Dean’s Message

I am an avid student of rhetoric. There is nothing more academically alluring than a concept or thought, artfully delivered. Dr. Charles Bertolami is one of those whom I admire for his ability to bring a fully formed idea to life in the minds of his readers or listeners. To that end, I would like to offer one of his thoughts for the opening of this edition of the Bridge. “While the exact role of research in the educational process is open to debate, what is not open to dispute is the importance of scholarship, both in dental education and other kinds of higher learning.”

As a new school, one of the unknowns is the role we will eventually play in research. Even broaching the topic of research in the “new” dental schools can be likened to setting out a lightning rod. The mere mention can bring a spectacular discharge.

My theory is the new schools will follow a relatively natural course of maturation and development. They will build their programs first, recruiting faculty with the necessary expertise to meet their educational obligations. Faculty expertise will gradually coalesce around strengths or areas of emphasis and evolve into research initiatives that are in concert with the school and university.

While research in the College of Dental Medicine will mature over the course of time, scholarship has been of prime importance from the outset. In this issue of the Bridge, we are pleased to emphasize both our approach to scholarship and the areas of budding research within the College.

Every day the College of Dental Medicine lives the language of scholarship. We are conversant in evidence-based dentistry; expect self-assessment; provide formative feedback and strive to develop a competency-based curriculum using innovative, integrated approaches that prepare students for the ultimate critical thinking exercise – the practice of dentistry.

Placing a high value on scholarship reinforces our need to engage in the origination of new knowledge. Although we are a relatively young college we are embedded in a University that values research and provides us with an interprofessional and interdisciplinary environment. As you will see, we are already cultivating faculty and students who are engaging in the scholarship of discovery.

Enjoy the journey.

Steven W. Friedrichsen, DDS
Dean, College of Dental Medicine

In the summer of 2005, Board of Trustees of Western University of Health Sciences formed the Office of the Vice-President for Research and Biotechnology to support greater prominence as a vibrant and front-line academic health institution. Their goal was to integrate and invigorate the significant bench, education and clinical research already in place. They also ratified the development of three clusters (see box below) based on major human and animal diseases that rank among the leading causes of death and disability in our society. Those decisions positioned WesternU well for the subsequent 2007 National Institutes of Health’s (NIH) “Roadmap for Medical Research”.

Consistent with the NIH “Roadmap”, these clusters have promoted interdisciplinary as well as multidisciplinary research to address health challenges that have been resistant to traditional research approaches. These clusters serve as discovery engines that can rapidly translate research into prevention strategies and clinical treatments for the people who need them.

While this innovative model of biomedical research is still young, it has already produced enhanced funding success, collaborative scholarly research and new recruiting initiatives.

The current **Strategic Plan for Research** is focused on a growing emphasis on bench and academics-based scholarly research at WesternU. This emphasis will be complemented with an emerging Graduate Program in Biomedical Sciences at Western University.

### WESTERN UNIVERSITY OF HEALTH SCIENCES - RESEARCH CLUSTERS

1. The Cluster for Integrative Neurobiology: With a focus on the etiology and treatment of intractable neurological disorders.

2. The Cluster for Molecular and Metabolic Diseases: With a focus on life threatening diseases such as cancer, diabetes, obesity and cardiovascular disease.

3. The Cluster for Infectious Diseases and Immunology: Investigates pernicious health challenges such as methicillin resistant Staphylococcus aureus, Human Immunodeficiency Virus, and zoonotic diseases.
Biomedical Sciences

The College of Dental Medicine’s (CDM) biomedical sciences curriculum tumbles some of the traditional silos that separate foundational knowledge from clinical practice. This approach provides the dental student with a seamless integration of the basic biomedical, behavioral and clinical sciences. The integrated curriculum ensures an in-depth understanding of a broad scope of basic biomedical science principles and abnormal biological conditions. Biomedical knowledge is presented from the outset with a perspective of how the knowledge and application is needed to meet the patient’s oral health needs.

Biomedical sciences instruction is jointly delivered to D1 and D2 students by CDM and the College of Osteopathic Medicine of the Pacific, where basic, behavioral and social sciences are integrated with clinical sciences. Unlike a traditional basic science curriculum that includes separate courses in general pathology, physiology, genetics, and/or clinical diagnosis, the core curriculum for the D1 and D2 students incorporates basic and clinical sciences in the study of 13 human organ systems of the body.

Each of the courses in the Human Systems series is designed to integrate basic, translational, and clinical sciences and is presented to dental students with a special emphasis placed on concepts and principles specifically related to dental practice.

In addition to a systems-based approach, the courses are taught using a tightly-structured objective driven, case-based “small group/large group” format. The courses are also designed to take maximum advantage of the VitalSource and AccessMedicine electronic book systems. Electronic texts allow for a laser like precision in guiding students to the material. Student utilization and comprehension have increased dramatically through the targeted approach to use of the resources.

Students are expected to read and understand the assigned material prior to attending any assigned activities. Students then meet in small groups to collaborate on the objectives and application of their learning to carefully constructed clinical cases. All small group sessions are facilitated by basic sciences and clinical faculty who rotate through the rooms during the sessions. Cases are comprehensive in nature and are designed to represent the most common diseases and conditions encountered in a busy dental practice.

After completing two small group sessions, the students participate in a “large group discussion” where the cases are discussed in further detail and important concepts are re-enforced. A panel of participating faculty is present for the sessions and the format is that of an interactive discussion rather than a traditional lecture format.

Student acceptance of the active learning environment has been very high and their performance has been exceptional. Most rewarding is the often voiced confidence the students have when they enter clinic and begin to treat patients. Students recognize that what they learned in the Biomedical Sciences has prepared them for “real” patients.

Research

Western University of Health Sciences is notable for its breadth and depth of commitment to an interprofessional and interdisciplinary environment. At WesternU basic scientists, clinicians, and social scientists from different professions can come together to engage in uniquely collaborative approaches to both educational activities and research.

Blending the expertise, creativity and initiative of the College of Dental Medicine (CDM) faculty, staff and students into the WesternU environment has resulted in an accelerated profile of research and scholarly activity for the College. There are already emerging research strengths in the areas of head and neck cancer, mineralized tissue biology, diagnostic sciences, forensics, and health services research.

One remarkable feature of the College of Dental Medicine’s research growth is that it is taking place in parallel with building the core components of the pre-doctoral program. Research has been formally woven into the curriculum and academic culture of the College through the course offering, “Dental Elective in Dental Research” and the CDM Student Research Group. Students in the elective course have the opportunity to engage in research as a meaningful component of their curriculum. CDM’s Student Research Group, offers students the opportunity to present their research findings to peers, attend presentations from internal and outside speakers, and lead literature review discussions on oral health topics relevant to their research focus.

All of these programs provide ample opportunities for student and faculty research and serve to create a culture in which students are taught dentistry as a rational, multidisciplinary, evidence-based approach to improving oral and overall health.
Vicki Wedel, PhD

Dr. Vickie Wedel is a joint faculty member in the College of Dental Medicine and the College of Osteopathic Medicine of the Pacific. Dr. Wedel states that she was, “fortunate to be one of CDM’s founding faculty and is excited to see how much the College has grown in the 4½ years she has been here.” Dr. Wedel is responsible for teaching the first year students in the Head and Neck portion of Gross Anatomy and the clinical application of anatomy during the local anesthesia module.

Outside of her teaching responsibilities, she works with local law enforcement agencies to identify human skeletal remains or developing new forensic techniques in her research lab.

As a forensic scientist with a proclaimed, “fondness for teeth,” her research is aimed at developing new methods for forensic odontologists and anthropologists. She is currently completing a validation study of a new method that can determine someone’s age and season at death using a 0.1 mm thin section through a tooth root. Dental cementum displays banding patterns somewhat akin to those found in trees.

Dr. Wedel uses the banding of the cementum to determine the age at which someone died. Dr. Wedel uses the color of the outermost band to determine the season in which someone died. The method has been used to determine age and season of death for the remains of Peruvian mummies and enslaved teenagers from Missouri. Dr. Wedel’s forensic successes include a 37-year-old cold case homicide.

Dr. Wedel is a member of the National Disaster Medical System’s Disaster Mortuary Operations Response Team (DMORT). She states that, “she is proud to be part of our nation’s safety net for catastrophic care”. Her most recent deployment was to Haiti in the wake of the 2010 earthquake to recover and identify the Americans who died in the quake.

Dr. Wedel adeptly balances the teaching, research and service aspects of her duties. She is a versatile and valuable member of the College and Western University.

James L. Borke, PhD

Dr. James Borke’s academic career includes involvement in bone and mineral research as well as dental education for over 20 years. He received his Ph.D. in Biology from the Illinois Institute of Technology in Chicago, and completed post-doctoral training in the Renal and Endocrine Research Units of the Mayo Clinic in Rochester MN. His previous faculty positions included the dental colleges of Loyola University Medical Center in Maywood, IL and Georgia Health Sciences University in Augusta Georgia.

Dr. Borke has been a member of the faculty at Western University College of Dental Medicine for the past year.

Dr. Borke’s primary research initiatives involve the study of bisphosphonate-related osteonecrosis of the jaw (BRONJ). Dr. Borke created a rat model that exhibits the characteristics of this disorder. At Western University he is currently working on a collaborative project between the College of Dental Medicine and the College of Optometry to use the examination of the retina of the eye as a window for detection and monitoring of the changes in the vasculature leading to BRONJ. A second year dental student, Charles Stoianovici, and Dr. Borke are working with Drs. Bennett McAllister, Tiffenie Harris, and Maryke Neiberg from the College of Optometry on this project.

An emerging area of active research in Dr. Borke’s laboratory involves a fourth year dental student Colby Gage and Dr. Andrea Feather, an orthodontist in the College of Dental Medicine (see Student Research Profile).

In addition to his consistent and valuable research profile, Dr. Borke has enjoyed contributing to WesternU’s innovative biomedical science curriculum. He has quickly become one of the leaders in this coursework.
As one of the newest dental schools in the country, WesternU College of Dental Medicine (CDM) strives to make its mark in dental education through innovative approaches that encourage students to become active participants in their education. Achieving this goal includes dental students in research. Research opportunities allow students to develop a broader perspective of dentistry and add additional layers to the dental education experience.

The CDM Student Research Group (SRG) includes students with various research backgrounds in monthly literature review sessions and offers the opportunity to attend research presentations from WesternU faculty, students and outside speakers. SRG also provides students an avenue to participate in a mentorship program where those who are new to research can learn how to perform various assays under the supervision of experiences researchers. Students with the skills and inclination can become involved in active research projects in conjunction with WesternU faculty.

The general mission of the student-run SRG is to create a rich research interest among its student body, and eventually establish itself among the research institutions in the United States!

My current research project involves studying the effect of a common acne medication (Isotretinoin or Accutane). As a member of the inaugural class at WesternU, I have been involved with all phases of research. Our hypothesis is that the medication, a Vitamin A derivative, modulates the effect of bone healing that occurs during orthodontic tooth movement. We chose this medication as it is commonly administered to adolescents, the age group most likely to undergo orthodontic treatment.

Knowing that we are the first people in the world to study the effects of this drug on orthodontic tooth movement makes the sacrifice of time worth the potential reward. Devising a project and carry it out completely during dental school could not have happened without the excellent mentorship of two exceptional professors, Dr. James Borke and Dr. Andrea Feather. Our animal trials were concluded during the summer and we are currently analyzing our findings, which will be presented at an upcoming national meeting.

Dr. Borke’s creative spirit and generous contribution of time and knowledge has sparked the interest of many students. We utilized and perfected techniques that he has developed over the years. I am glad that the College of Dental Medicine made it a priority to include multiple opportunities for students who want to get involved with science outside the classroom.
CDM Staff Profile

Josih Hostetler joined the College of Dental Medicine in 2010 with the Office of Academic Administration, and has recently been promoted to Director of Community Outreach. He earned his Bachelor’s of Arts degree in Social Work at Manchester College in North Manchester, Indiana. Shortly after, Josih attended the University of Minnesota for his Master’s of Social Work. Josih’s humanitarian work began in high school, allowing him the opportunity to travel to Puerto Rico helping communities and building homes after Natural Disasters. During college, Josih worked for the non-profit organization Mentoring Partnership of Minnesota. Here, he worked with Public Policy to receive state funding. After graduating, Josih worked for the College of Health Sciences at Walden University in Minneapolis, Minnesota directing the administration staff.

His role here, in our College of Dental medicine, is working with Dr. Timothy Martinez, Associate Dean for Community Partnerships and Access to Care. Josih prepares community base partnerships for fourth year Externship Rotations and works with the First 5 LA Oral Health and Nutrition Project to schedule student and faculty providers for provision of services in school-based clinics. Josih’s professional goal is to link his Social Work background to the academic capacity that he serves for the College of Dental Medicine.

Josih enjoys hiking, cooking, volunteering, and traveling.
The American Student Dental Association at Western University of Health Sciences (ASDA at WesternU) had an active spring and summer semesters due to the dedication of the leaders and the involvement of the members. Thanks to the efforts of our Health Fair Coordinator Allison Baylis, DMD 2014, monthly health fairs were organized which allowed members to perform oral exams, and instruct patients on oral hygiene care and patients needing more advanced care were referred to the WesternU Dental Center. It was a great opportunity for the students to take their knowledge from the classroom and apply it to real world situations. This past spring semester, ASDA hosted the First Annual Kickball Tournament that allowed students and faculty to form teams to compete against each other. With over 80 participants, the day was full of competition, food and networking along with the Dean’s Team taking home the trophy with a score of 2-1 in the championship game.

The Third Annual ASDA at WesternU Golf Tournament fundraiser was held on June 29, 2012. The tournament helped fund all health fairs, professional and social events, and conference trips organized by ASDA. Over 70 golfers, 100 students, faculty, and sponsors participated in a full day of golf. Prizes were raffled off during the dinner.

The leadership team continues to plan for the future by organizing events that help enrich the dental students’ experience at WesternU. Monthly health fairs, lunch-and-learn speakers, and a business series continue to be on the forefront of ASDA.

ASDA at WesternU also has created special interest groups, allow students to explore different dental specialties, hear from speakers, and review articles in those respective fields. This year, WesternU students will have the opportunity to attend dental conferences in San Francisco, Chicago, and Atlanta. This is an exciting experience as these conferences equip the students with leadership, networking, business, and dental skills. ASDA at WesternU would like to thank all who support the club, and continues to provide the students with educational and hands-on experience.

The Essentials of Clinical Dentistry course series is designed to prepare the CDM students for a seamless transition from the pre-clinical environment to patient care while also integrating with the other building blocks of the curriculum. The current approach uses a mix of discipline specific modules in combination with integrated multi-disciplinary modules. Content delivery includes lectures, recorded and live demonstrations as well as web-based learning modules. The approach facilitates wrapping the instruction related to tooth morphology, occlusion, dental materials, preparation design and procedure protocol into a presentation that is immediately re-enforced in a simulated clinical session.

To assess the students’ knowledge and refine their evaluation skills, they are required to self-evaluate their work prior to faculty evaluation. Immediate formative feedback is offered and recorded via e-Value, an electronic evaluation system. Students have the opportunity to review their feedback online, notice trends in their performance, and enact corrective action. By delivering critiques in this manner, we hope to plant the seeds of life-long learning through self-assessment from the outset of their simulated procedures.

When adequately prepared, students demonstrate their clinical skills in a series of timed, standardized exercises. These are evaluated then returned for post-examination learning. To ensure that previous skills learned are not forgotten, a cumulative examination will be administered prior to entry into patient care.

Looking into the future, the College is working to leverage multimedia—multi-angled, high definition, live demonstrations, recorded video for dental techniques, and a series of short online lectures—to allow students to quickly access the information on demand. WesternU is also continuing the development of web-based learning modules that have applicability for student learning, faculty calibration and collaborative use with other institutions.

Wherever the future of technology and dental teaching takes CDM, we will strive to be on its cutting edge to best teach our students.
AAWD — A Year of Promise

By Krystle P. Rapisura

WesternU’s chapter of the American Association of Women Dentists (AAWD), is proud to announce their second year by welcoming the Class of 2016!

AAWD has started a Smiles for Success program. We will accomplish this through our partnership with Crossroads, Inc., which provides housing, education, support, and counseling to women who have been incarcerated. Crossroads has an 85% success rate of self-sustenance after six years. AAWD is proud to offer this service to the women of their transition program. This is the beginning of a wonderful partnership and another way for AAWD to continue supporting the community.

This spring AAWD met with Linda Vharson, Mission Delivery Manager from the Girls Scout Association, and working to provide mini lectures on various topics, including dental hygiene. Many ideas are in the works to help extend our mentorships with young girls possibly through their Journey Girls program, and the newly formed Pomona Girl Scouts Troop.

AAWD will continue their plans for various Lunch-and-Learns, Thanksgiving baskets and Operation Holiday Smile for Early Head Start families. Planning is underway for their bi-annual fundraiser event, which plans to take place this Fall.

AAWD will continue to provide invaluable experiences for our college, our members, paving the way for another memorable year.

Philanthropy

By Desiree Colly, Senior Director of Development College of Dental Medicine

Investing in the Future

At the College of Dental Medicine, we are fortunate to have friends and family who have embraced our vision and invested early in our success. Special thanks to the individuals, corporations and foundations that provided generous seed funds for our capital needs to help build the state-of-the-art infrastructure that allows us to implement our innovative curriculum.

Members of our Dean’s Circle and Annual Fund donors have likewise provided essential unrestricted support that allows the Dean to apply funds where the need is greatest, such as the timely incorporation of new technology and or the recognition of student academic achievement.

Research is another area worthy of investment. Faculty Research or Fellowship Funds enable talented faculty to pursue projects and advanced study; Student Awards and Scholarships encourage scientific discovery, provides students with an experience grounded understanding of research methodologies, and facilitates the University’s goal of developing lifelong learners; and Capital Contributions build critical laboratory facilities. Please call the CDM Development Office at (909) 706-3456 to discuss ways in which you too can invest in the future.

Your Seat Awaits You!

Take your place in WesternU’s history and its future by naming an auditorium seat in the Health Education Center. An engraved brass nameplate will leave a legacy to honor or memorialize a loved one, celebrate an achievement, or recognize your family or business. Reserve your seat now: $1,000 VIP Section, or $500 General Seating. For more information, contact Desiree Colly at (909) 706-3456 or dcolly@westernu.edu, or go directly to www.westernu.edu/giving to make your tax-deductible gift online.

(Nameplate)