothe was appointed director of the Graduate Program in Pediatric Dentistry. On the faculty since 2003, Grothe received his D.D.S. from the University of Iowa, his formal pediatric dentistry training and M.S. degree from the University of Minnesota, and an M.B.A. from Iowa State University. Prior to his faculty appointment, Grothe had military and private practice experience. He is currently a diplomate of the American Board of Pediatric Dentistry.

■ The 2nd annual Robert J. Feigl symposium was held September 19. The Lectureship in Pediatric Dentistry was established to create an annual symposium to explore contemporary pediatric dental topics. This year, lectureship funding partially supported attendance by pediatric dental residents.

■ Plans are progressing with the University Medical Center-Fairview to establish a graduate pediatric dental clinic to support the new Children's Hospital on the west bank of the University of Minnesota campus. Space has been identified at the Riverside Plaza Building and operational planning is underway.

PERIODONTICS

■ The ADA Commission on Dental Accreditation commended the Advanced Education Program in Periodontics for its faculty, scholarly activity, clinical training in conscious sedation, and for encouraging collegial interactions with other postgraduate programs.

■ 2007 program graduate Jason Johnson won the 2007 Orban Research Competition at the American Academy of Periodontology's (AAP) national meeting for his research titled "Persistence of Extracrevicular Bacterial Reservoirs After Treatment of Aggressive Periodontitis." A manuscript on his project was accepted for publication in the *Journal of Periodontology*.

■ Russ Dylla, 2007 program graduate, presented a research forum poster session abstract at the 2007 AAP Annual Meeting. His presentation reported on the protocol and outcomes from the first four years of the Periodontal Honors Course taught by program director James Hinrichs and periodontal residents to a select group of senior dental students. Senior dental students who participate in the Periodontal Honors Course are twenty times more likely to enroll in a periodontal residency and residents who help teach the course are more likely to pursue an academic career in periodontology.



OHSOA Director Steve Shuman (R) reviews clinical findings with dental and medical trainees at Walker Methodist Health Center.

PHOTO BY RICHARD ANDERSON

housed under one roof, there are many opportunities for dental residents to learn together in both clinics and classrooms, develop a keen understanding of each others' skills and expertise, and fine-tune the art of collaboration and consultation.

The ADA Commission on Dental Accreditation recently recognized the school's commitment to collaborative

“Living and learning in a driven-to-discover environment allows students to witness their professors and other scientists expanding the boundaries of current knowledge and underscores their understanding of dentistry as a profession that's continually evolving.”

— JOEL RUDNEY

education when it commended the Advanced Education Program in Periodontics for encouraging collegial interactions in multidisciplinary training classes and seminars. These include courses in conscious sedation (jointly taught to residents enrolled in periodontics, pediatric dentistry and endodontics);

implantology (a multidisciplinary treatment approach taught to residents from periodontics, prosthodontics and endodontics); a treatment planning seminar for periodontic and prosthodontic residents; and a periodontics/orthodontics treatment planning seminar.

To maximize the opportunities for interdisciplinary interaction, Scott McClanahan, director of the Division of Endodontics and the Advanced Training Program in Endodontics, is chairing the Advanced Education Committee, composed of directors of graduate specialty programs. Starting this fall, the director of each program will carve out time from his or her curriculum so that all dental residents can meet together for a series of interdisciplinary seminars on treatment planning, case presentations and demonstrations. The seminars will increase students' understanding of each specialty area and of the ways they can work together to treat patients.

“At the program director level, we're enthusiastic about this collaboration,” says Schulte. When it comes to infusing a culture of interdisciplinary collaboration and education, he says, “we're kicking it up a notch.”

Raising the Bar

“Our grand plan is to keep raising the bar for the educational experience here,” says

McClanahan, who came to the School of Dentistry in 2005 when he retired from the U.S. Navy. In the Navy, he was chairman of endodontics and program director at the Naval Post Graduate Dental School at the National Naval Medical Center in Bethesda, Maryland. “The more we put residents together, the better they know each other, the better they communicate. Collegial relationships in their residency will lead to similar relationships out in practice. We’re training them to be good consultants.”

Collaboration is key, too, in the care of older adults. At the school’s teaching clinic at Walker Methodist Health Center, residents in the Oral Health Services for Older Adults Program collaborate with students and faculty from the University’s schools of medicine, nursing and pharmacy.

Yet, the educational experience for all residents has an emphasis that goes far beyond the clinic. Says Schulte of the graduate programs, “The clinical experience is grounded in academics, and both basic and clinical research.”

The School of Dentistry’s research faculty has pioneered discoveries in cancer pain research, fluoride, the link between bacteria in dental plaque and cardiovascular disease and pre-term birth, and is making promising advancements in knowledge about how viruses are assembled and infect new cells.

A research-intensive institution such as the University of Minnesota provides unique learning opportunities for all students. “Scientific contributions to the knowledge base that forms the foundation of the dental profession are ongoing. It’s critical that health care professionals understand the continually changing nature of their profession and be prepared to evaluate whether or not proposed clinical advances are based on a solid scientific foundation,” says Joel Rudney, interim associate dean for research. “Living and learning in a driven-to-discover environment allows students to witness their professors and other scientists expanding the boundaries of current knowledge and underscores their understanding of dentistry as a profession that’s continually evolving.”

Residents in the school’s advanced education programs have the opportunity to do their own research, too. For example, a recent graduate won the Orban

Research Competition at the 2007 annual meeting of the American Academy of Periodontology. A manuscript on his project was accepted for publication in the *Journal of Periodontology*. And four students in the Graduate Program in Oral Biology competed in the 2008 Hatton Competition at the annual meeting of the American Association of Dental Research. Three were finalists, and two

“When I was in private practice, I realized how hard it is to collaborate on treatment. Dental practice is a busy environment and collaboration can require significant patient and practitioner time. But it’s often in the best interest of the patient.”

— BRENT LARSON

won first place in their respective divisions. Such recognition heightens the school’s visibility and helps the School of Dentistry’s graduate and advanced education programs attract the best and the brightest students and faculty.

Looking back on his experience thus far Birdi says, “It was an amazing opportunity to work with another specialty department. It is through the collaboration of multiple dental specialties that these complex patients can be treated to the highest standard possible.” That collaboration, the continuing emphasis on research, along with state-of-the-art technology, are combining to fire the sense of energy and enthusiasm among the school’s advanced education and graduate programs. The benefits extend far beyond the walls of Moos Tower. Long after graduation, specialists such as Birdi may rely on the collegial relationships they have established with other dental residents and with the faculty at the School of Dentistry. The collective expertise of both the school’s faculty and the specialists they train provides a valuable regional resource for patients and practitioners throughout the state and beyond. ☉

PROSTHODONTICS

■ Four residents and several faculty members, including H. Birdi, S. Rodriguez-Lozano, D.C. McNeil, A.V. Saldarriaga, and John Schulte, presented their research projects in poster sessions at the 2008 Annual Meeting of the Academy of Osseointegration in Boston.

■ The Advanced Training Program in Prosthodontics continues to fund travel by all program residents to attend the annual meetings of the American College of Prosthodontics and the American Academy of Fixed Prosthodontics.

■ In the last three years, the program has graduated eight residents, four of whom are currently teaching at the University of Minnesota School of Dentistry, the College of Dentistry University of Oklahoma, and the Faculty of Dentistry Dalhousie University (Halifax). Program class size averages three residents/year; the program currently has 10 residents.

TMD AND OROFACIAL PAIN

■ Mike John joined the division faculty as a full time associate professor in 2007. His research fields of interest include the investigation of the etiology, diagnosis and classification of temporomandibular disorders and the assessment of outcomes of common oral treatments using the concept of oral health-related quality of life.

■ TMD residents and several faculty members, including Estephan Moana, Vladimir Leon, Donald Nixdorf, Ana Velly and Mike John, presented their research projects at the International Association for Dental Research (IADR) annual meeting in Toronto this year.

■ At the IADR meeting in Toronto, a one-day workshop was devoted to discussing the findings from the reliability and validity study of the Research Diagnostic Criteria for TMD, an \$8.2 million dollar NIH/NIDCR grant, with Eric Schiffman as the principal investigator.

■ The Advanced Training Program in TMD and Orofacial Pain continues to train four residents each year for completion of their advanced training. Many of the graduating residents become board certified by the American Board of Orofacial Pain (ABOP). The program at the University of Minnesota offers a mock board to residents from other programs, as well, to prepare for the ABOP.

Force and Function

Looking at biomechanics and biomaterials with a new view.



Alex Fok is director of the Minnesota Dental Research Center for Biomaterials and Biomechanics (MDRCBB), where he has served since November, 2007.

Founded in 1991, the MDRCBB is a multi-disciplinary center for research in biomaterials, biomechanics, and nanotechnology. 3M is a founding member of the MDRCBB and has provided continuous support since its inception in 1991. Based in the University of Minnesota School of Dentistry, the center has had 14 years of NIH/NIDCR funding, as well as support from industry-leading research partners and the University of Minnesota's Academic Health Center Faculty Development Grants Program.

Dentistry Magazine: Let's begin by asking how you came to end up in the field of dental research?

Alex Fok: Well, I didn't follow the traditional path. I'm a mechanical engineer by training, born in Hong Kong and educated in England. Before becoming involved in dental materials research, I was a senior lecturer at the University of Manchester's School of Mechanical, Aerospace, and Civil Engineering. I did a lot of work on stress analysis of the fuel core of graphite-moderated nuclear reactors. Nuclear graphite is a material used for slowing down and containing neutrons in the core of a nuclear reactor to sustain the chain reaction. Needless to say, this material is subject to intense radiation which, over time, changes its physical dimensions and properties and can lead to a lot of stress and, finally, cracking.

The same thing can happen to polymer-based dental materials like composite resin. During photo curing, which is a form of irradiation, they tend to shrink. Because they are bonded to the surrounding tooth tissues, stress is created and sometimes they fracture.

DM: How did you get from Manchester to Minnesota?

AF: While I was working in Manchester, a dentist-colleague called to ask if I could assist one of his Ph.D. students who was doing research on stress analysis of dental restorations—things like bridges and cantilevers. He needed expertise in the “finite element method,” a computer modeling tool used in engineering that could help him determine the relationship between loading and deformation of a restoration. Well, one thing led to another and I quickly discovered that the tools and methods used for analyzing the mechanical behavior of nuclear graphite could be adapted for use with dental restorations.

Then, in 2006, I attended a dental conference in Dublin where I learned about the directorship position here and I applied. Fortunately the interview process went well and I got the job. I think the University liked that I brought a novel perspective to the field of dental materials research.

DM: Other than the set of analytical tools that might be used to study either engineering or dental structures, are there other ways the two fields are similar?

AF: Yes. There are three basic elements to any structural analysis—loading, material properties, and shape. In dentistry, these might be better described as oral challenges, tissue properties, and anatomy. The three are interdependent; changes in one will affect the others. For example, if you change the material properties and shape, it will affect the component's ability to handle a heavier load. One of my research interests is in shape optimization. This is a well-developed concept in engineering used to design longer lasting, more durable engineering structures.

In dentistry, too, shape optimization is important, especially in restorations that must withstand the occlusal load caused by chewing. For example, a tooth preparation for an amalgam restoration requires the removal of sound tooth

PHOTO BY SCOTT STREBLE

Alex Fok

structure beyond the actual size of the caries. This is needed both to facilitate placement of the material and, because amalgam doesn't bond with the teeth, to hold it in place by mechanical means of retention.

But by preparing the tooth that way, the margins become stress "raisers" that produce very localized high stresses. This, in turn, can lead, first, to micro-cracking, then to gross failure of the tooth. Even with the new generation of restorative materials—one that is resin-based and can be bonded to the tooth—optimizing the cavity shape is still important to minimize the interfacial stresses that can lead to de-bonding, as well as the high stresses

between the teeth, and is capable of simulating the effects of an entire year of chewing in a single day. The machine has since been used extensively to help our industrial partners develop restorative materials that can withstand the loading experienced in an oral environment.

This is an excellent example of the kind of biomechanical research we do—applying the study of forces and their effect on bodies to biology and biomedical systems.

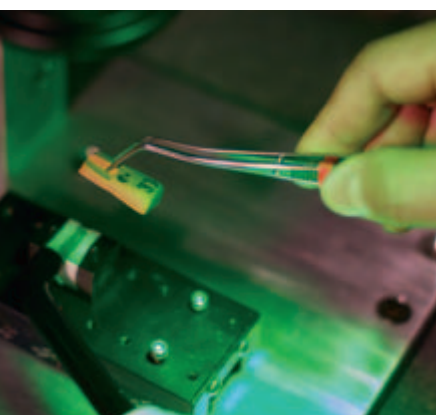
DM: What does MDRCBB offer that other research centers might not?

AF: The strength of the center is its ability to simulate oral challenges in the labora-

open to new ideas, and that's clearly the case here. In the U.K., people will tell you 10 reasons why your idea won't work. So I find I am able to try and do more things more easily here.

DM: What lies ahead for the center?

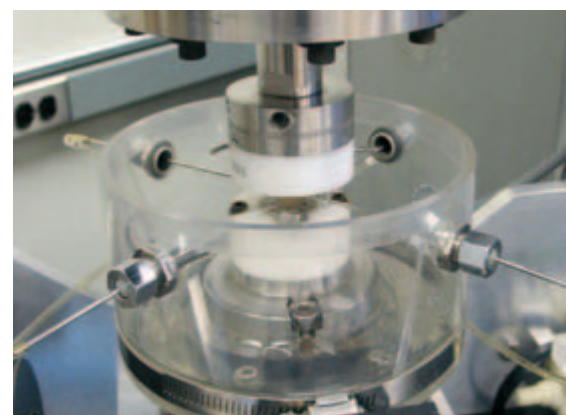
AF: In the recent past, our research emphasis has been on the physical properties of restorative materials. Now the focus has shifted to preventive capabilities—how to arrest caries and re-mineralize the tooth tissues, for example. One of our scientists, Daranee Versluis-Tantbirojn, is working on this new area of research. First, she creates a carious lesion in an extracted tooth, and then tries different



Dental materials research.



Ralph DeLong and Alex Fok



A.R.T.

at the margins once de-bonding occurs.

The challenges of shape optimization are also relevant to other restorations such as crowns, bridges and implants.

DM: And that's some of the work going on here right now?

AF: Yes. The research we do is all about the interplay between tissue and material properties, shape and anatomy, and loading and oral challenges. Apart from shape optimization, we also do a lot of mechanical testing of all kinds of restorative materials to measure shrinkage, fracture properties, and wear. Chewing exerts a tremendous force on the teeth and causes restorations to wear. Two of the founding members of the MDRCBB, Bill Douglas and Ralph DeLong, designed and built one of the world's first chewing machines called A.R.T. (Artificial Resynthesis Technology). A.R.T. reproduces the oral conditions of the human mouth, including the force of chewing and the contact

tory. We also work closely with industry leaders to develop dental materials.

This is a significant difference in that we don't test the final dental material product. Instead, we partner in the development of new dental materials. We simulate the clinical situation in the lab and so provide a way for companies to identify and respond to challenges *before* they reach the time-consuming clinical trial phase.

DM: What are some of the other qualities that make the research center stand out in your mind?

AF: It's located in one of the best dental schools in the country. People here are talented and creative, and leaders in their fields. Apart from developing the first chewing machine, MDRCBB also pioneered using imaging technology and 3D computer modeling to track changes in dentitions. On a more personal note, I've found that in America people are

methods to re-mineralize the site. One of the challenges in this type of research is that the techniques used to quantify the mineral content in teeth destroys the tooth. Recently though, the center acquired a micro-CT scanner. It takes a series of X-ray images which can be assembled to produce a three-dimensional image of the internal structure of the tooth so that it can be examined microscopically. With this new technology we can analyze all sorts of materials without destroying them and study more than just the before-and-after images of re-mineralization. We can, therefore, study each step of the remineralizing process to better understand what promotes or retards it.

DM: Clinically what are the implications of this?

AF: It has the potential to open up new approaches to dental treatment. For example, if you have a technology that re-mineralizes a tooth, you don't have ☺

to remove the carious tissues mechanically, reducing—if not eliminating—the need to drill.

Having said that, we'll start a project soon to look at the cutting characteristics of dental handpieces. The goal is to develop a 'smart' handpiece that can differentiate between sound and carious tissues. The information gathered will also be useful for the development of virtual reality dental training technology, such as haptics devices.

DM: Where would you like to take the center?

AF: As an engineer, I'd like to expand our collaboration with other fields of engineering. In a lot of ways, engineers have solutions in search of problems, not unlike where I started with the dental student researching stress analysis of dental materials. I am now working with a U-M civil engineer. His interest is in the fracture of concrete and rocks and using acoustic emissions to detect the micro-cracking events prior to final fracture. I'm interested in applying these

civil engineering techniques to dental restorations and, for example, issues related to shape optimization, material de-bonding and tooth fracture.

I'm also interested in modeling mathematically the development of caries and remineralization that involves the solution, diffusion and deposition of minerals. Again, the engineers already have the analytical tools for this. Hopefully, by understanding the process better, we can design better and more efficient preventive treatment options.

In general, modeling—whether physical (using laboratory assays) or computational (using sophisticated numerical software)—will be the focus of our activities. Actually, computational modeling is another strength of the center. Anthony Versluis, whose background is in aerospace engineering, is an expert in biomechanics for dental applications and his work has helped to clarify our understanding about the mechanical response of dental procedures and how dental materials wear and fail.

But the interaction between dentistry

and engineering is not unilateral. Engineers are always looking for new materials, new ways to build more efficient structures, and often they find that nature got there first. Enamel, for example, is one of the hardest structural materials of the human anatomy. So, engineers are interested in teeth—and in other natural structures, like seashells—to see what can be learned and applied to man-made structures to make them stronger, lighter and more efficient.

I'd also like us to have more interaction with biologists, and the micro-CT technology will allow us to do that. For example, the School of Dentistry has an excellent team of bone biology researchers. Bone biologists will be able to use the machine to look at changes in bone morphology due to osteoporosis or cancer treatment. Understanding the physical process of bone biology will also be applicable, of course, to issues related to loading the jaws, either through natural teeth or implants, and help us in the design of better implants and orthodontic appliances. ☉

MDRCB INVESTIGATORS

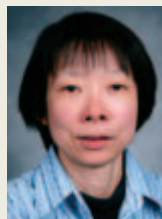


Ralph DeLong developed one of the world's first chewing machines, or A.R.T. (Artificial Resynthesis

Technology), an oral simulation environment often referred to as the "Artificial Mouth." The *Journal of Research & Development* chose it as one of the 100 most significant new technical products of the year. Along with co-developer, William H. Douglas, DeLong received the "I.R. 100 Award" for the development of a "Biomaterials Evaluation System (Oral)" in 1983. DeLong is currently adapting A.R.T. for applications in the food industry.

DeLong also developed a software program, AnSur™ that uses data from a 3-D surface digitizer to measure surface changes over time. The addition of an optical digitizer spurred the development of the "Virtual

Dental Patient" (VDP). In 1997, DeLong received a NIH/NIDCR grant to test the hypothesis that VDP correlates with an actual patient over a wide range of clinical conditions.



Daranee Tantbirojn-Versluis investigates the process of tooth decay. She simulates carious lesions

in vitro using chemical models that create demineralization and remineralization of the tooth structure. She follows the caries progression utilizing different physical assays, such as micro-indentation, micro-radiography and quantitative light-induced fluorescence. By interfering with demineralization and facilitating remineralization, this research aims to develop new preventive and therapeutic agents for tooth decay.



Anthony Versluis combines experimental and numerical methods in the study of biomechanics.

His experiments provide the essential basic and validation input, while numerical methods provide an integrating system that we can use to express our understanding and test our insight.

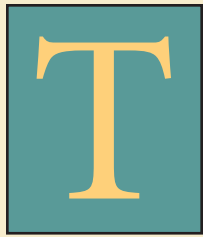
Versluis has contributed to the general knowledge about residual shrinkage stresses due to polymerization contraction of restorative materials, and failure, fracture, and fatigue crack propagation behavior. The gained insight and methodology have also been applied to testing common clinical procedures, such as the design of restorations and crowns, implants, posts, and shaping of endodontic root canals.



Maria Pintado is involved in research investigations into:

1. In vitro studies of occlusal wear as a key indicator of the performance of new dental materials.
2. Clinical measurement of the loss of enamel over time in non-carious cervical lesions (abfraction) by digital profilometry technology.
3. Development of a "Digital Environment for Learning Dental Anatomy." This is designed for use by students in their first year of dentistry. The CD "Tooth Explorer" provides students with 3-D modeling data of tooth and self quiz.

Century Club Life Members



he Century Club was established in 1967 by Dean Erwin Schaffer, with considerable input from Walter S. Warpeha, Sr., to raise funds in support of quality dental education and research at the School of Dentistry.

Funds raised supported: 1) visits by distinguished educators and clinicians for faculty in-service training; 2) faculty attendance at workshops; 3) the pilot research projects of young teacher-scientists that enabled them to acquire subsequent grants; 4) undergraduate summer research scholarships; 5) teaching programs; and 6) a "Century Club Professor of the Year" award.

The first Century Club Committee of 16, which provided leadership for the fund drive, was headed by Bruce Carlson.

Benefits to members included admission to special Century Club guest lectures, a variety of social events, and special recognition benefits. By the end of Schaffer's deanship in 1977, over \$565,000 had been received, and the Century Club continued until 1988.

Contributions to the School of Dentistry are now made through the Annual Giving Program of the University of Minnesota Foundation. Although the original Century Club is no longer active, the School of Dentistry continues to annually present one "Century Club Professor of the Year" award, and is pleased to recognize these Century Club Life members whose contributions began a tradition of private support for the School of Dentistry. Life members contributed \$100 each year for 12 years, or a one-time gift of \$1,000.

American Orthodontics	Dr. Marlowe L. Anderson	Judge Irving R. Brand	Dr. Sidney Chucker	Dr. Dale I. Erickson	Dr. Bryce A. Gilbertson*
Arnold A. Welu, Inc.	Dr. Robert W. Anderson	Dr. Phillip A. Brandeen	Dr. Keith A. Churchill	Dr. Donald O. Erickson	Dr. Raymond Gill
Women's Aux. MN State Dental Association	Dr. Anthony F. Antoncich	Dr. Dean Brandsness	Dr. Donavon D. Claussen	Dr. Donald R. Erickson	Dr. Paul D. Gillespie
Women's Aux. Mpls.	Dr. Lloyd J. Arhart	Dr. Dennis J. Brandstetter	Dr. & Mrs. Louis M. and Tess Cohen	Dr. Gary E. Erickson	Dr. James A. Gilman
District Dental Society	Dr. Lee A. Armstrong	Dr. David H. Brandt	Dr. Gage Colby	Dr. Jerome A. Erickson	Dr. James E. Gjerset
Bauer Dental Studio, Inc.	Dr. John J. Arouni	Dr. Dan E. Brannin	Dr. Harvey L. Colman	Dr. John F. Erickson	Dr. Joseph C. Gonnella, Jr.
Delta Dental Plan of MN	Dr. Robert E. Baker	Dr. William Branstad	Dr. & Mrs. Robert R. Conklin	Dr. Michael L. Erlandson	Dr. Donald R. Goodrich
Excel Dental Studios	Dr. Joseph R. Balach	Dr. William R. Bray	Dr. Richard R. Cooper	Dr. Robert R. Etem	Dr. John W. Gorder
Harrison Dental Studio, Inc.	Dr. Carl L. Bandt	Dr. Dwain S. Breitbart	Dr. Judd S. Copeland	Dr. L. Edward Evans	Dr. Robert J. Gores
Healthco Dental Supply	Dr. Douglas J. Barfield	Dr. Peter J. Brenny	Dr. B. E. Corcoran	Dr. Ronald R. Evenson	Dr. & Mrs. Robert J. Gorlin
MN Academy of General Dentistry	Dr. Allen R. Barnes	Dr. John Broker	Dr. Neil R. Covin	Dr. James Faith	Dr. John M. Gosche
MN Dental Association	Dr. John J. Barton	Dr. Donald W. Brown	Dr. Kemper M. Cowgill	Dr. Arlie R. Fast	Dr. Thomas J. Greenagel
NCR Foundation	Dr. Milton A. Bartsh	Dr. Edwin L. Brown	Dr. David D. Crane	Dr. Elray R. Fertig	Dr. William Gualtieri
Orthodontic Department	Dr. James O. Beck, Jr.	Dr. Neil C. Brownlow	Dr. John M. Cross	Dr. David J. Fihn	Dr. Kent C. Gulden
Premier Dental Laboratories	Dr. Robert Beerhalter	Mrs. V. Bruneau	Dr. Monte B. Curtis	Dr. Michael J. Fillmore	Dr. Carl Haedge, Jr.
Renstrom Dental Studio, Inc.	Dr. Earl M. Behning	Dr. Alvin Buechler	Dr. Melvin E. Dale	Dr. George E. Fischer	Dr. Mark Haemig
St. Paul District Dental Society	Dr. James W. Behrends	Dr. Harry P. Buetow	Dr. Arno E. Damerow	Dr. Albert G. Flor	Dr. Michelle M. Halcomb
W. E. Mowrey Co.	Dr. Bruce R. Beier	Dr. Roger J. Burke	Dr. Stephen H. Danielson	Dr. John M. Flor	Dr. Jerry H. Hall
Class of 1940	Dr. Roy E. Bengston	Dr. C. W. Burkhardt	Dr. J. Roger De Lange, Jr.	Dr. Timothy J. Flor	Dr. John W. Hamilton
Class of 1944	Dr. Gordon A. Bengtson	Dr. Thomas Byfield	Dr. Romulo L. DeLeon	Dr. Gerald R. Florence	Dr. Anna Hampel
Dr. Richard T. Addy	Dr. James D. Bennyhoff	Dr. Lewis R. Byzewski	Dr. Eldon Deadrick	Dr. Clarence S. Flynn	Dr. Peter R. Hansen
Dr. Herman T. Aeziman	Dr. David D. Benson	Dr. Bruce E. Carlson*	Dr. Theodore H. Dedolph, Jr.	Dr. Edwin J. Fong	Dr. Daniel E. Hanson
Dr. Steven C. Ager	Dr. Glenn F. Benson	Dr. Fred D. Carlson*	Dr. Anthony J. DiAngelis	Dr. William J. Ford	Dr. Duane T. Hanson
Ms. Donna Aker Dehn	Dr. Donald E. Bentley*	Dr. Gary L. Carlson	Dr. Dillon B. Donaldson	Dr. Howard M. Foster	Dr. Laverne Hanson
Dr. Raymond J. Albright	Dr. Gary Bergh	Dr. Kenneth L. Carlson	Dr. John Z. Doroschak	Dr. Cyrus R. Frank	Dr. Douglas G. Harlander
Dr. Ronald L. Albright	Dr. Jacob R. Bergstedt	Dr. Lowell Carlson	Dr. Harry Dorvinen	Dr. William P. Frantzich	Dr. Robert V. Harris
Dr. Erwin F. Allis	Dr. Sheldon M. Bernick	Dr. Robert O. Carlson	Dr. William J. Dresser*	Dr. Douglas R. Fraser	Dr. Ronald L. Harris
Dr. Dale W. Amundson	Dr. B. Berzina	Dr. Carl C. Caspersen	Dr. Lyonal I. Duff	Dr. Richard J. Fredlund	Dr. Michael J. Harrison
Dr. Gordon C. Amundson	Dr. Richard R. Bevis	Dr. Gerald D. Cavanaugh	Dr. Melvin P. Dumke	Dr. Roger J. Fredsall	Dr. William L. Hartwick
Dr. Vernon L. Amundson	Dr. E. J. Bifulk	Dr. Kim Mark Chart	Dr. Perry W. Dungey	Dr. Neal S. Freeman	Dr. George J. Hayano
Dr. A. William Anderson	Dr. Leon Birnberg	Dr. M. L. Chart	Dr. J. E. Echternacht	Dr. George F. Frisch	Dr. Alvin Hayashi
Dr. Bruce William Anderson	Dr. Nabil F. Bissada	Dr. R. K. Check	Dr. Harold S. Eberhardt	Dr. David Frogner	Dr. Arthur P. Hayward
Dr. Edward E. Anderson	Dr. Robert J. BJORAKER	Dr. D. S. Chernausek	Dr. O. Woodard Eklund	Dr. Darwin F. Fuller, Jr.	Dr. Chester I. Hegstrom
Dr. Clennan C. Anderson	Dr. Frank L. Blanchard	Dr. Effie Ngai-Pui Cheung	Dr. David J. Elasky	Dr. David L. Gadola	Dr. Elvin F. Heiberg
Dr. Gary C. Anderson	Dr. William G. Boerger	Dr. R. T. Chopp	Dr. Mahmoud El Deeb	Dr. Stanley J. Galuszewski	Dr. Robert L. Helleen
Dr. Jack L. Anderson	Dr. Clayton L. Bohn	Dr. Ralph O. Christensen	Dr. Mohamed El Deeb	Dr. Raymond Garland	Dr. Edward W. Henk
	Dr. Donald W. Bongard*	Dr. Stephen H. Christensen	Dr. R. P. Ellingson	Dr. & Mrs. Patrick A. Gaspard	Dr. Lee Hermann
	Dr. Ralph H. Boos	Dr. Wallace L. Christenson	Dr. Harold S. Elliot	Dr. Daniel Gatto	Dr. Idar J. Herring
	Dr. Irving A. Borkon	Dr. A. R. Christians	Dr. Richard P. Elzay	Dr. George A. Geist	Dr. Robert W. Hesse
	Dr. Allan J. Bornholdt	Dr. Ronald M. Christianson	Dr. Thomas J. Emond	Dr. Ronald E. Geistfeld	Dr. Arnold J. Hill, Jr.
	Dr. Wayne L. Bottomley			Dr. B. H. Gervais	Dr. William C. Hill
	Dr. John F. Boylan			Mrs. Ruth Getz	Dr. Paul W. Hiller
	Dr. Emmert M. Brackney				Dr. Dale A. Hills

Dr. Gustav A. Hinterberg
 Dr. Miles B. Hirschev
 Dr. Marmiom & Ruth Hoaglum
 Dr. Thomas T. Hodgson
 Dr. Cordelia E. Hoffmann
 Dr. Kenneth A. Hoffmann
 Dr. Mellor R. Holland
 Dr. Peter M. Holm
 Dr. Mark F. Holmberg
 Dr. Norman O. Holte
 Dr. Robert R. Hoover
 Dr. Kenji Horita
 Dr. James W. Horst
 Dr. Lisa P. Howard
 Dr. Melvin C. Humbert
 Dr. James H. Hunder
 Dr. Warren W. Hunt
 Dr. Odein L. Hyland
 Dr. James E. Indrehus
 Dr. Kay H. Ingebrigtsen
 Dr. Stephen P. Inglis
 Dr. Willis B. Irons
 Dr. John R. Isaacson
 Dr. Robert J. Isaacson
 Dr. B. A. Iverson
 Dr. Walter G. Iverson
 Dr. Lloyd E. Jacobson
 Dr. Arthur T. Jaeger
 Dr. W. Douglas James
 Dr. Eugene F. Jasper
 Dr. Mark T. Jaspers
 Dr. Howard K. Jensen
 Dr. James R. Jensen
 Drs. Robert & Jane Jensen
 Dr. Carroll E. Jensen
 Dr. Gary & Mary Jeanne Jernberg
 Dr. Robert D. Jeronimus
 Dr. Dean F. Johnson
 Dr. Dennis A. Johnson*
 Dr. Donald Edward Johnson
 Dr. Donald W. Johnson*
 Dr. J. Kenneth Johnson
 Dr. Jerry E. Johnson
 Dr. Oliver W. Johnson
 Dr. Paul W. Johnson
 Dr. Raymond E. Johnson
 Dr. Robert W. Johnson, Jr.
 Dr. Ross H. Johnson
 Dr. Roy A. Johnson
 Dr. Russell J. Johnson
 Dr. Thomas G. Johnson
 Dr. Warren D. Johnson
 Dr. William F. Johnson
 Dr. William R. Johnson
 Dr. Douglas A. Jolstad
 Dr. Richard N. Jones, Jr.
 Dr. Terry T. Jones
 Dr. Walter E. Jones
 Dr. Paul W. Jorgensen
 Dr. Saul S. Kanun
 Dr. John S. Kanyusik
 Dr. Peter F. Kappel
 Dr. Lois J. Karl
 Dr. Lennart E. Karlson
 Dr. Harris E. Keel
 Dr. Douglas K. Keim
 Dr. Gene S. Kelley
 Dr. Glaydon Kern
 Dr. Clarence F. Ketterling
 Dr. David G. Keup
 Dr. Loren W. Kihlstrom
 Dr. Thomas F. Kiner
 Dr. Barry J. Kinneberg
 Dr. George J. Kinney, Jr.
 Dr. Thomas I. Kintner
 Dr. Edwin J. Kleimola
 Dr. Merlin N. Kleinhuizen
 Dr. Jerome H. Kleven
 Dr. Robert L. Kline
 Dr. John R. Klobe
 Dr. Gordon W. Knudson
 Dr. A. Jarvis Knutson
 Dr. Paul W. Koch
 Mrs. Virginia Koch
 Dr. Lawrence L. Korda
 Dr. Thomas J. Kotula
 Dr. William D. Kranzler
 Dr. Allen G. Krebs
 Dr. Earl A. Krebs
 Dr. Zenith Kremen
 Dr. Robert G. Kroll
 Dr. Cory H. Kruckenberg
 Dr. Ramesh K. Kuba
 Dr. Clarence B. Kurz
 Dr. R. A. Kuth
 Dr. Paul H. Kwon
 Dr. Ronald E. La Belle
 Dr. Edwin J. Laberee
 Dr. John Phillip Lande
 Mr. Deane W. Langguth
 Dr. Timothy R. Langguth
 Dr. Odin M. Langsjoen
 Dr. Thomas R. Larkin
 Dr. Vernon R. Larsen
 Dr. Bert R. Larson
 Dr. Daniel A. Larson
 Dr. F. A. Larson
 Dr. James W. Larson
 Dr. Steven J. Larson
 Dr. John W. Lauer
 Dr. Robert Lauer
 Dr. Richard J. Lawler
 Dr. George C. Lawther
 Dr. Ronald K. Leach
 Dr. Edgar H. Lechner
 Dr. Robert E. Lee
 Dr. Walter D. Lee
 Dr. Michael W. Lehnert
 Dr. Dean Leonard
 Dr. Myer Leonard
 Dr. Gordon A. Leroux
 Dr. Gordon J. Lester
 Dr. Sherman A. Levenson
 Dr. Eugene S. Ley
 Dr. Edward C. Linden
 Dr. Clarence S. Lindley, Jr.
 Dr. David T. Lingle
 Dr. James R. Little
 Dr. Stephen F. Litton
 Dr. D. W. Loudon
 Dr. Anthony L. Lund
 Dr. G. L. Lundholm
 Dr. James F. Lundstrom
 Dr. Gary D. Lunstad
 Dr. B. Michael Manthei
 Dr. Michael C. Mardell
 Dr. Raymond M. Mardell
 Dr. Leslie V. Martens
 Dr. Julius M. Maslow
 Dr. Thomas E. Mauszycki
 Dr. James F. May
 Dr. James L. Mayerle
 Dr. Robert J. Mayhew
 Dr. Charles B. McAllister
 Dr. Thomas J. McCarter
 Dr. Terrence J. McCollow
 Dr. James S. McDonald
 Dr. Robert E. McDonnell
 Dr. J. David McGill
 Dr. Charles F. McGuiggan
 Dr. James W. McGuinness
 Dr. Dennis & Beverly McMahon
 Dr. Donald G. McMillan*
 Dr. E. T. McNiece
 Dr. John H. Menefee
 Dr. Henry J. Menke
 Dr. Robert J. Michelich
 Dr. James J. Michels
 Dr. David P. Miller
 Dr. Robert B. Miller
 Dr. Robert R. Miller
 Dr. Thomas E. Millham
 Dr. & Mrs. Robert Miner
 Dr. Floyd L. Misner
 Dr. James R. Mitchell
 Dr. Dale G. Mlinar
 Dr. Richard H. Moen
 Dr. Alan D. Mogck
 Dr. Jerome E. Mohs
 Dr. Thomas A. Molin
 Dr. Eugene A. Moll
 Dr. Edward J. Monahan, III
 Dr. George Monson
 Dr. James W. Monson
 Dr. Patrick J. Morgan
 Dr. Wallace J. Morlock
 Dr. Mylon B. Morris
 Dr. Andrew T. Morstad
 Dr. Bernard J. Mullaney
 Dr. Robert Mundt
 Dr. Brian F. Murn
 Dr. Thomas D. Murphy
 Dr. William Mussone
 Jane C. Myre, D.H.
 Dr. James A. Nasby
 Dr. Donald O. Nelson
 Dr. Douglas A. Nelson
 Dr. Edward T. Nelson
 Dr. G. Kenneth Nelson
 Dr. K. M. Nelson
 Dr. Leslie B. Nelson
 Dr. Richard L. Nelson
 Dr. Robert T. Nelson
 Dr. William H. Newhouse
 Dr. I. R. Niels
 Dr. Steven J. Nielsen
 Dr. William B. Nienaber
 Dr. George Nishida
 Dr. Howard Michael Noack
 Dr. Frederick W. Noble
 Dr. James C. Nord
 Dr. John Nord
 Dr. Oscar C. Nord
 Dr. Robert E. Nordby
 Dr. William J. Norman
 Dr. Guilan Norouzi
 Dr. Donald A. Norris, Jr.
 Dr. James H. Nyberg
 Dr. R. P. Nyberg
 Dr. James J. O'Brien
 Dr. Lee W. Odland
 Dr. Kermit H. Ohlsen
 Dr. Herman R. Oleson
 Dr. Richard C. Oliver
 Dr. Edmund "Sev" Olsen
 Dr. Carl J. Olson
 Dr. Dale V. Olson
 Dr. John W. Olson
 Dr. Leslie T. Olson
 Dr. Mark E. Olson
 Dr. Richard A. Olson
 Dr. William H. Olson
 Dr. Samuel J. Oltmans
 Dr. David J. Osdoba
 Dr. Richard J. Osmundson
 Dr. Burton D. Ostergren
 Dr. Charles D. Ostergren
 Dr. W. Douglas Ostergren
 Dr. Charles R. Ott
 Dr. Robert H. Owen
 Dr. James R. Palmquist
 Dr. John D. Palmquist
 Dr. Harold J. Panuska
 Dr. Gregory C. Pappenfus
 Dr. Walter B. Parsons
 Dr. Richard L. Patterson
 Dr. Vincent J. Paul
 Dr. Richard C. Paulson
 Dr. Lloyd E. Pearson*
 Dr. Bruno A. Perell
 Dr. Charles Peterka
 Dr. Douglas V. Petersen
 Dr. Raymond G. Petersen
 Dr. Raymond L. Peterson
 Dr. Craig A. Peterson
 Dr. Ralph C. E. Peterson
 Dr. William A. Peterson
 Dr. Jack H. Pfister
 Dr. Bruce L. Pihlstrom
 Dr. Richard D. Pihlstrom*
 Dr. Joe Manning Pike
 Dr. John B. Pike
 Dr. Irving H. Posnick*
 Dr. William Ross Posnick
 Dr. William Powell
 Dr. Harold A. Pressman
 Dr. Robert W. Prochnow
 Dr. John R. Quast
 Mr. Walter C. Rasmussen
 Dr. Gerald K. Rasmussen
 Dr. Frederick L. Rayman, Jr.
 Dr. Lawrence J. Record
 Dr. Omer K. Reed
 Dr. Duane E. Reiter
 Dr. Louis F. Remark
 Dr. David Remes
 Dr. Richard C. Render
 Dr. Mark R. Renneke
 Dr. Ronald G. Rhoades
 Dr. L. L. Rieke
 Dr. T. A. Rogstad
 Dr. Clayton A. Rohrer
 Dr. Curtis A. Rohrer
 Dr. Gary M. Rohrer
 Dr. H. Rudy Ronning
 Dr. Gerald A. Rosdahl
 Dr. Maurice Rosen
 Dr. Roy J. Ross
 Dr. Richard E. Rossi
 Dr. H. D. Rovelstad
 Dr. Robert G. Ryan
 Dr. Kenneth L. Sabs
 Dr. Reed E. Sanford
 Mr. Harvey Sarner
 Dr. Leonard A. Sarvela, Jr.
 Dr. A. Howard Sather
 Dr. Andrew O. Sather
 Dr. John F. Scanlon
 Dr. Erwin M. Schaffer
 Dr. Harold R. Scheibe
 Dr. Steven B. Schletty
 Ms. Myrtle Peterson Schmidt
 Dr. Alan R. Schmucker
 Dr. Carl F. Schneider
 Dr. Eugene V. Schoener
 Dr. Harry M. Schoening
 Dr. James A. Schorn
 Dr. Louis E. Schricker, Jr.
 Dr. Vernon E. Schuckhart
 Dr. Timothy J. Schuebel
 Dr. Max A. Scholdt
 Dr. Bernard W. Schulte
 Dr. William K. Schultz
 Dr. J. H. Schwantes
 Dr. Steve M. Schwarten
 Dr. Robert* & Inez Schwegler
 Dr. Thomas R. Seidelmann
 Dr. James R. Seifert
 Dr. H. H. Serr
 Dr. Lewis B. Severance
 Dr. Kenneth S. Severn
 Dr. Gregory M. Sheehan
 Dr. Abe R. Sher
 Dr. Robert Q. Sigford
 Dr. Hugh R. Silkensen
 Dr. Arlen G. Simi
 Dr. Mark S. Simmons
 Dr. Richard J. Simonsen
 Dr. Charles D. Simpson
 Dr. Leo C. Sinna
 Dr. Chester D. Sitz
 Dr. Thomas L. Sitzer
 Dr. R. A. Sjodin
 Dr. Melvin O. Sletten
 Dr. Wayne O. Sletten
 Dr. John E. Smith
 Dr. Myron J. Smith
 Dr. Stephen C. Smith
 Dr. Ronald A. Snyder
 Dr. Arthur J. Snyder, Jr.
 Dr. Dale T. Soderberg
 Dr. Hubert J. Solberg
 Dr. Lowell F. Sorenson
 Dr. Steven R. Soroko
 Dr. Leo A. Spanjers
 Dr. T. Michael Speidel
 Dr. James Spitzmueller
 Dr. Russell C. Staberg
 Dr. Eric Stafne*
 Dr. Vernon R. Steffens
 Dr. J. David Steen
 Dr. Gregory W. Stende
 Dr. Alan O. Stewart
 Dr. Sheldon Stewart
 Dr. Franklin R. Stickel
 Dr. Angus Stoesz
 Dr. Thomas J. Stone
 Dr. Glenn J. Stratton
 Dr. Wesley J. Streed
 Dr. C. G. Stromberg
 Dr. Roland L. Stromsborg
 Dr. Arthur W. Swanstrom
 Dr. Robert L. Swanstrom
 Dr. Donald L. Sween
 Dr. James A. Swenson
 Dr. James I. Swenson
 Dr. Richard J. Swenson
 Dr. David E. Taber
 Dr. Iden G. Takaichi
 Dr. Nerwin A. Theige
 Dr. Dennis C. Theis
 Dr. John W. Thibodo
 Dr. Elmer E. Thiesse
 Dr. B. O. A. Thomas
 Dr. Theodore S. Thompson
 Dr. Jerold E. Thoreson
 Dr. Fred Tidstrom
 Dr. John W. Tiede
 Dr. Reuben J. Tieszen
 Dr. Michael J. Till
 Dr. Hubert J. Tofte
 Dr. C. A. Tollefsrud
 Dr. Jack E. Tomhave
 Dr. James J. Tomhave
 Dr. Richard W. Topel
 Dr. Richard W. Towner, Jr.
 Dr. Ralph V. Townsend
 Dr. Richard J. Trezona
 Dr. Terrance L. Tri
 Dr. James E. Trost
 Dr. Lloyd H. Truax
 Dr. Robert K. Tschabrun
 Dr. Arthur F. Turek
 Dr. Robert O. Uppgaard
 Dr. Odd Valle
 Dr. Robert F. Van Etta
 Dr. Frank Veden
 Dr. Stanley W. Veker
 Dr. R. A. Vickers
 Dr. Harold H. Vigeland
 Dr. N. J. Vizzier
 Dr. J. David Vogel
 Dr. John A. Volkerding
 Dr. Daniel E. Waite
 Dr. Paul O. Walker
 Dr. Greg T. Walling
 Dr. Walter S. Warpeha, Sr.*
 Dr. Walter S. Warpeha, Jr.
 Dr. Donald F. Watson
 Dr. Lloyd J. Weber
 Dr. Robert W. Weinrich
 Dr. David E. Weiss
 Mrs. Amos S. Wells
 Dr. Charles J. Welter
 Dr. Lowell Wenberg*
 Dr. Ralph J. Werner*
 Dr. Arne R. Westerback
 Dr. Robert W. Wiethoff
 Dr. Jay Wilcox
 Dr. Charles Wilkinson*
 Dr. George H. Winn
 Dr. Michael T. Winter
 Dr. Carl J. Witkop, Jr.
 Dr. F. George Woessner
 Dr. Larry F. Wolff
 Dr. Clifford C. Wood
 Dr. Frank W. Worms
 Dr. William J. Yock, Jr.
 Dr. Allen A. Young
 Dr. William Yseth
 Dr. Hussein A. Zaki
 Dr. Darrell W. Zenk
 Dr. Edgar F. Ziegler
 Dr. Walter M. Zierman
 Dr. O. W. Zimmerman
 Dr. Michael Zustiak

*Past President

Joel Rudney Receives Century Club Professor of the Year Award



Joel Rudney

PHOTO BY SCOTT STREBLE

Joel Rudney, professor in the Department of Diagnostic and Biological Sciences, has been named the 2008 Century Club Professor of the year. This award is the School of Dentistry's highest honor and is conferred upon one faculty member each year in recognition of outstanding contributions in education, research and service.

You might say that Rudney has always had an interest in dentistry, but he began his career by limiting that interest to the study of really *old* teeth. An anthropologist by early training,

Rudney studied the dental remains of humans in Nubia (the area that is now southern Egypt and Sudan) for clues about the health of ancient communities. At the time, he was working on a Ph.D. in physical anthropology at the University of Colorado. Rudney came to the University of Minnesota to study cariology in 1981 and decided to stay, earning an M.S. in oral biology and a certificate in cariology, both in 1985.

Presenting the Professor of the Year Award, Dean Patrick Lloyd recalled Rudney's anthropology background and described him as the dental school's own "Indiana Jones." But unlike Professor Jones of the movies, who rescues lost treasures and fights evil empires, Rudney fights the invaders that cause oral disease.

Rudney is the recipient of 23 years of research funding from the National Institute for Dental and Craniofacial Research (NIH), totaling over \$2.5 million.

Over time his research interests expanded from investigations of antimicrobial proteins in saliva as host defense factors in oral ecology, to investigations that focus on interactions between oral bacteria and mucosal cells. His recent research on the possibility that normally noninvasive bacteria may gain entry into epithelial cells by adhering to invasive bacteria was featured on the cover of the prestigious journal *Infection and Immunity* (January, 2006). He also studies the extent to which the bacteria that cause periodontal disease are present outside the gums, and if they use the cheek cells as a reservoir.

In addition to his own scientific endeavors, Rudney serves the School of Dentistry in numerous roles in the classroom and beyond. He has been a member of the dentistry admissions committee for twelve continuous years, is currently the director of student research and the interim associate dean for research, and teaches in the undergraduate program and in the graduate program in oral biology.

A teacher of significant import, Rudney directs two courses for first-year students and has been the research mentor for 17 dental students and eight dental residents and graduate students. "I do a lot of teaching one-on-one," he says. He also mentors students in his own lab, and matches students with other mentors. He's the director of the Summer Research Fellowship Program, which introduces between 16 and 18 students a year to the world of dental research. "The program exposes students to academic dentistry," he says. "That opens them to a wider world of professional possibilities and enhances their view of what it means to be a dentist."

A Letter from the President



Dear fellow alumni,

The relationships we establish with others define some of the most important moments in our lives. We spend our whole lives creating, nurturing, maintaining and sometimes ending relationships with others. We have relationships with our spouses, our children, friends and neighbors. We create relationships with the people who work in the everyday places we go—the drycleaner, the bank, the grocery store, the doctor's office. In dentistry we also create relationships with our patients, our colleagues and our staff. We work hard to take care of those relationships and both sides benefit. When we *give* we *get* much more back in return.

This spring I had a chance to participate in the White Coat Ceremony for the second-year dental and dental hygiene students. The students were transitioning from preclinical training to clinical training. It is an exciting milestone for students. While preparing my remarks I began to think about my time at the School of Dentistry, the place dentistry has in my life now, and how proud and thankful I am for the education I received there. As an alumnus of the School of Dentistry, I have a continuing relationship with the school. This is a relationship that requires nurturing and maintaining, too.

Most of us probably don't think about our relationship with the School of Dentistry very often, but the important fact is that we need our school and our school needs us. When we nurture that relationship, we gain much more in return. Nurturing your relationship with the School of Dentistry can be as simple as joining the School of Dentistry Alumni Society (SODAS). The alumni society is a visible way of supporting the school and those who study and work there. In fact, the mission of the SODAS is "to promote lifelong relationships with alumni, faculty and staff, students, parents and friends of the University." Many of our colleagues already choose to maintain and nurture their relationship with SODAS by joining as life members. This provides the school with a strong and steady base of support.

Other ways to improve this relationship include getting involved with the SODAS board, participating in board activities like the Alumni Golf Classic, donating to the Cap and Gown Fund, and volunteering to be a legislative advocate to help garner support for the University and its projects such as biomedical science research and the light rail central corridor.

It is through the donation of time, talents, and dollars by our alumni that we are able to provide scholarships and awards for students. We sponsor the White Coat Ceremony I mentioned above and the Senior Recognition Banquet. Our generous alumni provide the caps and gowns for the graduating dental and dental hygiene students. We also sponsor Clinical Grand Rounds held on the first Thursday of the month which features a different speaker each month to discuss various current dental topics. This is an outstanding continuing education opportunity if you've never attended. Another new program that the SODAS is involved in is student leadership training. This one-day seminar helps give students the skills they will need to be leaders in the profession of dentistry and in the communities in which they will live and work.

As you can see, there are many ways to become involved with the School of Dentistry as an alumnus. So, take time to think about how you might be able to nurture your relationship with the School of Dentistry. You might be surprised by what you get back!

Sincerely,

A handwritten signature in black ink that reads "Liz Rydell". The signature is written in a cursive, flowing style.

ELIZABETH RYDELL, D.D.S. '91
President, School of Dentistry Alumni Society

The 14th Annual
**School of Dentistry
 Alumni Society**



Duffers and scratch golfers teed-off for a day of friendly rivalry at the 14th Annual Dental Golf Classic, held July 25, 2008 at the Majestic Oaks Golf Course. Eighty-five golfers, including alumni, students and friends of the School of Dentistry, enjoyed the camaraderie and fun golf event. A special thanks to all of the golfers and corporate sponsors for making this a successful day. Proceeds support numerous Alumni Society projects, including scholarships.

Special congratulations to the following contest winners:

Special Awards:

- Men's Long Drive:** Eric Kohorst
Women's Long Drive: Jane Hartner
Closest to the Pin: Jack Pryd
Longest Putt: Dan Gorder

Top Three Teams:

- Team 1:** Walt Parsons Richard Wiberg
 Mike Kurkowski Paul Kirkegaard
Team 2: James Hom Tom Inglis
 Michael Hom Courtney Welch
Team 3: Robert Marolt Scott Lingle
 Tim Emmer Robert Proebstle

The Finishing Touch: Alumni Sponsor Caps and Gowns for Grads

With an outpouring of generosity, alumni and friends made contributions to underwrite the cost of caps and gowns for 2008 classes of dental and dental hygiene graduates. The effort, led by Tim Langguth ('73), this year's Cap and Gown Committee chair, has been a tradition for the Society's board of directors since 1997.

A list of 2008 donors to the Cap and Gown campaign is provided below, and we send a sincere "thank you" to all contributors for their help in welcoming the graduating dentistry and dental hygiene classes to the profession.

- | | | | | | |
|---|--|--|--|---|--|
| Dr. William S. Akey
All Your Smile Needs
Dental Center | Dr. Stephen H. Danielson
Dr. Reed D. Dill
Dr. Nicholas C. Dorsher | Dr. David A. Herfendal
Dr. Patrick R. Hermanson
Dr. James W. Hill | Dr. Scott D. Lingle
Lisbon Smiles
Dr. Stephen F. Litton | Dr. John C. Ofstehage
Dr. Maureen A. Ohland
Dr. Lynne M. Olson | Dr. Stephen N. Schwartz
Dr. Thomas R. &
Julie D. Seidelmann |
| Dr. Troy A. Alton
Ms. Jeanne M. Anderson
Dr. Gary C. Anderson | Dr. William J. Dresser
Drs. Honkola & Honkola
Dr. David K. Dungey | Dr. Arnold J. Hill
Dr. Robert F. Hobday
Dr. James D. Hom | Dr. Patrick M. Lloyd
Dr. Daniel G. Lysne
Dr. Michael J. Madden | Dr. Dale V. Olson
Drs. Mark R. & Jo Ann
Omlie | Dr. Clayton R. Shepard
Dr. E. K. Shirley
Dr. Stephen K. Shuman |
| Dr. Jon D. Anderson
Arnold Orthodontics, PA
Dr. Bashar Bakdash | Dr. David K. Dungey
Eau Claire Family
Dental, SC | Dr. Sandra J. Houck
Houston Dental Clinic, PC
Dr. William A. Hunter | Dr. Michael J. Madden
Main Street Family Dental
Care, PA | Oral Maxillofacial
Surgical Consultants
Dr. Scott C. Osborn | Dr. Stephen K. Shuman
Skyway Dental Clinic
Dr. Dan R. Slaughter |
| Dr. Dellin R. Bakkum
Dr. A. Richard Ballin
Dr. Carl L. Bandt | Elmwood Family
Dentistry
Enget & Johnson Family
Dentistry | Dr. Inglis Orthodontics, PLLC
Dr. Robert J. Isaacson
Dr. Edward K. Ishii | Dr. Mark M. Malmberg
Dr. Leslie V. Martens
Dr. Tony P. Martin | Dr. Gerald W. Paczkowski
Ms. Annie Pennola
Pearson | Dr. Dan R. Slaughter
Dr. Jamie L. Sledd
Smile Solutions, PC |
| Dr. Joseph S. & Ms. Sara
M. Basile
Ms. Marie A. Baudek | Dr. Jay P. Erickson
Dr. Kenneth C. Erickson
Dr. Steven M. Erlandson | Dr. Edward N. Johnson
Dr. Brent T. Johnson
Dr. David H. Johnson | Dr. Jeffrey A. Mathews
Dr. Wayne A. Mattern
McClellan-Swanson | Dr. Jorge Perdigao
Dr. Ronald M. Peterson
Dr. Jack H. Pfister | Dr. James E. Spitzmueller
Ms. Heidi L. Spoelhof
St. Paul Dental Center |
| Dr. Steven J. & Ms. Debra
R. Baune
Dr. Robert H. Beaumont | Dr. Roger G. Ettel
Dr. Gerald L. Fields
Dr. George E. Fischer | Dr. Dennis A. Johnson
Ms. Kimberly S. Johnson
Dr. David W. Johnson | Dr. Kenneth D. McDougall
Dr. Tanner J. McKenna
Dr. Carol M. Meyer | Dr. Thomas J. Pink
Ms. Maria R. Pintado
Dr. Randolph R. Pitzer | Dr. Eric E. Stafne
Dr. Dawn M. Stavish
Stende Enterprises, Inc. |
| Dr. Janell J. Beck
Dr. Thomas M. Beckman
Dr. Bruce R. Beier | Dr. John A. Fishpaw
Dr. Brent L. Florine
Forestview Family
Dentistry | Dr. Kimberly S. Johnson
Dr. David W. Johnson
Dr. Orvis J. Johnson | Dr. Marmar Miar
Dr. Carney M. Middleton
Dr. John L. Mike | Dr. Randolph R. Pitzer
Plains Dentalcare
Dr. Sherwood R. &
Sharon M. Pomeroy | Dr. Loren J. Taple
Dr. Michael J. Till
Dr. Carey P. Tri |
| Drs. Stephen A. &
Elizabeth R. Bejarano
Dr. Douglas T. Bengson | Dr. Jeffrey J. Fox
Dr. Patrick J. Foy
Mr. Ronald J. & Ms. Rita
K. Garni | Dr. Mark R. Jung
Dr. Lois J. Karl
Dr. John Keaveny | Dr. Richard H. Moen
Dr. Karlind T. Moller
Dr. Michael J. Monti | Prairie Oral Surgery, Ltd.
Prairie Ridge
Orthodontics
Dr. Gerald W.
Rauchwarter | Dr. Paul J. Tronsgard
Dr. Joseph P. Trowbridge
Dr. Todd T. Tsuchiya
Dr. William W. Turner |
| Dr. Glenn F. Benson
Mr. Fred E. Bertschinger
Dr. Peter A. Berven | Mr. Ronald J. & Ms. Rita
K. Garni
Dr. Phillip M. Gattuso | Dr. Douglas K. Keim
Kelley Dental Clinic, PA
Dr. Kristin H. Kenner | Dr. Michael J. Monti
Drs. Randall D. & Julie A.
Moseng | Dr. Frederick C. Requa
Ms. Jody L. Reul
Riverside Dental | Dr. Todd T. Tsuchiya
Dr. William W. Turner
Dr. James A. & Mrs.
Marianne Ude |
| Dr. John P. Beyer
Ms. Christine M. Blue
Dr. Jo Ann C. Boraas | Dr. Gerald Larson, Ltd.
Dr. Joseph A. Gibilisco
Dr. Barry R. Godes | Dr. David G. Keup
Dr. George J. Kinney
Ms. Julie A. Kinney | Dr. Ryan M. Nelson
Dr. Stephen R. Nelson
Dr. Bruce M. Nelson | Dr. Michael R. Rohrer
Dr. Charles O. Rohrer
Dr. William R. Sabes | Dr. Marvin L. Ugland
Dr. Lori S. Veerman
Dr. Dean L. Wahl |
| Dr. Bernard Borkon
Dr. Nathan G. Bourassa
Dr. Mark A. Brahs | Dr. Daniel J. Goede
Grand Dental Center, PC
Greer Dental, PC | Ms. Julie A. Kinney
Klein Resource Grp, LLC
Dr. Dean D. Knudsen | Dr. James D. Nickman
Ms. Erin R. Niedermaier
Dr. Paul W. Niemi | Dr. Michael D. Rohrer
Dr. Charles O. Rohrer
Dr. William R. Sabes | Dr. Herbert N. Weisman
Ms. Andrea C. Welch
Dr. Richard A. Wiberg |
| Dr. Judith A. Buchanan
Dr. Todd G. Calder
Dr. Peter A. Cameron | Dr. Susan G. Gross
Dr. Lawrence G. Gunner
Dr. James E. Haack | Dr. Brian D. Koch
Dr. Woojin Kwon
Dr. Leilani L. LaBelle | Dr. Oscar C. & Helen L.
Nord | Saint Paul District
Dental Society
Dr. Christopher N. &
Diane A. Sands | Dr. Gary L. Williams
Dr. Mark K. Williamson
Dr. Gerald A. Wimmer |
| Dr. Jeffrey F. Carlson
Dr. John M. Carrels
Ms. Darlene D. Chesney | Dr. Roy W. Hakala
Dr. Patricia L. Halloran
Dr. Michael J. & Mrs.
Sandra A. Harrison | Dr. Venetia Laganis
Lake Minnetonka
Orthodontics, PA
Dr. Douglas L. Lambert | Dr. John O. Nord
Dr. James C. Nord
Dr. Hugh E. Norsted | Sandstone Dental
Office, Ltd.
Dr. Reed E. Sanford
Dr. Scott N. Schaar | Dr. George H. Winn
Dr. William A.
Woehrmann
Dr. Larry F. Wolff |
| Circle Pines Dental, PA
Dr. Charles H. Colby
Dr. Robert E. Conlin | Dr. Michael Harrison
Dr. Thomas M. & Mrs.
Michelle Harrison | Dr. Timothy R. Langguth
Dr. Ignatius K. Lee
Dr. Larry Legacie | Dr. Hugh E. Norsted
North Branch Dental
Northern Endodontic
Assoc. Ltd. | Dr. Steven B. Schletty
Ms. Leslee A. Schmidt
Dr. Herbert W. Schulte | Dr. George H. Winn
Dr. William A.
Woehrmann
Dr. Larry F. Wolff
Woodgrove Dental, PA |
| Dr. Neil R. Covin | | Dr. Julie M. Leshner | Dr. Larry Legacie
Dr. Julie M. Leshner | | Dr. Lisa A. Young |

Class Notes

Please submit brief notices about milestone events and activities to: U of M School of Dentistry, Alumni Relations (attn: Annie Pennola Pearson), 515 Delaware St. S.E., 15-136 Moos Tower, Minneapolis, MN 55455 or penno008@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.

1938

Walter Warpeha Sr. (D.D.S.), Minneapolis, passed away August 5 at age 95. An admired prosthodontist in both private practice and academia, Warpeha also served as a consultant on the cleft palate management panel at Sister Kenny Institute in Minneapolis and the Minnesota Crippled Children's Service in Duluth. He was instrumental in moving the Kenney Institute program to the University in 1965, establishing the Cleft Palate Maxillofacial Clinic (CPMC) as a special program in the School of Dentistry. He was, for more than a dozen years, a teacher and mentor to prosthodontic residents and an outstanding clinician in the CPMC. He taught the concepts and techniques of speech appliances, provided invaluable services to patients, and remained an ardent CPMA supporter throughout his lifetime.

Warpeha was also a president of the School of Dentistry Century Club and its Alumni Society, and the American Prosthodontic Society. He was the founder, first president, and long-time secretary-treasurer of the Minnesota Prosthodontic Society; a fellow of the American College of Prosthodontists, American College of Dentists, and International College of Dentists; and a diplomate of the American Board of Prosthodontics. He was a member of the Midwest Council of Prosthodontists; American Cleft Palate Association; Board of Directors of the Minnesota Dental Foundation, Inc; and he was a charter member and president of the Minnesota Restorative Academy.

1950

Odin M. Langsjoen (D.D.S.), Duluth, passed away April 1 at age 84. Langsjoen was a commissioned officer in both the Army and Navy, serving much of his Navy time as an executive officer aboard a landing craft in the Pacific Theater where he received a purple heart for wounds received in the 1945 battle for Okinawa. Langsjoen graduated second in his dental class, was a teaching assistant at the School of Dentistry and later a part-time faculty member (1961-63), and then retired

to private practice in St. Cloud. He returned as director of the school's dental anatomy course (1968-71), was appointed chair and associate professor of the Dental Hygiene Program at the University of Minnesota, Duluth (1971-81), then taught courses in dental hygiene until his retirement (1988).

An adventurer and forensic odontologist, he traveled the world to study mummified remains in Chile and the Canary Islands and to help identify the remains of victims of crime. His adventures earned him the nickname "Indiana Odie" and he later authored a chapter in *The Cambridge Encyclopedia of Human Paleopathology*. He was president of the Minnesota Dental Association (1966), a member of the Minnesota Board of Health (1968-71), commissioner of the accreditation team of the ADA Council on Education (1976-80), and a fellow of the ACD and the International College of Dentists, serving as ACD president from 1982-83. In 1984, Langsjoen was the recipient of the Ambert B. Hall Award from the School of Dentistry.

1953

Donald F. Watson (D.D.S.), St. Louis Park, passed away June 18 at age 84. Watson flew in the Pacific as a WWII Marine Air Corps pilot. His dental office was the first signed tenant at Southdale Medical Building in Edina. He was an active member of St. George's Episcopal Church and helped sponsor twelve Cuban refugee families in the 1960s who became enriching, extended members of his own family. Watson traveled to Honduras in 1972 with the Christian Medical Society, which later named him its dental director. Ten years later, he co-founded International Health Service and spent more than 25 years assisting people in Honduras. Watson also co-founded Tierra Santa Home for Abandoned Children in Villa de San Antonio, Honduras. Watson was an active member of St. Louis Park Lions Club, a Shriner, a life member of the ADA, and a member of the Society of Mayflower Descendants.

1957

Robert E. Krumholz (D.D.S.), Palm Desert, Calif., passed away on January 18. Krumholz attended the University of North Dakota Grand Forks where he was on the hockey team and was inducted into the Hockey Hall of Fame in 2002. He also served in the University National Guard. Krumholz then attended the University of Minnesota and set up practice in Austin, later moving his practice to Vail, Colo. where he enjoyed being a ski instructor and beekeeper. Krumholz also enjoyed fishing, hunting, golf, and remodeling his residences.

1961

Charles H. Buscher (D.D.S.), New Brighton, passed away February 14, at age 75.

1971

Howard W. Taylor (D.D.S.), New Brighton, was installed as Treasurer of the St. Paul District Dental Society.

1974

Mark R. Omlie (D.D.S.), Eden Prairie, was installed as vice president of the Minneapolis District Dental Society.

1981

Gary A. Bolmgren (D.D.S.), Richfield, was installed as secretary/treasurer of the Minneapolis District Dental Society.

1981

Craig R. Holtey (D.D.S.), Coon Rapids, passed away on May 25. He practiced in Hayward, Wis. where he was always willing to help those who could not afford dental services, often working after-hours and on weekends to treat the underserved. A man of many interests, he was a novice sailor who was married aboard his first sailboat, a MacGregor 25 he named "Alibi." He enjoyed sailing Lake Superior with friends, camping, fishing, cross-country skiing, and daytrips on his motorcycle. He also enjoyed wood-working and taught himself to build canoes, often sharing the experience of their maiden voyages with his younger brother. Always with a preference for the exotic, he had five piranhas as aquarium pets in lieu of the more common goldfish. He kept record and coin collections, and in his younger years, was an accomplished gymnast. Holtey was also a gifted gardener who, while in dental school, worked with a friend from the U-M agricultural program to perfect a new strain of sweet corn.

1983

Kenneth J. Zucker (D.D.S.), St. Paul, was appointed to the Board of Directors of the American Association of Endodontists.

1984

Donna J. Stenberg (D.D.S.), Stillwater, was installed as MDA Trustee of the St. Paul District Dental Society.

1989

Loren J. Taple (D.D.S.), Eagan, was installed as president of the St. Paul District Dental Society.

1997

James D. Nickman (D.D.S.), Lino Lakes, was installed as president of the Minneapolis District Dental Society.

Rosalie J. Perpich (D.D.S.), Mahtomedi, was installed as secretary of the St. Paul District Dental Society.

Remembering Our Faculty

We share these updates on the passing of former faculty members. Obituaries of faculty who are alumni of the University of Minnesota School of Dentistry are included in Class Notes.

Charles F. Schachtele, professor of diagnostic and biological sciences, passed away recently after a sudden heart attack. He was 64 years old.

A distinguished teacher of oral microbiology to generations of dental and graduate students, Schachtele received his B.S. degree from Macalester College and a Ph.D. degree in microbiology at the University of Minnesota.

In 1968, he joined the microbiology program in the School of Dentistry as an assistant professor where his work enabled him to analyze how bacteria-infecting viruses begin to make copies of themselves. Armed with this exceptional scientific background, in 1971 he began to publish the findings of a series of pioneering discoveries about how *Streptococcus mutans*, the primary bacteria associated with tooth decay, sticks to the tooth. He focused on how *S. mutans* uses an enzyme, dextran sucrose, to synthesize the sticky chains of sugars called dextrans from the dietary sugar, sucrose. Subsequently, his research addressed questions about the production of acid by *S. mutans*, which results in the carious loss of tooth mineral. His research was highlighted by collaborations with notable colleagues, graduate students, postdoctoral fellows, visiting scientists, and international collaborators.

Schachtele also served as associate dean for research at the School of Dentistry, and through enormous energy and vision, brought the school to the upper echelons of research performance and grant support from the National Institutes of Health. Among the highlights of his tenure was the establishment of the NIH-supported Minnesota Oral Health Clinical Research Center.

Schachtele's research also took him to lecture and collaborate at other universities such as the University of Oklahoma and he spent productive sabbatical time with colleagues in Japan.

Schachtele was a leader. He wrote and directed the first postdoctoral research training grant at the School of Dentistry devoted to cariology. He valued new intellectual contributions to stimulate novel departures in research and was a strong advocate for funding young scientists to take risks and study exciting questions. He served on numerous NIH study sections—the review panels that evaluate grant applications—where he championed young scientists.

Most recently, he was the lead author on the definitive treatise about oral streptococci in a new reference book on the molecular biology of streptococci—the capstone of his career as a scientist and scholar.



Charles F. Schachtele

Schachtele leaves his loving wife, Therese, who worked at the School of Dentistry for 35 years, starting in the Division of Health Ecology (now Division of Community Oral Health) and culminating in the Neurosystems Center.

In his memory, funds are being raised to establish the Charles F. Schachtele Endowed Lectureship to be hosted annually by the Graduate Program in Oral Biology. Contributions may be sent c/o Development Office, University of Minnesota School of Dentistry, 15-136 Moos Tower, 515 Delaware St. SE, Minneapolis, MN 55455.

Michael A. Johnson, who served on the School of Dentistry faculty in varying capacities from 1975 until 2005, passed away on July 17, 2008 in his North Oaks, Minn. home. Johnson trained in counseling psychology before pursuing his legal education at William Mitchell College of Law. He was admitted to the Minnesota State Bar in 1974 and worked for the State of Minnesota's Department of Highways and Performax, a management consulting company, early in his career.

Michael Johnson joined the School of Dentistry's Division of Health Ecology (now Division of Community Oral Health) in 1975, teaching organizational management and dental jurisprudence. He had primary responsibility for the school's practice management curriculum for many years, and worked with hundreds of students, reviewing employment contracts and assisting with early career employment issues. In addition to his regular classroom instructional activities, Johnson was frequently sought out as a lecturer and trainer by continuing dental education programs, both in Minnesota and elsewhere in the country. He worked extensively with dental hygiene and dental

assisting programs throughout the state, teaching in the areas of team-building and employee rights. From 1989 to 1992, he served as director of the school's Office of Enrollment Management. Among his numerous service contributions to the School of Dentistry, his colleagues are indebted to him for his many hours of work on a major revision of the school's constitution and by-laws.

Johnson served as a consultant to a number of dental schools, often assisting in the development of practice management courses. He also worked with a number of private corporations on a consulting basis, most often in the area of organizational management. During much of his tenure at the School of Dentistry, Johnson was on a part-time appointment, and for many years held a similar appointment with the Carlson School of Management where he taught in the business taxation and employer education programs.

Colleagues will remember Johnson's unrelenting enthusiasm and positive outlook. He truly enjoyed working with people to find solutions to problems. He was



Michael A. Johnson

especially fond of classroom teaching, which he found exhilarating. Few responsibilities at the School of Dentistry gave him greater satisfaction than his one-on-one work with students as they approached graduation and faced critical career decisions. Assisting young professionals make their dreams become reality was his greatest joy. Minnesota's dentists have lost someone who cared deeply about them.

Events Calendar

OCTOBER 2008

October 17
University of Minnesota
Alumni Reception
ADA Annual Session
5:30 p.m. to 7:30 p.m.
Marriott Rivercenter Hotel
San Antonio, Tex.

For information:
(612) 625-6164

October 29
Alumni Service Award
Celebration
5:00 p.m. to 7:30 p.m.
McNamara Alumni Center
University of Minnesota
Minneapolis, Minn.

For information:
(612) 625-6164

NOVEMBER 2008

November 5
Minnesota Student
Dental Society Vendor
Placement Fair
4:30 p.m. to 6:30 p.m.
Radisson University Hotel
University of Minnesota
Minneapolis Campus
Minneapolis, Minn.

For information: Call Dawn
(612) 767-8400
(800) 950-3368

JANUARY 2009

January 15
School of Dentistry
Alumni Society (SODAS)
Board Meeting
School of Dentistry
University of Minnesota
Minneapolis Campus
Minneapolis, Minn.

For information:
(612) 625-6164

APRIL 2009

April 1-4
International & American
Associations for Dental
Research | IADR/AADR/CADR
General Session
Miami, Fla.

Reception:

April 3
University of Minnesota
School of Dentistry
6:00 p.m. to 7:30 p.m.
Loews Miami Beach Hotel
Miami, Fla.

For information:
Contact Michelle Lamere
(612) 625-3974

April 4
19th Annual Daniel E.
Waite Lecture
U-M Continuing Education
and Conference Center
University of Minnesota
Saint Paul Campus
Saint Paul, Minn.

For information:
(612) 624-9959

April 24
Dean's Reception
Star of the North Meeting
5:30 p.m. to 8:00 p.m.
Saint Paul Hotel
Saint Paul, Minn.

April 24-25
Star of the North Meeting

April 23
Pre-session seminars
Touchstone Energy Place
Saint Paul, Minn.

For information:
(612) 767-8400
(800) 950-3368

MAY 2009

May 7
School of Dentistry
Alumni Society (SODAS)
Board Meeting
School of Dentistry
University of Minnesota
Minneapolis, Minn.

For information:
(612) 625-6164

Specialty Receptions

American Association of Endodontists Annual Session
April 29-May 2, 2009, Orlando, Fla.
Alumni Reception: April 30, 2009, 5:30 p.m.
Gaylord Palms Resort and Convention Center
Contact: Dr. Scott McClanahan

American Association of Orthodontists Annual Session
May 1-5, 2009, Boston, Mass.
Alumni Reception: May 2, 2009, 6:00 p.m.
Location: to be announced
Contact: Dr. Steve Litton

American Academy Pediatric Dentistry Annual Session
May 21-25, 2009, Honolulu, Hawaii
Alumni Reception: May 22, 2009 at 6:00 p.m.
Location: to be announced
Contact: Annie Pennola Pearson, 612-625-6164

May 15
School of Dentistry
Graduation
10:00 a.m.
Northrop Auditorium
University of Minnesota
Minneapolis Campus
Minneapolis, Minn.

For information:
(612) 625-8947

May 14-16
South Dakota
Dental Association
Annual Session

Alumni Reception:
May 16, 5:00 p.m.

Sioux Falls Sheraton Inn
and Convention Center
Sioux Falls, S.D.

For information:
(612) 625-6164

May 16
University of Minnesota
Alumni Reception
5:00 p.m.
Sioux Falls Sheraton
Sioux Falls, S.D.

For annual session information:
info@sddental.org

For alumni reception
information:
612-625-6164

May 21-22
Montana Dental Association
Annual Session
Best Western Heritage Inn
Great Falls, MT

Alumni Reception:
to be announced.

For annual session information:
(406) 443-2061

For more information:

Except where noted,
you can obtain further
information on the events
listed by contacting:

Julia Cross
(612) 625-7678
cros0183@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

10% Discount Now Available

School of Dentistry Alumni Society members are eligible for discounted continuing education. Members may receive a 10% 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).

OCTOBER 2008

**Occlusion & Function—
Postgraduate Program
in Esthetic Dentistry
Level III**
October 22-25, 2008

**Clinical Updates in TMD
and Orofacial Pain**
October 24, 2008

**Advanced Seminar in TMD
and Orofacial Pain**
October 25, 2008

**Office Oral Surgery:
A Clinically Guided
Participation Course**
October 27-28, 2008

**Recordkeeping Workshop
for the Dental Team**
October 30, 2008

**Tough Problems:
Artful, Ethical Solutions**
October 31, 2008

NOVEMBER 2008

Clinical Grand Rounds: TMD
November 6, 2008

**Integrating Technology
into Your Practice—
Postgraduate Program
in Esthetic Dentistry
Level III**
November 6-8, 2008

Oral Medicine Update
November 7, 2008

**Winter Dental
Assistants' Seminar**
November 8, 2008

**Postgraduate Program in
Esthetic Dentistry: Level I—
Lecture/Laboratory Series**
November 14-16, 2008
January 9-11, 2009
February 13-15, 2009
April 3-5, 2009

**Postgraduate Program in
Esthetic Dentistry: Level II—
Patient Series**
November 14-16, 2008
January 9-11, 2009
February 13-15, 2009
April 3-5, 2009

DECEMBER 2008

**Clinical Grand Rounds:
Restorative/High Caries
Risk Patients**
December 4, 2008

JANUARY 2009

**Conscious Sedation
Training Program**
January 2-5, 2009

**Clinical Grand Rounds:
Oral Manifestations
of Renal Disease**
January 8, 2009

**Nitrous Oxide/Oxygen
Inhalation Sedation:
A Training Program**
January 16-17, 2009

**Successfully Treating
Older Patients: Techniques
for the Entire Dental Team**
January 23, 2009

**Research Design—
Postgraduate Program in
Esthetic Dentistry: Level III**
January 23-24, 2009

What's New in Dentistry
January 30, 2009

**Study Abroad:
Cabo San Lucas, Mexico**
January 31-February 7, 2009

FEBRUARY 2009

**Clinical Grand Rounds:
Restorative Dentistry/Implants**
February 5, 2009

**14th Annual Ski & Learn:
Steamboat, Colorado**
February 12-14, 2009

**Endodontic Update for
the General Practitioner**
February 20, 2009

**Winter Dental Hygiene
Seminar: Minimal Intervention
Dental Hygiene Practice**
February 20, 2009

**Indirect Bonding: A Hands-On
Program for Orthodontists
and Dental Assistants**
February 21, 2009

MARCH 2009

**Clinical Grand Rounds:
Clinical Applications
for CEREC**
March 5, 2009

**Fixed Prosthodontics: Key
Factors Affecting Success**
March 6, 2009

**Improving Your
Radiographic Techniques:
A Hands-On Program**
March 7, 2009

**Removal of Bond Material
with Rotary Instrumentation:
A Hands-On Program**
March 12, 2009

**Tough Clinical Problems:
Practical Solutions**
March 13, 2009

**Endoesthetics—
Postgraduate Program in
Esthetic Dentistry: Level III**
March 13-14, 2009

**The Periodontal Pocket:
Treat or Defer?**
March 27, 2009

APRIL 2009

**Advances in Local
Anesthesia & Technique
Refresher Course**
April 20, 2009

MAY 2009

**Miniresidency in
Pediatric Dentistry**
May 1-3, 2009

**Proper Body Mechanics
for the Dental Hygienist:
A Participation Program**
May 8, 2009

For more
information
and to register
for classes,
contact:

Continuing Dental Education

6-406 Moos HS Tower
515 Delaware Street SE
University of Minnesota
Minneapolis, MN 55455

Phone:

(612) 625-1418
or (800) 685-1418

Fax:

(612) 624-8159

Website:

\$10 discount for on-line
registrations. Please access
our secure Web site at
www.dentalce.umn.edu.



**Join us for the University of Minnesota
School of Dentistry Reception
for Alumni and Friends at the
149th Annual Session of the American
Dental Association**

Friday, October 17, 2008
5:30 p.m. - 7:30 p.m.

Marriott Rivercenter Hotel-Grand A Room
San Antonio, TX

For more information, visit our website at
www.dentistry.umn.edu

Join Dean Patrick Lloyd, faculty and staff, and alumni and friends from around the country for cocktails, hors d'oeuvres and exciting updates on the innovations taking place at the School of Dentistry.

See You In San Antonio!

UNIVERSITY OF MINNESOTA
School of Dentistry

SCHOOL OF DENTISTRY
University of Minnesota
15-209 Moos Tower
515 Delaware Street S.E.
Minneapolis, Minnesota 55455

NON-PROFIT ORG.
U.S. POSTAGE
PAID
MINNEAPOLIS, MN
PERMIT NO. 155

Address Service Requested