FALL 2011 – SPRING 2012

EVENTS FOR STUDENTS AND ALUMNI

Managing a Successful Dental Practice—Developing a Business Worth Smiling About

IMPRESSIONS

DECEMBER – FEBRUARY

4th Annual Battle of the Bands: Faculty/Alumni vs. Students
January 13, 2012 (Friday)

MORE EVENTS FOR ALUMNI

Alumni Wine Reception
TODJ Meeting, Kelowna
October 21, 2011 (Friday)

Annual Alumni Reception
Pacific Dental Conference 2012
March 9, 2012 (Friday)

Alumni News

Exploring the Role of Enzymes in Disease

Volunteer Dentists

Bridging a Gap—Part-Time Faculty

Donor Impact Stories

Off the Campus

Donor Honour Roll

CDE Calendar

MARK YOUR CALENDARS!

FALL 2011 – SPRING 2012

Managing a Successful Dental Practice—Developing a Business Worth Smiling About

-designed for dentists who own their practice, this nine-day program delivered over three months will develop the strategic and operational skills and abilities to ensure an efficient, patient-centered business.

-you focus on your own practice, identifying your key performance issues, to develop a sound assessment of the current health and future prospects for your practice. There is also peer discussion to identify shared problems and a range of solutions. Guest speakers will deliver seminars on topics such as managing wealth and investment strategies, among others.

-developed and presented in partnership with the Sauder School of Business, the Faculty of Dentistry and the British Columbia Dental Association, this innovative new program, based on best practices and key measurements, is delivered by recognized industry leaders and leading business researchers.

December 1 – 3, 2011
January 19 – 21, 2012
February 23 – 25, 2012

More information about these events can be found on page 37 in this issue of Impressions or at www.dentistry.ubc.ca/alumni

UBC Dentistry

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Dean’s Message

Dear Colleagues,

Welcome to the autumn 2011 edition of UBC Dentistry’s Impressions.

Beginning a new academic year is always exciting. Our student body keeps growing: the first-year DMD class has 48 students compared to the average of 41 over the last 10 years, the dental hygiene program continues to expand and the new clinical specialty graduate programs are adding more and more students as the programs mature.

This growth in the number of students has prompted several renovation projects in the John B. Macdonald (JBM) Building. While these renovations do impose some burdens, it is very clear to everyone that the new spaces directly enhance the environment for learning. The newly renovated plaster lab—made possible by a generous donation from Aurum Ceramic Group of Companies—has just been opened to provide all students with an outstanding space for performing laboratory procedures. Other major projects scheduled for JBM include: the remaining operatories in the Sutherland clinic, next to the old Specialty Clinic, will be transformed into a conference space, providing Continuing Dental Education with permanent space for study clubs to meet, practice and learn.

The Faculty of Dentistry has been fortunate in faculty recruitment activities—12 full-time faculty members have joined us in the last year and a half. These new faculty members will add immensely to advancement in our research, teaching and service missions.

The major articles in this issue of Impressions focus on some significant accomplishments in research and community service. Researchers Drs. Alan Lowe and Fernanda Almeida have become internationally recognized for their achievements in dental sleep medicine. The incidence of sleep disordered breathing is growing, and UBC Dentistry has a leading role in recognizing and treating these conditions. Sleep disordered breathing may be associated with other medical problems: sleep apnea, for instance, is associated with cardiovascular disease, hypertension and stroke to name a few. On another research front, Dr. Dieter Brömme, a Tier I Canada Research Chair, focuses on the destructive impact of proteases on tissues. Inhibiting the function of these enzymes will lead to new therapeutic approaches for several health and dental conditions.

The Adopt a School Program requires an annual funding commitment of approximately $30,000 to ensure the clinic is operational for the clinic and waived all rental charges. There is an additional proposal by UBC Dentistry to use BC Healthy Kids Program basic dental services coverage to support the overhead costs. However, there remain significant program costs associated with supplies, equipment and maintenance. The Adopt a School Program requires an annual funding commitment of approximately $30,000 to ensure the clinic is fully operational on a yearly basis.
Bioimaging Equipment: It’s Here!

Ask Dr. Edward Putnins, professor and associate dean of Research, Graduate and Postgraduate Studies, what $3.5 million can buy, and he will tell you precisely: a MALDI-TOF Orbitrap tandem mass spectrometer, an optical projection tomography (OPT) scanner, a Leica white light confocal microscope, and a Helios 650 dual beam scanning electron microscope.

This equipment, the bulk of which is being built in the Czech Republic, will enhance research and cross-discipline collaborations in the areas of hard tissue development and degradation, and will support the development of novel treatment approaches utilizing new drug therapies.

Putnins and other co-applicants at UBC were awarded a multi-million dollar government grant from the Canada Foundation for Innovation and the British Columbia Knowledge Development Fund to expand Dentistry’s bioimaging facility and upgrade its vastly outdated ultramicrotomy, transmission and scanning electron microscopy systems. (See Impressions, fall 2009.)

The inconvenience of stepping around large wood packing crates containing the sensitive, precision-based equipment from Europe, the United Kingdom and the United States has been minor compared to the huge boost this equipment gives to dentistry, medicine, science and engineering researchers at UBC and across Canada and the western United States.

“The Helios 650 uses EDAX [energy-dispersive X-ray spectroscopy] secondary electron detector systems, which allow us to analyze the elemental composition of small areas of the sample. For example, we can look at the mineral composition in a particular part of a tooth or bone sample, and predict the elemental properties of that part of the structure,” explains Putnins of the scanning electron microscope built in the Czech Republic. “There is no other system like this in Canada or on the west coast of the United States.”

A core component of the bioimaging facility, the Helios 650 will operate 24 hours per day, seven days per week. This will enable faster research results, accelerating the rate at which disease regulators can be examined and potential therapies evaluated.

Currently installed in a temporary location in the John B. Macdonald Building, the equipment will be moved to its final home in 2012. The new bioimaging facility—an environment purpose-built to accommodate the scientific functions and supported by high-volume data storage and analysis—is taking shape in the UBC Faculty of Pharmaceutical Sciences’ Centre for Drug Research and Development building now under construction. (See Impressions, fall 2010.)

Behind the scenes, yet another aspect of the facility is being formulated. Nancy Ford, an assistant professor newly hired as the centre’s director to oversee the development of novel 3D analysis methodologies, and Clive Roberts, associate professor, are busy developing policies, procedures and a cost-recovery business model. The centre’s website, phenogenomics.dentistry.ubc.ca, will feature full descriptions of the equipment to help researchers with their imaging requirements, an online booking calendar for the equipment, and standard operating procedures for specimen preparation.

Putnins is proud of the awarded grant and of the centre’s cross-disciplinary approach and synergistic model. He anticipates not only UBC researchers, but those from other universities, institutions and private companies will reap the rewards of working with an advanced bioimaging facility in Canada. "We believe the greatest scientific advantages will occur through collaborations between scientists that cross traditional research boundaries but exhibit complementary expertise."

Ensuring an assistant professor newly hired as the facility’s director is the associate dean of Research, Graduate and Postgraduate Studies, Dr. Edward Putnins (2nd L) and Nancy Ford (L) talk with construction crews in the space slated for the Centre for High-Throughput Phenogenomics. This new central location on campus, in the new pharmaceutical sciences building, will enhance research and cross-discipline collaborations in the areas of hard tissue development and degradation, and will support the development of novel treatment approaches utilizing new drug therapies.

A New Spin on Endodontics Education

How do you make an already dynamic, interactive DVD-ROM on the subject of endodontics even better? Ask Dr. Markus Haapasalo, editor-in-chief of the latest incarnation of the multimedia program on the topic: Visual Endodontics 2012.

Building on the success of Visual Endodontics Curriculum, a DVD-ROM released in 2006, Haapasalo and colleagues updated the subject in 2011 with 3,000 images, 100 videos and hundreds of pages of hyperlinked text, and they present the material in a compelling style for both specialists and general practitioners. “It now covers the whole disciplines,” Haapasalo begins, “including diagnostics, treatments, instruments, materials, etc. In this way, it presents more ramifications, so it’s more than a topic-specific lecture.”

Key learning points are linked to relevant biomedical literature citations on PubMed, an online database developed by the US National Library of Medicine.

Continuing education (CE) credits can be earned through UBC Dentistcy’s Division of Continuing Dental Education. “We had CE in mind and built in the required components like asking questions of an expert and providing a channel for feedback to the user,” Haapasalo says, also noting the better performance and snappier interface, both driven by new software.

Haapasalo, a professor and chair of the Division of Endodontics, asserts that Visual Endodontics 2012 is a powerful learning and teaching tool with potential to replace short-lifespan textbooks and time-consuming lectures, which are both expensive.

Backed by hundreds of endodontic content providers and an international editing and advisory board, Visual Endodontics 2012 has received positive feedback from the Centre for Teaching, Learning and Technology at UBC and from the BC Endodontic Society.

For more information, visit www.visualendodontics.net

On the Cover—Publications by UBC Dentistry Faculty

Fernanda Almeida, assistant professor, Department of Oral Health Sciences, was guest editor for Sleep and Breathing (May 2010), an international journal of the science and practice of sleep medicine. In the official journal of the American Academy of Dental Sleep Medicine and other dental sleep medicine organizations in Europe and Asia, Dr. Almeida, who regularly contributes as associate editor, notes in her guest editorial, “Dental Sleep Medicine in Education, Practice and Research,” that this special issue features a significant number of excellent articles in the field of dental sleep medicine. For the first time, an entire edition of Sleep and Breathing is dedicated to focusing on dentistry in sleep medicine. View the journal at www.springerlink.com/content/1520-9512/15/2.

To provide succinct and practical information about oral and maxillofacial radiology, Quintessence Publishing—a international publisher of professional and student dental and medical books, journals and multimedia products—turned to Dr. David MacDonald, a recognized expert in the field. The associate professor and chair of the Division of Oral & Maxillofacial Radiology provided a chapter on the subject for their second edition of Diagnosis and Treatment in Prosthodontics.

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In the next five years, we will be focusing on Tooth and Jaw Development

NSERC Funding Awarded for Tooth and Jaw Development

Tooth and Jaw Development

CIHR Doctoral Research Award to Richman Lab Student

Sara Hosseini-Farahabadi, a PhD student in the Cell and Developmental Biology Program under the supervision of Dr. Joy Richman, won the Frederick Banting and Charles Best Canada Graduate Scholarship from the Canadian Institutes of Health Research for her work, “Discovery of WNT5A Functions During Embryonic Skeletal Development in the Face.” The scholarship provides a $30,000 per year trainee stipend and a $5,000 per year research allowance over three years. All candidates were expected to have an exceptionally high potential for future research achievement and productivity. There were over 900 applications in the competition, and Sara was ranked in the top 10 percent of the biomedical category.

“A research program providing fundamental insights into craniofacial development and evolution got a bit brighter with funding from the Natural Sciences and Engineering Research Council of Canada (NSERC).”

Dr. Joy Richman, a pediatric dentist and developmental biologist, was awarded an NSERC Discovery Grant of over $312,000 on her previous molecular studies of snake reptiles like pythons and leopard geckos are ideal study subjects. “In the skeletogenesis arm of the grant, we will focus on palate and temporal bone development.”

Her other area of expertise, using chicken embryos to shed light on facial abnormalities, is also involved: “Our approaches will be to apply the molecular and functional techniques we use in our chicken work [see Impressions, fall 2010] to the study of reptiles.”

Reptiles like pythons and leopard geckos are ideal study subjects, because as egg-laying animals, tooth development can be easily studied in the embryos. The bigger picture of Richman’s investigations using the reptilian animal model is to ascertain how the second generation of teeth (permanent teeth) forms in humans. This work will lead to a better understanding of how human tooth number is controlled and could translate into new methods of regenerating lost teeth.

“Just because it is new and shiny doesn’t mean it’s better. Improved learning outcomes are key; typically, educational technology that works is based on sound learning theory and cognitive psychology. What the technology works is based on sound learning theory and cognitive psychology. What the technology can do is make the surgical component of oral surgery more predictable.”

Techie or Trekkie? It’s All Good for Learning

Dr. Fernanda Almeida, assistant professor in the Department of Oral Health Sciences, has won the 2011 Pierre Robin Academic Award from the American Academy of Dental Sleep Medicine (AADSM) for her outstanding work in the field. The award—presented in Minneapolis, Minnesota, on June 19, 2011, at the AADSM 20th Anniversary Meeting—honours individuals who have exhibited exceptional initiative and progress in the areas of education and academic research, with original contributions to the field of dental sleep medicine.

Almeida, who teaches oral and maxillofacial radiology and dental sleep medicine, received her master’s degree from the Federal University of Sao Paulo and her PhD at the University of British Columbia, both in the field of dental sleep medicine.

Almeida leads the area of dental sleep medicine at UBC with Dentistry professor and colleague Dr. Alan Lowe, who was the first recipient of the award in 1999.

He has published more than 35 peer-reviewed papers and four book chapters. Her research is focused on dental sleep medicine, involving oral appliance side effects on dentition, temporomandibular joint disorder, compliance, titration modalities and treatment outcomes. She also researches upper airway imaging, and pediatric and geriatric sleep disorder breathing. To read more about Almeida’s award and her biography, visit www.dentistry.ubc.ca/go/almeida.

For more information on Almeida and Lowe’s work, read “And to All a Good Night! UBC Leaders in Dental Sleep Medicine” on page 12 in this issue of Impressions.

Director of Integrated Clinical Care at UBC’s third- and fourth-year teaching clinic, Richardson is a self-proclaimed “tech-nerd” and sees technology playing an increasing role in clinical learning. He is currently researching the use of haptic devices (immersive tactile feedback technology) in clinical simulation.

One device looks like a dental handpiece and operates like a joystick that provides high-quality touch feedback as a student works on a virtual jaw or tooth. It may someday replace the traditional mannequin head and plastic teeth typodont models. Richardson explains: “Unlike the plastic typodont tooth, the textural haptic feedback accurately replicates the differing density of enamel, dentin, pulp and tooth decay. In addition, in contrast to the uniformity of the typodont, the virtual jaw is modelled to represent many different tooth morphologies and arrangements and can be rapidly ‘replaced’ with the click of a button. This gives students more opportunity for practising their hand skills, rather than wasting time unscrewing and replacing five-dollar plastic teeth.” Richardson also notes that the device can record the preparation process, allowing analysis and error correction. “The instructor can now not only identify what is wrong, but also why and when it went wrong.”

As skills advance, case scenarios can be built around the virtual patient to help students integrate the psychomotor skills into clinical decisions, making the transition to patient care seamless. “It’s like learning dentistry on the holodeck,” says Richardson of haptic devices in clinical simulation.

Faculty who teach operative dentistry are keen to try this new technology. UBC Dentistry is applying for research grants and partnering with UBC Medicine’s simulation-based educational research efforts. Financing is the biggest barrier. Richardson’s MEd studies exposed him to the pitfalls of technological determinism: “Just because it is new and shiny doesn’t mean it’s better. Improved learning outcomes are key; typically, educational technology that works is based on sound learning theory and cognitive psychology. What the technology can do is make the surgical component of care more predictable.” With the digital revolution entering its fourth decade, UBC’s dental education program is poised to “boldly go” beyond the traditional. Beam me up, Scotty! 
New Appointments: Full-Time Faculty

Nancy L. Ford, PhD, has joined the Department of Oral Biological and Medical Sciences as assistant professor, and is director of the Centre for High-Throughput Phenogenomics—UBC Dentistry’s biobanking facility. Dr. Ford received her doctoral degree in Medical Biophysics from the Schulich School of Medicine & Dentistry at the University of Western Ontario in 2005. Her thesis, “Optimization of Micro-Computed Tomography Techniques for computed tomography and in vivo small-animal imaging,” was the apex of a solid background in the field. In 1997 she received her Bachelor of Science (Honours) in Chemical Physics from the University of Waterloo, then worked as a research assistant at Sunnybrook and Women’s College Health Sciences Centre, Toronto, from 1997 to 2000. She was a postdoctoral fellow at the Imaging Research Laboratories, Roberts Research Institute, University of Western Ontario, between 2005 and 2006, and assistant professor in the Department of Physics, Ryerson University, from 2006 to 2011. Ford is an expert in micro-computed tomography and in vivo small-animal imaging—specifically, physiologically gated imaging in free-breathing animals and quantitative image-based measurements of structure and function from 3D micro-CT images. Ford is a member of the editorial board of Medical Physics.

Dr. Nancy L. Ford

Dr. Mathu-Muju

Kavita R. Mathu-Muju, DMD, MPH, FRCD(C), has joined the Department of Oral Health Sciences, Division of Pediatric Dentistry, as assistant professor. Dr. Mathu-Muju is a 1993 graduate of the Faculty of Dentistry of the University of Manitoba. She matriculated in the pediatric dentistry residency program at the School of Dentistry of the University of North Carolina at Chapel Hill in 2003. Concurrent with her residency, she earned a Master of Public Health degree, completing both programs in 2006. Mathu-Muju is a Diplomate of the American Board of Pediatric Dentistry and a Fellow of the Royal College of Dentists of Canada. She was a general dentist with the First Nations and Inuit Health Board of Health Canada and volunteered with Kindness in Action, a non-profit organization providing dental treatment to underserved, indigenous populations in Central and South America. She is passionate about caring for children and advocating to improve their access to oral health care. From 2006 to 2011, Mathu-Muju was assistant professor at the College of Dentistry, University of Kentucky, where she led the establishment of a master’s degree program in pediatric dentistry. Her publications appear in a variety of peer-reviewed journals, and she serves as peer reviewer and editorial board member for Pediatric Dentistry and the Journal for Dentistry for Children.

Kavita R. Mathu-Muju

UBC Dentistry Research Day 2012
BIOFILM DISEASE DYNAMICS: FROM UNDERSTANDING TO ERADICATION

Tuesday, January 24, 2012
UBC Student Union Building Ballroom

Biofilm, often referred to as “plague,” is an aggregate of microorganisms that preferentially grow in biofilm-enclosed communities and have an inherent resistance to disinfectants, antibiotics and host defenses. These biofilm properties are the basis for dental diseases such as caries, root canal infections and periodontal diseases. Research Day 2012 will highlight the exciting and progressive work of UBC Dentistry’s faculty in the areas of biofilm dynamics, control, eradication, significance in treatment failures, and community strategies to manage dental caries.

The Faculty of Dentistry is honoured that the keynote address will be delivered by Dr. Bill Costerton from the Center for Genomic Sciences, Pittsburgh, Pennsylvania. Dr. Costerton is widely credited with founding the field of Biofilm Microbiology and has over 850 publications on this important topic.

Keep up-to-date at www.dentistry.ubc.ca/researchday

More than 30-million patients in North America receive steroid drug treatment for a broad range of general systemic conditions and skin inflammation. While therapeutic benefits are definitely positive, side effects are common—and of great concern to patients. Long-term steroid drug treatment has significant side effects, causing damage in several body tissues, including the skin where tissue can atrophy. Impaired tissue repair, or poor wound healing, is one serious complication of steroid drug treatment, or glucocorticoid therapy. Glucocorticoids—a group of steroids naturally occurring in the body and used for anti-inflammatory treatment—affect almost every phase of wound healing due to their inhibitory effects on gene expression in various cells involved in healing. For patients who may encounter accidental or surgical trauma, this effect of glucocorticoids is of paramount concern.

Dr. Hannu Larjava and Lari Häkkinen from the Faculty of Dentistry, and Dr. Kelvin McLellan from the Department of Dermatology and Skin Science, UBC Faculty of Medicine, are looking at hair follicle stem cells and the role of an integrin in healing steroid-impaired wounds. Their research, titled “Regulation of Hair Cycle and Wound Healing by efny Integrin,” has attracted five years of funding—just over $564,000—from the Canadian Institutes of Health Research.

Larjava explains the model: “Transforming growth factor beta 1 (TGF-β1), which is a naturally occurring molecule that regulates skin inflammation and tissue maintenance, strongly inhibits hair follicle stem cell growth and has been directly implicated as a significant factor in hair growth regulation.” TGF-β1 is produced in the body as an inactive molecule and needs to be activated to function. One of the main activators of TGF-β1 is an integrin that is expressed on the epithelial cell surface.

“We have recently demonstrated that this integrin is localized in hair follicle stem cells, where it could keep these cells inactive by way of TGF-β1 activation.” The UBC researchers have also demonstrated that mice engineered to lack this integrin (β6-/-) have accelerated hair growth and delayed hair regression. Of most consequence, Larjava notes, is that steroid-impaired wounds heal significantly better in β6-/- mice than in normal mice.

When people receive corticosteroids, these drugs inhibit stem cells, which delays the “re-epithelialization” of wounds. Working under the hypothesis that this integrin naturally suppresses stem cell proliferation in hair follicles, Larjava anticipates that using inhibitors of this integrin could potentially reduce stem cell suppression. This would provide a useful therapeutic tool to improve outcomes of steroid-impaired wound healing.

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Hair follicles in mouse skin shown in hair cycle stages: resting (L), growing (C) and regressing.
Faculty of Dentistry External Awards and Recognition in 2010 – 2011

RECIPIENT | AWARD/RECOGNITION
--- | ---
Dr. Fernanda Almeida, Assistant Professor | Pierre Robin Academic Award, American Academy of Dental Sleep Medicine
Dr. Bruno Breindel, Assistant Professor | Distinguished Service Award, College of Dental Surgeons of British Columbia
Dr. Daniel F. Rees, Clinical Assistant Professor | BC Oral Cancer Prevention Program
Dr. Genguste Th, Assistant Professor | Canadian Institutes of Health Research — Institute of Population and Public Health
Dr. Michael T. MacNeil, Professor, Prosthodontics and Dental Geriatrics | Dr. Lawrence Rossoff, Clinical Assistant Professor | Inducted into the Royal College of Dentists of Canada as a Fellow, September 2011
Dr. Benjamin Pliska, Assistant Professor | Inducted into the American College of Dentists as a Fellow, October 2010
Dr. Michelle Williams, Clinical Assistant Professor | Co-winner, Oral Health Promotion Award to BC Oral Cancer Prevention Program, Canadian Dental Association
Adjunct, PhD candidate | Fellowship, Psychosocial Oncology Research Program, Canadian Institutes of Health Research — Institute of Cancer Research and Policy Research
Dr. Sara Hossein-Farahabadi, PhD candidate | Best Student Poster Research Presentation Award for “It’s in My Culture”: Betel Quid and Smokeless Tobacco Use Among South Asian Men in British Columbia” (Auluck A, Hislop G, Zhang L, Bottorff J, Rosin M), Canadian Association of Psychosocial Oncology
Dr. Bruce Watson, PhD candidate | Awarded to attend the 2011 Canadian Association of Psychosocial Oncology (CAPO) Conference, May 2011, Toronto, Ontario
Dr. Leandra Best, DMD, clinical associate professor, is also director of the Bureau of Legal Dentistry (BOLD) lab. He is a 1978 alumus of UBC and a world renowned scientist in forensic odontology. He was invested as an Officer of the Order of Canada in 2008 for enhancing Canada’s reputation in the science of victim identification and for his contributions as a teacher, mentor and consultant. Sweet has a long list of farms in DNA recovery methods that have become global industry standards in forensic odontology, including techniques for disaster response. He is Canada’s odontology representative for the Interpol Standing Committee (Iyon, France) on disaster victim identification and a forensic advisor to the International Committee of the Red Cross (Geneva, Switzerland). Sweet has had an ongoing interest in UBC students, and this new role formalizes what he has advocated on their behalf.

Three new administrative appointees—
Dr. Leandra Best as associate dean of academic affairs, Dr. David Sweet OC as associate dean of student affairs, and Dr. Andrea Esteves as associate dean of clinical affairs—marked the new academic year.

While the associate dean of clinical affairs position has been vacant since the departure of Dr. Ma A.J. (Lyn) MacNeil in 2009, academic and student affairs has been under the leadership of Dr. Joanne Walton since 2005. Walton leaves her role to two associate deans who, respectively, will oversee the academic and personal life issues related to students’ education.

New Associate Deans

W. Leandra Best, DMD, clinical associate professor, joined the Faculty of Dentistry in 1999 as a part-time instructor in fixed prosthodontics and quickly became involved in many components of the dental curriculum. As DMD coordinator for years one and two, she worked closely with the Faculty of Medicine on the delivery of our joint problem-based learning (PBL) pedagogy. She co-authored numerous PBL cases and developed Dentistry’s PBL Tutor Training Workshop and the PBL Orientation for students. Best, who received a 2004 Dentistry Teaching Award, a 2006 Killam University Excellence in Teaching Award and was the 2007 3M – ESPE ACFD National Teaching Award winner, is involved in UBC-wide initiatives who, respectively, will oversee the academic and personal life issues related to students’ education.

Keep up-to-date on all awards and achievements—
including the annual Dean’s Night, Graduation and Teaching Awards—at www.dentistry.ubc.ca/awards

The College of Dental Surgeons of British Columbia Distinguished Service Award recognizes outstanding and broad contributions to the dental profession in BC and to CDSC-over time. It was presented on March 17, 2011, to Dr. Michael MacNeil, Professor of Prosthodontics and Dental Geriatrics, as well as to alumni Susan Chow (DMD 1972) and Ashley Varma (DMD 1990). Both now (L to R), Drs. Ashley Varma and Michael MacNeil, MB, ChD (oral surgery), Dr. John Glog, (ACI) and Dr. Jeff Stein, (CABD, post-graduate) presented the Award on behalf of the CDSC.

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The College of Dental Surgeons of British Columbia Distinguished Service Award recognizes outstanding and broad contributions to the dental profession in BC and to CDSC-over time. It was presented on March 17, 2011, to Dr. Michael MacNeil, Professor of Prosthodontics and Dental Geriatrics, as well as to alumni Susan Chow (DMD 1972) and Ashley Varma (DMD 1990). Both now (L to R), Drs. Ashley Varma and Michael MacNeil, MB, ChD (oral surgery), Dr. John Glog, (ACI) and Dr. Jeff Stein, (CABD, post-graduate) presented the Award on behalf of the CDSC.

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New Associate Deans

Three new administrative appointees—
Dr. Leandra Best as associate dean of academic affairs, Dr. David Sweet OC as associate dean of student affairs, and Dr. Andrea Esteves as associate dean of clinical affairs—marked the new academic year.

While the associate dean of clinical affairs position has been vacant since the departure of Dr. Ma A.J. (Lyn) MacNeil in 2009, academic and student affairs has been under the leadership of Dr. Joanne Walton since 2005. Walton leaves her role to two associate deans who, respectively, will oversee the academic and personal life issues related to students’ education.

New Associate Deans

W. Leandra Best, DMD, clinical associate professor, joined the Faculty of Dentistry in 1999 as a part-time instructor in fixed prosthodontics and quickly became involved in many components of the dental curriculum. As DMD coordinator for years one and two, she worked closely with the Faculty of Medicine on the delivery of our joint problem-based learning (PBL) pedagogy. She co-authored numerous PBL cases and developed Dentistry’s PBL Tutor Training Workshop and the PBL Orientation for students. Best, who received a 2004 Dentistry Teaching Award, a 2006 Killam University Excellence in Teaching Award and was the 2007 3M – ESPE ACFD National Teaching Award winner, is involved in UBC-wide initiatives who, respectively, will oversee the academic and personal life issues related to students’ education.

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AND TO ALL A GOOD NIGHT!

UBC LEADERS IN DENTAL SLEEP MEDICINE

BY MARI-LOU ROWLEY

Sleep disordered breathing has become a growing health problem that affects the lives and well-being of sufferers and partners alike. Drs. Alan Lowe and Fernanda Almeida are working at the forefront of dental sleep medicine to help patients—and bed partners—get a better night’s sleep, one deep breath at a time.
Snoring is so common that it has often been thought to be normal, particularly in men,” says Lowe. “But the more we have learned about it, the more we understand the prevalence, and that it is higher in women than we thought.”

In fact, sleep medicine is the fastest growing area of medicine today because of the large percentage of the population it affects. Data suggests that up to 60 percent of Canadian males 30 years old and up snore, as do roughly 30 percent of females. While a much smaller percentage have sleep apnea, sleep apnea remains disturbed, and sleep deprivation alone is a major health and safety concern. “The disease was only identified in the 1970s, so it is still very recent in the history of medicine,” notes Almeida. “With the increase in obesity there is a huge increase in sleep apnea, so the percentages are increasing dramatically.”

Snoring Versus Sleep Apnea—A Deadly Difference

Although snoring is often considered mainly a social nuisance, it may be an indication of OSA, a chronic, life-threatening condition associated with cardiovascular disease, hypertension and stroke. “Snoring is to sleep apnea what a cough is to lung cancer,” explains Lowe. “Not everyone who snores has sleep apnea nor does everyone who coughs have lung cancer. But few people who have sleep apnea don’t snore, and very few people who have lung cancer don’t cough.”

Snoring is a result of the narrowing of the upper airway due to the relaxation of the tongue and throat. “It tends to be worse when you are lying on your back, because the tongue falls back and the jaw rotates down and back, decreasing airway size,” says Lowe. (Think of your grandfather napping in his recliner, mouth open, snoring away.) “A person has to breathe the same amount of air in and out, in the same amount of time, through an already narrow array,” Almeida explains. “If the airway is partially obstructed, it becomes even narrower and the air must pass through faster, which vibrates the uvula and soft palate, causing snoring.”

In sleep apnea, the tongue and soft tissue of the throat relax to the point that not enough air reaches the lungs, causing hypoxia, or low blood-oxygen levels. Symptoms of sleep deprivation are daytime sleepiness and fatigue, problems with memory and cognitive function, and other physiological and mood changes.

“Obstructive sleep apnea is very complex, and the cardiovascular disease associations have not been completely understood,” says Almeida. “The origin of obstructive sleep apnea in OSA patients is likely multifactorial. Intermittent hypoxia and frequent arousals are some of these pathways.” Several such arousals, over the course of an hour, destroy the restorative function of sleep and may increase blood pressure and lead to cardiovascular problems such as atrial fibrillation.

Data dating back to 1988 show that after 10 years post-diagnosis for untreated patients with severe OSA (20 apnea events per hour or more), 39 percent had died by year nine. Recent data show similar results and note that there is a higher incidence of cardiovascular disease even in mild to moderate sleep apnea patients. Treatment of patients with mild to moderate OSA can reduce cardiovascular risk by 64 percent, independent of age.

Treatment Options: CPAP and/or Oral Appliances

Lowe and Almeida work in collaboration with the UBC Hospital Sleep Disorder Program, which is one of the foremost sleep clinics in the country. Both emphasize that because OSA has serious health implications, it must be diagnosed by a family physician or sleep medicine specialist. Dentists can play a crucial role in OSA treatment. There are currently two treatment options for patients with continuous positive airway pressure (CPAP) and oral appliances.

CPAP involves a mask—most commonly a nasal mask attached to an apparatus that forces air into the lungs. Most oral appliances work by holding the jaw closed while moving the tongue and jaw forward to open the airway. Both CPAP and oral appliances have advantages and disadvantages, and there has been much debate over what device to prescribe and for what degree of apnea.

“There is evidence that up to 50 percent of CPAP machines may end up on the floor three months after treatment, so compliance is not good,” says Lowe. Besides obvious discomfort, Lowe’s studies have found that CPAP can cause craniofacial changes, and other side effects to the gums, teeth, hard palate, dry mouth, rhinitis, pressure intolerance and aerophagia (swallowing of air). “On the other hand, CPAP does increase blood oxygen levels better because it forces air into the entire airway with positive airway pressure.”

OSA is both a chronic and a progressive disease, so compliance is essential for treatment to be effective. Oral appliances are much more easily tolerated, are portable, adjustable and less costly; but, Lowe emphasizes, they need to be properly fitted by dentists, with regular follow-up.

Oral Appliances Lead Dental Treatment of OSA

As a founder of the American Academy of Dental Sleep Medicine, and inventor of the Klearway™ oral appliance (see sidebars) for the treatment of OSA, Lowe is one of the world’s foremost experts in the field. Klearway set the benchmark for adjustable appliances when it was patented in 1995 and has become one of UBC’s long-term marketed inventions. Today, Lowe and Almeida’s research is based on broader evaluations of oral appliances in general, and includes: the study of dentoskeletal, neuromuscular and soft tissue variables in patients with snoring and OSA, the study of tongue and jaw muscle activity, and the development of computerized models for analysis; and, testing oral appliance titration monitors for clinical applications in snoring and OSA. Titration refers to the adjustment of the appliance to ensure the airway is open.

“The biggest challenge with oral appliances is finding the correct jaw position where the airway is open, because it differs for every patient and there is no size or gender correlation,” says Lowe, noting again that it is crucial for dentists to be involved in fitting and monitoring these devices. Sleep disordered breathing affects children as well. With industry funding, Almeida and Lowe have recently undertaken a pediatric study to look at how oral appliances might benefit children with sleeping disorders.

Research and Testing Tells the Tale

While not all of the medical community has embraced the use of oral appliances over CPAP, Lowe notes that enough research has been done to show their effectiveness. While oral appliances are now recommended as the first line of therapy for mild to moderate apnea, and for people with severe OSA where traditional nasal CPAP has not been successful.

“Studies that compared CPAP to oral appliances, where patients used one treatment at a time over a three-month period, showed that subjective outcomes were not different at all,” says Almeida. “Patient improvement in quality of life, sleepiness and other symptoms remained the same with the appliance as with CPAP.”

In a clinical trial by Almeida and Lowe, successful CPAP users were given the option to use oral appliances as an alternative therapy, and about 50 percent moved completely to oral appliances after the study was finished. One of the biggest criticisms of oral appliances is that they may affect the dentition and cause tooth movement. In another study, they showed that even a very low force from CPAP wear applied over a two-year period caused tooth movement and craniofacial changes.

“We really don’t have a therapeutic option that doesn’t affect the dentition, which is another reason why dentists should be involved,” Lowe says.

Another finding on the Klearway appliance in adults showed that it has a direct effect on blood pressure, reducing both systolic and diastolic blood pressure during sleep, and restoring the normal dip in blood pressure at night. While this is also an outcome of nasal CPAP therapy, this finding has huge implications for patients, dentistry and health care, particularly in cost savings.

Perhaps most interesting is the involvement that bed partners have in the CPAP versus oral appliance decision. While patient preference for one or the other favours oral appliances, 95 percent of bed partners prefer an oral appliance because it is less noisy and unattractive.

“Because of the improved oxygenation, the bottom line is that patients are managing well on CPAP, they should be left alone,” says Lowe.

Klearway™ Reaps Dividends for UBC, Dentistry Research and Health Care

Since Klearway was first patented in Canada, the US and Europe in 1995, it has garnered not only numerous awards and recognition for inventor Dr. Alan Lowe, but sizeable sales and dividends that now fund researchistry. To date, over 30,000 devices have been sold worldwide, and the royalty income helps to fund up to five researchers and support staff in Lowe’s lab. Lowe acknowledges the support of industry partners such as the Aurum Group and Space Maintainers Laboratory, who distribute the appliance across Canada.

“I have the wonderful job of deciding what research we support,” Lowe says. “And in a world of ever increasing funding and grant complexities, this is a real gift,” Lowe says. Direct economic benefits of Klearway to Canada, including laboratory sales, royalties and dental office sales, are estimated at just over $21 million since 1995. Indirect economic health benefits, such as reduced hospitalization and medical costs to society, are estimated at $3.9 billion over the same period. Reduced motor vehicle collision costs are estimated to add another $1.2 billion.
Education and Partnerships
Key to OSA Treatment

Both Almeida and Lowe stress the need for more education and training in dental sleep medicine and the use of oral appliances in Canada. UBC’s dentistry program includes seminars on sleep medicine for undergraduates, and a number of graduate students are doing master’s programs in the field. Almeida is currently in the process of setting up a two-year interdisciplinary graduate program to train dentists in dental sleep medicine.

Lowe notes that while the American Academy of Dental Sleep Medicine is celebrating its 20th anniversary this year and works closely with the US Food and Drug Administration on regulatory guidelines, Canada still doesn’t have a university residency in sleep medicine or the same regulatory oversight of oral appliance protocols. Almeida is one of the authors of the soon-to-be-published Canadian guidelines on the prescription and supervision of oral appliances (see sidebar).

Lowe also cautions dentists who may be tempted to placate a complaining bed partner to tell the difference between COPD and OSA. “It’s often used as an example of how the two are completely connected, and we have been doing joint grant work for many years. I have been working with Drs. Lowe, Almeida and other dentistry faculty—from bench to bedside. Located in the Faculty of Dentistry, John B. Macdonald Building, the CRC will provide the means to investigate clinical applications of basic research through studies on patients with defined health and disease profiles.”

“Dentistry faculty have been doing clinical research and clinical trials for a long time, so this is an important new initiative,” says Lowe.

The CRC’s full-time staff will develop the protocols and ethical guidelines to conduct patient studies. The centre will be equipped with five dental operatories with multiple forms of radiology, and two surgical operatories for physical exams, outpatient medical procedures, oral and maxillofacial surgery, and general and pediatric oral health research.

“New areas of sleep research are focusing on larger randomized clinical trials, and now many studies are looking at people with chronic diseases, and need to follow patients over longer periods of time, so the timing of this facility is very important,” says Almeida.

“The centre’s clients will benefit from collaborating with a scientific staff that has extensive experience in identifying the most effective strategies for conducting studies and developing optimal protocols to meet research needs. Most importantly, the centre will be designed to deliver optimum health care to research participants, while making them feel a part of the research team.”

“Now, with electronic databases and networks, it is much easier to gather critical information for evaluating treatment,” says Almeida, who notes that all indications are that the CRC will host an oral appliance network for the entire world.

“The American Academy of Dental Sleep Medicine has allocated some funding to facilitate this process, so it is more than a dream—it is almost a reality!”

Dental Sleep Medicine Guidelines (in a nutshell)

• Patients first should be assessed by their family physician. In BC, protocol suggests that the family physician organize an oximetry test, or blood oxygen study.

• If the study is negative, there are no other symptoms of OSA or cardiovascular disease and the patient snores, then the family physician may refer the patient to the dentist directly.

• If the oximetry study is positive, the BC medical protocol is that the patient should see a sleep specialist. The patient may then be assessed in an overnight sleep study. The sleep specialist makes a decision regarding therapy, whether the patient requires a CPAP machine or oral appliance, and refers accordingly.

• After the recommended device is prescribed and is titrated, the patient must report back for a follow-up with the sleep specialist, who may then recommend a home study or another overnight study in the sleep clinic.

• Dentists should follow oral appliance patients on at least an annual basis.

Dental Hygiene Students Enrich Lower Mainland ELSA Class

BY TERRY WINTONYK

Students from the UBC Dental Hygiene Degree Program might spend a lot of time in class learning their profession, but with community-based outreach initiatives, class time takes on a whole new character.

In March 2011, dental hygiene students visited English Language Services for Adults (ELSA) classes offered by the Immigrant Services Society of BC (ISSofBC). The UBC students enriched the student experience for those in the ELSA program with a lesson in dental hygiene.

This year marked the first time that dental hygiene students worked in New Westminster—at two sites—and in a Level 1 English-language classroom. In previous years, they have worked with Levels 1 to 5 in Vancouver-based classrooms.

Sayana Faraji, Maria Huillas, Ambreen Khan, Hye Jeong Kim, Julie Kwan, Nayung Lee, Ashley Lessard, Monica Park, Alysha Sunderji and Duna Yu were all second-year dental hygiene students at the time. They were divided into three teams, and each team taught three one-and-a-half-hour sessions over a span of six weeks.

Diana Lin, clinical assistant professor and program supervisor for UBC’s Dental Hygiene Degree Program, summarizes the objectives of the initiative: to address the unmet oral health needs of vulnerable populations by delivering culturally appropriate oral health promotion/education and clinical services; to foster social responsibility and awareness; and to increase student exposure to various communities and interprofessional relationships.

Theresa Howell, an ELSA instructor, sat in on the classes.

“I saw how committed and adaptable this program is to the needs of ESSofBC and the ELSA students. It was interesting to see how much energy and effort the students put into their lesson planning and delivery.”

Howell appreciates programs like this benefit all involved, and she sees it as great bridge-building between agencies that care about their students and the settlement of new immigrants.

Many new immigrants to Canada come from countries where, like medical care, dental hygiene and dentistry services may be out of reach for the average population. Personal knowledge about dental hygiene may also be scant. Howell notes that, after the six weeks, many of the ELSA students were more enlightened about dental hygiene and more aware of programs in community-based dental care available to them. Says Howell, “It was amazing to witness how naturally partnerships such as these can improve the lives of so many.”
EXPLORING THE ROLE OF ENZYMES IN DISEASE

BY MARI-LOU ROWLEY

Dentistry professor Dieter Brömme, Canada Research Chair in Proteases and Diseases, is studying the enzymes involved in bone growth and deterioration. His basic research could lead to new treatments for a host of degenerative diseases—from osteoporosis and arthritis to jaw necrosis.

Understanding the inner workings of biochemical processes is like being drawn down into a spiralling vortex of increasingly complex interactions among smaller and smaller bits of matter. On the macro scale, our bones, cartilage and skin provide the framework and support that holds our organs in place and allows them to function efficiently. Deciphering the interplay between genes, proteins and enzymes that form, reform and degrade these tissues is the work of biochemist Dieter Brömme, professor in UBC Dentistry’s Department of Oral Biological and Medical Sciences.

The path that led him to UBC is as intriguing as his research. Brömme became fascinated with enzymology as a student at the Institute of Biochemistry of the Martin-Luther-Universität in the former German Democratic Republic. “That institute was renowned for pioneering work in proteases, the enzymes that break down proteins into peptides or amino acids, and traces its very early roots back to Nobel Prize winner Emil Fischer and his students more than a century ago,” says Brömme. While there, he went on to study first microbial serine proteases and then cysteine proteases, most notably cathepsin S.
Deficiency in collagen molecules is a critical enzyme in osteoclast-driven bone resorption and cartilage erosion. From 1997 to 2004, Brömme was a professor at Mount Sinai School of Medicine in New York. He left that position to assume a Canada Research Chair in the Faculty of Dentistry at UBC.

“Our lab is part of the Centre for Blood Research, and we have an affiliation with the Chemical Biology and Disease Group, so we are working with great resources and talented colleagues.”

Mechanisms of Bone Remodelling

Every seven to 10 years our skeleton is renewed by a process called bone remodelling, a delicate balance between bone resorption and bone formation. In resorption, cells called osteoclasts break down bone, releasing calcium, magnesium, phosphate and collagen products into the blood. Cells called osteoblasts are responsible for bone formation. During childhood, bone formation exceeds resorption, but as the aging process occurs, resorption exceeds formation.

Osteoclasts are involved in tissue destruction associated with osteoporosis, as well as osteoarthritis and other rheumatic and immune-related disorders. For years, researchers have been trying to discern the mechanisms of bone degradation by osteoclasts. Ninety percent of bone is made up of type I collagen fibers, and the collagens are very resistant proteins that are normally turned over very slowly,” says Brömme.

“Part of the reason is that collagen molecules have a complex triple helical structure and they are organized in protease resistant fibers.”

Collagen fibril

Triple helix

N ter

C ter

4/3 Collagen Fragment

1/4 Collagen Fragment

Schematic representation of the degradation of triple helical collagen by catK (multiple cleavage sites) and matrix metalloproteinases (one specific cleavage site).

Brömme notes that the search for a cysteine-dependent collagenase—a cathepsin that is able to break down collagen molecules efficiently—had been ongoing for over two decades, when a group in Switzerland discovered the gene OC-2 that is highly expressed in osteoclasts. “Everyone thought this was the gene for the enzyme that we had been looking for,” he says. “At that time, matrix metalloproteinases (MMPs) were the only proteases known to be true collagenases, because they cleave within the triple helical collagen molecule.”

“However, MMPs cleave at only one site on the triple helical collagen molecule,” explains Brömme, “whereas catK cleaves at multiple sites, including peptide bonds involved in cross-linking to hold the triple helix together. This makes it much more effective, because it is able to degrade the collagen into very small, soluble pieces.”

Brömme’s research group cloned and characterized the enzymatic properties of human catK, solved its three-dimensional structure and initiated the search for specific inhibitors that could slow down excessive bone resorption in diseases. This work has applications in dentistry as well. Since the jaw and teeth are made up of bone and hard connective tissue, catK inhibitors could be used to aid healing after tooth extraction. It could also help to prevent jaw necrosis in cancer patients.

Brömme came to Canada in 1991 to bring cathepsin research to the Biotechnology Research Institute in Montreal, and in 1993, was recruited by a small San Francisco biotechnology company. Between 1994 and 1997, he was leading the research to identify and characterize novel cysteine proteases, including cathepsin K (catK), and to show that catK was a critical enzyme in osteoclast-driven bone resorption and cartilage erosion. From 1997 to 2004, Brömme was a professor at Mount Sinai School of Medicine in New York. He left that position to assume a Canada Research Chair in the Faculty of Dentistry at UBC.

“Our lab is part of the Centre for Blood Research, and we have an affiliation with the Chemical Biology and Disease Group, so we are working with great resources and talented colleagues.”

Discovering CatK—A Novel Collagen-Degrading Enzyme

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Brömme’s current research projects are focused on the role of catK in bone resorption. He is also studying a number of human diseases characterized by excessive degradation of the extracellular matrix, including bone and cartilage diseases, atherosclerosis and destructive lung disease. For example, his group was the first to link overexpression of catK with rheumatoid arthritis. In addition, they found that when catK’s sister protease cathepsin K runs amok, it can cause improper processing of proteins that can lead to autoimmune disorders.

To better understand the role of proteases in health and disease, Brömme and his lab use an interdisciplinary array of tools (molecular biology, enzymology, crystallography, histology, animal models) and collaborate with clinicians and biotech institutions around the world.

“Our research is very fundamental, and preclinical discoveries depend upon facilities like UBC Dentistry’s new Clinical Research Centre to bring them into practice.”

CatK Inhibitors to Treat Osteoporosis

Osteoporosis affects roughly 10 percent of the population in Europe, Japan and North America, and as populations age, the numbers will increase. Bisphosphonates—the current most commonly recommended drug therapy for osteoporosis—act by indirectly killing osteoclasts, thereby reducing bone resorption. Bisphosphonates are also used in higher doses in anticancer therapies to reduce bone metastasis. Recent studies, however, have indicated that these drugs may actually undermine the integrity of bones, linking bisphosphonates with increased fracture rates and debilitating and disfiguring hip and jaw necrosis.

“Clearly, these outcomes are unacceptable, and catK inhibitors are a promising alternative therapy,” says Brömme, noting that some catK inhibitors developed by the pharmaceutical industry are now in various stages of clinical evaluation, including a final phase III trial.

“A very important factor in a catK targeted inhibitor is that most of the other drugs affect bone formation by suppressing both formation and resorption,” explains Brömme. “CatK inhibitors only affect bone resorption, and thus allow for ongoing bone formation.”

But catK also has functions other than degrading collagen. In fact, cathepsin K expression has been found in many cell types other than osteoclasts, including skin fibroblasts, macrophages (white blood cells), and dendritic (immune) and epithelial cells. CatK is also known to trigger the release of thyroid hormones and can regulate the expression of important growth factors.

“All catK inhibitors being developed, even those tested in phase III trials, are classic active-site directed, which means that the enzyme is completely inactivated so that it cannot perform any other function,” Brömme explains. “And this can lead to unforeseen side effects, including skin fibrosis, granulomas and impairment of brain functions.”

Patenting a ‘Complex’ Approach

Another question researchers had with the active-site approach was how the very small cathepsin K molecule, with an active site of only 5 angstroms in diameter, could cleave the large, cable-like collagen protein three times its size. Brömme’s lab found that the enzyme is not doing it by itself, but forms a complex with bone- and cartilage-resistant glycosaminoglycans, or sugars.

“These negatively charged sugars bind to catK molecules and form a complex, which we think surrounds the collagen fibre and leads to a partial unfolding of the triple helix. This then allows the subsequent cleavage by the active site of the individual catK molecules,” explains Brömme. For delving deeper into the vortex of molecular interaction, Brömme and his lab were awarded a US patent for this catK complex mechanism.

“Our approach is to prevent the formation of the complex between the glycosaminoglycans and cathepsin K, without interfering with the enzyme’s active site. This would prevent the unfolding and degradation of the collagen, but not interfere with other substrates of this protease and thus reduce side effects,” explains Brömme.

Cathepsins Linked to Many Diseases

As an associate member of the Department of Biochemistry and Molecular Biology at UBC, the role of catK in bone resorption is only one of Brömme’s current research projects. He is also studying a number of human diseases characterized by excessive degradation of the extracellular matrix, including bone and cartilage diseases, atherosclerosis and destructive lung disease.

For example, his group was the first to link overexpression of catK with rheumatoid arthritis. In addition, they found that when catK’s sister protease cathepsin K runs amok, it can cause improper processing of proteins that can lead to autoimmune disorders.

To better understand the role of proteases in health and disease, Brömme and his lab use an interdisciplinary array of tools (molecular biology, enzymology, crystallography, histology, animal models) and collaborate with clinicians and biotech institutions around the world.

“Our research is very fundamental, and preclinical discoveries depend upon facilities like UBC Dentistry’s new Clinical Research Centre to bring them into practice.”
Imagine a bridge spanning two successful dentistry groups. On one side, extremely bright and talented students, eager to learn, join accomplished full-time faculty, immersed in mostly on-campus dental work. Let’s call this combined side the “academic excellence” group, which excels at leading-edge learning and educational rapport.

On the opposite side, let’s add the “real-life” group. They’re practising dentists with a thriving business in diverse communities, who offer an array of professional dental services to people of mixed ages and cultures. These part-timers bring the academic and outside worlds together, crossing easily between each realm and sharing on both sides what they know and learn. “They offer a refreshing approach to teaching,” says Dr. Jim Richardson, a clinical assistant professor in UBC Dentistry who recruits part-time faculty.

“ Their contributions are really valuable. We can’t run the school without them.”

In any given week, 85 part-timers are working for the faculty, he says.

Two Vancouver-area dentists, who each received a 2010-2011 sessional teaching award based on UBC Dentistry student votes, enthusiastically share the benefits of interacting with these learners. “The students always give me inspiration,” says Dr. Zohreh Ansari, who runs a West Vancouver dental practice with her husband. “When you’re with the younger generation, it keeps you going. They are focused. Most are very talented and educated. They have PhDs in other fields. It’s amazing.”

Dr. Robert Rosenstock, an associate in a three-dentist office in Richmond and past president of the College of Dental Surgeons of BC, says that he looks forward to teaching and enjoys the break from his practice. “The kids are very, very enthusiastic. They learn very quickly. Most of them are on top of everything and are gung ho about doing things right. It’s beautiful to see.”

Both Rosenstock and Ansari began at UBC by teaching a half-day a week, but enjoyed it so much, they increased their hours. Their content varies, from second-year ergonomics for Ansari to a third-year “boot camp” that Rosenstock has taught. Both teach students preclinical restorative work, using plastic teeth on mannequin heads, as well as integrated clinical care, in which students provide care for patients from the community for a reduced fee. Overall, students are excited to learn the variations in technique that both dentists share. Rosenstock says: “They have the theories, but you can tell them why something works.”

Both dentists say that through teaching they, too, learn valuable new information in cutting-edge dentistry. “You’re learning from the experience that you’re getting, such as an opinion from a specialist,” says Rosenstock, “and you take that knowledge back to the office.” Ansari says that teaching helps her stay up-to-date because she learns the same new material as the students.

A passionate teacher throughout her life (she taught English to teenagers in her native Iran), Ansari says: “I love it.” She adds that she’ll never forget one dental student testimonial, which she recites: “She never intimidates you. She makes you feel so comfortable. You don’t feel that your question is silly.”

While a student herself, Ansari says, some instructors in Iran made her feel stupid. This keeps her determined to give her UBC learners respectful attention. Many part-time faculty, including recent UBC Dentistry grads, choose to teach part-time because they have fond memories of dental school and want to recreate positive experiences for new students, says recruiter Jim Richardson.

This sense of giving back is one quality that Richardson looks for in recruiting part-time faculty, besides someone who is a team player, friendly and approachable, computer savvy, has a strong student-centred focus (no “My way or the highway”) and performs a wide range of dentistry. “Almost universally, the students really love the part-time faculty,” he says.

Rosenstock recommends to potential candidates: Make sure that your business overhead is covered and that you can teach without worrying about the office when you’re not there.

“The full-time people are very appreciative of the time you’re putting in,” he says, “and they’re more than happy to help out.”

He adds: “You get more out of it than what you put in.”

Those interested in a part-time faculty position are invited to apply online at www.dentistry.ubc.ca/go/pt
GIVING BACK—VOLUNTEER DENTISTS AT HOME AND ABROAD

BY HEATHER CONN

In isolated parts of Nicaragua, she has volunteered to do fillings for children in orphanages who have never been to a dentist. Dozens and dozens of Nicaraguans have waited all day in lines hot for dental help while she gave portable care in a dirt-filled room with little daylight or electricity. During a volunteer visit to Mexico and repeat trips to Guatemala, she and others have set up mobile clinics (one venue was a high-ceilinged church) with donated dental equipment: a sterilizer, mobile drills, suction units and instruments. Liz Johnson-Lee, who graduated from UBC Dentistry in 1992, is no stranger to much-needed services at community clinics for low-income or disadvantaged groups around the province.

“It’s addictive, this mission work,” says the associate who works in two general dental practices (Kitsilano and downtown Vancouver). “It hit me how much I received. I felt so fulfilled and so enriched. When you give without expecting anything back in return, that’s when you get the most.”

Richmond endodontist David Hemerling joined Johnson-Lee at Penelakut as a volunteer. Like her, he brings to his UBC volunteerism a passion for volunteer dental care in a mud hut with little more than a lawn chair, flashlight and a pair of forceps.

Here in British Columbia, he is one of two volunteer dentists who, with a faculty member, supervise about 10 UBC students at the East Side Walk-in Dental Clinic in Vancouver. For six months, he has spent one Saturday a month overseeing students as they do extractions, root canals and fillings at this skid-road storefront. “There is a lot of poverty there, and the suffering is very real, as real as any Third World country,” he shares at a Commercial Drive café.

Patients are deeply appreciative of the students’ work, however, whether they’ve done a filling, alleviated extreme pain or made an esthetic transformation, says Hemerling, who also teaches endodontics part-time at UBC. He recalls the satisfaction of one patient at the Downtown Eastside clinic, an attractive woman in her 20s: “When she came in, her front tooth was dark brown. She had a root canal, and three hours later, the tooth was white. She was overjoyed and all smiles.”

Students appreciate the chance to work outside the university’s “very controlled” environment and confer with practising dental professionals, says Hemerling, who also offers excursions. “There’s no billing, dealing with insurance, bookkeeping and charting. There’s no scheduling, so you can’t be behind.”

For those contemplating a volunteer dentistry experience, Johnson-Lee advises: “Go for it. You’ll love it. You have so much to offer. Every little bit helps.”

For more information about volunteer dentistry opportunities with UBC, visit www.dentistry.ubc.ca/cvcv.
Whether in a volunteer capacity or as part of a curriculum component, dental and dental hygiene students reached far and wide in UBC Dentistry’s community initiatives this past spring and summer. Here are some photos taken recently at local, provincial and international settings that have enhanced the educational experience of students while increasing Dentistry’s community involvement.

Dr. Bradford Scheideman, then a fourth-year student (L), and general practice resident Dr. Fahad Cadili gave toothbrushes to three young Cambodian boys.

During the summer of 2011, a young boy received dental treatment by two UBC dental students, Emma Wong (L) and Leila Shahbazi, who volunteered with three other classmates and a UBC alumnus in the Brazilian town of Praia do Presídio in the state of Ceará. Read more of their story by Nicole Vicenzino on page 35.

Then a fourth-year dental student, Dr. Dustin George (L), travelled to Cambodia with three fellow classmates as part of a fourth-year DMD student elective. They were accompanied by two residents in the General Practice Residency (GPR) Training Program. Download the fourth-year DMD student report at www.dentistry.ubc.ca/cambodia2011

This past summer, for the second year in a row, dental and dental hygiene students volunteered in a First Nations community on Penelakut Island. Read what then second-year DMD student Akash Villing says about the experience on page 35.

Then first-year dental student Jay Chan, during his summer of 2011 volunteer trip to Honduras, watched an examination by a Honduran dentist. Jay travelled with classmate Danielle Coulson; read more of their story on page 35.

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As part of Oral Health Month in April, third-year DMD student Amr Foda (L) performed restorative treatment, while first-year DMD student Sangwoo Ham assisted, at the Abbotsford Food Bank dental clinic during a day of free community dentistry. View more photos and read the story at www.dentistry.ubc.ca/go/apr2.

Two plastic chairs served as an operatory for a dental clinic set up in a community centre in a rural Brazilian village.

The villain Sugar Bug, a “big bad bug” representing plaque and bacteria played by dental student Phil Fox, performed for children during Love Your Smile Day on April 6, 2011, at Ray-Cam Co-operative Centre in Vancouver’s Downtown Eastside. As part of Dentistry’s Professionalism and Community Service (PACS) program, first-year dental students promoted oral health at the centre using high-energy activities and interactive demonstrations. Read more about PACS at www.dentistry.ubc.ca/go/pacs.

Dr. Brad Schademan, then a fourth-year student (L), and general practice resident Dr. Fahad Cadili gave toothbrushes to three young Cambodian boys.

Large models of teeth help dental hygiene students convey their message about oral health to students in local schools and community organizations. Read about dental hygiene students at one such organization on page 17.

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The seminar rooms are perfect for our groups,” Amro explains. “We can concentrate together and the flexible study space have been built next to the new clinic. “That is, until now. 

“With this gift to the Faculty of Dentistry,” says Aly Kanani, “we hope to inspire others to give generously and ultimately, completing the vision and passion of our profession.”

Aly credits his and Suphattra’s parents with modelling great support and commitment. They sacrificed tirelessly to provide their children with financial and moral support in pursuing their passions, and instilled in them “a moral code grounded in the ethics of faith.”

The Kanani family’s gift exemplifies the faculty’s focus on providing the very best in oral health education, according to the dean, Dr. Charles Shuler. “These seminar rooms,” says Shuler, “are an innovative and dynamic environment, where an academic partnership of students and faculty will be instrumental, providing an enjoyable experience, encouraging communication, and ultimately, completing the vision and passion of our profession.”

For him, the opportunity to interact with other dental students colleagues from USC, with their openness and welcoming attitude, provided an atmosphere very conducive to learning. “This experience has allowed me to grow in ways I never thought I could. The amount of confidence that I found was never imagined prior to going to Belize.”

For Maskan, the collaboration between universities underscored the benefits of his participation. He would like more students to have the opportunity to experience the joy of helping individuals in other parts of the world and to become a more familiar with their culture and life experiences. “These trips,” Maskan says, “also allow for interactions with colleagues educated at a different university and for great discussions about the similarities and differences of practising dentistry.”

The Sinclair Travel Fellowship Program, a fund established by Sinclair Dental for UBC Dentistry’s fourth-year travel elective, supports the UBC Dentistry goals of broadening the scope of dentistry learning.

“Sinclair has always been active in the broader community, but I realized we have to focus more on a dental contribution. I felt we can achieve that best by teaming up with UBC Dentistry,” explains Dr. Nowash.

The endodontics specialty program, now in its fourth year, with nine full-time residents, is emerging as one of the top in its field in North America. But Dr. Jeffrey Coil, assistant professor and director of the program, saw that something was missing. That something—a state-of-the-art focused-field cone beam CT (CBCT) unit suited for endodontics—was nowhere in sight, and no money was available in the budget. A CT unit yields detailed images in that is far superior to an ordinary dental operating microscope. And, Coil asserts, “will be incorporated into endodontic practice more rapidly according to leaders in the field.”

Coil set to work. If he wanted a Kodak 9000 3D Extraoral Imaging System, he’d have to raise the money himself—the first donation was his own $5,000. Soon after, his personal solicitation attracted more donors, and his hidden talent as a fundraiser emerged.

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During the ceremony to unveil the rooms on May 8, 2011, Aly remarked that not only are the new conference rooms a strong legacy for dental students, but they represent, going forward, the commitment and admiration of his family for the Faculty of Dentistry.
The Dip DH Class of 1971 chose a mini cruise to celebrate graduating 40 years ago from UBC as dental hygienists. Being on the ship maximized opportunities to be together—to catch up and be thankful for our education. A few of the graduates are still scaling teeth, while many are staying active through golfing, fitness and chasing grandchildren! Pictured from left to right are Cassada Parsons, Janet Louden, Evelyn McNee, Lorraine Machell, Diane Eade, Ann Bell, Linda Bedry, Mary Findlay and Janice McYean. The photographer was Frances Lawson.

The DMD 1971 class of UBC Dentistry got together during this year’s Pacific Dental Conference, then went on to the alumni reception and followed up with dinner at the Show Case Restaurant & Bar in the Marriott Pinnacle hotel. Sixteen of us enjoyed catching up and reminiscing about those bygone days in the basement of the John R. Macdonald Building. We honour the bonds we have formed and look forward to the next reunion.

The Dip DH Class of 1981 started our 30-year reunion celebration at the Pacific Dental Conference, then went on to the alumni reception and followed up with dinner at the Show Case Restaurant & Bar in the Marriott Pinnacle hotel. Sixteen of us enjoyed catching up and reminiscing about those bygone days in the basement of the John R. Macdonald Building. We honour the bonds we have formed and look forward to the next reunion.

Congratulations to Garry Sutton DMD 1972, winner of the UBC Dentistry Getaway Contest. He is the lucky recipient of two airline tickets as dental hygienists. Being on the ship maximized opportunities to be together—to catch up and be thankful for our education. A few of the graduates are still scaling teeth, while many are staying active through golfing, fitness and chasing grandchildren! Pictured from left to right are Cassada Parsons, Janet Louden, Evelyn McNee, Lorraine Machell, Diane Eade, Ann Bell, Linda Bedry, Mary Findlay and Janice McYean. The photographer was Frances Lawson.

The DMD Class of 1986 celebrated their 25-year anniversary at Goldfish Restaurant following the alumni reception at the Pacific Dental Conference. Twenty-two graduates attended and shared an enjoyable evening reminiscing and catching up. The consensus: the women all looked great, while most of the men were showing signs of “experience”? In honour of the anniversary and to recognize our successes since graduation, classmates donated to a class gift. We raised $31,000 and created a legacy fund to provide a gift in perpetuity to a deserving second-year student who best exhibits traits of leadership and community involvement. The DMD Class of 1986 challenges other classes celebrating a significant milestone to consider doing likewise. Taurus?</p>
Congratulations to Greg and Kristi on the birth of their baby girl, Isabel Lynne, born on May 21, 2011, at BC Women’s Hospital & Health Centre. Ingrid Emanuels DMD 1980 and Frank Marasa DMD 1979 are also proud grandparents. Could this be a third generation of dentists to come?

When my classmates Kevin Ko and Alex Chen and I arrived in New York City, we were welcomed at a casual alumni dinner with recent graduate Anne Brymer DMD 2010. Anne captivated us with stories of working as a general practice resident in the Big Apple.

The Class of 2011 thought it would be a fun idea to revive the tradition of leaving a graduation gift to the school. After a class vote, the most popular gift idea was a mobile dental chair that students could use on dental missions and in the Professionalism and Community Service program. We hope that this dental chair gets a lot of use and that the classes following us will carry on the tradition of leaving a gift to UBC Dentistry.

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Alumni at the CDE in Maui
UBC Dentistry alumni attended Adventure & Learn Hawaii 2011, a UBC Dentistry Continuing Dental Education travel and learn conference held in February 2011 at the Fairmont Kea Lani in Maui.

Annual Alumni Reception
Pacific Dental Conference
Over 600 alumni and friends joined in the fun at the Annual Alumni Reception this past March at the PDC. The country of France was the theme, and volunteers looked great in berets and scarves. Nadean Burckett & Associates sponsored the get-away contest—a trip to Las Vegas with accommodation at the Paris Las Vegas hotel. Contest winners were Mario Sertic with accommodation at the Paris Las Vegas and Renate Simmons, both DMD 1999.

UBC Alumni Weekend
Derek: Over the past few years, I’ve been grilled by professors on various subjects, ranging from the best method to achieve a purchase point on a root tip, to occlusal factors that will determine prosthodontic treatment options, and even ethical issues pertaining to patient autonomy . . . So, when I was presented an opportunity to join a rock band and jam with those same professors, I didn’t think twice about the good fortune I’d been afforded. With the same professionalism and persistence they demonstrate in the classroom and clinic (though with a few more jokes), they included me in refining an impressive set list, and we put on an exceptional show that afternoon during Alumni Weekend in spite of a limited amount of rehearsal time. My thanks to the Last Faculties for giving me the chance to join the band and for encouraging me the whole way through!

Sam: Transforming into the Tooth Fairy for the May 2011 UBC Alumni Weekend was fun and rewarding. It was great to experience teaching children about their oral care in such a fairy-tale environment. I could see parents were having just as much fun as the little ones. I look forward to being part of something like this again!

Tooth Fairy Gala
The Faculty of Dentistry hosted two tables at the BC Dental Association Tooth Fairy Gala. Pictured are Mark Kwon DMD 1997 and his wife Jennie, who bought cakes in the cake auction raising money for the Save a Smile Program.

Events for Students and Alumni
DUS WELCOME BACK BZZR! GARDEN & YEARBOOK PICK-UP
Friday, September 16, 2011 – 3:30 pm
Student Lounge, John B. MacDonald Building
UBC Point Grey Campus
For more information, e-mail alumni@dentistry.ubc.ca

UBC Alumni Weekend
Derek
Derek Decloux
DMD 2011
Sam Heron
BDSc 2012 candidate

UBC Alumni Weekend
Prince George & District Dental Society
On September 10, 2011, over 80 alumni and friends attended the Prince George & District Dental Society’s 2nd Annual Luau Dinner at the home of Lydia Naccarato DMD 1985 and Dr. Janine Burg. The dean, Dr. Charles Shuler, dean of UBC Dentistry, and fellow Okanagan alumni for a glass of wine, hors d’oeuvres, cheese and conversation following the 2011 Thompson Okanagan Dental Society (TOODS) Annual Dental Meeting. Conference registration is not required to attend the reception. For conference registration, go to www.todsmetting.com. For information about the reception, e-mail alumni@dentistry.ubc.ca

4th Annual Battle of the Bands: Faculty/Alumni vs. Students
Friday, January 13, 2012 – Doors open at 7 pm (first band at 8 pm)
Ballroom, Tros Konner Student Centre, UBC Point Grey Campus
Tickets on sale soon!

More Events for Alumni
TASTE OF VANCOUVER ISLAND ALUMNI & FRIENDS RECEPTION
Saturday, October 1, 2011 – 4 - 6 pm
Inn at Laurel Point, 680 Montreal Street
Victoria, BC
Join Dr. Charles Shuler, dean of UBC Dentistry, and fellow Victoria & District Dental Society alumni and friends at the TASTE of Vancouver Island reception. Local food will be prepared by Inn at Laurel Point chef Takashi Ito, and wine from Cherry Point Vineyards will be served. For more information, e-mail organizers Sunny Tateo DMD 2003 at stateo@shaw.ca or Anna Rankin DMD 2010 at shortrankin@hotmail.com

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 604-822-8751 or alumni@dentistry.ubc.ca
Stay connected to more than 2,300 alumni. Share your news, thoughts or comments. www.dentistry.ubc.ca/alumni