

MARK YOUR CALENDARS!

WINTER - SPRING 2014

Adventure & Learn: Hawaii 2014
February 3 - 7, 2014 (Monday - Friday)

Whistler Ski Seminar
February 13 - 15, 2014 (Thursday - Saturday)

Thailand Travel and Learn
March 15 - 29, 2014 (Saturday - Saturday)

For more details, visit www.dentistry.ubc.ca/cde

SUMMER - FALL 2013

EVENTS FOR STUDENTS AND ALUMNI

Volunteer Community Clinics—Upcoming

H'ulh-etun Health Society (Chemainus)
July 18 - 21, 2013 (Thursday - Sunday)

Tl'etinqox-ł'in Health Services (Anaham)
July 25 - 28, 2013 (Thursday - Sunday)

Vancouver Native Health Society (Vancouver)
August 24, 2013 (Saturday)

Annual Alumni & Friends Golf Tournament
September 15, 2013 (Sunday)

MORE EVENTS FOR ALUMNI

Open Wide Community Clinic Day, Burnaby
September 14, 2013 (Saturday)

Taste of Vancouver Island, Victoria
October 19, 2013 (Saturday)

Alumni Wine Reception at the TODS Meeting, Kelowna
October 25, 2013 (Friday)

Alumni Pub Night, Calgary
November 15, 2013 (Friday)

More information about these events can be found on pages 44 - 45 in this issue of *Impressions* or at www.dentistry.ubc.ca/alumni

JANUARY - DECEMBER 2014

50TH ANNIVERSARY OF THE FACULTY OF DENTISTRY

For all the 2014 celebration events and dates, see page 45 in this issue of *Impressions* or www.dentistry.ubc.ca/50years



UBC DENTISTRY



SPRING 13

IMPRESSIONS

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Advancing Oral Health Through Outstanding Education, Research and Community Service



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THE UNIVERSITY OF BRITISH COLUMBIA

Dean's Message



*Dear Colleagues,
Welcome to the spring 2013 edition of UBC Faculty of Dentistry's Impressions. I take great pleasure in once again sharing the Faculty's undertakings with you—and in alerting you that in 2014 the Faculty will celebrate 50 years of accomplishments.*

The growth and change in the Faculty over these 50 years has been significant. We invite all our alumni and colleagues in the oral health professions to visit UBC Dentistry anytime, to see first-hand what is occurring here. And we invite everyone to participate in the 50th anniversary events planned for 2014, when we will recognize the Faculty's achievements since its beginnings in the early 1960s.

It has been another exciting academic year. This spring the first students completed the new graduate programs in orthodontics, pediatric dentistry and prosthodontics. UBC Dentistry now has six dental specialty graduate programs, and another new program in dental public health is moving through the final stages of UBC Senate approval. All these new programs have a strong research component—our research accomplishments continue to improve the international reputation and recognition of the Faculty of Dentistry.

Renovations that will enhance the student experience were completed in the John B. Macdonald Building. The Graduate Student Commons, in particular, provides an excellent environment for the graduate students to

work in, both individually and together.

The major articles in this edition of *Impressions* focus on some significant accomplishments in research and community service. Dr. Leeann Donnelly and Ms. Diana Lin have developed a strong program that helps our dental hygiene students to appreciate the diversity of patients in the community and the diversity of their oral health needs, and to develop competencies for addressing these needs. The article shows yet another facet of how the Faculty is increasing its community engagement.

We also look at the Faculty's expanded capacity in dental materials, both at the basic laboratory level and with respect to application in the Frontier Clinical Research Centre. The focus is on Drs. Dorin Ruse, Ricardo Carvalho and Adriana Manso, who represent an incredible resource in supporting new innovations in dental materials, including supporting the research projects of students in the Faculty. Their work significantly amplifies our research productivity.

Another feature article profiles Dr. HsingChi von Bergmann. The Faculty of Dentistry

Strategic Plan specified the need for an educational specialist to help verify the effectiveness of our educational programs. Dr. von Bergmann, who was recruited to accomplish that goal, is making great headway in her work on enhancing the student experience.

Yet again, the past year has seen UBC Dentistry faculty members receive numerous awards for their accomplishments and new grants to support their innovative research. We are happy and proud to recognize those achievements in this issue of *Impressions*.

And please, plan to join me and our outstanding students, staff and faculty members for our 50th anniversary celebrations in 2014.

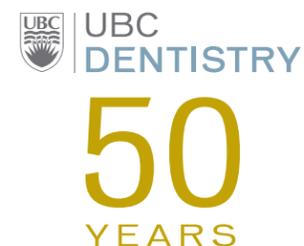
All the best,

Charles Shuler, DMD, PhD
Dean and Professor, Faculty of Dentistry

PHOTO BY MARTIN DEE

NEWS

Faculty Announces 50th Anniversary Celebrations



The year 2014 marks 50 years since eight students registered for the first dental class in the newly established Faculty of Dentistry at the University of British Columbia. Many events are planned to celebrate this and other milestones along the way from 1964.

All alumni and former and current students, faculty and staff are warmly invited to attend. A list of event dates and times can be found on page 45 in this issue of *Impressions*. But here is a sneak peek at some of the highlights.

In January, to kick off the anniversary year, the annual UBC Dentistry Research Day will present a special showcase of alumni research over the 50 years.

In March, the three-day Pacific Dental Conference will specially honour the Faculty's half century, including the not-to-be-missed Annual Alumni Reception, which will get personal when 50 years of dental school sweethearts are celebrated. Meanwhile, on the UBC Point Grey campus, there will be an open house and barbecue lunch—visitors can tour the dental school during the day before attending the British Columbia Dental Association Toothfairy Gala in the evening. The Gala will celebrate the fifth decade of dentistry at UBC, and funds raised will benefit dental care for underserved children.

The UBC Dentistry 50th Anniversary Weekend will run from September 19 to 21, starting with the Welcome Reception and BZZR Garden on Friday night. Saturday will be packed with an all-day symposium, followed by the 50th Anniversary Celebration Dinner at the Commodore Ballroom featuring the faculty/alumni band and special guests. On Sunday, the fun will continue at Morgan Creek Golf & Country Club for the Annual Alumni & Friends Golf Tournament.

You can meet the co-chairs of the 50th anniversary committee and check out 50 years of milestones in the Faculty of Dentistry on pages 38 to 39 in this issue of *Impressions*.

And most important, mark your calendars and come to the events in 2014. Celebrate with us!

Share stories and pictures from when you were at the Faculty of Dentistry. Upload them to www.dentistry.ubc.ca/50years, where you will find ongoing information and announcements about the events and celebrations.

Dean and Associate Dean Receive BCDA Awards; Faculty and Alumni Among Winners

The British Columbia Dental Association (BCDA) honoured many individuals at their annual Toothfairy Gala in Vancouver on March 9, 2013, including UBC Dentistry faculty and alumni.

President's Award to Dean

This year the BCDA bestowed one of their highest annual honours, the President's Award, on Dr. Charles Shuler, professor and dean of UBC Dentistry. Shuler was lauded for his significant impact on dental students, new graduates and dentistry in BC.

The gala's program guide notes: "Dean Charles Shuler has brought dental education closer to every corner of our great province." The dean regularly travels across BC, visiting dental societies to promote the Faculty of Dentistry and its dental programs.

Known for his stewardship, Shuler has changed the admission rules for dental school to ensure 90 percent of the students come from BC; has implemented several graduate programs, including Endodontics, Orthodontics and Pediatric Dentistry; and has expanded outreach programs to serve the marginalized and complex patients in the Metro Vancouver area and beyond.

The BCDA particularly hails the close working relationship he has fostered between the provincial association and UBC Dentistry. Through this alliance, the dean promoted and expanded the Summer Student Practitioner Program, which enables third-year dental students to work in a private practice environment. By working closely with the BCDA, Shuler also realized his goal of helping students better transition from dental students to competent practitioners—through development of the Dental Mentorship Program, which the BCDA describes as "the perfect partnership between UBC and the BCDA."

Award of Merit from BCDA to Associate Dean

A BCDA Award of Merit was given to Dr. Christopher Zed for his many contributions to the field of dentistry. Zed is associate dean of Strategic and External Affairs, and head of Postgraduate and Hospital Programs. He is also director of the UBC General Practice Residency Program.

"His leadership and diligence," the BCDA writes, "led to the inclusion of dentistry in a hospital setting when many believed it didn't belong—dentistry has become a well-respected, state-of-the-art program at Vancouver General Hospital."

The award also recognizes Zed as a respected practitioner and strong advocate and supporter of research, education and care in all environments. Zed is especially known for his work in underprivileged communities in the Lower Mainland, across the province and overseas in Vietnam and Cambodia where he regularly volunteers to support patient care.

More BCDA Awards to Faculty and Alumni

Distinguished Service Awards were presented to professor emeritus Dr. Robert Priddy; Dr. Saida Rasul, past part-time faculty member; and Dr. Ken Stones, part-time faculty member and active volunteer dentist in the Volunteer Community Clinic Program.

Awards of Merit were also bestowed on Dr. Doug Johnston, retired faculty member, former director of Graduate Pediatric Dentistry and former head of Pediatric Dentistry at BC Children's Hospital; Dr. Ken Lee, part-time faculty member; and Dr. Robert McDougall, UBC Dentistry alumnus from the Class of 1991.



Dr. Charles Shuler (C) receiving the President's Award from the BCDA. He is seen here with Ms. Jocelyn Johnston, executive director of the BC Dental Association, and Dr. Richard Wilczek, president of the BC Dental Association.



Dr. Christopher Zed (C) receiving an Award of Merit from the BCDA. He is seen here with Ms. Jocelyn Johnston, executive director of the BC Dental Association, and Dr. Richard Wilczek, president of the BC Dental Association.

Dr. Christopher Overall Wins IADR Distinguished Scientist Award

The International Association for Dental Research has presented its 2013 IADR Distinguished Scientist Award for Research in Oral Biology to Dr. Christopher Overall, professor in the Department of Oral Biological & Medical Sciences and Canada Research Chair in Metalloproteinase Proteomics and Systems Biology. This award, one of the highest honours bestowed by IADR, recognizes Prof. Overall for his lifelong achievements as a scientist in the field of oral biology.

Overall is the pioneer of "degradomics"—a term he coined for a highly specialized field of biochemistry that uses all genomic and proteomic approaches to study the makeup of all proteases in an organism.

Moreover, Overall's laboratory is the only one in Canada—and one of only a few in

the world—that is exploring the new field of degradomics to understand the role of matrix metalloproteinases. This systems biology approach is revealing new roles for proteases in vivo, new diagnostic indicators of disease, and new drug targets to treat disease.

Overall and his team recently discovered a biological master switch that could provide a road map for treatment of arthritis and other inflammatory diseases like periodontitis. [For more information, see page 13 in this issue of *Impressions*.]

The award was presented to Overall at the opening ceremonies of the IADR's 91st General Session & Exhibition on March 20, 2013, in Seattle, Washington.



Dr. Christopher Overall receives the 2013 IADR Distinguished Scientist Award for Research in Oral Biology from IADR immediate past president Mary MacDougall.

Students Win Award for Booth at Local Health Fair



Proud winners of the Outstanding Booth Contest at the Vancouver Diversity Health Fair (L to R): Karen Nguyen, Kevin Shen, Ambreen Khan and Erin Chung. Missing: Kelvin Leung. In the photo on the right, attendees at the Vancouver Diversity Health Fair visit UBC dental and dental hygiene students' award-winning booth. Ambreen Khan (L) is seen with her "Exposure to Tobacco" poster, which was developed as part of her guided independent study course elective (read more about Ambreen's elective topic on page 29 in this issue of *Impressions*).

Attendees at the Vancouver Diversity Health Fair on March 9 would have found, among the 50 health- and wellness-related exhibitors, a UBC Dentistry booth staffed by the winners of the Outstanding Booth Contest.

Students Ambreen Khan (BDS Sc 2013), Kevin Shen (DMD 2015), and Erin Chung, Kelvin Leung and Karen Nguyen (DMD 2016) welcomed visitors to their interactive display of oral health care information. Organizers of the fair credit the students with raising the bar for all health organization exhibitors.

The largest of its kind in Canada, the annual health fair takes place at the Croatian Cultural Centre in East Vancouver. The fair aims to engage ethnic communities and new immigrants with a wide range of health and wellness resources, which are presented in a number of languages.

Prof. Dieter Brömme Secures Five-Year Funding for Two Studies Involving Enzymes Linked to Osteoporosis, Arthritis and Cardiovascular Diseases



Dieter Brömme (2nd R) with members of the Brömme Lab.

The Canadian Institutes of Health Research (CIHR) has awarded UBC Dentistry professor Dieter Brömme, Canada Research Chair in Proteases and Diseases, over \$1.14 million for two studies to investigate the role of cathepsins in osteoporosis, arthritis and cardiovascular disease.

Osteoporosis, a disease resulting in loss of bone, affects the lives of millions of Canadians, and is a major burden to health care systems worldwide due to the increasing elderly population. Current treatments, such as hormone replacement therapy or bisphosphonates, have either various side effects or patent expiration issues. Arthritis is caused by an overactive immune system attacking the body's own tissues—most commonly the joints, and also tendons, bones and ligaments—leading to inflammation, pain and tissue damage.

Just over \$583,000 will fund “Mechanisms of Osteoclastic Bone Resorption: Collagenase Activity of Cathepsin K.” This study focuses on cathepsin K as a novel pharmaceutical target for the treatment of osteoporosis and various forms of arthritis. Cathepsin K is a cysteine protease predominantly expressed in osteoclasts, cells which are responsible for the degradation of bone collagen.

Presently, in clinical trials that use inhibitors to block the activity of the protease cathepsin K, there is an improvement in the quality of bone, but the overall results still fall short due to off-target and off-site effects. Brömme and his team seek a cathepsin K inhibitor that will inhibit the osteoclast-mediated collagen degradation in bone but will not inhibit or otherwise affect the protease's activities in other types of cells.

“Our objective is to understand the cathepsin K-specific mechanism of collagen degradation, and understand how to exploit this knowledge

in developing novel and highly selective cathepsin inhibitors. We also need to elucidate potential off-target and off-site inhibition effects and determine how to avoid them,” Brömme says.

There is a strong correlation between osteoporosis and calcification, the formation of mineral deposits in arteries. Arterial calcification makes blood vessels brittle and restricts blood flow, and is predictive of cardiovascular diseases like heart attack and stroke, which are the main causes of death in Canada.

Brömme's other study, which received just over \$556,000 from the CIHR, is titled “The Role of Cathepsins in Vascular Calcification.” As Brömme points out, little is known about the mechanism of calcification and whether the degradation of the matrix leads to mineralization, or vice versa. The calcification may actually be a kind of protective response that has gone out of control, thus causing the vessel destruction.

Calcification mainly happens in the extracellular matrix of blood vessels. The primary extracellular matrix components, elastin and collagen, are both heavily degraded by cathepsins during hardening of the arteries (atherosclerosis), and also during ballooning of blood vessels (aneurisms). Here, too, cathepsin K is of particular interest to Brömme. He and others have demonstrated that this enzyme is critically involved in both bone degradation and weakening of the arteries, though its specific role in calcification is unknown.

Since the introduction of a cathepsin K inhibitor is beneficial in the case of osteoporosis, would it also be beneficial to prevent calcification and resulting arterial degradation? Brömme predicts so.

Dentistry Announces Support for Students in Crisis: The Sweet Student Fund



UBC Dentistry is honoured to work with Dr. David Sweet OC and his friends, colleagues and long-time associates to establish the Sweet Student Fund.

This fund will assist students in the Faculty of Dentistry who face personal crises during the course of their academic studies. Over the years, a number of dental students have experienced challenges such as life-threatening or

debilitating illness, grief and loss, and other kinds of personal hardship that have compromised their ability to pay for their education. The Sweet Student Fund will help alleviate such unforeseen financial emergencies.

As associate dean, Students, Dr. Sweet is committed to the educational experience of dentistry students, and this commitment extends to their health and well-being.

When you commit to help establish the Sweet Student Fund at UBC Dentistry, you are providing needed resources to help dental students who are challenged with unforeseen adversity.

To support the Sweet Student Fund, contact Jane Merling at 604-822-5886 or merling@dentistry.ubc.ca



Dr. Hugh Kim

New Appointments: Full-Time Faculty

Hugh Kim, DMD, Dip Perio, MSc, PhD, FRCD(C), has joined the Department of Oral Biological & Medical Sciences as an assistant professor. Dr. Kim obtained his Doctor of Dental Medicine from the University of Montreal in 2000, followed by a Master of Science combined with a Diploma in Periodontics from the University of British Columbia in 2004, and a Doctor of Philosophy (Cell Biology) from the University of Toronto in 2010. Prior to returning to Vancouver, Kim completed a postdoctoral fellowship at Harvard University in Boston, Massachusetts. Kim's research has been continuously funded through external fellowships from the Canadian Arthritis Network, the Heart and Stroke Foundation of Canada and the Canadian Institutes of Health Research (CIHR). Kim currently holds a CIHR Clinician-Scientist Award, which supported his postdoctoral training at Harvard and will support his research at UBC. Kim is a principal investigator with the Centre for Blood Research, a research group of the Life Sciences Institute. His research is focused on platelet biochemistry; specifically, on how biochemical signals are transduced (interpreted) by the platelet's structural framework, or cytoskeleton, and how such signals may affect platelet function, and ultimately, oral health and disease. In addition to his research activities, Kim is a practising periodontist and a diplomat of the American Board of Periodontology, and he teaches at the undergraduate and graduate levels.

PHOTO BY MARTIN DEE

Updates from BOLD



The Bureau of Legal Dentistry (BOLD) lab recently scored a hit on a 24-year-old cold case file of a missing person. A DNA match was confirmed between found human remains and the missing person.

The BOLD lab manages, on behalf of the BC Coroners Service, a provincial missing persons dental database, comparing dental records to found human remains.

In 1989 a person went missing in Prince George. In Coquitlam, several months later, a mandible was found. The 770 kilometres of geographic distance between the two jurisdictions had prevented comparison of the two files—until recently. Original dental records for the missing person were obtained and compared to records of the mandible—and in February 2013 a match was confirmed.

Scientists at the BOLD lab often provide consultation services to the entertainment industry, lending their expertise on DNA testing to writers of crime drama television series such as *CSI*. Sometimes, for documentary films, the consultation involves actual forensic DNA analysis and attempts at identification.

A new documentary film by Michael Jorgenson,

Unclaimed, is about missing US prisoners of war. One character followed in the film, an American who had been lost since the Vietnam War ended in 1975, was found living in Vietnam with a wife and children. He speaks Vietnamese fluently, and has forgotten most of his English and his family back in the United States. The film crew and accompanying military veterans found him to be extremely quiet, introverted and suffering from extreme post-traumatic stress disorder. They were able to convince the war-torn veteran to have swabs of saliva and blood taken to be analyzed. Testing was done at the BOLD lab, against a DNA profile of the man's sister—but the samples did not match. However, when a full story was disclosed by family members, it turned out that the sister and her missing brother likely had different fathers. Yet, upon meeting, the family recognized the missing man—he was, indeed, one of their own. He too was able to recognize his family.

In a previous documentary by Jorgenson, *Hunt for the Mad Trapper*, the BOLD lab identified the remains of the Mad Trapper of Rat River, thus revealing his identity. [For details of that story, see the fall 2009 issue of *Impressions* online at www.dentistry.ubc.ca/impressions.]

Postdoc at UBC Dentistry Helps Decode First Turtle Genome; Finds Lost Teeth



Dr. John Abramyan holds a specimen container of turtle embryos. The painted turtle is a common species across North America; the western painted turtle is a subspecies and the only turtle native to British Columbia.

Scientists from the Genome Institute at Washington University in St. Louis, Missouri, turned to Dr. John Abramyan, a researcher in the Richman Lab at UBC Dentistry, in their efforts to complete the genome map of the western painted turtle, a common species across North America and the only one native to BC. This is the first time the genome of any of the approximately 330 species of turtles has been analyzed—and the results are fascinating.

A National Institutes of Health National Research Service Award postdoctoral fellow, Abramyan was the perfect choice to analyze this genome. His childhood enthusiasm for turtles continues—to this day he keeps a few as pets at his home base in California, where his mother is entrusted with their care.

Abramyan has identified the “tooth-specific” enamel genes in the western painted turtle. Enamel loss is an irreversible dental problem.

Turtles once had complete sets of teeth like most other animals, whereas now all turtle species have beaks. “Turtles lost their teeth 200 to 150 million years ago, so we assumed their tooth genes would be long mutated and disappeared from the genome,” Abramyan says. “When we look at birds who lost their teeth 100 to 80 million years ago, their tooth genes are there, but already highly mutated. We see the same thing in baleen whales, which don’t produce teeth.”

Usually, once an organism stops producing teeth, their tooth enamel genes start to mutate and become non-functional. In turtles, however, as Abramyan and the principal investigators from the US found, most of the tooth enamel genes were still present and in pretty good shape, despite having lost their teeth well before birds evolved beaks. This indicates that turtles have a really slow mutation rate.

Understanding the genetics of turtle teeth may not only shed light on the evolutionary reduction of teeth in other animals such as the

platypus—but may also shed light on the formation of enamel.

But there is more to the turtle than its lost teeth. Abramyan sees this fascinating reptile as a potential model organism. Abramyan is one of the co-authors of “The Western Painted Turtle Genome, A Model for the Evolution of Extreme Physiological Adaptations in a Slowly Evolving Lineage,” including study lead professor Brad Shaffer from the University of California, Los Angeles. The paper, published in *Genome Biology*, discusses the physiological advantages of the turtle for survival, and suggests that an understanding of the turtle’s regulatory networks may give clues to alleviating many human diseases.

Abramyan says: “Turtles are so strange physically, as well as physiologically. Yet they have this super slow evolution rate to evolve crazy things like their shell, the ability to survive freezing and to live an extremely long time.” Understanding these mechanisms may help us understand diseases like cancer, which is caused by mutation, as well as heart attacks, strokes and other situations where oxygen is cut off or where extreme environmental situations pose a threat.

Read a *CTV News* report about the significance of the western painted turtle as biodiversity in British Columbia and how scientists hope turtle DNA could lead to treatment for hypothermia. Online at <http://bit.ly/XVQT5F>

Watch a *CTV News* interview with John Abramyan where he discusses the significance of mapping the turtle genome. Online at <http://bit.ly/13BgS0f>



IADR/AADR–William J. Gies Award

Drs. Catherine Poh and Lewei Zhang from the Faculty of Dentistry, and their colleagues, received the 2013 William J. Gies Award from the International and American Associations for Dental Research (IADR/AADR) for their paper, “Unique FISH Patterns Associated with Cancer Progression of Oral Dysplasia.”* The award was presented to the researchers for authoring the best clinical research paper published in the *Journal of Dental Research* over a 12-month period.

The paper describes the use of molecular markers to characterize oral premalignant lesions according to their risk of developing into cancer.

The results showed that changes in the number of gene copies at specific genomic loci, as visualized using fluorescent in situ hybridization (FISH), can be used to identify high-risk lesions—those that are more likely to develop into oral cancer.

The study’s findings have implications for patient treatment. The characterization techniques can be easily adapted to the existing set-up of many pathology laboratories, and the information yielded makes it possible to better help patients understand their treatment options. If patients are shown to be at high risk, they can opt to start aggressive treatment earlier.

“Currently, we adopt a ‘wait-and-watch’ approach to pathologically similar low-grade precancers. Lesions either take 10 years or more to develop into cancer, in the majority of cases, or will never become cancerous,” says Poh, lead author of the article. “The markers identified in this paper allow us to categorize these lesions, which can have a potentially enormous impact on patients in terms of alleviating anxiety and fear of the unknown, and on reducing costs for unnecessary follow-ups.”

The award was presented at the IADR’s 91st General Session & Exhibition on March 20, 2013, in Seattle, Washington.

Adapted from original source: www.jcd.ca/article/d62

*Reference Poh CF, Zhu Y, Chen E, Berean KW, Wu L, Zhang L, Rosin MP. (2012). Unique FISH patterns associated with cancer progression of oral dysplasia. *Journal of Dental Research*, 91(1). Epub 2011 Oct 11.

Faculty, Students and an Alumnus Win IADR/AADR, ADEA, CADR and CIHR Awards for Papers

ADEA–Olav Alvares Awards

The American Dental Education Association honoured assistant professor Dr. Mario Brondani with an Olav Alvares Award for best article published in the *Journal of Dental Education* in 2012. His paper, titled “Teaching Social Responsibility Through Community Service-Learning in Predoctoral Dental Education,” was selected under the category of junior faculty. Brondani is a core faculty member of UBC Dentistry’s Professionalism and Community Service Learning program, a course, offered in all four years of UBC’s dental curriculum, that combines classroom learning with community-based outreach initiatives.

Shiva Khatami (PhD 2010; supervisor Dr. Michael MacEntee) also won an Olav Alvares Award for best article published in the *Journal of Dental Education* in 2012 by a junior scholar. Her paper, titled “Clinical Reasoning in Dentistry: Across Levels of Expertise and Problems,” was written while completing her doctorate degree at UBC Dentistry.

Brondani and Khatami received their awards at the 2013 ADEA Annual Session & Exhibition on March 16, 2013, in Seattle, Washington.

CADR–Student Research Award

Under the supervision of Dr. Joy Richman, professor in the Department of Oral Health Sciences, graduate student Sara Farahabadi’s research project, titled “Wnt5a Induces Enzymatic Degradation of Craniofacial Cartilage via JNK Signaling,” won first place in the Canadian Association of Dental Research’s senior basic science category—she garnered the CADR Student Research Award. The award, also sponsored by Henri Schein Canada, was given at the Annual General Meeting of the CADR, held in conjunction with the meeting of the International Association for Dental Research in Seattle, Washington, in March 2013. As an award recipient, Sara represented Canada at the IADR/Unilever Hatton Competition in Seattle during the same month.

CIHR–Travel Awards

For her poster presentation, “Role of Connexins in Regulating Fibroblast Function in Wound Healing,” graduate student Rana Tarzeman, candidate for a doctorate degree in Craniofacial Science and a diploma in Periodontics, won a Canadian Institutes of Health Research (CIHR) Institute Community Support Travel Award to attend the International Association of Dental Research General Session. Her supervisor is Dr. Lari Häkkinen.

For his poster presentation, “Deprived Oral Health Status Among Low-Incomes in Vancouver’s Downtown Eastside,” graduate student Keith Hau, candidate for a master’s degree in Craniofacial Science, won a CIHR Institute Community Support Travel Award to attend the International Association of Dental Research General Session. His supervisor is Dr. Catherine Poh.

A graduate student of N. Dorin Ruse, Jean-François Nguyen, at the Université Paris Descartes, France, won—for his research in new and innovative testing methods of dental materials, and new ideas and approaches to improving and developing dental materials—an IADR Heraeus Travel Award to attend the International Association of Dental Research General Session.

PHOTOS Recipients of the 2013 William J. Gies Award (L to R): Esther Chen, then MSc student, now DMD 2014 candidate; Catherine Poh, associate professor; and Yuqi (Sarah) Zhu, research associate. In the photo on the right: Drs. Mario Brondani and Shiva Khatami each received an Olav Alvares Award from the American Dental Education Association on March 16, 2013, in Seattle, Washington.

A Top Honour from India to Dr. Ravindra Shah—The Hind Rattan Award



Dr. Ravindra Shah, with his sisters Kumudini (L) and Jayu, received the Hind Rattan Award in New Delhi on January 26, 2013.

For the many people around the world who know Dr. Ravindra Shah, it came as no surprise that he was bestowed with a Hind Rattan Award. This award, given by the Non-Resident Indian Welfare Society of India, is one of that country's most prestigious national honours.

UBC Dentistry's venerable director of International Relations was honoured for outstanding services, achievements and contributions in his field.

For over 27 years, Dr. Shah has lead UBC Dentistry's International Relations program. He has been instrumental in bringing over 100 students annually to UBC Dentistry for exchange visits. These students have come from over 51 countries. He also organizes academic visits for UBC students to over 20 countries. Shah sees his role as a catalyst for connecting people and institutions within today's rapidly globalizing world.

The Hind Rattan Award (commonly translated as "Jewel of India") is given each year on the eve of the Republic Day of India to a person of Indian origin residing outside India. Dr. Shah received his award on January 26 in New Delhi.



Dr. Ravindra Shah (front row, C) with faculty members from the University of Benin, Benin City, Nigeria.

Director of International Relations Speaks in Nigeria

Dr. Ravindra Shah is an erudite speaker, sought after by universities worldwide. He delivered the Founder's Day Lecture during convocation ceremonies at the University of Benin, in Benin City, Nigeria, on November 23, 2012.

The University of Benin is one of the foremost universities in West Africa. It is among the top-ranked in Nigeria.

Read more about Dr. Shah receiving the Hind Rattan Award, view more photographs and watch a video clip of the ceremony online at www.dentistry.ubc.ca/go/shah_rattan

Dr. Shah's Founder's Day Lecture was broadcast live on the Internet. Watch it at <http://bit.ly/Zlr5IM>

For more information about Dr. Shah and International Relations at UBC Dentistry, read the article "Global Education: A Qualitative Rather Than Quantitative Approach" in the spring 2012 issue of *Impressions* magazine online at www.dentistry.ubc.ca/go/glob_ed

CDSBC Recognizes UBC Faculty Members and Alumni



College of Dental Surgeons of BC 2013 award winners. Front row (L to R): Drs. Karl Denk and Warren Ennis, Ms. Rosie Friesen, Dr. Patricia Hunter, Ms. Nadine Bunting, Drs. Mel Sawyer and Ron Smith. Back row (L to R): Dr. Peter Stevenson-Moore (CDSBC president), Drs. Ken Chow, Scott Stewart, David Lawson, Bob Coles, David Vogt (PhD) and Ed Putnins, Mr. Jerome Marburg (CDSBC registrar and CEO). Missing: Drs. Don Anderson, Elizabeth Bryce (MD) and Leanne Donnelly (PhD), Ms. Allison Ransier, Dr. Steve Wedan.

At the annual College of Dental Surgeons of BC (CDSBC) awards ceremony held on March 7, 2013, UBC Dentistry faculty and alumni were well represented among those recognized for their contributions to the college.

Dr. Don Anderson, UBC Dentistry alumnus (DMD 1974), and Dr. Bob Coles, UBC Dentistry alumnus (DMD 1986) and member of the UBC Dentistry Board of Counsellors, each received a Distinguished Service Award. This award recognizes their outstanding and broad contributions to the profession of dentistry through their extensive involvement with the college.

Awards of Merit were conferred upon each of the following UBC Dentistry-affiliated professionals: Ms. Nadine Bunting, clinical instructor (radiography); Dr. Ken Chow, part-time faculty member; and alumni Drs. Karl Denk (DMD 1983), Warren Ennis

(DMD 1983), Patricia Hunter (DMD 1983) and David Lawson (DMD 1975). The award recognizes volunteer involvement with CDSBC that significantly impacts the profession.

The college's Special Group Award was presented to members of the Infection Prevention and Control Working Group.† In addition to Dr. Elizabeth Bryce (MD), regional medical director for Infection Control at Vancouver Coastal Health, and registered dental hygienist Ms. Allison Ransier, the following UBC Dentistry affiliates were honoured: Ms. Nadine Bunting, clinical instructor (radiography); Dr. Leanne Donnelly, assistant professor and MSc 2005 alumna; Dr. Edward Putnins, professor, associate dean of Research, Graduate & Postgraduate Studies and PhD 1995 alumnus; Dr. Mel Sawyer, former UBC Dentistry faculty member; and UBC alumnus Dr. Steven Wedan (DMD 1988).

†This group developed the CDSBC's *Infection Prevention and Control Guidelines*. For more information, visit www.cdsbc.org/infection-prevention-and-control-guidelines



Prof. Receives Funding to Study an Orthopedic Intervention for Sleep Apnea in Children

Dr. Benjamin Pliska, assistant professor in the Department of Oral Health Sciences, received funding to study a non-surgical treatment—maxillary expansion (ME)—in children with obstructive sleep apnea syndrome (OSAS), a serious medical condition that affects an estimated 1.2 to 5.7 percent of children.

OSAS is a multifactorial disease, with the primary cause in children thought to be hypertrophic tonsils and adenoids. A common treatment is an adenotonsillectomy, a surgical procedure to remove these tissues. However, Pliska points out, recent data indicates that as many as 29 percent of children have residual obstructive sleep apnea following surgery. "While we know that craniofacial proportions play a role in OSAS and in the incomplete resolution of the disease following surgery, the exact nature of this relationship remains to be characterized," Pliska says.

To better understand the influence of craniofacial morphology and a possible orthodontic intervention for OSAS, Pliska received the 2013 Fred F. Schudy Memorial Research Award—\$25,000 for biomedical research—from the American Association of Orthodontists Foundation.

The broad objective of Pliska's study is to develop a better understanding of the patients most likely to benefit from orthopedic intervention of OSAS, with the long-term goal of improving health outcomes and quality of life for these children.

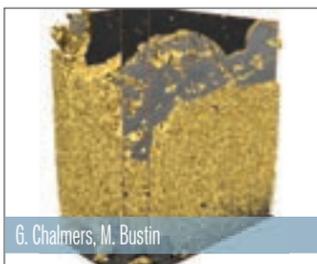
Dentistry's Imaging Facility Popular with UBC Scientists and Corporate Users



P. Panwar, D. Brömme



M. Alotaibi, C. Shuler



G. Chalmers, M. Bustin

Top: Collagen fibre; image courtesy of Dr. Preety Panwar, postdoctoral fellow in Dr. Dieter Brömme's lab, Department of Oral Biological & Medical Sciences.

Centre: Mouse mandible; image courtesy of Dr. Mazen Alotaibi, graduate student in Dr. Charles Shuler's lab, Department of Oral Biological & Medical Sciences.

Bottom: Shale rock; image courtesy of Gareth Chalmers, graduate student in Dr. Marc Bustin's lab, Department of Earth and Ocean Sciences, Faculty of Science.

Fish, rock and fuel cell specimens, and yes, teeth and bones—these were just some of the subjects in intriguing pictures shown at the opening celebration for UBC Dentistry's advanced tissue and material imaging facility. Located in the new Faculty of Pharmaceutical Sciences building since fall 2012, the Centre for High-Throughput Phenogenomics officially opened its doors on February 20, 2013.

Guests were treated to a demonstration of the centre's imaging capabilities. Its comprehensive suite of technologies—scanning electron microscopy, optical imaging, X-ray imaging and mass spectroscopy—provides two- and three-dimensional graphic information and quantitative analysis of the structure of specimens.

The centre is a core facility and welcomes collaborative, interdisciplinary research projects from universities, research organizations and corporate users.

UBC Dentistry has a multidisciplinary research team using the facility to understand the structure of bone tissue, which is crucial to shedding light on inflammatory conditions such as gum disease and arthritis, as well as bone development abnormalities like cleft lip and cleft palate. Both areas affect millions of Canadians. [See the fall 2009 *Impressions* article "Moving to the Forefront of Bioimaging" online at www.dentistry.ubc.ca/go/moving.]

Scientists in UBC's Department of Earth and Ocean Sciences have been using the imaging facility to investigate the properties of shale rock, toward improving mining technologies. Other campus users come from the Civil, Electrical, Computer, Chemical and Biological

Engineering programs, Physics, Zoology, Medicine and Pharmacy.

Users have also come from Simon Fraser University and the National Research Council, as well as from the corporate sector. Researchers from the Automotive Fuel Cell Cooperation (AFCC), located in Burnaby, BC, have been using the centre's Helios scanning electron microscope. Having access to this state-of-the-art equipment and knowledgeable staff has, in the words of AFCC director of research Greg Frenette, "enabled us to accelerate our level of innovation, giving us a competitive edge."

The Centre for High-Throughput Phenogenomics is supported by \$10.1 million in funding from the Canada Foundation for Innovation, the BC Knowledge Development Fund and UBC's Faculty of Dentistry.

To learn more about how this facility can support your scientific objectives, visit www.phenogenomics.dentistry.ubc.ca

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Watch now: Chris Overall discusses his lab's recent discovery on Global BC news, online at <http://bit.ly/W2sYwB>

Overall Lab: Master Switch Discovery Could Provide Road Map for Treating Inflammatory Diseases

Scientists seeking solutions for treating chronic inflammation in diseases like arthritis now have a new culprit—an enzyme known as MMP2. New research from the Overall Lab shows that MMP2 functions as a master switch to activate inflammation.

According to Chris Overall, a professor in the Faculty of Dentistry and Canada Research Chair in Metalloproteinase Proteomics and Systems Biology who regularly employs arthritis as a disease model in his research, this is the first study to explain this pathway system.

Arthritis is one of the major causes of pain and physical disability in Canada, with an economic burden of about \$4 billion. In patients with arthritis, the immune system becomes overactive, attacking the body's own tissues, commonly the joints. This attack causes inflammation, pain and joint damage.

The research, published recently in *Science*

Signaling, examined the role a group of enzymes known as MMP proteases play in inflammation. Overall and his team found that the protease MMP2 can remove a block, allowing inflammation to become activated. This pathway is often overactive in patients with arthritis and other inflammatory diseases.

"Imagine a cart parked on a hill with a rock behind its wheel to prevent it from rolling down the hill," said Overall. "We found that MMP2 can remove that rock, causing the immune response to activate."

"We were amazed by these results. This shows us a new way to design drugs to treat many chronic inflammatory diseases like arthritis and even periodontal disease," said Overall.

Findings also provide a basis for developing a new diagnostic screen such as a blood test to detect the disease before severe damage to joints occurs.

CIHR Funding for Student to Address Gap in HIV/AIDS Educational Material and Resources

This summer Dr. Denise Laronde's research in the area of oral cancer screening and early detection will receive a boost from one of her students, Marco Wu, a recent graduate from the Dental Hygiene Degree Program. Building on guided independent study work undertaken in his fourth year (see page 29 in this issue of *Impressions*), Wu will develop an educational module for oral mucosal screening within a high-risk community setting.

Wu was awarded a Canadian Institutes of Health Research Undergraduate Summer Studentship. Of 36 grants available across Canada, he won the only one specific for a dental hygiene student. The award is funded in partnership with the Canadian Dental Hygienists Association.

Barriers to oral care can be great for many people with HIV/AIDS and are often

associated with financial limitations, stigma, discrimination and fear. These factors make it very difficult to find care providers who can or will attend to them.

Wu will collect and assess current oral health educational resources aimed at the HIV-positive population as background for developing future educational resources. He will also be involved in developing referral pathways for lesion follow-up. His findings will be presented to the Positive Living Society of British Columbia and to oral health and medical professionals to raise awareness of HIV individuals who do not receive regular oral health care and oral mucosal screening.

A further result of Wu's summer studentship will be to educate non-oral health care providers to screen for oral lesions in HIV-positive individuals who do not access

regular oral health care, and to aid in referring individuals with lesions to oral health professionals.



Dr. Denise Laronde and Marco Wu

PHOTO BY MARTIN DEE

Publications by UBC Dentistry Faculty

“Armed to the Teeth with $\alpha\beta6$ Integrin”

Hannu Larjava, professor and periodontology researcher, and his colleagues, have their recent research paper on enamel development highlighted in the editorial of the *Journal of Cell Science*, February 15, 2013 (volume 126, issue 4). The editorial, titled “Armed to the Teeth with $\alpha\beta6$ Integrin,” illustrates the importance of $\alpha\beta6$ integrin in enamel development.

Larjava and co-authors, including DMD student Leila Mohazab who is the first author of the study and at the time an MSc candidate, conclude that integrin $\alpha\beta6$ plays a crucial role in regulating the deposition of amelogenin (tooth enamel protein) and subsequent enamel biomineralization. By using an animal model deficient in $\alpha\beta6$ integrin, researchers found chalky, round incisors with a significantly

reduced mineral-to-protein ratio, and molars with severe attrition. Tooth enamel is the hardest mineralized tissue in the body and serves to protect and insulate teeth from damage. The body cannot repair tooth enamel when it becomes damaged or deteriorated; therefore, understanding the characteristics of initial enamel growth is required. They propose, in the end of the study, that $\beta6$ integrin should be added to the list of candidate genes that cause human amelogenesis imperfecta, a genetic defect in enamel formation. Patients with amelogenesis imperfecta suffer from severe caries in their dentition, require extensive restorative work and often lose many of their teeth.

Endodontics: There’s an App for That

Fresh thinking, effective editorial collaboration, current content, quality writing and superb visuals—the makings of a good textbook—have now reached the convenience of anytime, anywhere learning for the digital age. World-renowned UBC Dentistry endodontics professor Dr. Markus Haapasalo and colleagues have launched *Endodontic Morphology* and *Endodontic Instruments & Instrumentation*, two digital publications for professionals in dentistry who need to know and understand the root canal anatomy of teeth in finest detail.

Text and voice narration are interwoven in the image-rich publications. Learners can control every aspect of their experience in the publications—formatted for the iPad—with the swipe of a finger.

Endodontic Morphology contains numerous high-quality 3D movies of micro-CT-scanned teeth. Numeric data related to root canal anatomy is clearly presented. In addition to the canal anatomy of each permanent tooth, a variety of topics important in clinical

endodontics—invaginations, evaginations, apical root canal, pulp stones, dentin structure, preentin, lateral canals, taurodontism, C-shaped canals, molarization and other different canal shapes—have been collected into valuable packages of information.

Endodontic Instruments & Instrumentation is a cutting-edge manual addressing every aspect of modern root canal instruments and instrumentation.

These two publications are the first in the field that have been designed for interactive digital learning. Continuing education (CE) credits can be arranged through a post-test with UBC Dentistry’s Division of Continuing Dental Education.

Endodontic Morphology and *Endodontic Instruments & Instrumentation* are published by Artendo Enterprises Inc. These titles, at \$35.99 each, are available through the iBookstore using the iBooks app on an iPad, or via the iTunes Store.



Wild-type mouse (L) and $\beta6$ -/- mouse.



Drs. Mario Brondani (C) and Leeann Donnelly meet with Paul Kerston at the Positive Living Society of BC office on Seymour Street in Vancouver.

Prof. Receives Funding From the Vancouver Foundation to Investigate Roots of HIV Stigma

Public health professional and assistant professor Dr. Mario Brondani has received two-year funding from the Vancouver Foundation to investigate and understand the roots of HIV stigma as it affects two marginalized communities: Aboriginal and refugee/immigrant.

HIV stigma may prevent people from being timely diagnosed and engaging in life-saving care due to misconceptions by the ill individuals about the disease progression, or due to discrimination by health care providers. Stigma may also prevent those who are HIV positive and marginalized from seeking educational health information and services, particularly if they experience disempowerment, health inequity and access to care barriers.

A community-based participatory research (CBPR) framework will be used in the study: focus group discussions (peer-led by volunteer trainees) will inductively explore the experience of HIV-positive community members, while individual interviews with HIV-negative people from the general public will gather their attitudes and beliefs. Brondani is working with co-investigators Dr. Leeann Donnelly, assistant professor in UBC Dentistry, and Paul Kerston from the Positive Living Society of BC.

The study aims to identify the factors contributing to stigma, inform the development of strategies to address and minimize it, and understand the educational and service needs of the two marginalized communities.

Highlights: Research Day 2013

UBC Dentistry’s Research Day, held on January 22, 2013, gathered experts together to address a range of technological advances in clinical practice.

Presentations in the first part of the annual forum, now in its sixth year, included ongoing research in the areas of cone beam computed tomography (CBCT) quality control, dosimetry and imaging of the pediatric patient, as well as an introduction to ultrasound imaging in dentistry—all increasingly popular in-office technologies that allow for unprecedented examination of patients.

The second part of the day offered a discussion about the paradigm shift to computer-aided design and computer-aided manufacturing (CAD/CAM) systems, a review of material selection, and a look at final-restoration marginal fits.

Two clinical cases—a craniofacial imaging case and a restorative dentistry case—were integrated into the day’s program. The cases provided frameworks that

helped lead the overall conversation around technology and next-generation materials toward judicious decision-making in daily practice.

UBC Dentistry speakers included the following faculty and graduate students: Drs. Ella Choi, Pierre Deman, Mark Fogelman, Nancy Ford, Jonathan Ng and N. Dorin Ruse. The keynote address was presented by world-renowned speaker on dental resin composites Dr. Jack Ferracane, from the Oregon Health & Science University in Portland. Dr. Ferracane discussed research in the area of resin properties and performance enhancement.

Research Day 2013 took place in the UBC Student Union Building Ballroom. All faculty and students attended the annual event.



Sinclair Dental was the Gold Sponsor of Research Day for the second year in a row. Seen here are Sinclair representatives Shervin Nowtash (L) and Mark Wilson (R), with Dr. Diego Ardenghi, a graduate student in Prosthodontics. Dr. Ardenghi provided the correct answer in the Sinclair trivia contest and won an iPad from Sinclair Dental.

UBC Dentistry is grateful to the following Research Day 2013 sponsors.

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COMMUNITY SERVICE LEARNING GIVES UBC DENTAL HYGIENE STUDENTS AN EDGE

BY HEATHER CONN

When third-year UBC dental hygiene students visit their first long-term-care facility, half of them will cry. Some have never experienced the frail elderly; after all, their grandparents are only in their 60s. Others vow that they will never grow comfortable in such a setting. Yet, by the end of fourth year, many want to go back and work at the same facility for the summer, seeking to maintain their friendship with elderly clients.

Such transformation in attitudes and client relationships reflects one overall success of the Community Service Learning (CSL) program in UBC's Dental Hygiene Degree Program (DHDP): it breaks down significant barriers to health care, enriching the lives of both students and clients. Whether it's someone homeless, with mental illness or HIV/AIDS, students learn to see beyond stereotypes, social stigmas, and their own biases. They provide empathic on-site care to those whose oral health needs—and total health and psychosocial needs—would otherwise remain unmet.

Such enriching hands-on community work with special-care populations begins in second year and culminates in 300 hours of experience by the end of fourth year. This sets UBC's Dental Hygiene Degree Program apart—it's Canada's only entry-level dental hygiene degree

program with a focus on community practice. (UBC students receive a bachelor of dental science (dental hygiene) degree.)

"It's about fostering social responsibility and awareness as a student, citizen and health professional," says clinical assistant professor Diana Lin. Through the CSL program, students learn that dental hygiene practice is more than "cleaning teeth," says Leeann Donnelly, an assistant professor in UBC's dentistry faculty. As one student reflected: "It's important to look at the individual as a whole."

Students learn about real-life health care challenges beyond UBC's state-of-the-art clinic, Donnelly says. This can range from assisting at a cancer clinic to giving a homeless person a portable kit of toothpaste and a toothbrush. Most importantly, they learn compassion. "It's extremely important to try

to understand the client's life situation and be a compassionate and approachable health care provider."

UBC Dental Hygiene prides itself on what it calls "layering of curriculum." Rather than parachuting students into an unfamiliar setting where they sink or swim, CSL enables them to build skills gradually and grow progressively more comfortable with special-care populations. This also enables them to maintain meaningful, ongoing relationships that continue throughout their years in the program.

Since 2009, second-year UBC dental hygiene students have provided oral health promotion programs to specific community groups, from schoolchildren to new immigrants. Some of these clients have never met a dental health professional. Second-year students learn how



“The program is really for the community, with the community —not just to the community.”

— Diana Lin

Dr. Leeann Donnelly (L) and Diana Lin

to engage, assess, develop and implement culturally appropriate programs for diverse communities while learning teaching and public speaking skills. “The students collaborate with the community to ensure the program addresses identified needs and interests,” says Lin, who, along with Donnelly, oversees roughly 60 students in community service learning projects across the Lower Mainland.

Second-year CSL topics include educating people about the relationship between smoking and oral health and/or the effects of sugary drinks on oral health and nutrition. “Everyone is always amazed at how much sugar there is in a Slurpee or bubble tea,” says Lin.

By third year, UBC dental hygiene students work more independently but collaboratively

with their communities to address identified needs, whether it’s creating a program at a youth drop-in clinic or food bank. They spend the year working with communities such as:

- recent immigrants and refugees
- toddlers and young children
- pregnant women, parents and caregivers
- seniors in daycare centres and/or long-term-care facilities
- the working poor and homeless
- at-risk teenagers
- adults with special needs, such as diabetics, people with developmental disabilities or mental health issues, and people with HIV/AIDS

Third-year work focuses on accessing people who do not seek out professional dental care, such as those who do not recognize that they might have an oral health care need. “When you go into a food bank, not everyone wants to hear about oral health while they’re lining up for soup,” says Lin.

Third-year students also begin to work alongside professionals, from dietitians, pharmacists, medical doctors and nurses to administrators, educators and public dental hygienists. Experiencing the dynamics of team work, they learn diplomacy and professionalism, critical thinking, and a deeper understanding of the life situations of special-care populations, while gaining more confidence to act independently. “We’ve built really good relationships in the communities we serve and have had nothing but positive feedback,” says Donnelly.

PHOTO BY MARTIN DEE

By fourth year, students are in the community one day a week, running clinical programs themselves, learning to be more efficient, realistic and adaptable. They’ve also gained more realistic expectations, Donnelly says, with a shift from “Oral health is the most important thing in the world” to “Oral health is an important aspect of a person’s life.”

In this final year, UBC dental hygiene students in CSL serve as valuable advocates, becoming involved in all aspects of a client’s health, not just his or her oral health needs. They’ll make a call and book an appointment for someone who doesn’t speak English, or help a client with complex health conditions, such as someone with HIV/AIDS, understand a lab report. If a client has no dental insurance, a student will arrange a visit to a low-cost dental clinic. “We’re working with communities so that they can support individuals in their community to take action and control their health,” Lin says. “It’s exciting to make a difference. I love it.”

As part of their community work, students prepare reports, which include a situation and needs analysis of the specific community’s strengths, weaknesses, opportunities and threats related to both oral and overall health. They’ll solicit feedback from community partners and program participants. “The program is really *for* the community, *with* the community—not just *to* the community,” says Lin.

“The goal is to build long-term sustainable relationships,” says Donnelly, who ensures that all community sites receive year-round attention, including from faculty and student volunteers in the summer. “We don’t just pop in from September to April.”

Through written reflections, students share their client misconceptions. Some who initially disliked or feared working with children soon find that this client group has become their favourite. “This is experiential learning,” says Lin, “not just theoretical. You’re immersed in it.” One student wrote: “This program has been a real eye-opener.”

Through their community work, UBC’s dental hygiene students gain more social awareness, not only as learners and health practitioners,

but as citizens. This reflects the role of students and UBC as “a bridge between worlds,” as the university’s strategic plan states. UBC Dentistry’s Strategic Plan notes that multi-site clinical environments help maximize learning opportunities, better serve disadvantaged groups, and attract the best students.

Donnelly started working as a dental hygiene clinician and educator in long-term care in the late 1990s as part of UBC’s dental geriatrics program. She soon recognized that she could make a difference in people’s lives. “It was so gratifying and there was so much need.”

As a model for its community service learning program, UBC Dental Hygiene drew on the success of a five-year pilot project known as the Dental Pipeline program. This research project, involving 15 dental schools across the US, set an overall goal of reducing disparities in access to dental care. The Pipeline program strived to improve access by increasing the time that senior students and residents spent treating underserved populations in patient-centred community clinics, while providing both classroom and clinical courses to prepare the students for these community experiences. Completed in 2007, the study met its goals: the average time that a senior student spent in community clinics and practices rose from 10 to 50 days in an academic year.

Globally, UBC Dental Hygiene Degree Program’s community service learning model is recognized as unique and a leader in its field. Colleagues from both Australia’s University of Adelaide and Dalhousie University in Halifax have asked Donnelly about UBC’s community work and wanted to know more about her related curriculum.

Thanks to the comprehensive CSL it provides, UBC’s Dental Hygiene Program is leading the way in educating broad-based professionals to work with diverse clients in a variety of settings. The program gives UBC students an edge, whether they want to practise independently or be hired at a dental office.

Help Shape the Future of Dental Hygiene

Are you a dental professional who’d like to support the next generation of dental hygienists? By donating to the Impact of Ten Dentistry Dental Hygiene Fund, you can join a distinguished group of UBC alumni and friends to shape the future of the Dental Hygiene Degree Program (DHDP) and the profession.

Your individual gift of \$10,000, pledged over time, or a donation of your choice, will offer unique opportunities for DHDP students to participate in essential community outreach dental initiatives across BC. Your contribution will also provide ongoing funding for annual and endowed merit-based student awards and bursaries.

“I’ve had the benefit of an excellent education and wonderful career, and I’m very happy to give back,” says donor Brenda Currie, who has taught part-time in UBC’s DHDP and received a master’s degree at UBC in 2007 with a focus on “Access to Care: Oral Cancer Screening in Vulnerable Populations.”

To find out more about how your gift will ensure continuing academic excellence and enhanced student learning in dental hygiene education at UBC, please contact Nik Williams-Walsh at 604-822-6808 or nww@dentistry.ubc.ca



SHIFTING GEARS WITH DISRUPTIVE INNOVATION

BY LESLEY EVANS OGDEN

Sometimes an innovation comes along that changes everything. Like Google and the Model T Ford, the innovation doesn't just change the status quo—it displaces it. Every once in a while that “disruptive innovation” is not a technology. It's a person.

Such is the case with Dr. HsingChi von Bergmann, who felt like a round peg in a square hole when she joined UBC Faculty of Dentistry as an associate professor in 2010. Neither an oral science researcher nor a dentist, Dr. von Bergmann was hired because of her expertise in educational research and her desire to work toward one of the faculty's strategic goals—enhancing the student experience.

At first it was “a difficult marriage,” says von Bergmann, who came to UBC from her position as an associate professor in science education at the University of Calgary. She describes her integration into UBC Dentistry as a culture shock for both herself and other faculty members. Her presence on the faculty, she suspects, was initially enigmatic—many colleagues were unsure of how to make use of her expertise.

Von Bergmann has a remarkable track record of science education research. During her

seven years on faculty at the University of Calgary as coordinator of curriculum, teaching and learning in the Faculty of Education, and evaluation consultant for the Faculty of Science, she dug deep into the application of evidence-based educational practices to science teaching. This made her an ideal candidate for UBC Dentistry in its quest to attract a partner that would support their teaching of evidence-based dentistry.

In 2008 she co-founded the Hong Kong Accord on Global Science Education. The accord represented a move away from just comparing countries' science education systems, and a step toward promoting international collaboration. Von Bergmann looks upon global science education—well delivered—as a mechanism for solving global problems. Her global philosophy and experience align well with another of UBC Dentistry's strategic goals: to expand the international presence at UBC and UBC's presence globally.

Dr. HsingChi von Bergmann



Von Bergmann's arrival at UBC's dentistry faculty has stretched her in new ways. Her prior focus was K-12 science education, where considerable energy is invested to develop theories of learning. The higher education context, however, is a different kettle of fish, with "very little research around curriculum design," explains von Bergmann. "It's difficult because you have to think about it in a vacuum." So in designing her research, von Bergmann lifts parallels from K-12 science education into the higher education setting.

After two years at UBC, von Bergmann is confident that her approaches are relevant, useful and no longer completely alien to dentistry. Her research—on topics ranging from the development of critical thinking activities to enhancing undergraduate student study habits—is designed to take UBC's already progressive dental curriculum a few notches higher. In one recent project, for example, von Bergmann collaborated on a course redesign that transformed a previously passive learning situation (teacher-centred, with lecturing as the main instructional approach) into active learning. Graduate students prepared seminars for their classmates and developed synthesis exercises that resulted in greater engagement for the whole class.

In another ongoing research project, von Bergmann is piloting the use of new media, such as online videos, to replace some of the lecturing time for content she describes as "didactic stuff." This approach of looking beyond the traditional classroom could free up more face-to-face time for students to focus on learning the critical psychomotor

skills they need for a career in dentistry; particularly, skills that require instructor guidance of precise, tactile movements. Another benefit of moving some of the content online is that it allows flexibility for students to learn at their own pace. Some students may arrive with a firm grasp of topics like the physics of colour (important for understanding tooth health and aesthetic dentistry), for example. These students may not need extensive lecture-based coverage, while others lacking that background might benefit from online content that can be viewed repeatedly. A further benefit is "differentiated instruction": teachers have more face-to-face time to address diverse student learning needs.

One of von Bergmann's major undertakings has been a systematic examination of the medical school curriculum that dental students are required to take during their first two years. "Students were constantly talking about how some of the topics were completely irrelevant to them," says von Bergmann. The faculty shared the students' concerns, but wanted an objective evaluation of the situation.

Von Bergmann came up with the idea of using the Delphi method—a structured, systematic communication technique that uses a panel of experts—to evaluate all the biomedical learning objectives in these two years. Dentists, dental specialists, oral biologists, oral health scientists and senior students in the dentistry program identified which aspects of the curriculum were relevant versus irrelevant—separating out the "nice to know" from the "need to know," she explains.

The results revealed that only about 50 percent of the biomedical learning objectives from the Faculty of Medicine were "need to know" for dentistry. This sparked some intense thinking by Dr. Leandra Best, associate dean of Academic Affairs, and members of the Academic Advisory Committee, about what might be possible if some of that curriculum was removed.

In further discussion with Dentistry's curriculum committee, von Bergmann advocated that faculty resist the temptation to "add more stuff" to replace what could be

taken out. Often, when it comes to curriculum in higher education, "we think about adding new things in, but we don't do the taking out," she says. Taking time to weed out the non-essential material is an innovative approach to curriculum that von Bergmann is determined to apply to dental education at UBC.

"Students need some wide space to think about what they have been learning," she explains. It's an educational approach that borrows from the slow food movement that arose in Italy in the 1980s. Analogous to people sitting down and eating slowly rather than gulping down fast food on the move, the slow learning concept suggests that learners slow down, reflect and take the time to learn things well. "Having a curriculum that is a mile wide and an inch deep" results in students trying to learn everything but not mastering anything, von Bergmann explains.

One outcome of this illuminating research has been the removal of one of the 13 biomedical modules offered by the Faculty of Medicine. It's no joke that students have traditionally learned to deliver a baby before learning about tooth structure, says von Bergmann, so the extraction of the reproduction module is already providing welcome relief to many dental students. A few relevant aspects of that module have been salvaged, says von Bergmann, but the module's removal could provide more time for independent work and reflection, and increases the overall relevance of the dental curriculum to future dentists.

Von Bergmann is particularly passionate about designing the research. "Data collection is the most painful part," she admits, "but once I see the data analyzed, it really excites me." Her research reveals possibilities for making educational shifts that impact student learning. And with much more data yet to analyze, more positive changes will be coming. [See the fall 2012 *Impressions* article about curriculum renewal online at www.dentistry.ubc.ca/go/renewal]

"Disruptive innovation in technology is a very good analogy for educators like me," says von Bergmann. Until her expertise was understood and put to work in driving

educational improvements within the faculty, her colleagues probably didn't think they needed her, she says. But now being embedded in more than 18 collaborative research projects is a testament to the disruptive innovation that her presence brings to the Faculty of Dentistry at UBC.

Applying her expertise to improving curriculum and ultimately the student experience involves placing "all of the cards on the table," says von Bergmann. "I don't know anything about dentistry," she admits, but recognizing respective limitations is an essential part of the ongoing and increasing number of conversations she has with dental faculty. As faculty have come to recognize what they can bring and what she can bring, it has transformed a difficult marriage . . . into a stronger and vibrant one.

Shifting Gears—At Work and Home

Whatever the weather, von Bergmann commutes to work each day on a vehicle that was very much a disruptive innovation when it burst on the scene—the bicycle. Just as she applies her knowledge tool kit to educational research, when it comes to cycling, she is well prepared: "I have all the gear," she explains. "Vancouver rain is actually not that bad, it's more like drizzle," she says, exemplifying her positive attitude about life in general, as well as the impacts of her research. "I tend not to focus on the dark side," she muses. During her downtime von Bergmann loves listening to jazz and classical music, seeking out the city's best Japanese ramen noodles, and hiking in the mountains with her mathematician-turned-app designer husband and her young son.



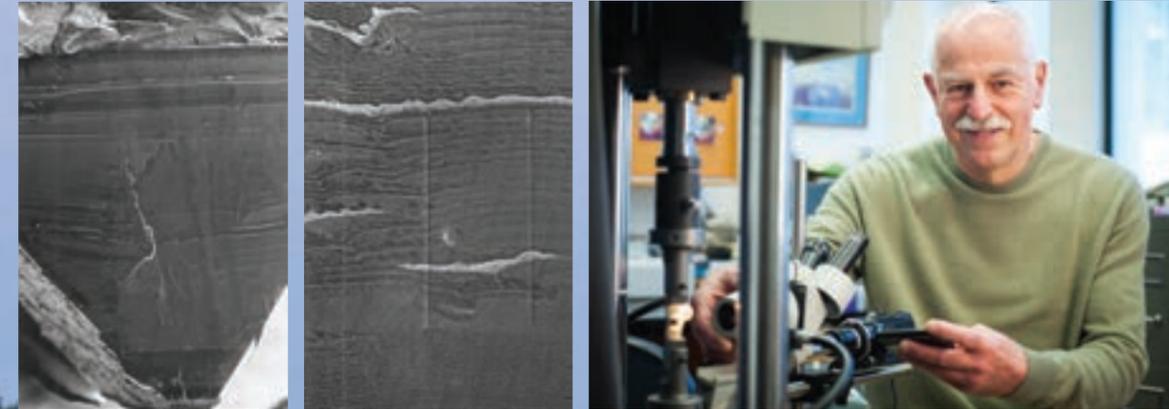
"Students need some wide space to think about what they have been learning."

— Dr. HsingChi von Bergmann

THE VANGUARD OF RESTORATIVE BIOMATERIALS RESEARCH

BY MARK WITTEN

Three leading researchers in the dynamic field of restorative biomaterials are investigating new and better solutions to the big problem of dental restoration treatments breaking down too soon. Each one looks at the root causes of restoration failure—outside mechanical stresses, attacks from the body, and variations in dental handling and patients' oral care—from a different perspective. Now their advances in the lab are ready to move into prime-time testing by industry and clinical trials with patients.



N. Dorin Ruse: Fracture Mechanics-Based Fatigue Studies

Dorin Ruse's path toward becoming a top researcher in the field of restorative dental biomaterials was unexpected. Trained as a chemist at Babes-Bolyai University in Romania, he left that country in 1981 to seek better opportunities for himself and his young family. "I just wanted to escape a communist regime. I landed in Toronto with a five-year-old child, a wife who couldn't speak any English, and US\$1,500. I saw an ad in the Saturday newspaper looking for a research chemist in a lab in the Faculty of Dentistry at the University of Toronto and applied for the position," says Ruse, now a UBC Dentistry professor and chair of the Division of Biomaterials, in the Department of Oral Biological & Medical Sciences. He is also an associate member in the Faculty of Applied Science's Department of Materials Engineering.

Ruse knew nothing about dentistry, but Dennis Smith, the U of T faculty's head of biomaterials, hired him because of his chemistry background. Smith, an Order of Canada recipient who had an illustrious career as a leader in biomaterials within and beyond dentistry, had also trained as a chemist and not a dentist. "It was a terrific way to start in Canada. Dennis had an amazing vision of the future in biomaterials and was very supportive of me," says Ruse, who pursued his PhD in materials science and biomaterials with his accidental mentor.

While studying the theory and methodology for the classical technique of shear bond strength testing for dental adhesives at U of T, Ruse began to have serious questions about its limitations. "You don't really know if the adhesive is weak, and you can't identify where the weakness is. When I started my own research lab at UBC, I decided to shift to a fracture mechanics approach," says Ruse, who has been a pioneer in fatigue performance testing of adhesion and bond interfaces to evaluate their longevity in real life.

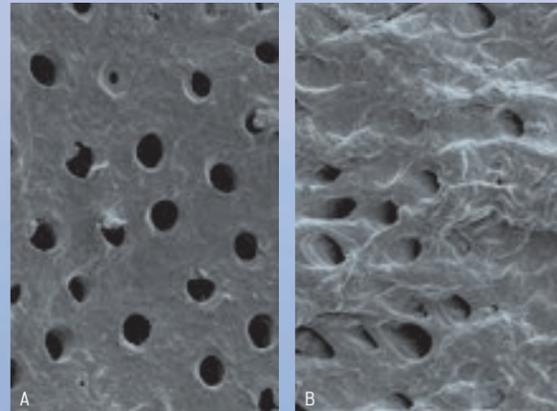
Ruse developed the influential NTP (notchless triangular prism) specimen fracture toughness test early in his career at UBC. The Ruse method is well recognized for its relative simplicity and advantage of having an easier sample preparation technique than other fracture toughness tests. His method has been applied in research to test a wide range of dental materials, as well as adhesive interfaces between dentin and composites, dentin and cement, enamel and composites, enamel and cement, and metal and ceramics.

Ruse maintains that the results of fracture mechanics-based fatigue studies better correlate with long-term clinical performance than short-term mechanical tests do. "In general, dental materials and adhesive interfaces fail by crack initiation and propagation. Fracture mechanics is a better predictor of how a material will behave and of where a material will break in real life than other testing methodologies. We would like to see a fracture mechanics approach applied more widely to dental restorative materials," he says.

He also believes that fatigue performance studies would help to address the problem of short-lived materials being brought to market prematurely. "This is the type of testing that should be done by the manufacturer before the product comes on the market. Patients are being treated as guinea pigs and dentists are being used to run trials that should be done in-house," says Ruse.

In teaching biomaterials to dental students, Ruse emphasizes how this vital technical knowledge will help them to succeed in clinical practice. "The success of the dentist depends on understanding the science behind the materials and the art of applying the materials. If the dentist doesn't understand the properties of adhesives, for example, the patient will have a poor restoration with a short life. You can have an inferior material and an excellent dentist, but the results could be better than with an excellent material and a lousy dentist. If students understand how the materials should be applied and why, they will become better dentists," he says.

PHOTOS Surface of a Plexiglas sample fractured during a fatigue crack propagation study, shown at two different magnifications.



Ricardo Carvalho: Biological Threats to Restoration Longevity

One of the biggest threats to the survival of aesthetically pleasing, tooth-coloured dental fillings is biological. The enzymes released from the patient's dental tissue during the restoration procedure attack and destroy the tooth collagen fibrils that are the anchor of the bond between the material and the dental tissue. This ultimately degrades the adhesive joint and leads to premature failure of the restoration.

"The resin composite restorations are beautiful but not long-lasting. When you perform the bonding procedure, you're releasing the lion in there," says Dr. Ricardo Carvalho, a professor in the Department of Oral Biological & Medical Sciences and director of UBC Dentistry's new Frontier Clinical Research Centre.

Carvalho, a leading dental biomaterials researcher who has published over 180 articles in peer-reviewed journals, is a member of the research group that identified the key role of enzymes, such as matrix metalloproteinases (MMPs) and more recently cysteine cathepsins, in the failure of dental restorations. He and his colleagues also pioneered testing enzyme inhibitors to prevent this destruction and have shown that chlorhexidine—a common antimicrobial solution used by dentists to treat gum disease—is effective in protecting dentin collagen from the action of the enzymes.

"We confirmed that chlorhexidine is a very potent enzyme inhibitor and can be included

as a new step in the bonding procedure to prolong the restoration's durability. Some dental schools are teaching these techniques, but we would like to see them adopted more widely by dentists in the clinic," he says.

Research into enzyme destruction and finding ways to prolong the lifetime of restorations has become a hot topic in the world of dental biomaterials. "A resin composite restoration lasts only five to seven years in a good clinical scenario on average. The risk with a reckless patient is that it could fail in six months or a year. Because these fillings have to be replaced more frequently than the old metallic alternatives, that means more visits to the dentist, more discomfort in the dentist's chair and more money spent. It can also eventually lead to tooth loss because sound tooth structure is removed with each replacement," Carvalho says.

After joining UBC Dentistry in 2011, Carvalho teamed up with Dieter Brömme, a UBC Dentistry expert in enzyme inhibitors and Canada Research Chair in Proteases and Diseases, on an exciting new project. Their labs are joining forces to investigate and test new and different combinations of inhibitors to prevent collagen degradation and the breakdown of restorative procedures. "With the right inhibitors, you could potentially prolong the life of direct and indirect restorations and virtually any adhesive procedure in dentistry," says Carvalho, who trained at the Bauru School of Dentistry, University of São Paulo, Brazil, and has held various faculty appointments at Bauru, the University of North Carolina in Chapel Hill, the University of Florida, and in Japan.

The project will also investigate using protein cross-linking agents to inactivate enzymes and strengthen collagen fibrils during the bonding procedure, an alternative approach to enzyme inhibitors. "If we can make the collagen stronger, it will be resistant to degradation regardless of the type of enzyme," explains Carvalho. To assess the effectiveness of different inhibitors and cross-linkers in prolonging restorations, he will use the widely adopted non-trimming microtensile bond testing method he invented.

Carvalho is also collaborating on a project with researchers at Georgia Regents University to develop new bioactive dental adhesives. "A dream material will be one that includes either enzyme inhibitors or cross-linking agents in its composition to make dental restorations last longer," he says.

PHOTOS In A, the cut surface of a tooth exposes dentin as the substrate where adhesives and resins are bonded when dentists are placing restorations. The holes are the dental tubules, and in between the holes the structure is mainly composed of minerals and collagen fibrils. The collagen fibrils are the anchor that permits the bond of the resin to the tooth structure, thus the integrity of the collagen fibrils is vital for maintaining the bond and the restoration in function.

In B, the same tooth surface after the action of the enzyme cathepsin K (catK) for two hours. The enzyme attacks the collagen fibrils and breaks them into small fragments, resulting in total dissolution of the collagen. Because catK is present in the tooth structure, the collagen fibrils that sustain the adhesion of the restoration can be degraded at the resin-tooth interface, thus leading to the failure of the bond, and consequently, the failure of the restoration.

Current research aims to develop inhibitors of catK that can be used in conjunction with the restorative procedure, thus preventing the degradation of the bonded interface and increasing the durability of the restorations.

PHOTO BY MARTIN DEE - SCIENTIFIC PHOTOS COURTESY OF RICARDO CARVALHO



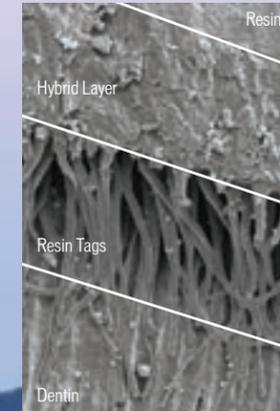
Frontier Clinical Research Centre

As director of UBC Dentistry's new Frontier Clinical Research Centre, Ricardo Carvalho is building a dedicated facility for all types of dental-related, patient-based research in Canada. "This is a place where patients will be treated on an ongoing basis and the treatment will have a strong research component. My vision is of a facility where all faculty who want to be involved in clinical, patient-centred research can design and run the clinical trials needed to translate promising bench-top research into routine clinical practice," says Carvalho.

The centre will provide the infrastructure and services to help facilitate clinical studies. This support will include protocol review, statistical consultation, budget planning, regulatory compliance, recruitment of subjects, data collection and report preparation.

It will also offer opportunities for industry and corporate sponsors to run clinical trials to test and validate their products. "Companies need to do clinical studies with patients to properly evaluate and reinforce the quality and goodness of their products. We can collaborate with them to design those studies and provide the services, support and expertise needed to conduct clinical trials effectively and efficiently," says Carvalho.

To find out more about the Frontier Clinical Research Centre, visit www.fcrc.dentistry.ubc.ca



Adriana Manso: Quest for New Resin Composites

Adriana Manso's efforts to improve the quality and durability of dental restorations, through her teaching and research, are grounded in 15 years of experience treating patients as a practising dentist. "Everyday practice requires knowledge of dental materials. As an example, if the dentist doesn't know how to properly handle dental adhesives, the patient can have post-operative sensitivity. The handling of the dental material can also result in the restoration being more or less durable."

Manso ensures students know why it's important for dentists to educate patients about their role in prolonging the life of a restoration procedure. "Any type of preventive or restorative treatment needs attention. The restorations are more prone to have a problem in a shorter period of time if the patient is not properly educated for regular maintenance," says Manso.

In her current research, Manso has taken on the challenge of minimizing the breakdown of the adhesive/dentin interface over time through chemical reactions with water. In pre-clinical studies, she has tested an ethanol bonding technique that aims to remove intrinsic water from dentin before the dental adhesive is applied.

"Before applying the adhesive, we chemically dry the tooth with an ethanol solution instead of air drying the tooth. We've done this in a clinically feasible time of 15 seconds," explains Manso, a clinical assistant professor in the Department of Oral Biological & Medical Sciences, who has specialty degrees in endodontics and operative dentistry, a master's degree in operative

dentistry, and a PhD in dental materials from the University of São Paulo.

She is also investigating a combined approach, in which ethanol mixed with an enzyme inhibitor is applied before the dental adhesive. "The goal of the combined technique is to minimize degradation from both the adhesive resin and the collagen fibrils from the dentin," says Manso, who joined UBC Dentistry in 2011. She was drawn to the opportunities for teaching dental materials and for doing evidence-based research and translating that into clinical practice at a leading North American university and dental school.

Manso is excited by a major effort among researchers around the world to develop new resin composite materials with durability properties similar to dental amalgam, without the mercury waste and environmental issues. Manso plans to pursue research to improve the mechanical properties of resin composites and also develop a resin composite that can be self-adhesive and bioactive.

This would eliminate the need for dental adhesives, provide good interfacial sealing, and deliver bioactive components to prevent recurrent caries. The ideal material would be something that could also work in remote areas, where it could be applied in a simple way. "This would benefit everyone in places where they can't afford high-end equipment or long patient or clinical time to provide good care," she says.

PHOTOS The dentin-resin interface corresponds to the bonded area between any type of tooth-coloured filling and the dental substrate (dentin, in this case). This interface is shown in four sections: dental adhesive only (resin); dental adhesive and dental substrate combined (hybrid layer); dental adhesive branches inside the dental tubules, with dentin demineralized (resin tags); and superficially demineralized for imaging purposes, dental substrate only (dentin).

PHOTO BY MARTIN DEE - SCIENTIFIC PHOTO COURTESY OF ZHEJUN WANG AND ADRIANA MANSO

Three Dental Hygiene Students Forge Their Own 'Less Travelled' Roads

BY TERRY WINTONYK

It made "all the difference" for the American poet Robert Frost. Now a popular axiom, taking the road "less travelled" presumes positive, though hard-won, results. Three fourth-year students in the Dental Hygiene Degree Program at UBC each took their own road beyond the established curriculum, to explore a topic of their choosing, through an elective course—the Guided Independent Study (GIS).

Jennifer Vandergaag



PHOTO BY MARTIN DEE

Jennifer—A Desire to Drive the Profession Forward

When Jennifer Vandergaag came to her fork in the road, she knew which direction to take. The Guided Independent Study was an obvious route since she was already interested in graduate work, with an aspiration toward education or administration.

Jennifer's guided study focused on the regulatory processes involved in changing education credentials for dental hygiene. Currently, almost all dental hygienists in Canada graduate with a two- or three-year diploma from a college program; UBC, however, offers a four-year baccalaureate degree in dental hygiene.

As a first step, Jennifer investigated these discrepancies in dental hygiene education. She saw value in both the college and university routes—both graduate highly skilled professionals—but she needed to know more about the long-term benefits of undertaking a four-year degree. She did an in-depth exploration of the history of dental hygiene education and an analysis of the literature about baccalaureate education for the health professions in general.

To better understand regulatory change processes and some of the governmental, professional and political challenges involved with credential advancement, Jennifer interviewed the acting registrar of the College of Dental Hygienists of BC. The interview was audio-recorded, transcribed verbatim, coded and analyzed.

Prof. Zul Kanji, acting director of UBC's Dental Hygiene Degree Program, provided expert guidance for collecting research data from an interview. "By following some commonly adopted methods, Jennifer gained a valuable first exposure to a qualitative research approach," he says.

Through the interview and her other research, Jennifer learned that Canada would require evidence that a credential advancement in dental hygiene directly results in an improvement in client care outcomes. She presented her findings to faculty members and all 90 students of UBC's Dental Hygiene Degree Program.

Jennifer notes that her project is small scale, but it does contain information about abilities

particularly fostered in baccalaureate education, such as critical thinking, research use and interdisciplinary collaboration. She also cites other countries, such as Finland, Holland, Italy, Slovakia and the Netherlands, where the baccalaureate is now the minimum requirement for entry to practice in dental hygiene.

Kanji says, "Jennifer brought a lot of passion for the subject, which certainly set her up for success in a course of this structure. Through the Guided Independent Study, she has been exposed, on a smaller scale level, to what she could experience in graduate studies learning."

According to Jennifer, the Guided Independent Study cured her procrastination. "There was no one to prod me; no one telling me what to do. I wrote the learning contract and determined the deadlines. It was a different way of learning."

Before she begins a graduate degree with a wider scope in the realm of public health and health administration, Jennifer plans to spend a few years gaining clinical experience to better understand the profession she wants to advocate for and drive forward, down "the road."

Ambreen—A Cultural Connection Steers Research Direction

While investigating tobacco cessation for her Guided Independent Study, Ambreen Khan realized that water pipe use can be another source of nicotine intake. In Middle Eastern and South Asian cultures, tobacco or herbal substances that are often flavoured with fruit and other ingredients (shisha) are smoked through a pipe with a water chamber (hookah) that cools the smoke before inhalation. Ambreen, originally from Pakistan, says, "In my culture, its use is very common. It really hit home that this is something I should investigate further."

Ambreen's GIS project supervisor was Dr. Denise Laronde, a researcher who studies oral cancer screening and early detection. "It was quite exciting, from an instructor point of view, to see Ambreen discover a research topic she is passionate about and that she can relate to personally," Laronde says.

Ambreen set out to do a literature review and to prepare for a health promotion fair in early spring. She remained cool about the stressful work load and says she was able to remain

motivated because of her personal connection to the topic. "It was exciting, because I know so much about its use and the products out there," she says, acknowledging that her family members use the water pipe in social settings, "but I didn't know how bad it really is." Ambreen is concerned about the hookah lounges and bars that are becoming more common.

At the community health fair, Ambreen presented her public information pamphlet and poster outlining the risks of using alternative nicotine substances, including substances used in water pipes. Risks include cancer, respiratory illness and low birth weight. And, she warns, water pipe use can increase the spread of diseases like herpes, hepatitis and tuberculosis, because the instrument is shared among users.

While Ambreen's immediate plans are to practise as a clinician in dental hygiene, she has her eye on research and education. "I took a guided independent study to learn whether I could do research and found out that I really enjoy it." Her GIS literature review is a solid look at what research has been done on the effects of water pipe use—and what still needs to be done.

Current research on the effects of water pipe use is scant. "I want to do my own research on it and contribute to the body of knowledge," she says. "The course helped me find my passion." For Ambreen, this new-found desire, discovered on her road "less travelled," means all the difference.

Marco—Headed Down an Oral Pathology Path

Marco Wu was inspired by previous students to undertake a guided independent study. Through their presentations, he saw the appeal of following his own line of inquiry.

Marco wanted to know more about oral pathology, so he, too, turned to Dr. Denise Laronde for help in narrowing this broad topic down to his burning question: What does a dentist or a dental hygienist need to know about the oral biopsy?

Marco wanted to address an inconsistency he understood existed—that is, hesitation or uncertainty among some dentists and dental hygienists around performing an oral biopsy procedure or referring it to a specialist.



Marco Wu and Ambreen Khan

Doing fieldwork at the BC Cancer Agency's Fraser Valley Centre was a highlight for Marco. He met oral pathologists, gained an understanding of the referral process, experienced the internal processes for biopsies, and met patients. "I also learned about client management—knowing what to say and how to say it," he says, referring to clients who present with a suspicious oral lesion.

Marco's presentation to faculty and students provided information about different kinds of biopsies, screening adjuncts and tips for client management. Being "on stage" also gave him good insight into the how-to of presentations. "I learned the value of preparing, and that sometimes the use of humour falls flat," he says of presenting serious topics with the potential for significant impact. "Winging it doesn't work at a higher level either," he says, with a self-effacing chuckle.

In the near future, Marco will be no stranger to presentations. He has already been accepted to undertake a master's degree in Craniofacial Science in the Faculty of Dentistry. The Guided Independent Study prepared him well, he says. "It was a small taste that got me over my apprehension about doing research."

A short-lived apprehension, indeed. Marco was quick to apply for and win a research grant from the Canadian Institutes of Health Research for a summer project. Building on the body of work from his guided study, he will develop a protocol for oral mucosal screening—the what, why and how to do screenings—for health care professionals, such as the nutritionist at the Positive Living Society of BC who works with the high-risk HIV/AIDS population. "Oral cancer is preventable if detected early—my project is intended to give front-line health care providers the knowledge and tools to detect suspicious lesions," Marco says.

Marco's guided-independent-study "road travelled" served as a kind of geographic information system—that other infamous "GIS"—by providing a clear route toward a promising academic career plan.

The work of all three dental hygiene student researchers is slated for publication in the *Canadian Journal of Dental Hygiene*. Ambreen will present a poster of her research at the *Canadian Dental Hygiene Association (CDHA) conference in Toronto in the fall*.

PHOTO BY MARTIN DEE

DMD Students Reap Benefits From Volunteering

BY TERRY WINTONYK

A volunteer dentistry mission to India has taught four UBC students to see the whole patient—including his or her social and economic context, cultural beliefs and values—not just the ailing tooth.

In December, fourth-year dentistry students Akashdeep Villing, Amandeep Hans and Vikrant Sharma and third-year student Tanmeet Singh arrived in India to set up dental camps at local factories and elementary schools. They had intended to provide straightforward dental checkups and extractions, but learned that to get to the tooth, you first have to get the patient to open up.

The four set off on their adventure on their own accord after meeting a visitor to UBC Dentistry from India and hearing about the unmet dental needs prevalent in his country. The group received valuable guidance and support for dental supplies from the Dental Mission Project Society (see sidebar) and Patterson Dental.

The Indian workers the students served made on average \$20 a month, and dental health is a low priority. "Many patients refused to have infected root tips and even loose teeth extracted," says Villing. "We couldn't use long-term consequences to convince patients to treat their infections; they thought strictly in the short term. 'If you take it out, will it hurt today?' was their most pressing concern."

With the help of the Baba Jaswant Singh Dental College in Ludhiana, Punjab, the UBC students—who all spoke Punjabi—set up a clinic at a factory on the outskirts of the city and completed more than 70 checkups, offering advice and counselling about oral health and future dental problems.

"Workers were astounded that we travelled such a long distance at our own expense to offer free dentistry to them," Hans says. "That gave us some social credibility to offer advice as well."

Before the trip, Hans thought offering treatment for pain relief would be a piece of cake—that people would jump at the opportunity to trade long-term pain for short-term discomfort.

"Instead, we were bombarded with requests for teeth whitening," says Hans. "Most people refused treatment such as an extraction, but were open to basic advice on proper brushing because it promised whiter teeth."

Yet, the team was not dissuaded. To be effective, Hans took a step back to gauge the knowledge of his patients. He realized he could not assume they had a basic understanding about oral health or the seriousness of dental decay, and would simply comply with treatment. He learned how to work with patients on their terms, understanding their references.

"We realized that we couldn't change their whole belief system overnight," Villing adds. "But we did feel that we had a positive impact." That meant knowing a seed was planted about the awareness and importance of oral health.

In addition to the factory clinics, the UBC Dentistry team also staged their dental camp at a local elementary school. Oral hygiene education played a large role with the children, many of whom suffered from ectopic eruptions (permanent teeth growing before baby teeth fall out), poor hygiene and retained decayed primary teeth. They found children more receptive and eager to make changes. Parents were also receptive to advice about the necessity of orthodontic intervention. The team has tentative plans to return to the school and set up a full restoration camp.



"Returning to the country that raised our parents and shaped much of our lives was a great experience," Villing says. "The dentistry we were able to perform was also a blessing."

After his experience in India, Hans says he's more prepared to work with a broader population of patients, especially in other countries as a volunteer dentist. "A practitioner has to consider the social dynamics at play, and in our case in India, having white teeth was deemed more valuable than basic treatment. We need to understand those we serve, and learn from them."

Dentistry students "cut their teeth" in volunteer dentistry throughout their four years at UBC in the faculty's Community Volunteer Clinic Program as well as with outside groups such as the Dental Mission Project Society, run by DMD 1972 alumnus Dr. Doug Nielsen. Community service learning opportunities build confidence and help foster a lifetime of global citizenship.

Adapted from a reprint with permission from UBC Public Affairs; published in UBC Reports, Mar. 6, 2013.

The Dental Mission Project Society



Do you want to reach out to the world?

The Dental Mission Project Society supports regions in desperate need of oral health care and education—around the world and in our own backyard. The non-profit society is committed to assist dental groups interested in providing assistance to marginalized populations regardless of their religious or political beliefs, or economic or social circumstance. If you are interested in coordinating a dental mission trip somewhere in the world, contact the society through its website at www.thedentalmissionproject.com

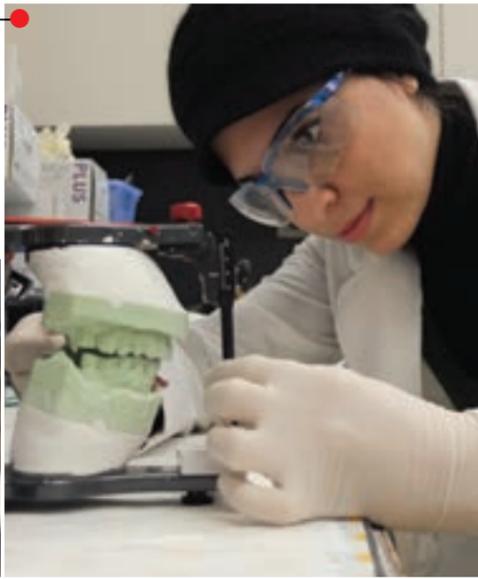
PHOTOS BY TANMEET SINGH

GRADUATE RESEARCH ACROSS THE DISCIPLINES

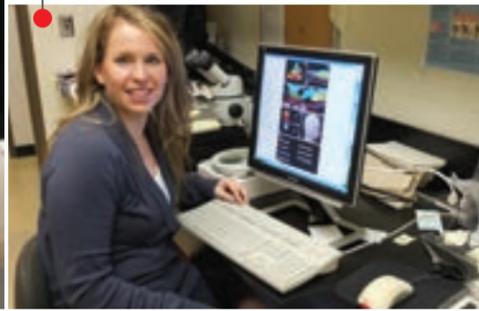
BY TERRY WINTONYK

The UBC Faculty of Dentistry offers clinical specialty graduate programs in endodontics, orthodontics, pediatric dentistry, periodontics, and prosthodontics, as well as the non-clinical graduate programs in basic craniofacial science. All graduate programs require students to produce original research for an MSc or PhD thesis. The research is wide ranging, varying from molecular biology to social science. Dentistry graduate students were co-authors of papers published last year in various basic science and clinical publications such as Archives of Oral Biology, Gerodontology, International Endodontic Journal, Journal of Cell Science, Journal of Community Health, and Journal of Dental Education. The following photos show some of these young dental professionals in their new roles as research investigators.

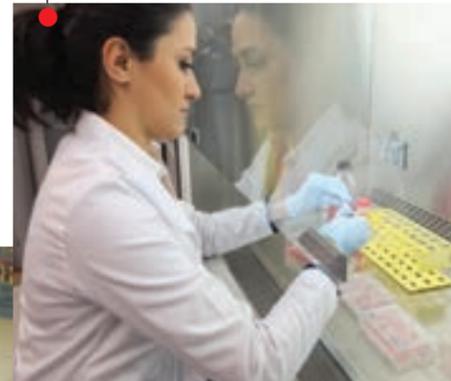
Lubna Alkadi, graduate prosthodontics student, received her Bachelor of Dental Surgery from King Saud University, Riyadh, Saudi Arabia, in 2010. Lubna uses the notchless triangular prism specimen fracture toughness test, developed at UBC by N. Dorin Ruse, to characterize ceramics used in computer-aided design and manufacture. Lubna presented her work at the 2013 International Association of Dental Research meeting in Seattle, Washington.



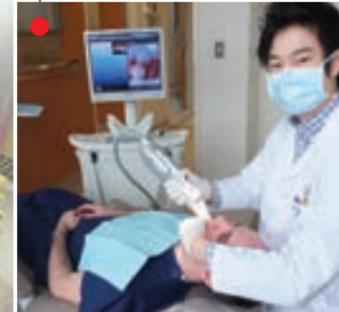
Melanie Mattson, graduate orthodontics student, received her Doctor of Dental Surgery from the University of Alberta in Edmonton in 2009. Melanie tests hypotheses on how the human soft palate forms; here she is viewing three-dimensional reconstructions of soft and hard palate anatomy. The software she is using was originally developed in Virginia M. Diewert's lab at UBC.



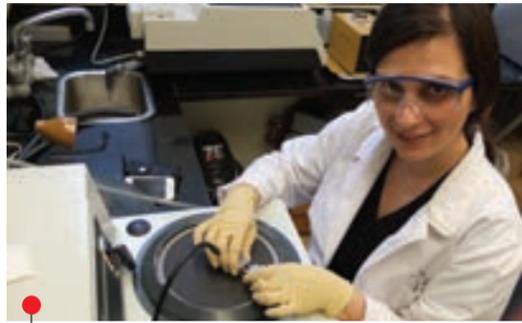
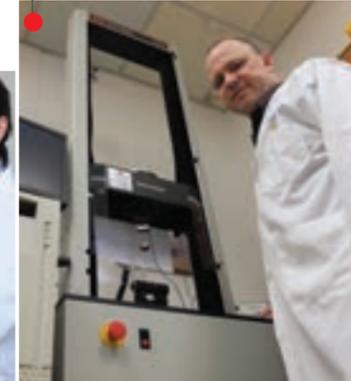
Rana Tarzemy, graduate periodontics student, received her Doctor of Dental Surgery from the Islamic Azad University Dental School, Tehran, Iran, in 2009. She is culturing human fibroblasts for her studies on the role of connexins in regulating fibroblast function in wound healing. Rana won a Canadian Institutes of Health Research Institute Community Support Travel Award to attend the 2013 International Association of Dental Research meeting in Seattle, Washington. She also won a PhD student award in the 2013 UBC Dentistry Research Day poster competition.



Jonathan Ng, graduate prosthodontics student, received his Doctor of Dental Surgery from the University of Alberta in Edmonton in 2007. Jonathan is using a Cadent iTero intra-oral scanner to produce digital impressions that can be used in fabricating computer-aided design and computer-aided manufacture (CAD/CAM) of dental prostheses. His study focuses on determining marginal fit of CAD/CAM-produced ceramic crowns. Jonathan presented his work at the 2013 UBC Dentistry Research Day.



Ian Thornton, graduate prosthodontics student, received his Doctor of Dental Surgery from the Schulich School of Medicine and Dentistry at Western University, London, Ontario, in 2005. Ian stands tall next to the Instron mechanical testing apparatus that he uses to study fracture toughness, flexural modulus and flexural strength of nano-ceramics. Ian won an MSc student award in the 2013 UBC Dentistry Research Day poster competition.



Faranak Zaeimdar, graduate prosthodontics student, received her Doctor of Dental Medicine from UBC in 2011. She prepares specimens to be used in a fracture mechanics characterization of adhesive interfaces related to computer-aided design and computer-aided manufacture of ceramics. Faranak presented her work at the 2013 International Association of Dental Research meeting in Seattle, Washington.



Shannon Waldron, graduate student, craniofacial science, received her Bachelor of Science in Dental Hygiene from UBC in 2010. Here, Shannon conducts focus group interviews for the purpose of developing a tool for formative program evaluation in Canadian dental hygiene programs.

Marina Braniste, graduate endodontics student, received her Doctor of Dental Medicine from the University of Montreal in 2009. Marina places carrier-based root filling material into an obturation oven. Her research measured retrieval times of obturation materials from root canals in extracted teeth. She presented her work last October at a meeting of the Canadian Association of Endodontics in Edmonton, and in April at a meeting of the American Association of Endodontics in Honolulu.



Mazen Alotaibi, graduate periodontics student, received his Bachelor of Dental Surgery from King Saud University, Riyadh, Saudi Arabia, in 2005. Mazen is placing maxilla specimens in a micro-CT scanner to detect alveolar bone loss—he studies the role of Smad2 gene overexpression and the progression of periodontitis. Mazen presented his work at the 2013 International Association of Dental Research meeting in Seattle, Washington, and won a PhD student award in the 2013 UBC Dentistry Research Day poster competition.



Diego Ardenghi, graduate prosthodontics student, received his Doctor of Dental Surgery from the Federal University of Santa Maria in Brazil in 2003. He is seen here prior to interviewing elderly patients' family members about the impact of the UBC Geriatric Dentistry Program on their lives and health.



Angela Wong, graduate prosthodontics student, received her Doctor of Dental Medicine from UBC in 2009. Here she prepares samples for quantitative polymerase chain reaction, a procedure to study the effect of the topography of implant surfaces on gene expression. Angela presented her work at the 2013 International Association of Dental Research meeting in Seattle, Washington, and at the Canadian Biomaterials Society meeting in Ottawa on May 29, 2013.



Firoozeh Samim, oral medicine and oral pathology resident, received her Master of Science (Craniofacial Science) from UBC in 2013, and her Doctor of Dental Medicine from Shiraz University of Medical Sciences, Shiraz, Iran, in 2000. Firoozeh (left) stands with Sue Stevenson, vice-principal of Mount Pleasant Elementary School. During her master's program, Firoozeh worked in community dentistry, describing the dental health and treatment needs of elementary-school-age children in Vancouver's inner city, and examining socio-economic and ethnic group differences in dental health.

Individual student research projects cost between \$5,000 and \$10,000, and this research relies on funding from sources outside the regular program budgets.

To ensure continuing support for the outstanding academic work of its graduate students, UBC Dentistry is building a new, dedicated fund: the Graduate Program Research Fund.

A gift to the Graduate Program Research Fund not only supports individual graduate research projects, but it also helps the Faculty advance the practice of dentistry in British Columbia to the cutting edge of the discipline.

Your very welcome gift of support for graduate research may be specified for either basic science or for use in one or more of the following clinical specialty graduate programs:

- Endodontics
- Orthodontics
- Pediatric Dentistry
- Periodontics
- Prosthodontics

For further information about a gift to UBC Dentistry's Graduate Program Research Fund, contact Jane Merling at 604-822-5886 or merling@dentistry.ubc.ca

For more information about graduate programs at UBC Dentistry, visit www.dentistry.ubc.ca/education/grad

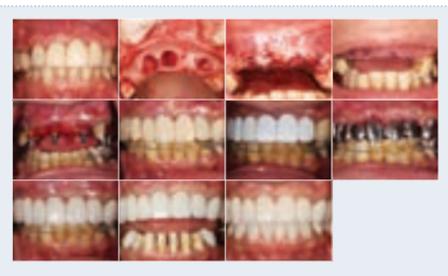
TIME FOR A GRADUATE SPECIALTY CLINIC

BY TERRY WINTONYK

UBC Dentistry's five clinical specialty graduate programs—endodontics, pediatric dentistry, periodontics, prosthodontics and orthodontics—are grounded in an integrated educational model. This model shapes students—and future dental professionals—who are better able to serve patients with more complex case needs.

Patients who come to UBC Dentistry's clinic often present with multiple diseases and problems—and most of these patients have limited means. It is quite common that a pediatric dentistry patient also needs orthodontics, or a periodontics case may require an endodontic component in the treatment plan.

A patient recently seen by graduate prosthodontics student Dr. Jonathan Ng, for example, required orthodontics, periodontal grafting, implant surgery and endodontic treatment in addition to complex prosthodontic rehabilitation with crowns, bridges and veneers. Only an interdisciplinary approach would achieve a total aesthetic and functional restoration for this patient.



Ng cites the clinical collaboration, through interdisciplinary treatment seminars and clinical case discussions, as key to developing and delivering treatment for these patients with complex needs. "There is significant benefit from working closely on numerous cases alongside all the specialties," he says. "It's

a true interdisciplinary experience, one that brings treatment planning and treatment delivery together. UBC offers a unique learning experience."

Dr. Edward Putnins, associate dean, Research, Graduate & Postgraduate Studies, notes: "Our approach of integrating all grad students through shared common experience rather than by discipline is reflected in our evolving architecture." In the new Graduate Student Commons on the first floor of the John B. Macdonald Building, students make use of dedicated seminar rooms for multidisciplinary treatment planning. Common study, kitchen and relaxation areas are designed to facilitate spontaneous interaction and debriefing among graduate students of all disciplines.

There is, however, one core project remaining to complete the fully envisioned integrated model: the Graduate Specialty Clinic.

Currently the graduate programs operate out of UBC Dentistry's main clinic, the Nobel Biocare Oral Health Centre. But, as Dr. Andrea Esteves, associate dean, Clinical Affairs, points out, in recent years the Faculty has grown from offering two graduate specialty programs to five. Five programs translates to approximately 46 graduate students to incorporate among the operatories, which are designed to accommodate, for the most part, the four classes of students in the undergraduate dentistry program.

"While we are operating quite well at full capacity," Esteves says, "a new graduate specialty clinic would complete the integrated educational model by enabling a more flexible clinic schedule. This would increase interaction among grad students and allow them to attend to more of our patients."

Esteves also notes that a dedicated clinic for the specialties would have the specific technologies needed for the various

specialties—whereas adding such technologies into the footprint of the existing clinic would be difficult and very costly.

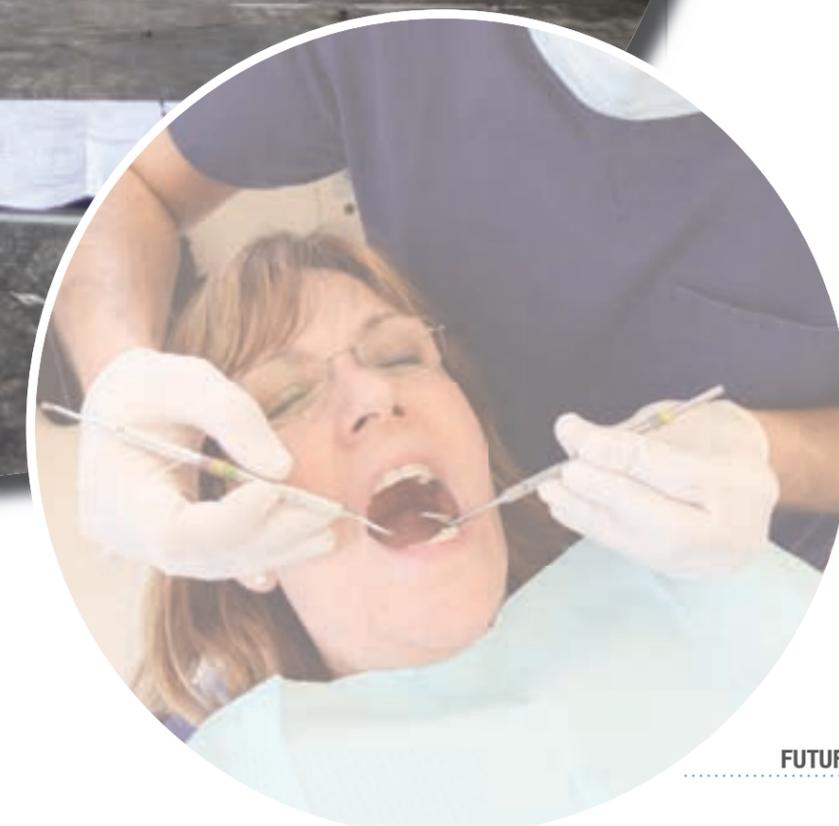
Creating an environment in which specialists treat patients and learn in close proximity to each other produces a generation of specialists with an expanded scope of knowledge and instills a professional interaction model for managing their own complex cases in future private practice.

Patients with complex needs who are managed in this model will benefit by having input from multiple specialists who are readily accessible, which will help ensure that the best treatment can be delivered in a timely fashion.

So what is the holdback to building a graduate specialty clinic?

"Financial support," explains Putnins. "We want to engage the external professional communities to help build the graduate clinic, which in the long run supports the education of the next generation of specialists, and more immediately supports patients—those who wouldn't otherwise receive the complex treatment required."

The space exists, Putnins says, pointing to the original clinic in the John B. Macdonald



TODAY

FUTURE

Building. Decommissioned in 2006, the old clinic has been stripped of its outdated and ailing infrastructure and has sat idle. Having space at UBC is a double-edged sword—a luxury to possess, but a financial challenge to renovate. The university does not financially support these kinds of renovations; the faculty or department must raise the funds.

Several donors have already come forward to financially support UBC Dentistry's vision for the graduate specialty clinic, but more support is needed.

The plan includes 20 open and closed operatories conducive for the specialties and for patients such as children and seniors, as well as consultation rooms and a conference room. Says Putnins, "We know the architectural elements we need—we've done our homework. We just need financial support to build it."

"We know the architectural elements we need—we've done our homework. We just need financial support to build it."

— Dr. Edward Putnins

PHOTOS BY TERRY WINTONYK

JBM REVITALIZATION—LET'S FINISH THE JOB!

Just over 840 square metres (9,000 sq. ft.) remains of unused or outdated space to convert into modern facilities for teaching, learning, research and service.

COMPLETED RENOVATIONS

670 square metres (7,206 sq. ft.)
Student lounge and atrium
Graduate student commons*

Small group-learning rooms (6)
Large conference room
Computer learning centre* (80 work stations)

Plaster laboratory

Total cost of renovations: \$3,995,000
Funds raised to date: \$1,509,474

*opportunities are available to financially support these facilities through naming recognition



“When I came to BC after completing my degree in Toronto, I was impressed with the progress at UBC Dentistry. I fully support renovating JBM, because it aligns with my values to help future leaders in the dental profession. Building a graduate specialty clinic shows vision and dedication in providing the very best educational experience for students—many of whom I would welcome to join my practice in Abbotsford.”

- Dr. Brad McDonald, Clayburn Dental

“This area [the atrium of the student lounge, with its abundance of natural light and serene atmosphere] helps us to wind down, refocus and to relax. It’s a place where students want to be.”

- Jonathan Hung, former fourth-year DMD student

“The small learning rooms are perfect for our groups. We can concentrate together on our cases without the noise and distractions we had in other areas. The large monitors make a difference, too, in how we learn. Each room is equipped with the same technology, so all student groups have access to the best possible environment.”

- Amro Foda, former fourth-year DMD student

FUTURE RENOVATIONS



TODAY

FUTURE



TODAY

FUTURE



TODAY

FUTURE

Build a Graduate Specialty Clinic

265 square metres (2,850 sq. ft.)
Open operatories (12)
Closed operatories (8)
Patient consultation rooms (2)
Conference room
Computer work station

Total cost of renovations: est. \$3,000,000
Funds raised to date: \$340,000

Create New Laboratories

383 square metres (4,120 sq. ft.)
Biomaterials lab
Cell biology lab
Microbiology lab
Seminar rooms (3)
Dry research labs (2)

Total cost of renovations: est. \$3,000,000
Funds raised to date: \$0

Upgrade Meeting and Learning Space

194 square metres (2,087 sq. ft.)
Conference room
Lecture hall
Seminar room

Total cost of renovations: est. \$720,000
Funds raised to date: \$0

HOW DO WE PAY FOR IT?

Generous donors provide financial support. Dentistry receives no money from the university or the province for these renovations.

Your gift will be acknowledged in a meaningful way. Various donor recognition levels and naming opportunities are available. Charitable receipts for tax purposes are issued for all donations.

CORPORATIONS
\$650,000

ALUMNI
\$781,924

OTHER INDIVIDUALS
\$417,550

Funds raised to date: \$1,849,474

My history with UBC Dentistry extends nearly three decades, from Dental Undergraduate Society president and editor of the 25th anniversary yearbook, to a proud alumnus and now member of the dean’s Board of Counsellors. I am well acquainted with the old dentistry building, affectionately known as JBM, which is undergoing an enormous transformation.

Dean Shuler, the faculty and staff are to be lauded for their drive and commitment to maintaining UBC Dentistry’s status as a world-class teaching and research facility. The planned renovations of the John B. Macdonald Building will meet the needs of a dental curriculum that is not only current, but visionary. Top-notch facilities attract world-class professors and researchers, who enhance the learning experience for all our students—who are the future of our oral health care profession. Your continuing financial support will make these essential renovations possible!

Richard Busse, DMD 1986

PHOTOS BY MARTIN DEE, BRUCE MCGAUGHEY, TERRY WINTONYK

Read more about JBM renovations and the generous supporters online at www.dentistry.ubc.ca/jbmreno
To learn more about opportunities to support the revitalization of JBM, contact the UBC Dentistry Development Team at 604-822-5886

Look How Far We Have Come in 50 Years

It is hard to believe that the dental school at UBC will be 50 years old next year. Its growth from just a collection of huts in 1964 to the state-of-the-art facilities that exist today is quite remarkable.

The Deans of UBC Faculty of Dentistry

Dr. S. Wah Leung, 1962 – 1977
 Dr. Doug Yeo (acting), 1977 – 1978
 Dr. George S. Beagrie, 1978 – 1988
 Dr. Paul B. Robertson, 1988 – 1992

Dr. Marcia A. Boyd (pro tem), 1992 – 1994
 Dr. Edwin H.K. Yen, 1994 – 2007
 Dr. Charles F. Shuler, 2007 – present



Meet the Co-Chairs of Dentistry's 50th Anniversary Committee

As an alumnus, it gives me great pride to celebrate this milestone with my colleagues in dentistry. Our profession has evolved significantly over the last five decades, and the dental school has kept abreast of these changes. It is exciting to see that the new graduates are as keen today as we were when we graduated.

Dentistry has been a very good career choice for me, and I welcome the opportunity to pay it forward. It is our responsibility to ensure that the next generation of dentists has the same opportunities that we had.

I have been fortunate to be part of the planning for the 50th anniversary. There is an incredible team of individuals working on the celebrations, and it is quite evident that it is going to be a year to remember. I encourage all members of the dental profession—and especially those who are alumni of UBC Dentistry, dentists and hygienists alike—to mark your calendars and make time in 2014 to attend some of the planned showcase events.

— Ashok Varma, DMD 1983

I am absolutely thrilled and honoured to be a co-chair of the organizing committee for the UBC Faculty of Dentistry's 50th anniversary celebrations. I have been affiliated with the Faculty for many years, having obtained my dental hygiene diploma in 1976, as well as my bachelor's degree in 2004 and Master of Science in 2007. My education here has served me very well in my chosen profession of dental hygiene.

The UBC Faculty of Dentistry has come a long way over 50 years, developing into a highly regarded, world-class dental and dental hygiene education and research institution.

There are many opportunities for everyone to participate in this once-in-a-lifetime celebration of excellence. Please consider becoming involved in one of the many exciting events that are planned for you during 2014, our anniversary year.

— Brenda Currie, Dip DH 1976, BDS 2004, MSc 2007

PHOTO BY DON ERHARDT

1962 BC Legislature authorizes the establishment of a faculty of dentistry at the University of British Columbia.

1964 Eight students register for the first dental class.



1966 First patients receive treatment from first dental students in a temporary seven-chair clinic housed in trailers.

1968 New dental building opens; named the John Barfoot Macdonald Building.

1968 Twenty students enroll in the first dental hygiene class.

1979 Graduate periodontics program launched; first graduate program combining a master's degree and a specialty diploma.

1997 Bureau of Legal Dentistry opens; Canada's first facility devoted exclusively to police work, research and instruction in the use of forensic dentistry for crime investigation and prosecution.



1993 Invention disclosures filed with UBC-Industry Liaison Office for an oral appliance to treat snoring and obstructive sleep apnea; product is brought to market as Klearway™.

1990 Research grants received by the Faculty of Dentistry exceed \$1 million.

1986 Doctor of Philosophy in Oral Biology program established.

1984 Over 1,000 people on a waiting list for the dental clinic (provincial economic climate leads to an increase in people seeking treatment).



1980 First residents accepted into a new general practice residency (GPR) program at UBC Hospital and at Vancouver General Hospital's Munroe outpatient clinic. These locations were the first GPR rotation sites.

1997 First intake of international dental graduates; two-year program leads to the completion of the Doctor of Dental Medicine program.

1999 Faculty adopts problem-based learning pedagogy.

2000 Research grants received by the Faculty of Dentistry exceed \$2 million.

2001 Geriatric Dentistry Program launches to provide dental services in eight residential care centres; a UBC, Providence Health Care and Vancouver & Richmond Health Board partnership.



2002 UBC Dentistry services begin in Haida Gwaii (formerly Queen Charlotte Islands); Skidegate Dental Clinic added as a rotation to the GPR Program.



2006 Nobel Biocare Oral Health Centre opens. Clinic in the John B. Macdonald Building is decommissioned.



2012 International relations program, grown since its ad hoc beginning in the 1980s, coordinates student exchanges with 50 countries on five continents.



2011 UBC Dentistry "adopts" an elementary school. A one-chair dental clinic is built in Vancouver's Florence Nightingale Elementary School; treatment is provided to the children by dentist-residents of the GPR program.

2010 Research grants received by the Faculty of Dentistry exceed \$10 million.

2010 Three additional clinical specialty graduate programs in orthodontics, pediatric dentistry and prosthodontics launched.

2009 John B. Macdonald Building renewal; half of the decommissioned clinic space refitted as a student learning centre.

2008 Clinical specialty graduate program in endodontics launched.



2012 The Frontier Clinical Research Centre opens; Canada's first dedicated centre for all modalities of dentistry-related, patient-based research.

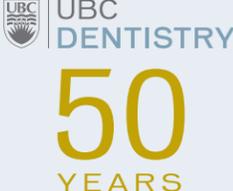
2012 The Centre for High-Throughput Phenogenomics, UBC Dentistry's enhanced bioimaging facility, opens in the new Pharmaceutical Sciences Building.

2012 Oral health research centre opens in Ho Chi Minh City, Vietnam; the centre is a hub in Southeast Asia for advancing oral-facial health and scientific knowledge across international boundaries.



2013 Faculty announces 50th anniversary celebrations for 2014.

2014 50th anniversary of the UBC Faculty of Dentistry.



Share your memories and photos from when you were at the Faculty of Dentistry. Upload them to www.dentistry.ubc.ca/50years, where you will find ongoing information and announcements about the events and celebrations. Follow along on Twitter @ubcdentistry with the hashtag #ubcdent50



The Community Access Fund Made It Possible . . .

Ten-year-old Lucy* was extremely self-conscious about a gaping hole in her smile when she first arrived at UBC's Nobel Biocare Oral Health Centre. The "chief concern"—one of her front teeth was not growing in.

After an orthodontic and periodontic assessment, which included a CT scan, the suggested treatment plan was estimated to cost over \$5,000—a fee well beyond the means of her mother and father who are both students with three additional children to support. Her father currently works, but his income is barely enough to support his family's daily needs.

UBC Dentistry's Community Access Fund provided the funds needed for Lucy to receive the recommended treatment and relieve the family of a hefty financial burden.

Dr. Winnie Zhao, a third-year graduate pediatric

dentistry student who provided the treatment for Lucy, was thrilled to receive the child's many thank yous. The family's gratitude has reached well beyond the clinic: Lucy's mother has called several times to thank the Faculty of Dentistry for the help and care her daughter received.

Lucy got her smile back thanks to the Community Access Fund.

Mr. Brown's* complete upper denture lacked retention and stability, causing a strong gag reflex. This made it difficult for Mr. Brown to tolerate the denture.

Dr. Ian Thornton, a second-year graduate prosthodontics student, notes that his patient had additional problems: his lower partial denture also lacked retention, and the inadequate anterior-posterior spread of his remaining teeth meant the denture was either too loose, which

hurt his tissues, or too tight on his abutment teeth.

Needless to say, Dr. Thornton determined that, due to these complications, Mr. Brown's dentures were unacceptable for wear.

Sixty-eight-years old and on a fixed income, Mr. Brown could not afford the cost of treatment for his denture issues. Through the Community Access Fund, however, he received the oral health care required, with the added bonus that his overall quality of life improved.

*pseudonym



The 'Gift of Jade'

Many patients who come to UBC Dentistry face financial hardships that affect the extent of their treatment plan. Frequently, attending students recommend a range of needed procedures, only to discover that the patient cannot afford the full case—even with the rates reduced below the BC Dental Association fee guide. Patients are often left with chronic dental problems, and our students are frustrated at not being able to care for their patients.

Since its inception in August 2011, the Community Access Fund has assisted patients in financial need. A by-product of funding

patients for the required dental care is that students will have the educational advantage of being able to follow through on the full treatment plan they have identified for these patients.

A gift to the Community Access Fund provides financial support for patients facing financial hardship, which enables optimal treatment planning, yielding improved long-term outcomes. By assisting these patients financially, the fund ensures that students—graduate and undergraduate—have opportunities to manage comprehensive patient care cases.

"Bringing in the inspired gift of jade by throwing in a piece of brick"—this Chinese saying illustrates how Dr. Susan Chow DMD 1972, a generous supporter of the Community Access Fund, views the effect of her donations. Dr. Chow hopes others will be as excited as she is about the new specialty programs at UBC, and will be inspired to support the fund to help facilitate treatment for more patients with costly dental needs, like Lucy and Mr. Brown.

To learn more about the fund or to make a donation, visit www.dentistry.ubc.ca/go/caf

PHOTOS COURTESY OF IAN THORNTON



UBC
DENTISTRY
ALUMNI

CLASS NOTES AND EVENTS

Share your news with classmates, faculty and friends. Look for reunion announcements and events for all alumni. Submit alumni stories and keep in touch at www.dentistry.ubc.ca/alumni

1970s



Janice Cox
Dip DH 1978

The Dip DH Class of 1978 celebrated their 35-year reunion at the 2013 Pacific Dental Conference Annual Alumni Reception. Eleven members of our class reunited at the reception and nine of us went to dinner at Boneta, a restaurant in Gastown, after the reception. It was great to see each other, and we have vowed not to let another 10 years slip by before getting together again.



Ed O'Brien
DMD 1978

My wife Robin and I were pleased to host 24 graduates of the DMD Class of 1978 in our home for a homemade buffet dinner following the alumni reception at the Pacific Dental Conference on March 8, 2013. Conversations that night were less about our practices and more about retirement, vacations and families. The evening ended with a delicious updated version of the molar cake we enjoyed following our last day of clinic in 1978. While we had much more hair back then, it was evident we could all still enjoy a few cocktails and have a great time together.

PLANNING A REUNION?

For ideas, contact Jenn Parsons, manager of Alumni & Community Affairs, at 604-822-6751 or alumni@dentistry.ubc.ca

1980s



Douglas W. Conn
DMD 1982

Doug was elected president of the Canadian Academy of Endodontics (CAE) at the CAE annual meeting held on October 18, 2012. Doug is a part-time clinical assistant professor with the Faculty of Dentistry at UBC and a member and past-president of both the British Columbia Society of Endodontists and the Dental Specialists Society of British Columbia. He practises endodontics in Vancouver.



Mike Racich
DMD 1982

Mike is pleased to announce that his third book, *The Basic Rules of Facially Generated Treatment Planning*, has just been published. To order the book, contact Palmeri Publishing at www.palmeripublishing.com



Bill Liang
Ben Yeung
DMD 1983

Members of the DMD Class of 1983 enjoyed a glass of sparkling wine and then had dinner at MARKET by Jean-Georges, a restaurant in the Shangri-La Hotel. The chef prepared a delicious four-course tasting menu, and everyone toasted 30 years since dental school.

KEEP IN TOUCH

www.dentistry.ubc.ca/alumni



Maria Taylor
(née Nibbelink)
Dip DH 1983

The Dip DH Class of 1983 celebrated their 30-year reunion on March 8, 2013, at the Pacific Dental Conference. They reminisced that it seemed like only yesterday they were together in the basement of the John B. Macdonald Building. Many laughs were shared, and everyone is excited about the next reunion.



Myrna Pearce
DMD 1985

Myrna has been recognized as an associate fellow of the American Academy of Implant Dentistry.



Alan Lau
Brian Standerwick
David Yu
DMD 1988

Part I of the DMD Class of 1988 25-year reunion happened at the Blue Water Cafe + Raw Bar in Yaletown on March 8, 2013. Twenty-nine of the 38 members of our graduating class attended the dinner. Everyone really enjoyed catching up and reminiscing.

REUNION DMD CLASS OF 1988-25-YEAR REUNION PART II

Brian Standerwick, Alan Lau and David Yu are planning a second 25-year reunion for this fall in either Whistler or Kelowna. For information, contact Jenn Parsons at 604-822-6751 or alumni@dentistry.ubc.ca

1990s



Dave Hemerling
DMD 1993

The DMD Class of 1993 enjoyed a fantastic Italian dinner at La Pentola Della Quercia restaurant in Yaletown following the Annual Alumni Reception at the Pacific Dental Conference. Pictured here are Sandra Shostak and Young Tse Kuah.



Lisa Reino
DMD 1993

Kate Allyson Montague was born one month early on December 20, 2011, at BC Women's Hospital & Health Centre. After many years of trying to start a family, my husband Brent and I were told it wouldn't happen. So, we gave up and got a dog—and three weeks later Kate was conceived. Best surprise ever! Kate is our true miracle. Brent is a stay-at-home dad, which he loves. And, having an established practice and a great associate has made it easy to take all the time off I want to be with her at home. Kate already has 12 teeth and loves brushing them!



Michelle Chang
DMD 1998

Twenty-seven members of the DMD Class of 1998 recently celebrated our 15-year graduation reunion at the Bluewater Cafe + Raw Bar in Yaletown. It was a very enjoyable evening, and we are looking forward to our next reunion!

SHARE

Send an alumni story or update for "Class Notes" to alumni@dentistry.ubc.ca

2000s



Ryan Lauwers
DMD 2004

Michelle Lauwers
DMD 2009

Ryan and Michelle are pleased to announce the birth of Westley Michael Sinden Lauwers. Westley was born on December 19, 2012, at 7:18 a.m. by emergency C-section, 10 weeks early. He spent nine weeks in the neonatal intensive care unit and came home on February 20, 2013. Keeping to the Lauwers' family profession, his parents predict dental school is around the corner for this little fellow.



Danielle Woo
DMD 2008

Five years and almost 30 babies later, the Class of 2008 had a fantastic time reuniting at the Pacific Dental Conference. While we missed the classmates who weren't able to make it to Vancouver, we shared many memories and good times, and much laughter, over a great dinner and evening.



Michelle McIntosh
(née deBoer)
DMD 2010

Michelle moved back to Alberta and now practises in High River, Alberta. Along with her husband Brad, she is pleased to announce the birth of Elliotte Lee McIntosh on November 10, 2011.

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www.twitter.com/dentalum_at_ubc



Brian Bostrom
DMD 2012

Immediately following graduation last year, I moved to Port McNeill (a small town in the northern region of Vancouver Island, BC) with my wife Jaclyn and three-month-old baby girl Peyton, to associate with David Baird DMD 1980. Over the Christmas holidays, I bought the practice and have been practising solo since January. I have patients from all over the North Island. Being in an isolated community has its pros and cons. On the con side, I get a wide range of situations I can try and deal with, but I have to be very careful because there is no one around to bail me out. I find I am constantly pushing myself. I was overwhelmed leaving dental school and felt it would take years before I got to the point where I could run a practice. I quickly found out, however, that UBC Dentistry gave us a great foundation. When situations arise that I am unsure of, I explain that to the patient and then look to other dental colleagues for advice. Members of the Upper Island Dental Society are on hand by phone. This is the pro side—the dental community has been great and goes above and beyond to help out. Also, being in a small town like this is very satisfying because there is a real need for dental care and everyone is appreciative. And, just minutes from Port McNeill, I can find everything I enjoy doing: fishing, hunting and diving. I can even see my crab traps from my office window! Being from the North Island has been an advantage, as I have hobbies in common with most people in the area.



Sara Garbelya
DMD 2012

Kathryn Hunter, Melissa Milligan, Michelle Watroba (all DMD 2012) and I recently travelled to New York City. Our classmate Amro Foda met up with us for a day, as he is doing his oral surgery residency in the Bronx, New York City.

In Memoriam



Donald B. Neratini
DMD 1974

We are sad to announce that Don passed away suddenly on February 26, 2013, at the age of 63, while vacationing in the Caribbean. Don was born and raised in Burnaby, BC. He graduated from dental school at UBC in 1974 after seven strenuous years of university. Upon graduation, he decided to leave the stress of the big city by moving to Ucluelet, BC, where he opened the town's first dental office and met the love of his life, Barbara. Don and Barb moved to Campbell River in 1976, where they opened another dental office. They spent years travelling to Port McNeill and Ucluelet, providing dentistry to ensure adequate income for their family. Hard work and family were two of Don's biggest values. At age 54, Don was forced to take an early retirement and was thankfully able to enjoy these last years. He always looked forward to family camping trips and fishing. Working in his vegetable garden was a passion, and a tradition that Don's daughters will continue. He was an avid member of the Campbell River gun club and competed in IPSC shooting. Don also loved riding his Harley with Barb in the local toy and poker runs, as well as driving his precious '66 Corvette. He will be missed by many, but we can all feel confident in the fact that Don lived well until his last moment.

Almost Alumni



Mike Crisanti
DMD 2013

The inaugural Dental Undergraduate Society and alumni wine tasting evening was a great success. Mark Anthony Brands generously sponsored Mission Hill wines. Sinclair Dental and Hanbury and Associates were generous sponsors for the event as well.



Ambreen Khan
BDS Sc 2013

This April, the dental hygiene students organized their first hygiene-only Volunteer Community Clinic at the Abbotsford Food Bank. The clinic was a positive experience for the 12 participating students and two supervising alumni, Jill Moore Dip DH 1976 and Sean Kelly DMD 1995. We got the opportunity to do film radiographs and sterilization on site, with minimal assistance, and were able to stay efficient despite the limited supplies and busy schedule. Everyone voted this as one of the most organized volunteer clinics yet, and we are committed to planning another one for next year.



Steven Huang
DMD 2014

The 2013 International Dental Student Convention happened from January 17 to 20, 2013, at Fairmont The Queen Elizabeth in Montreal. Selected third- and fourth-year UBC Dentistry DMD students joined 837 student representatives from other Canadian dental schools for a weekend of activities, including lectures, exhibits and a fashion show. Thank you to MediCapital Bank for their support. Pictured here from left to right holding Graeme Scott (MediCapital Bank): Kaitlin Enns DMD 2013, Steven Huang DMD 2014, Whitney Weisshaar DMD 2013, Sunpreet Bains-Dahia DMD 2013, Jay Chan DMD 2014 and David Chen DMD 2014.



Julianne Proniuk
DMD 2015

Team "The Dent Ladies" dominated in the pool, on the pavement and climbing the 12-foot wall in this spring's legendary UBC Rec Storm the Wall event. Their winning time of 15:56 minutes placed them first in both the women's Van Vliet and Campus Wide divisions. Pictured here from left to right: Nancy Schmidt, Carmen Hansford and Rosy McCroden, all from the DMD 2015 class, Lauren Crawford (Faculty of Medicine) and Julianne Proniuk DMD 2015.



Jocelyn Shih
DMD 2015

On February 23, 2013, 13 dental and dental hygiene students volunteered at Richmond General Hospital for the first volunteer community clinic for seniors. With the help and leadership of Doug Nielsen DMD 1972, his wife Susan and Dr. Bill Brymer, the day was a success for both patients and students alike.



Liora Berant
DMD 2016

Liora was cast in three roles in the Medical Undergraduate Society's (MUS) production of *Picasso at the Lapin Agile*, written by Steve Martin. Liora may be the first dental student to be cast in a MUS play. Liora played the Countess, Suzanne and a female admirer.

Recent Events



Adventure and Learn Hawaii 2012

In February, alumni gathered on the beach in Hawaii to earn their continuing education credits in the sun.



Young Alumni & Student Reception at the Pacific Dental Conference 2013

In March, young alumni enjoyed a beer with the current third- and fourth-year students following the Pacific Dental Conference. Thank you to Mahony & Sons Burrard Landing, Sinclair Dental and Scotiabank for sponsoring the event.



Annual Alumni Reception at the Pacific Dental Conference 2013

This year, the theme of the reception was “Cirque du Soleil” and the winner of the trip to see O at the Bellagio Hotel in Las Vegas was Gurjit Gakhil DMD 2004. The trip was generously sponsored by Nadean Burkett & Associates. Thank you also to the other alumni partners who support this event each year: Advil, Scotiabank, Sinclair Dental, Aurum Ceramic, and Nadean Burket & Associates. Mark your calendars for Friday, March 7, 2014, for the next alumni reception. The Faculty of Dentistry celebrates its 50th Anniversary in 2014.



Alumni vs. Students Hockey Game

On March 10, 2013, the students dominated over the alumni in the annual UBC Dentistry hockey game at UBC’s Doug Mitchell Thunderbird Sports Centre. The score was 6 to 1 for the students. Email Brian Standerwick DMD 1988 at standerwick@telus.net to join the alumni team. We need all the help we can get—so join now!



Northern British Columbia Dental Society

Dentistry dean, Dr. Charles Shuler, lectured at the Northern British Columbia Dental Society meeting in Prince Rupert this April.

FRIEND US ON FACEBOOK

Find Jenn Parsons, manager of Alumni & Community Affairs, on Facebook.

Events for Students and Alumni



ANNUAL ALUMNI & FRIENDS GOLF TOURNAMENT

Sunday, September 15, 2013 · 1 pm (shotgun start)

Morgan Creek Golf & Country Club, Surrey, BC

For more information and to reserve your foursome for this sell-out event, contact Jenn Parsons at alumni@dentistry.ubc.ca

VOLUNTEER COMMUNITY CLINICS—UPCOMING

H’ulh-etun Health Society (Chemainus) July 18 - 21, 2013

Tl’etinqox-t’in Health Services (Anaham) July 25 - 28, 2013

Vancouver Native Health Society (Vancouver) August 24, 2013

Volunteer supervising dentists and dental hygienists can get updates at www.dentistry.ubc.ca/cvcp

More Events for Alumni



UBC ALUMNI WEEKEND

Saturday, May 25, 2013

UBC Point Grey

For more information, visit www.alumni.ubc.ca or email alumni@dentistry.ubc.ca



OPEN WIDE COMMUNITY CLINIC DAY

Saturday, September 14, 2013

CDI College, Burnaby, BC

UBC Dentistry alumni and the British Columbia Dental Association have teamed up to deliver free dentistry and dental hygiene in Burnaby at CDI College. The clinic will offer basic dental care to the clients of a local social agency. For more information on volunteering for this community clinic, email Jenn Parsons at alumni@dentistry.ubc.ca



TASTE OF VANCOUVER ISLAND, VICTORIA

Saturday, October 19, 2013 · 4 - 6 pm

Join Dr. Charles Shuler, dean of UBC Dentistry, and fellow Victoria & District Dental Society alumni and friends at a reception featuring local food, cocktails and BC wine. The event location is to be announced. For more information, email alumni@dentistry.ubc.ca



ALUMNI WINE RECEPTION AT THE TODS MEETING, KELOWNA

Friday, October 25, 2013

Join Dr. Charles Shuler, dean of UBC Dentistry, and fellow Okanagan alumni for a glass of wine, hors d’oeuvres, cheese and conversation following the 2013 Thompson Okanagan Dental Society (TODS) annual meeting. Conference registration is not required to attend the reception. For conference registration, go to www.todsmeeting.com. For information about the reception, email alumni@dentistry.ubc.ca



ALUMNI PUB NIGHT, CALGARY

Friday, November 15, 2013 · 4 pm

Celli’s Irish Pub and Restaurant

351 4th Avenue SW, Calgary, Alberta

Join Dr. Charles Shuler, dean of UBC Dentistry, and fellow Calgary & District Dental Society alumni and friends for a beer and snacks. Thank you to Densply for sponsoring this event. For information, please email alumni@dentistry.ubc.ca

Stay in Touch

The alumni relations department at UBC Dentistry can help you stay connected with your fellow graduates, plan and promote reunions, and keep you informed of upcoming educational opportunities. To learn more, contact Jenn Parsons, manager of Alumni & Community Affairs, at 604-822-6751 or alumni@dentistry.ubc.ca

Stay connected to more than 2,400 alumni. Share your news, thoughts or comments. Visit www.dentistry.ubc.ca/alumni

MENTORSHIP PROGRAMS

The UBC Faculty of Dentistry & BC Dental Association Dental Mentorship Program, sponsored by CDSPI, is recruiting dentists to be mentors. If you are interested in being paired up with a student, contact Alex Hemming at ahem@dentistry.ubc.ca

COMMUNITY PARTNERS



ALUMNI PARTNERS



REGIONAL ALUMNI PARTNER



UBC DENTISTRY 50 YEARS THE UNIVERSITY OF BRITISH COLUMBIA

50TH ANNIVERSARY OF THE FACULTY OF DENTISTRY 2014 CELEBRATION EVENTS AND DATES

Save the Dates

UBC DENTISTRY RESEARCH DAY 2014

Showcasing alumni research over 50 years
Tuesday, January 28, 2014

UBC DENTISTRY 50TH ANNIVERSARY WEEKEND

September 19 - 21, 2014
Celebrating 50 years of the Faculty of Dentistry at UBC

PACIFIC DENTAL CONFERENCE 2014

March 6 - 8, 2014
Honouring 50 years of UBC Dentistry

Welcome Reception and BZZR Garden

Friday, September 19 (evening)

Annual Alumni Reception

Friday, March 7 (evening)
Second Floor Lobby, Vancouver Convention and Exhibition Centre
Celebrating 50 years of dental school sweethearts

UBC Dentistry CDE Symposium

Saturday, September 20 (daytime)

50th Anniversary Celebration Dinner

Saturday, September 20 (evening)
Commodore Ballroom, Vancouver, BC
Featuring the faculty/alumni band and special guests

Open House and Barbecue Lunch at UBC Dentistry

Saturday, March 8 (daytime)
Tour the dental school

Annual Alumni & Friends Golf Tournament

Sunday, September 21, 2014 · 1 pm
Morgan Creek Golf & Country Club, Surrey, BC

14th Annual Toothfairy Gala and BC Dental Association Awards

Saturday, March 8 (evening)
Benefiting the UBC Faculty of Dentistry

Tickets for events on sale soon. For more information, visit www.dentistry.ubc.ca/50years

Thank you to all our volunteers and industry supporters. **5TH ANNUAL BATTLE OF THE BANDS: FACULTY/ALUMNI VS. STUDENTS** · Andre Arsenault · Liora Berant DMD 2016 · Najia Bhimji DMD 2014 · Shane Bot DMD 2014 · Lesley Branton · Danielle Coulson DMD 2014 · Dr. Duncan Higgins · Heather Jones DMD 2013 · Graham Macdonald DMD 2014 · William (Bill) McDonald DMD 1977 · Julianne Proniuk DMD 2015 · William Rosebush DMD 1983 · Doug Scober · Zack Zeiler DMD 2015 **50TH ANNIVERSARY ADVISORY COMMITTEE** · Brenda Currie Dip DH 1976 BSc 2004 MSc 2007 · Ash Varma DMD 1983 **DEAN'S STUDY CLUB** · Dan Berant DMD 2013 · Nadean Burkett · Matthew Francisco DMD 2013 · John Guenther DMD 2013 · Phil Hou DMD 2014 · Ed Lowe DMD 1986 · Mark Norris DMD 1979 · Dr. Mike Thomas **DENTAL MENTORSHIP PROGRAM** · Dr. Pamela Barias · San Bhattha DMD 2001 · Janis Boyd DMD 1987 · Dr. Tom Cheevers · Dr. Rod Clarence · Dr. Zahra Davami · Jeffry Davis DMD 1980 · Dr. Inderjit Dulay · Dr. Ashley Dykun Yakiwchuk · Ray Fong DMD 1989 · Judy Gough DMD 1995 · Silke Gumplinger DMD 2003 · Dr. Kathy Horwood · Dr. Chris Kan · Andrew Kay DMD 1981 · Alisa Lange DMD 1994 · Kevin Lauwers DMD 2005 · Dr. Michael Layton · Angelique Leung DMD 1988 · Dr. Fred Li · Dr. Kevin Li · Greg Nelson DMD 1983 MSc 1987 · Dr. Frank Pan · Bob Paterson DMD 1981 · Mike Racich DMD 1982 · Nick Seddon DMD 2006 · Dr. Andrew Shearon · Dr. Bob Sims · Erwin Soon DMD 1981 · Brian Standerwick DMD 1988 · Janet Thom DMD 1990 · David Waterman DMD 1979 **DENTAL UNDERGRADUATE SOCIETY** · Tony Bae DMD 2013 · Sunpreet Bains-Dahia DMD 2013 · Najia Bhimji DMD 2014 · Bruce Chou DMD 2015 · Danielle Coulson DMD 2014 · Michael Crisanti DMD 2013 · Sayena Faraji BSc 2013 · Phil Hou DMD 2014 · Heather Jones DMD 2013 · Scott Kollen DMD 2013 · Julie Kwan BSc 2013 · Chris Lee DMD 2015 · Paul Lee DMD 2015 · Chris Low DMD 2014 · Graham Macdonald DMD 2014 · Eric Mok BSc 2013 · Anna Molavi DMD 2015 · Kevin Shen DMD 2015 · Alysha Sunderji BSc 2013 · Michael Tsai DMD 2015 · Marco Wu BSc 2013 · Stephen Yoon DMD 2016 · Zack Zeiler DMD 2015 **DENTAL UNDERGRADUATE SOCIETY AND ALUMNI WINE TASTING NIGHT** · Najia Bhimji DMD 2014 · Danielle Coulson DMD 2014 · Michael Crisanti DMD 2013 · Phil Hou DMD 2014 · Priya Kandola DMD 2014 · Julie Kwan BSc 2013 **GERIATRIC DENTISTRY PROGRAM-GRAD PROGRAM** · Dr. Nelson Hui **HAIDA GWAII CLINIC-GPR PROGRAM** · Dr. Jason Choi · Terry J. Donaldson · Dr. Renee Duprat · Nayeem Esmail · Dr. Peter Liem · Dr. Kash Vora **KELOWNA GOSPEL MISSION-GPR PROGRAM** · Dr. Gordon Black · Dr. David Bobyn · Brent Corlazzoli DMD 1996 · Dr. David A. (Sandy) Crocker · Dr. Shane Gagner · Dr. Colin Hughes · Ian Leitch DMD 1983 · John A. (Andy) Macdonnell DMD 1994 · Thomas Martin DMD 1987 · Dr. Todd Penkala **ORIENTATION VOLUNTEERS** · Greg Marasa DMD 2010 · Mike O'Brien DMD 2010 · Dr. John Palmer **PACIFIC DENTAL CONFERENCE** · Dilraj Bal DMD 2014 · Najia Bhimji DMD 2014 · Natalie Chaudhary DMD 2014 · David Chen DMD 2014 · Esther Chen DMD 2014 · Joy Chen DMD 2014 · Irene Cho DMD 2014 · Danielle Coulson DMD 2014 · Steven Huang DMD 2014 · Scott Jung DMD 2014 · Priya Kandola DMD 2014 · Tracy Kim DMD 2014 · Madison Low DMD 2014 · Graham Macdonald DMD 2014 · Kate Park DMD 2014 · Fran Rhee DMD 2014 · Charlene Tai DMD 2014 · Sinthi Vaithilingham DMD 2014 **PORTLAND HOTEL SOCIETY-GPR PROGRAM** · Matias Grimminck · Dr. Jaspaul Seehra · Dr. Sean Sikorski **REUNION LEADERS** · Mary Banford Dip DH 1978 · Michelle Chang DMD 1998 · Janice Cox Dip DH 1978 · David Hemerling DMD 1993 · Alan Lau DMD 1988 · Bill Liang DMD 1983 · Ed O'Brien DMD 1978 · Wayne Peace DMD 1973 · Brian Standerwick DMD 1988 · Maria Taylor Dip DH 1983 · Danielle Woo DMD 2008 · Ben Yeung DMD 1983 · David Yu DMD 1988 **UBC ALUMNI ASSOCIATION ADVISORY COUNCIL** · Ryan Lauwers DMD 2004 **UBC DENTISTRY BOARD OF COUNSELLORS** · Richard Busse DMD 1986 · Dr. Kenneth Chow · Susan Chow DMD 1972 · David Ciriani DMD 1987 · Brenda Currie Dip DH 1976 BSc 2004 MSc 2007 · Carrie De Palma BSc 2010 · Mr. Craig Dewar · Mark Kwon DMD 1997 · Mrs. Sophia Leung CM · Dr. Jin Li-Jian · Mr. Tuomas Lokki · Mr. Hyo Maier · Mr. David Poole · Mr. Kishore Pranjivan ·

THANK YOU

Tom Roozendaal DMD 2001 · Nick Seddon DMD 2006 · Dr. Chuck Slonecker · Dr. Peter Stevenson-Moore · Margit Strobl BSc 2008 · Mr. Ron Suh · Dr. Tim Tam · Ash Varma DMD 1983 · Dr. Bill Wong · Benjamin Yeung DMD 1983 · Ron Zokol DMD 1974 **UNDER ONE UMBRELLA COMMUNITY ORAL HEALTH DAY** · Arryn Burant BSc 2014 · Airra Custodio BSc 2014 · Nevin Haynes BSc 2015 · Jeremy Huynh BSc 2015 · Julie Kwan BSc 2013 · Chris Lee BSc 2013 · Joe Tian BSc 2015 **VICTORIA COOL AID CLINIC-GPR PROGRAM** · Leah Bowers DMD 2006 · Gary Dillabaugh DMD 1972 · Dr. Patrick Finnigan · Dr. Randy Law · Dr. Kent Leacock · Dr. Min Li · Dr. Josef Novosad **VOLUNTEER CLINIC-ABBOTSFORD FOOD BANK** · Chris Barlow DMD 1989 · Laura Bowman DMD 2013 · Mike Crisanti DMD 2013 · Lauren Currie DMD 2014 · Airra Custodio BSc 2014 · Ray Dyck DMD 1992 · Brittany Fandrick BSc 2015 · Michelle Foster BSc 2014 · Sukhpaul Gurm DMD 2016 · Sangwoo Ham DMD 2014 · Nevin Haynes BSc 2015 · David Hemerling DMD 1993 · Angel Hu BSc 2015 · Brian Hu DMD 2016 · Jeremy Huynh BSc 2015 · Sean Kelly DMD 1995 · Ambreen Khan BSc 2013 · Elizabeth Koh BSc 2015 · Scott Kollen DMD 2013 · David Larsen DMD 1987 · Eric Mok BSc 2013 · Jill Moore Dip DH 1976 · Mike Nicholls DMD 1985 · Jordan Sanders DMD 2015 · Chelsea So BSc 2013 · Alysha Sunderji BSc 2013 · Charlene Tai DMD 2014 · Jade Tan BSc 2013 · Sisi Xu BSc 2015 **VOLUNTEER CLINIC-RICHMOND GENERAL HOSPITAL** · Najia Bhimji DMD 2014 · Bob Blacker · Kathy Chatten · Natalie Chaudhary DMD 2014 · Danielle Coulson DMD 2014 · Michael Crisanti DMD 2013 · Joanne Dawson · David Hemerling DMD 1993 · Anderson Hsu DMD 2014 · Alex Hupka · Elizabeth Johnson-Lee DMD 1992 · Priya Kandola DMD 2014 · Elizabeth Koh BSc 2015 · Paul Lee DMD 2015 · Madison Loh DMD 2014 · Chris Low DMD 2014 · Eric Mok BSc 2013 · Doug Nielsen DMD 1972 · Susan Nielsen · Jason Park DMD 2014 · Jocelyn Shih DMD 2015 · Garry Sutton DMD 1972 · Nora Tong BSc 2014 · Akash Villing DMD 2013 **VOLUNTEER CLINIC-VANCOUVER NATIVE HEALTH SOCIETY** · Tony Bae DMD 2013 · Dan Berant DMD 2013 · Emery Bland DMD 2010 · Vik Boparai DMD 2014 · Shane Bot DMD 2014 · Rene Buttar DMD 2005 · Joyce Chan DMD 2015 · Esther Chen DMD 2014 · Lisa Cho DMD 2014 · Tarn Dhillon DMD 2014 · Katie Enns DMD 2013 · Reza Entezarion DMD 2016 · Lindsay Flumerfelt DMD 2014 · Elnaz Ghandchi DMD 2013 · Sasan Hadianfar DMD 2014 · Heather Jones DMD 2013 · Aleem Kara DMD 2014 · Monika Kasprzak DMD 2013 · Kevin Lauwers DMD 2005 · Paul Lee DMD 2015 · Sierra Lee DMD 2016 · Cody Lin DMD 2016 · Ann Lu DMD 2014 · Mike Mah DMD 2015 · Jamie Marshall DMD 2015 · Alexandra Moore DMD 2016 · Julianne Proniuk DMD 2015 · Micah Pyde DMD 2014 · Neda Rafati DMD 2010 · Tony Reichert DMD 2009 · Fran Rhee DMD 2014 · Fiona Roth DMD 2016 · Laura Schmidt DMD 2015 · Nancy Schmidt DMD 2015 · Sharon Shao DMD 2014 · Stacy Stelting DMD 2016 · Mandeep Toor DMD 2016 · Michael Tsai DMD 2015 · Candace Woodman DMD 2007 · Tim Yan DMD 1989 · Stephen Yoon DMD 2016 **VOLUNTEER COMMUNITY CLINIC PROGRAM-STUDENT LEADERS** · Dilraj Bal DMD 2014 · Jay Chan DMD 2014 · David Chen DMD 2014 · Lauren Currie DMD 2014 · Airra Custodio DMD 2014 · Jeremy Huynh DMD 2015 · Jamie Marshall DMD 2015 · Fiona Roth DMD 2016 · Nancy Schmidt DMD 2015 · Jocelyn Shih DMD 2015 · Michael Tsai DMD 2015 **YOUNG ALUMNI & STUDENT PUB NIGHT AT THE PDC** · Dilraj Bal DMD 2014 · Danielle Coulson DMD 2014 · Lauren Currie DMD 2014 · Ann Lu DMD 2014 · Charlene Tai DMD 2014 · Sinthi Vaithilingham DMD 2014 · *Those listed with DMD or BSc years from 2014 through 2016 following their name are candidates for graduation in the specified year. UBC Dentistry appreciates all who volunteered their time. We apologize if your name or organization was missed.*

CONTINUING DENTAL EDUCATION 2013 - 2014

This calendar is subject to change. For updates to fall 2013 and spring 2014 course offerings, visit www.dentistry.ubc.ca/cde

SEPTEMBER 2013

21 (SATURDAY)
Topic TBA
Speaker TBA

28 (SATURDAY)
Digital Dental Photography-Didactic and Hands-On
Dr. Jason Goodchild

FEBRUARY 2014

3-7 (MONDAY - FRIDAY)
Adventure & Learn: Hawaii 2014
Topics to be announced
Dr. Nasser Barghi, Dr. Ricardo Carvalho, Dr. Adriana Manso, Dr. Charles Shuler
Location: The Fairmont Kea Lani, Maui, Hawaii

13-15 (THURSDAY - SATURDAY)
Whistler Ski Seminar
Topics to be announced
Dr. Daniel Haas, Dr. Glenn van As
Location: Four Seasons Resort, Whistler, BC

FOR REGISTERED DENTAL HYGIENISTS AND CERTIFIED DENTAL ASSISTANTS

SEPTEMBER 2013
Local Anaesthesia for Registered Dental Hygienists
28-29 (SATURDAY - SUNDAY)
Lecture and clinical sessions

OCTOBER 2013
25-26 (FRIDAY - SATURDAY)
Written and clinical examinations

MAY 2014
Orthodontic Module for Certified Dental Assistants and Registered Dental Hygienists
Spring dates for Lecture Sessions, Clinical Session A and Clinical Session B will be posted on www.dentistry.ubc.ca/cde

OCTOBER 2013

5 (SATURDAY)
Fifty Oral Lesions Every Dental Practitioner Should Know
Dr. Dolphine Oda

19 (SATURDAY)
Topic TBA
Speaker TBA

26 (SATURDAY)
TBA (Ergonomics course)
Ms. Bethany Valachi

MARCH 2014

15-29 (SATURDAY - SATURDAY)
Thailand Travel and Learn
Topics to be announced
Dr. Jeffery Coil, Dr. Charles Shuler, Dr. Chris Wyatt
Location in Thailand to be announced

2013 FALL THURSDAY EVENING LECTURE SERIES FOR DENTAL HYGIENISTS

Fall dates, topics and speakers will be posted on www.dentistry.ubc.ca/cde

NOVEMBER 2013

1-3 (FRIDAY - SUNDAY)
Inhalation and Oral Sedation in Dentistry
Dr. David Donaldson, Dr. Mark Donaldson, Dr. Fred Quarnstrom

8-10 (FRIDAY - SUNDAY)
Guided Bone Regeneration and Implant Dentistry-Didactic and Hands-On
Dr. Farzin Ghannad
Location in California

16 (SATURDAY)
Topic TBA
Dr. Jamison Spencer

23 (SATURDAY)
TBA (Endodontics course)
Dr. John West

29-30 (FRIDAY - SATURDAY)
Hands-On Microscope
Dr. Jeff Coil

STUDY CLUBS 2013 - 2014

September 2013 - July 2014
Basic Orthodontics for the General Practitioner
Dr. Paul Witt

September 2013 - August 2014
Advanced Orthodontics for the General Practitioner
Dr. Clement Lear

October 2013 - May 2014
Advanced Fixed Prosthodontics for the General Practitioner Part 2
Dr. Chris Wyatt

October 2013 - April 2014
Digital Dentistry for the General Practitioner - A Hands-On Approach
Dr. Jonathan Ng

For dates, times and locations of Study Clubs, visit www.dentistry.ubc.ca/cde

DECEMBER 2013

7 (SATURDAY)
Implant Maintenance-Emerging Trends in Periodontics
Dr. Jim Grisdale

FOR FULL DETAILS OF CDE COURSES AND TO REGISTER VISIT DENTISTRY.UBC.CA/CDE ADA CER-P Continuing Education Recognition Program