

# Expressions

Newsletter of the HKU Faculty of Dentistry  
2012, Issue 3



## Taking to the world stage Pearl Jubilee at World Dental Forum

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THE UNIVERSITY OF HONG KONG  
**CENTENARY**  
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# Building on dental excellence

By [Lakshman Samaranayake, Dean](#)

**This new academic year heralded the beginning of an exciting new era for the HKU Faculty of Dentistry, as we launched our 6-year undergraduate dental curriculum.**

We also welcomed two cohorts of students. These entrants, from Hong Kong's last group of secondary school students sitting the HK Advanced Level Examination and first group sitting the HK Diploma of Secondary Education examination, will follow our revised 5-year curriculum and new 6-year curriculum, respectively.

Accordingly, we enhanced our undergraduate learning environment to accommodate the double intake, by completely remodelling our Problem-based Learning Suite. Each of the 12 redesigned tutorial rooms allows seamless blended learning during small-group discussions by using interactive whiteboards to promote critical thinking, communication, and team-building.

In addition, we have recently refurbished the Oral Biosciences area and Centralised Research Laboratories

to catalyse discovery and technology transfer, and we have expanded and revamped the Postgraduate Habitats to enhance postgraduate learning. Of course, infrastructure improvements need to be complemented by quality people. And we are fortunate to have teams of talented and well-qualified staff to guide our students in learning, research, and knowledge exchange, and to promote problem-solving and collaboration throughout and beyond the Faculty. We are also grateful to the various planning committees and our loyal donors, funders, industry partners, alumni, and advisers.

As I said in June 2012, at the Opening Ceremony of our main Pearl Jubilee celebration at the Modern Dental Laboratory's World Dental Forum, "sharing a problem with the right network of people magnifies opportunities for creative and innovative solutions". So that we can build relationships and respond to the interests and needs of the whole community in innovative ways, we warmly invite you to be part of our network. ■

**Happy reading!**



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"To serve the people of Hong Kong and the region by advancing their oral health and well-being through excellence in learning, discovery, patient care, and engagement."



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# Extra Professional with Microgranules

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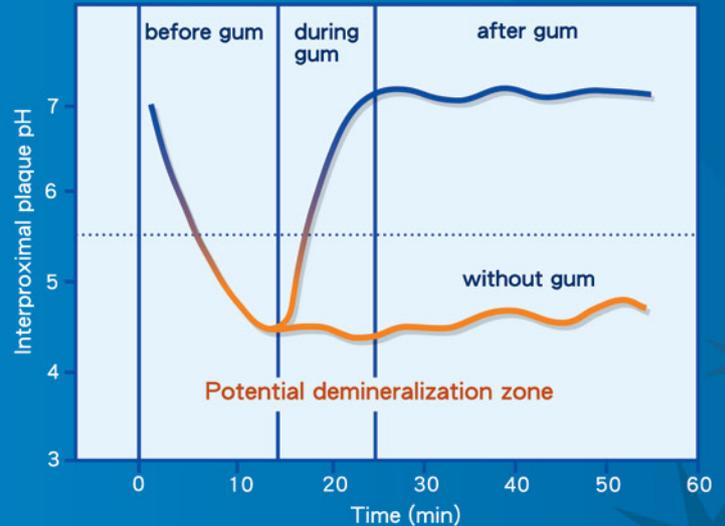
Working together for patients' healthy smiles

- Sugarfree chewing gum with Microgranules
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The FDI World Dental Federation recognizes that chewing sugarfree gum, like Extra, is proven to benefit dental health.

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Recommend chewing Extra Professional to your patients so they can experience the feeling of clean teeth in between twice daily brushing and be encouraged to chew more frequently after meals and snacks to help reduce the risk of dental caries.



References for graph

- Maiwald H.J., et al. *Zahn-, Mund- U. Kieferheilkd.*, 1982; 70: 598-604
- Jensen M.E. *JADA*.1986; 113:262-266



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# Faculty Jubilee at World Dental Forum



The highlight of the HKU Faculty of Dentistry's Pearl Jubilee Celebrations took place from 2 to 3 June 2012 at the Grand Hyatt Hotel, Wanchai, coinciding with the Modern Dental Laboratory's World Dental Forum II.

Attended by about 580 delegates, the joint Jubilee and World Dental Forum II brought together dentists from all over the world to exchange ideas and learn from the following renowned dental experts: Dr Jack Gerschman (Australia), Prof Bart van Meerbeek and Mr Jozef Ludovic Beckers (Belgium), Prof Markus Haapasalo and Dr George Freedman (Canada), Dr Paul Miara (France), Dr Daniel Edelhoff (Germany), Dr Michael Burrow and Prof Niklaus Lang (HKU, HK), Dr Joerd van der Meer (UK), and Prof Jack Ferracane, Dr Joseph Kan, and Dr John Burgess (US).



Special invited guests at the Opening Ceremony and Gala Dinner included Mr Godfrey Ngai (CEO of Modern Dental Laboratory), Prof Lap-chee Tsui (HKU Vice-Chancellor), Prof Roland T Chin (HKU Deputy Vice-Chancellor and Provost), Prof SP Chow (HKU Pro-Vice-Chancellor and Vice-President [University Relations]), Dr Che-hung Leong (HKU Council Chairman), Dr York Chow (then HKSAR Secretary for Food and Health), and Dr Wah-ching Tam (Honorary University Fellow).

In the spirit of professional knowledge exchange, diners at the Gala Dinner were treated to a multimedia presentation given by Dr Tze-chuen

Ng, a Hong Kong dentist and precision dental toolmaker. Dr Ng shared his international experience in developing special sampling and visualisation tools—for the European Space Agency's exploration of Mars and Egyptian government's exploration of secret pyramid burial chambers.

"Dr Ng's dinner presentation was truly inspirational and illustrated the application of dental knowledge in the real world and the results of hard work, perseverance, and creativity," says Dean Samaranayake. "His work must surely be the first case of taking Hong Kong dentistry beyond the realms of this world!" ■

"I would like to express my heartfelt thanks to all the organisers, speakers, participants, partners, and sponsors, who helped make this a memorable jubilee event," says Dean [Lakshman Samaranayake](#). "It was also great to see so many representatives of other dental schools, HKU dental alumni, and former Faculty staff members at the conference and at the Gala Dinner cum Alumni Homecoming on 2 June 2012."

Former full-time staff who attended the Gala Dinner included Prof Urban Hägg, Dr Margareta Bendeus, Prof Nigel King, Prof Stephen Wei, Prof Frederick Smales, Prof Robert Clark, Dr CM Tse, and Mr Rupert Chan. "The occasion was extra-special because of the concurrent celebrations to mark our University's Centenary and to re-affirm our shared values of Knowledge, Heritage, and Service," adds Dean Samaranayake.

For more photo coverage of this event, please visit:

<http://facdent.hku.hk/gallery> or use the QR code on the right.



# Special jubilee messages



**M**y sincere congratulations to the Faculty of Dentistry of The University of Hong Kong on its 30th anniversary. As the only dental school in Hong Kong, the Faculty has made tremendous contributions to the health care of our community and firmly established itself as the leading dental education and training institution in Asia.

Hong Kong's oral health services have witnessed remarkable improvements over the past 30 years, due in no small part to the professionalism and dedication of quality dental professionals trained by the Faculty.

On its 30th anniversary, I commend all the staff, students, and graduates of the Faculty for their devotion to serving our community and passion to excel in their profession.

—**The Hon Chun-ying Leung**, *Chief Executive, HKSAR*

**W**ithin a mere three decades since it was formally established in 1982, the Faculty of Dentistry of The University of Hong Kong has put itself on the map to become one of the top dental schools in the world.

The Faculty has also devoted much attention to dental research, which is pivotal in bringing the Faculty and the dental professional community to higher levels of excellence. Being the only university that provides university dental training and having trained a significant number of the 2200 registered dental practitioners in Hong Kong, the HKU Faculty of Dentistry has become a cradle of local dentists and has a tremendous impact on the future delivery of oral health care in Hong Kong.

—**Dr Wing-man Ko**, *Secretary for Food and Health, HKSAR*



**I**would like to congratulate the HKU Faculty of Dentistry for its strong commitment to excellence in teaching and learning, research, community service, and knowledge exchange.

By taking advantage of learner-centred and learning-centred techniques, the Faculty strives to promote holistic development, which is a central theme in the University's curriculum reform. As such, the Faculty is playing a very important role in Hong Kong not just as the city's provider of bright, technology-savvy dentists skilled in operative techniques, but also as a contemporary educational institution that nurtures globally aware and thoughtful, benevolent health care professionals who deliver high-quality patient care.

We are extremely proud of the Faculty's work and scholarship, its competent graduates, and its staff's dedication and productivity. The Faculty has shown itself to be important to the city, nation, region, and the whole world. And we look forward with eagerness to what it will achieve in the next 30 years.

—**The Hon Dr Che-hung Leong**, *Chairman, HKU Council*



**I**am very pleased to congratulate, on behalf of the University, the Faculty of Dentistry on the occasion of its Pearl Jubilee. The HKU Faculty of Dentistry has grown from modest beginnings as Hong Kong's sole dental training provider into a world-leader in innovative pedagogy, quality dental education, and scholarship. The value of the Faculty to Hong Kong has, however, been clear from the start. The Faculty plays the pre-eminent role in the provision of dental practitioners to the local community by closely adhering to its mission, which is "To serve the people of Hong Kong and the region by advancing their oral health and well-being through excellence in learning, discovery, patient care, and engagement."

Once again, my congratulations to the Faculty on this happy and historic occasion and my best wishes for many, many more years of unparalleled success!

—**Prof Lap-chee Tsui**, *Vice-Chancellor and President, The University of Hong Kong*



**I**am delighted to have this opportunity to offer my warmest congratulations to the Faculty of Dentistry at The University of Hong Kong on the 30th anniversary of its establishment, and on the 30 years of its collaborations with The Prince Philip Dental Hospital. This partnership has obviously been highly successful, and I would like to commend all those who have made a positive contribution to the international reputation of the two bodies. Such a reputation can only be achieved by developing the highest standards of training, practice, and research in dental, surgical, and health sciences. I have no doubt that the successes in education, research, and service to the community will continue for many years to come.

—**HRH Prince Philip, The Duke of Edinburgh**



# Encouraging knowledge exchange

The Knowledge Exchange Unit is the Faculty's main link to HKU's Knowledge Exchange Office, Communications & Public Affairs Office, and Development & Alumni Affairs Office, and has been facilitating community engagement and engaged scholarship since 2008. Some recent community and publicity campaigns conducted by Faculty members are highlighted below.

## Engaging elders

**Dr Edmond HN Pow** (Clinical Associate Professor in Oral Rehabilitation) was invited by the Po Leung Kuk charity group to clarify misconceptions of oral health among Hong Kong's older population at an educational event on 25 September 2012.

Called "Beautiful smiles start with your teeth", the event was held at the charity's headquarters in Causeway Bay and was attended by 388 senior citizens. The main part of the programme was a stage drama that aimed to debunk common myths about oral health and hygiene. Dr Pow, who advised on the script, took part in the play, gave the audience an explanation of its key messages, and also answered their questions and concerns.



"The Po Leung Kuk was grateful for the Faculty's participation in this health promotion event," says Dr Pow. "Together, we are now producing an accompanying educational booklet for seniors and hope to plan further collaborative health projects."



## Community programmes

(1) **TV times**—**Prof Edward CM Lo** (Clinical Professor in Dental Public Health) was featured in a half-hour Phoenix TV programme on gum health and disease, as part of the *Best Medical Apps* series. The programme aired on 16 June 2012 and is archived on the Faculty's YouTube page at: <http://www.youtube.com/user/hkufacdent>. The Faculty is now arranging more oral health programmes with Phoenix TV and iCable TV for airing this winter. About 10 Faculty staff will present their areas of expertise to the public.



(2) **Pearl reports**—Thanks to the HKU Knowledge Exchange Fund 2011-12, the Faculty has completed two projects with the *Ming Pao* newspaper. In June and July 2012, six Faculty members (**Prof Edward CM Lo**, **Prof Cynthia KY Yiu**, **Dr Ricky WK Wong**, **Prof W Keung Leung**, **Prof Li-jian Jin**, and **Dr Edmond HN Pow**) published a weekly series of educational articles on oral health and hygiene. And on 29 September 2012, the Faculty published a double-page supplement commemorating its Pearl Jubilee.



(3) **Face value**—**Prof Lim K Cheung** (Chair Professor of Oral and Maxillofacial Surgery) led a media conference on 9 October 2012 to launch a research project that will provide free implant-supported prosthetic treatment for 60 patients with facial defects, and to announce the hotline (2859 0234) for patient enrolment. Funded by the SK Yee Medical Foundation with a grant of HK\$ 2.13 million, the project is a collaboration between the Faculty, Prince Philip Dental Hospital, and United Christian Hospital. The project co-investigators are **Dr Stephen Tam**, **Dr Henry WK Luk**, **Dr Edmond HN Pow**, **Prof Colman McGrath**, **Prof Samuel Ho**, **Dr John Lo**, and **Dr Siu-chung Fung**.



(4) **Public practice**—**Prof Colman McGrath** (Clinical Professor in Dental Public Health) gave a media conference on 22 August 2012 on the results from a telephone poll of Hong Kong adults, commissioned by Philips Sonicare. Half of the 532 respondents said their oral health had affected their quality of life, but more than half had not visited a dentist in the past year, half had never used floss, and about a tenth brushed less than twice a day. To counter the apparent common neglect of oral care, "the government and the industry need to raise awareness of oral health," Prof McGrath said.



The newspaper articles related to the above items are available on the Faculty website, at: <http://facdent.hku.hk/engagement/ke/newspaper2012.html>; or use the QR code on the right.

# Applying solutions to problems

**Dr Chun-hung Chu—Clinical Associate Professor in Community & Family Dentistry and Deputy Director of the Faculty’s Knowledge Exchange (KE) Unit—leads teams of dentists who provide oral care and education for Hong Kong’s kindergarten and primary schoolchildren.**



## Preschool campaigns

At an HKU KE Lunch Seminar on 26 September 2012, titled “Preventing dental caries for Hong Kong kindergarten children”, Dr Chu gave an update on projects of his preschool outreach team. The talk covered KE project planning, funding, implementation, evaluation, and sustainability.

His team (also including [Prof Edward CM Lo](#), [Dr Xiao-li Gao](#), Dr Alex MH Chau, Dr Ivy D Wu, Dr Emily M Jiang, and Dr Marcus HT Fung) targets preschoolers because the government School Dental Care Service covers only primary schoolchildren, Dr Chu explained. His group provides free check-ups, gives parents a dental report, advises on further dental visits, and teaches oral hygiene methods to children, parents, and teachers.

In addition, teeth with early signs of decay receive a coating of a fluoride solution. “Silver diamine fluoride application has been shown to be effective at arresting early childhood caries,” said Dr Chu. “The treatment is simple and suits restless preschoolers. Caries will at least be slowed down until children get older and use the government School Dental Care Service.”

Dr Chu’s preschool outreach team won the 2011 Faculty KE Award for this annual kindergarten oral health campaign. Since 2011, his team has been seeing more than 10,000 children in 100 kindergartens each year. All 80 kindergartens responding to a survey in 2012 reported improved knowledge and awareness of their students’ oral health and hygiene.



## KE funders and partners

KE funders for Dr Chu’s preschool KE projects have included the SK Yee Medical Foundation (HK\$1.25 million in 2010), Mr and Mrs Steven Lo Donation Fund (HK\$1.25 million in 2012), and Colgate’s international “Bright Smiles, Bright Futures” programme (HK\$220,000 each in 2010 and 2012). Non-government organisations that have benefited include the Tung Wah Group of Hospitals, Baptist Convention HK, Lutheran Church HK, HK Ling Liang Church, Po Leung Kuk, and HK Federation of Youth Groups.



Most recently, the HK Christian Service took part as a KE partner under the HKU Impact Project scheme, supported by the HKU KE Fund (HK\$100,000 in 2011-12, granted by the HKSAR University Grants Committee). In that preschool project, the outreach team also interviewed parents individually to improve the way they brush their children’s teeth. They did this by using a technique that has been shown to successfully motivate behaviour change. The HK Christian Service is interested in sustaining this educational service in the future.

## School campaigns

Dr Chu also leads another team (including Dr Irene Lau, Dr Alex MH Chau, Dr Jasmine Yeung, Ms Carole Lew, Ms Yuki Cheng, and Ms Carol Tse) for primary school outreach.



In 2012, the team gave oral health and hygiene talks and free check-ups to a total of 3341 senior primary children in 10 primary schools. This programme and a pilot programme conducted in 2011 were funded by “Extra Teeth Loving Day Action” grants from The Wrigley Co (HK) Ltd—of HK\$60,000 in 2011 and HK\$150,000 in 2012.

“There’s still a lot to do to bring down the rates of dental caries in preschool and primary schoolchildren, and this requires continued concerted efforts from all sectors of society,” said Dr Chu. ■

## Effective go-betweens

Toothbrushes do not reach between teeth, explaining the need for floss and interdental brushes to remove plaque there. However, the shape of interdental brushes affects plaque removal, a research team from the HKU Faculty of Dentistry has found.



The team tested two types of commercially available soft interdental brush: a cylindrical one and narrow-waisted one with a wide top and bottom. Eight adults who had received standardised cleaning were asked not to clean teeth for 3 days and were then randomly assigned to two groups. Using one type of brush per group, dental surgery assistants cleaned between a total of 102 teeth, from canines to second molars including dental implants, in a standardised way. Two weeks later, the other brush was used. Because the waist-shaped brush increased friction, it removed significantly more plaque from the corners at the gumline than did the cylindrical brush, the team reports.

[Chongcharoen N, Lulic M, Lang NP. *Clin Oral Impl Res* 2012;23:635-40.]

[Link to Medline abstract](#)



## Wisdom remains

As an alternative to total extraction of lower wisdom teeth, coronectomy—removing tooth crowns and leaving the roots behind—protects the nearby inferior alveolar nerve without any lasting complications, according to two oral and maxillofacial surgeons at the HKU Faculty of Dentistry.

In their 3-year follow-up study after coronectomy of 135 lower wisdom teeth in 98 adults, only one patient had moderately reduced lip sensation, which resolved within 1 year. Four roots (3%) emerged through the gum and were removed without nerve injury or other complications. Otherwise, there were no cases of pain or infection after the third month and no cases of disease. On average, root position shifted a maximum of 1.9 mm and all movement stopped by 2 years. Coronectomy of lower wisdom teeth is thus “safe in the long term up to 3 years postoperatively”, the authors conclude.

[Leung YY, Cheung LK. *J Oral Maxillofac Surg* 2012;70:1515-22.]



[Link to Medline abstract](#)

## Regaining apatite

Dental researchers at HKU and Nanjing Medical University have developed a new laboratory method of replenishing the mineral content of tooth dentine. The team—including Dr Chun-hung Chu from the HKU Faculty of Dentistry—aimed to mimic natural remineralisation by preparing a jelly matrix to deliver calcium and phosphate.

They first used acid to dissolve the minerals from dentine slices. The demineralised samples were then coated with a 2-mm layer of sugar-based gel (0.5% agarose) premixed with sodium hydrogen phosphate. After the gel had set, a 2-mm layer of plain gel was added and allowed to set. Then, calcium chloride solution was added. After 10 days at 37°C, sheets of densely packed hydroxyapatite crystals had covered the dentine surface. This “biomimetic” technique of dentine remineralisation could eventually be developed into treatments for sensitive teeth and tooth decay, the researchers suggest.

[Ning TY, Xu XH, Zhu LF, Zhu XP, Chu CH, Liu LK, Li QL. *J Biomed Mater Res Part B* 2012;100B:138-44.]



[Link to Medline abstract](#)

## Tooth timing

Forensic studies that predict ages of southern Chinese people by applying UK tooth data result in underestimations of about 3 months, according to the HKU Faculty of Dentistry and King’s College London Dental Institute.



Using X-ray records of 266 southern Chinese patients aged 2 to 21 years, the researchers classified the developmental stages of all teeth on the left side and the wisdom teeth on the right side (via Demirjian’s method). Corresponding tooth ages were obtained from the UK Caucasian Reference Dataset, and each person’s age was then calculated. However, predicted ages were younger than ages stated in patient records—by 0.25 years for the 133 males and 0.23 years for the 133 females. Although these differences were not statistically significant, the analysts recommend that “it would be prudent to develop an ethnic specific reference dataset”.

[Jayaraman J, Roberts GJ, King NM, Wong HM. *Forensic Sci Int* 2012;216:68-72.]



[Link to Medline abstract](#)

# Innovating with tradition

**The Discipline of Orthodontics at the HKU Faculty of Dentistry enjoys a reputation for its East-meets-West approach to dental research. For more than a decade, researchers have been exploring the potential of applying plants and herbs from traditional Chinese medicine (TCM) to dentistry.**

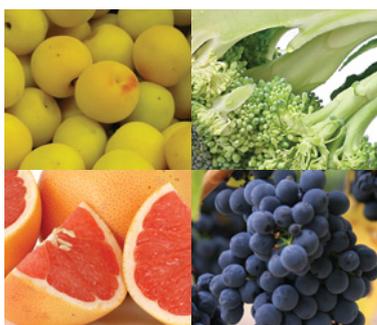
## Bone boosters

A Faculty bone research team, including **Dr Ricky WK Wong** (Clinical Associate Professor in Orthodontics), began investigating TCM compounds more than 10 years ago in a search for natural substances able to enhance bone growth after the surgical repair of cleft palates. The results of their animal studies revealed that some TCM plant and herb extracts indeed promoted bone healing and bone growth. The extracts included *Salvia miltiorrhiza*, *Monascus purpureus*, *Fructus psoraleae*, and *Psoralea corylifolia*. Active chemicals identified so far include genistein and daidzein (present in soybeans and the TCM plant *kudzu*), naringin (present in grapefruit), and quercetin (present in apples, broccoli, red grapes, and onions).

Their discoveries also have implications in orthodontic (tooth-straightening) treatment. Such treatment induces remodelling of the periodontal tissues surrounding teeth. These tissues include alveolar bone and periodontal ligaments, which attach teeth to bone. The next step is to systematically test TCM components for their possible usefulness in this remodelling process. Thanks to the Chinese Orthodontic Collaboration network among China's seven top dental schools including the Faculty—initiated in 2011 by Dr Wong and **Prof Urban Hägg** (Honorary Clinical Professor in Orthodontics)—cross-border efforts into TCM research in orthodontics are now increasing.

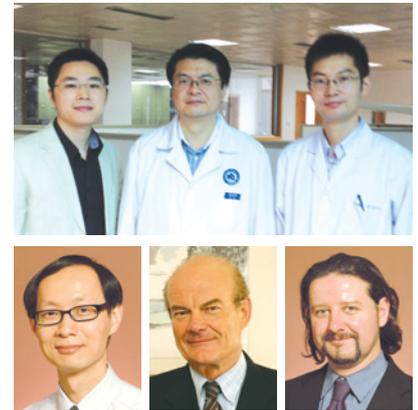
## Dental supporters

The Faculty researchers are currently testing effects of TCM compounds on cells involved in the production of periodontal ligaments, through mainland collaborations. In October 2012, **Dr Yong Chen**, a fourth-year PhD student in Orthodontics at the Faculty, won a travel grant to perform some *in vitro*



studies at the State Key Laboratory of Oral Diseases at the West China College of Stomatology, Sichuan University. The grant came from the special Ministry of Education fund set up by the Central Government for 1000 HKU staff and students to organise academic visits to the mainland, as

announced by State Council Vice-Premier Mr Ke-qiang Li during his HKU Centenary visit in August 2011. "The Orthodontics Department at Sichuan University has extensive research experience in periodontal ligament remodelling under orthodontic force, and the State Key Laboratory of Oral Diseases has plenty of facilities and equipment for isolation, culture, and identification of periodontal cells," says Dr Chen.



"The travel award allowed our two dental schools to enhance cooperation and communication, and to promote research into using natural compounds in orthodontics. Our initial findings on the bone-forming and growth effects of TCM substances on periodontal ligament cells are exciting, and we will continue our fruitful partnership."

Dr Chen's research collaborators on the mainland are **Prof Zhi-he Zhao**, President of the Chinese Orthodontic Society, and **Dr Mei-le Li**, a third-year PhD student at the West China College of Stomatology, pictured top row, from left to right. His supervisors at the Faculty are Dr Wong, Prof Hägg, and **Prof Colman McGrath** (Clinical Professor in Dental Public Health), pictured second row, from left to right.

## Bug busters

A "happy accident" that arose during the Faculty's TCM research was when another team noticed that some of the naturally occurring chemicals being tested for bone-inducing properties also had antibacterial or antifungal activity. After the *in vitro* screening of dozens of compounds, some were found to inhibit the growth of bacteria implicated in tooth decay and gum disease.

Quercetin and naringin, as well as resveratrol (present in red grapes), are some of the natural antimicrobial chemicals identified so far and which are being investigated further in human clinical trials. "In particular, we are exploring Asian plum (*Prunus mume*), which contains flavonoids and organic acids, for development into a commercial mouthrinse," says Dr Wong. "Natural antimicrobials based on TCM would help combat the growing problem of drug resistance, and natural mouthrinses would be safe even if swallowed."

For recent journal publications on the Faculty's work on TCM in dentistry, please use the QR code on the right.



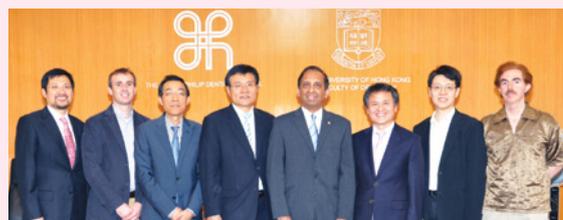
## International visits

On behalf of the HKU Faculty of Dentistry, [Dean Lakshman Samaranayake](#) signed a 5-year Memorandum of Understanding (MoU) with **The Nippon Dental University**, Japan, on 4 July 2012 (first photo). Signatories from The Nippon Dental University were Prof Hideo Ogura (Dean), Prof Masahito Sumitomo (Dean), and Prof Sen Nakahara (President).

On 4 October 2012, the Dean signed an MoU with Prof Paulo Otávio Mussi Augusto (Vice Rector) and Prof Sérgio Surugi de Siqueira (Dean) from the **School of Health and Biosciences, Pontifícia Universidade Católica do Paraná**, Brazil (second photo). On the same day, staff from the **Faculty of Dentistry at Universitas Padjadjaran**, Indonesia, paid the Faculty an academic visit to learn about the HKU BDS curriculum, focusing on the use of IT, clinical skill assessment, and problem-based learning (third photo).

And on 19 October 2012, Dean Samaranayake signed an MoU with Prof Sun-hun Kim (Dean) from the **School of Dentistry, Chonnam National University**, South Korea (fourth photo).

"We are delighted that educators from Japan, Indonesia, Brazil, and South Korea are interested in undergraduate and postgraduate dentistry at HKU," says Dean Samaranayake. "The three MoUs we have created pave the way for more international cooperation, consultation, and synergy in education, clinical and specialty training, and research."



## Summer school report



Ninety-six of the 350 applicants gained places at this year's Faculty summer school programme, which took place during the week of 23 to 27 July 2012.

The participants (64 from Hong Kong and 32 from Canada, China, and the UK) received an introduction to problem-based learning and library research; virtual-reality procedures in the Simulation Lab, Haptics Unit, and Orthodontics and Oral & Maxillofacial Surgery clinics; oral hygiene procedures; dental technology; and clinic observations. Faculty staff gave dental careers guidance, and students also had opportunities to explore hall and HKU life.

## Aligning aims of orthodontics schools in China

The Second Chinese Orthodontic Collaboration Meeting, held at the China National Convention Center, Beijing, on 21 September 2012, was organised and chaired by Dr [Ricky WK Wong](#) (Clinical Associate Professor in Orthodontics) and Prof Urban Hägg (former Chair Professor of Orthodontics).

This high-level strategic meeting took place during the XIV International Symposium on Dentofacial Development & Function and the 11th National Congress on Orthodontics of China (19-23 September 2012). The meeting provided a forum for orthodontics representatives of seven major universities in China to discuss ways of strengthening academic exchange and communication and to put into reality some of the plans discussed at the First Chinese Orthodontic Collaboration Meeting, which was held in Shenzhen on 26 June 2011.

Besides Dr Wong, Prof Hägg, and Dr [Yanqi Yang](#), who represented HKU, the other attendees were Prof Jiu-xiang Lin and Prof Yan-heng Zhou from Peking University; Prof Zhi-he Zhao from Sichuan University; Prof Gang Shen from Shanghai Jiao Tong University; Prof Yin Ding from The Fourth Military Medical University; Prof Hong He from Wuhan University; and Prof Jian-guo Wang from Nankai University.

"I'm very happy our collaboration meeting went well and we were able to map out concrete plans to promote quality and collaborative orthodontics training and research among our universities," says Dr Wong.



# Recent Faculty successes

In addition to achievements mentioned in this issue of *Expressions*, the following staff and students have received distinctions. Further details and entries can be found at the webpage: <<http://facdent.hku.hk/newsevents/detail/award.html>>.



• The following have received a total of about HK\$7.7 million in General Research Fund 2012-2013 awards from the Hong Kong Research Grants Council:

**Dr Susan Bridges** (Assistant Professor in Dental Education and E-Learning), **Dr Xiao-li Gao** (Research Assistant Professor in Dental Public Health), **Dr Tazuko K Goto** (Clinical Associate Professor in Oral Radiology), **Prof Li-jian Jin** (Clinical Professor in Periodontology, Modern Dental Laboratory Professor in Clinical Dental Science), **Prof Colman McGrath** (Clinical Professor in Dental Public Health), **Dr Rory Watt** (Assistant Professor in Oral Biosciences), **Dr Gloria HM Wong** (Clinical Assistant Professor in Paediatric Dentistry), **Dr Cheng-fei Zhang** (Clinical Associate Professor in Endodontics), and **Dr Li-wu Zheng** (Clinical Assistant Professor in Oral Medicine).

• The following have been awarded grants from the Research Fund for the Control of Infectious Disease, HKSAR Food and Health Bureau:

- **Dr C Jayampath Seneviratne** (Research Assistant Professor in Oral Biosciences) received a total of HK\$2.06 million to conduct four projects on the fungus *Candida* with Prof Lakshman Samaranayake, Dr Yu Wang, Dr Richard Kao, Prof CM Che, and Dr Dominic Tsang in Hong Kong, as well as Dr Juan Vizcaino in the UK, and Dr Hiroshi Egusa, Dr Tomoko Ohshima, and Prof Nobuko Maeda in Japan.  
 - **Dr Paul WK Tsang** (Research Assistant Professor in Oral Biosciences) received HK\$743,520 to conduct a project on *Candida albicans* with Prof Lakshman Samaranayake (HKU) and Prof Wing-ping Fong (School of Life Sciences, The Chinese University of Hong Kong).  
 - **Dr Cheng-fei Zhang** (Clinical Associate Professor in Endodontics) received HK\$765,000 to conduct a project on *Enterococcus faecalis* with Dr CJ Seneviratne, Prof LJ Jin, and Dr RM Watt at the

HKU Faculty of Dentistry, and Dr X Li at the HKU Department of Chemistry.

- **Dr Peter CS Tsang** (Clinical Assistant Professor in Oral Rehabilitation) received HK\$78,000 to conduct a project on zirconia implants with Dr Paul WK Tsang and Dr Edmond HN Pow.

• The following won awards at the 100th FDI Annual World Dental Congress, Hong Kong, 29 August – 1 September 2012:

- **Dr Bao-ying Liu** (Postdoctoral Fellow in Public Health and Healthy Ageing) won both the FDI Poster Award in the theme of Preventive Dentistry and the FDI Poster Award for overall best research poster, co-authored with Prof ECM Lo (HKU), **Dr CH Chu** (HKU), and Prof CH Lin (Sun Yat-sen University, China).  
 - **Dr Ying Cao** (PhD student in Oral Diagnosis and Polyclinics) won the FDI Poster Award in the theme of Dental Treatment and Restorative Dentistry. The poster was co-authored by Dr QL Li (Anhui Medical University, China) and supervisors Prof ECM Lo (HKU) and Dr CH Chu (HKU).

• The following won awards at the 90th General Session of the International Association for Dental Research (IADR), Iguacu Falls, Brazil, 20-23 June 2012:

- **Prof Edward CM Lo** (Clinical Professor in Dental Public Health) received the IADR Colgate Community-Based Research Award for Caries Prevention to perform a clinical trial using silver diamine fluoride solution in older adults. His co-investigators are Dr Chun-hung Chu (HKU) and Prof HC Lin (Sun Yat-sen University, Guangzhou, China). Prof Lo has also been appointed as Treasurer of the IADR for 2012-15.  
 - **Dr Pei-hui Ding** (PhD student) received an IADR/Colgate Research in Prevention Travel Award for a project supervised by Prof Li-jian Jin (HKU) and Prof Cun-yu Wang (UCLA School of Dentistry, Los Angeles, CA, USA).  
 - **Dr Waruna Lakmal Dissanayaka** (PhD student) received an IADR/Colgate Research in Prevention Travel Award for a project supervised by Dr Cheng-fei Zhang and Prof Li-jian Jin.

• **Dr Ricky WK Wong** (Clinical Associate Professor in Orthodontics) has been awarded HK\$81,000 from

the HKU KE Fund to conduct an Impact Project with **Dr Yan-qi Yang** and Dr Alex TH Tang.

• **Dr Philip Newsome** (Clinical Associate Professor; pictured, back row 2nd from right) has received an HKU Long Service Award for 25 years of service to HKU. He has also been awarded a Fellowship Ad Eundem by the Faculty of General Dental Practice (UK) of The Royal College of Surgeons of England, to recognise the contribution he has made to the dental profession.



## Staff moves

The Faculty bids a warm welcome to:

- **Dr Nikos Mattheos**, Clinical Associate Professor in Implant Dentistry
- **Dr James KH Tsoi**, Assistant Professor in Dental Materials Science
- **Dr David Green**, Research Assistant Professor
- **Dr Nalaka YS Jayaratne**, Research Associate
- **Dr Donabella Lacap-Bugler**, Postdoctoral Fellow
- **Miss Carmen KM Yip**, Executive Assistant
- **Ms Yuen-ching Chan**, Office Attendant
- **Ms Angel WS Wong**, Office Attendant

...And congratulations to:

- **Prof Cynthia KY Yiu**, who has been promoted to Clinical Professor in Paediatric Dentistry
- **Ms Frances SC Chow** and **Ms Zinnia SH Pang**, who have been promoted to Senior Secretary
- **Mr Geoffrey PH Ng** and **Mr Bentley FT Yeung**, who have been promoted to Technical Officer

...And a fond farewell to:

- **Dr Anson CM Chau**, Assistant Professor in Oral Radiology
- **Dr Xiao Li**, Postdoctoral Fellow
- **Mr Ben WP Ho**, Executive Officer
- **Ms Polly PY Houng**, Senior Executive Assistant
- **Ms Eliina MC Chan**, Executive Assistant
- **Mr Wai-yip Sin**, Office Attendant
- **Ms Siu-ling Chan**, Office Attendant



**Prof Lakshman Samaranayake** (Chair Professor of Oral Microbiology) has published the fourth edition of his textbook *Essential Microbiology for Dentistry*, with Churchill Livingstone Elsevier. The third edition has also now been translated into Korean.

# Food for thought, thought for food

**Dr Tazuko K Goto (Clinical Associate Professor in Oral Radiology) recently won an Outstanding Research Award 2012 from the Alumni-Fellow Association of the Department of Oral and Maxillofacial Radiology, Kyushu University, Japan, and an Academic Award 2012 from the Japanese Society for Oral and Maxillofacial Radiology. Expressions asked Dr Goto about her prize-winning work.**

## What are your research interests?

My research work focuses on clinical diagnostic imaging and 3-D imaging of the head and neck, as well as on brain function mapping using functional magnetic resonance imaging (fMRI).

As principal investigator, I'm using fMRI to study the brain during dental anxiety and also during eating and tasting. In addition, I'm using MRI to research the 3-D structures and functions of the head and neck in patients with jaw deformity. As co-investigator, I'm using 3-D X-ray imaging (cone-beam computed tomography) to image dental implants, and MRI to assess the quality of bone in the lower jaw.

## What was the Kyushu University Alumni-Fellow Association award for?

The Outstanding Research Award 2012 was for my for collective academic career (including research output, research grants received, teaching activities, and postgraduate supervising) at the Kyushu University, Japan, which was where I worked for nearly 18 years before coming to the HKU Faculty of Dentistry in 2010.

## What was the Japanese Society for Oral and Maxillofacial Radiology award for?

The Society's Academic Award 2012 was for a published paper on research conducted with my colleagues at Kyushu University.<sup>1</sup> That project compared the image quality of four commercially available digital X-ray sensing and imaging systems used in dentistry. Such digital systems display X-ray images quickly and directly onto a computer screen, as an alternative to processing black-and-white films.

We studied images obtained after X-rays went through an aluminium block that had 12 steps, each increasing by 1 mm, and with each step containing a row of round indentations of increasing depth. Examiners were asked to assess the screen images of grey vertical bands containing dark holes. Our method accounts for both image



**R to L:** Dr Tazuko K Goto receives the Kyushu University Alumni-Fellow Association Outstanding Research Award 2012 from Emeritus Prof Shigenobu Kanda, President of the Kyushu University Alumni-Fellow Association.

contrast and unwanted image effects (noise) and is also sensitive to observer performance. So, it would be a useful way of rating the image quality of new digital X-ray systems.

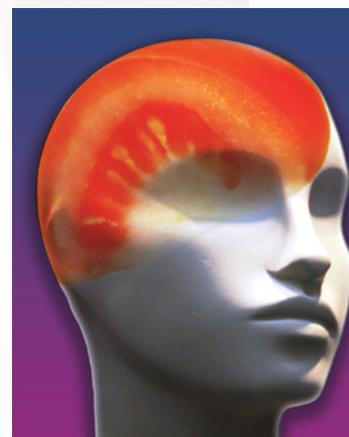
## What is your advice to people who may be apprehensive about radiation in dentistry?

The dose of high-energy (ionising) radiation used in X-ray scanning and in computed tomography is very low (called "as low as reasonably achievable" in radiology and radiography). Also, body areas other than the area of interest are protected with a thick lead shield, so the dose absorbed by the body is very low. People should talk to their dentist and consider the relative benefit to risk: without an appropriate diagnostic test and appropriate treatment, a health condition could get serious. The technical skills, knowledge, and experience of staff are also important. MRI does not use ionising radiation. The HKU University Health Service has a useful factsheet on dental X-rays, at: <http://www.uhs.hku.hk/dental/newsletter/issue-08.pdf>.



## Your research includes tasting. What is umami?

I aim to observe whole-brain activity during tasting and, hence, what goes wrong in disorders or diseases affecting taste. Umami is a Japanese word (meaning delicious taste) describing the savoury taste that is the fifth basic taste ability of the tongue, in addition to salty, sweet, bitter, and sour. This component of taste makes food more delicious, and responsible chemicals can be found in meat, seafood, and vegetables such as ripe tomatoes, shitake mushrooms, and even potatoes. Some chemical additives based on glutamate or nucleotides (eg, monosodium glutamate, disodium inosinate, disodium guanylate) enhance flavour via the umami taste.



Umami taste is not yet fully understood. Some of my imaging research using fMRI has tried to define what happens in the brain when passively tasting umami. The methodology attempts to isolate the sense of taste by minimising other factors such as head, mouth, and tongue movement, and other sensory stimuli including tongue pressure, smell, and sight. My colleagues and I found that tasting umami involves similar brain activity to tasting saltiness.<sup>2</sup> This might explain how umami—and also flavour-enhancing additives—affects our perception of savoury food and saltiness, thereby increasing food palatability. ■

## References

1. Okamura K, Yoshiura K, Tatsumi M, Kawazu T, Chikui T, Shimizu M, Goto TK. A new method for evaluating perceptible contrast information in digital intraoral radiographic systems. *Oral Radiology* 2011;27:98-101.
2. Nakamura Y, Goto TK, Tokumori K, Yoshiura T, Kobayashi K, Nakamura Y, Honda H, Ninomiya Y, Yoshiura K. Localization of brain activation by umami taste in humans. *Brain Research* 2011;1406:18-29.

# New era of undergraduate dental education



**The HKU Faculty of Dentistry welcomed a double intake of undergraduate dental students this September: the last cohort from the old secondary school system and the first cohort from the new secondary school system.**

This academic year marks a new milestone in education in Hong Kong, as the old secondary school curriculum ends and the university phase of the new “3-3-4” curriculum begins. Under the new system, secondary schooling in Hong Kong lasts 6 years instead of 7 years, students enter university 1 year younger, and most university degrees last 4 years instead of 3 years. The HKU Bachelor of Dental Surgery (BDS) degree will last 6 years instead of 5 years.

However, all Hong Kong universities are faced with two incoming cohorts this year: the last group that sat the Hong

Kong Advanced Level Examinations and the first group that sat the Hong Kong Diploma of Secondary Education examinations. HKU has used this opportunity to develop a new compulsory Common Core Curriculum to emphasise whole-person development and ease the transition from school to university (see <http://commoncore.hku.hk>). The Faculty has also created new 5- and 6-year BDS curricula for the two parallel cohorts.

Despite the age difference, both BDS cohorts (Classes of 2017 and 2018) joined the traditional Faculty Orientation Camp, which this year took place at the Po Leung Kuk Jockey Club Tai Tong Holiday Camp, Yuen Long, from 31 August to 3 September 2012.

“Dental O-Camp 2012 was truly amazing, and I experienced the genuine warmth and unyielding spirit

of the close-knit Dental Family for the first time,” says **Mr Dennis TF Tse**, Class Representative of Class of 2018. “I hope to carry on this spirit not only throughout the duration of my 6 years of study, but also by passing it on to future students to appreciate.”

Fellow Class Representative **Ms Crystal PY Mak** agrees: “O-Camp and the orientation weeks gave me a taste of how close dentistry students are. The new students got to understand each other more, and I believe we can help each other in the coming 6 years. Other than acquiring professional knowledge, I hope that I can build a social network with my future colleagues.” ■



## Suite success

The Faculty has remodelled its Problem-based Learning Suite in line with international trends in learning-space design.

A common room, resource room, and 12 soundproof tutorial rooms with interactive whiteboards all facilitate small-group problem-based discussions.

**Mr Ernest CL Tang** (BDS II) says: “The PBL Suite has a number of improvements for students. Electric plugs and complimentary computers in tutorial rooms mean we don’t need to borrow them anymore. Moreover, the use of glass walls has generally made the PBL Suite look more modern. The bigger resource room is spacious and comfortable, and the new furniture in the PBL Common Room will help us relax and recharge between study sessions.”



### Comparison of 5- and 6-year BDS programmes

	5-year BDS	6-year BDS
<b>University Requirements</b>		
Language	9 credits	18 credits
Common Core	12 credits	36 credits
Professional Core	321 credits	306 credits
<b>Total</b>	<b>342 credits</b>	<b>360 credits</b>
<b>URL for further information</b>	<a href="http://facdent.hku.hk/learning/ug_5_year_BDS.html">http://facdent.hku.hk/learning/ug_5_year_BDS.html</a> 	<a href="http://facdent.hku.hk/learning/ug_6_year_BDS.html">http://facdent.hku.hk/learning/ug_6_year_BDS.html</a> 

# Gaining street cred

Outside their classes, HKU Faculty of Dentistry undergraduates have been volunteering in the local community by conducting public health and knowledge exchange (KE) programmes.

## Committee in the community

The Dental Public Health Committee (DPHC) of the Dental Society, HKU Students' Union, for Session 2011-12 held the following events in 2012:



- 29 Feb – 1 Mar: University Oral Health Exhibition at HKU
- 5-6 March: University Oral Health Exhibition at the Chinese University of Hong Kong
- 8-9 March: University Oral Health Exhibition at the Hong Kong University of Science and Technology
- 22 March: Secondary school visit to Bellios Public School
- 18 April: Secondary school visit to Homantin Government Secondary School
- 5-6 May: Housing estate visit to Lok Wah Estate, Kwun Tong
- 8-10 June: Health Expo 2012 at the Hong Kong Convention and Exhibition Centre, Wanchai, in cooperation with Metro Broadcast Corporation Limited, Hong Kong Society of Periodontology and Implant Dentistry

The final event of the year will be on 10-11 November 2012, when the DPHC will hold its annual shopping mall exhibition in collaboration with the Hong Kong Dental Association. This year's event, at the Tseung Kwan O Plaza, will clarify common oral health misconceptions among the general public, especially about daily plaque control.

"The DPHC helps the public while strengthening our social responsibility to serve the community," says **Mr Chris MH Chan**, DPHC Chairperson for 2011-12. "Thanks to our advisors, **Dr Stanley Lai** and **Dr Dominic Ho**, we have learnt a lot and enjoyed ourselves in serving the public throughout the year."

## Student KE projects

Two groups of BDS students collaborated with community KE partners this year in projects funded by the HKU KE Fund

2011-12 (granted by the Hong Kong University Grants Committee to HKU).

Mentored by **Dr Yan-qi Yang** (Clinical Assistant Professor in Orthodontics), a team of BDS IV students (**Miss Candy KN Ma**, **Miss Stephanie YT So**, **Mr Yau-sing Wong**, **Mr Alex PC Lee**, and **Miss Chao Zhong**) partnered with the Tsan Yuk Hospital to give advice on infant feeding and oral hygiene habits to more than 100 pregnant women. The benefits of the project also extended to the student team. "We gained valuable experience in event planning, making educational materials, presenting, and working with this special-needs group," says team leader, Candy Ma.



Supervised by **Dr C Jayampath Seneviratne** (Research Assistant Professor in Oral Biosciences), another group of Faculty students (**Ms Shirley CC Kot** [BDS V], **Mr Chao Ji** [BDS V], and **Mr Chu-hang Leung** [BDS IV]) led interactive science workshops for 55 Form 1 and 2 students at two local secondary schools. The team introduced concepts in oral microbiology and dentistry during hands-on practicals and tutorials using a problem-based learning approach and dental-related real-life examples. The Hong Kong Federation of Youth Groups, which helped organise the events, said the project was "very meaningful" and "very good service to the community". ■



**L to R:** Dr C Jayampath Seneviratne (team supervisor), Mr Chao Ji (BDS student), Ms Jessica Chow (science teacher, Good Hope School), Mr Chu-hang Leung (BDS student), Ms Shirley CC Kot (BDS student team leader), Mr Ken Li (The Hong Kong Federation of Youth Groups).



## Industry insights

Now entering its fourth year, the Colgate-Palmolive – HKU Faculty of Dentistry intern scholarship scheme, administered by the Faculty's KE Unit, allows two dental students each year to take part in industry, community, and professional knowledge exchange. At an experience-sharing session with Faculty staff and students, this year's interns said they enjoyed their 1-month summer internships and learnt about a different angle of dental public health.

**L to R:** Intern Dr Stefani Cheung (MDS in implant dentistry student), Prof LP Samaranyake (HKU Dean of Dentistry), Intern Ms Yedda KY Tsoi (BDS V student), and Ms Tiffany HY Huang (Director, Professional Oral Care, Asia Division, Colgate-Palmolive Management Services (HK) Ltd).

# Connecting alumni and students

The HKU Faculty of Dentistry is very grateful to dental alumni who have been giving back to their *alma mater* by helping to prepare students for study, their future profession, and life in the real world. With the help of the Faculty Knowledge Exchange Unit, alumni assistance and support are never too far away.

## Alumni presence

Our Faculty alumni are an extremely valuable knowledge exchange resource, and to promote even more alumni involvement in student learning, the Faculty has relocated and renovated the in-house HKU Dental Alumni Association (HKUDAA) Office.



On the evening of 5 July 2012, just before the HKUDAA – Faculty Mentorship 2011-12 summer dinner, **Dean Lakshman Samaranayake** and the then HKUDAA President, **Dr Michael SF Mui** (main photo, left and right) formally opened the new HKUDAA Office, at Room 7B50B on the seventh floor of the Prince Philip Dental Hospital. “We hope the HKUDAA Office offers a visible presence of alumni in the Faculty as well as a place of increased alumni-student engagement,” said Dr Mui.

Moreover, at the mentorship summer dinner, Dr Mui launched a BDS Student Consultation Service, based at the HKUDAA Office. The alumni-led consultation service complements the BDSII Mentorship Programme by providing confidential

appointments for BDS I and III-V students. “Our alumni are keen to give back to the Faculty, and students are very welcome to talk to us about their concerns such as study skills, stress management, and careers advice,” Dr Mui said.

Mentor-mentee pairs wishing to book the HKUDAA Office, dental alumni wishing to volunteer as Alumni Ambassadors for the Student Consultation Service, and BDS I and III-V students wishing to use the consultation service can contact the Knowledge Exchange Unit (E-mail: <[dentke@hku.hk](mailto:dentke@hku.hk)>; Tel: 2859 0410 or 2859 0455).

## Career clinic

The 2012 HKUDAA Annual General Meeting was held in the 7/F Lounge at the Prince Philip Dental Hospital on 5 August 2012 and doubled up as a Career Forum for later BDS years and the outgoing cohort, BDS Class of 2012.



The event, held jointly by the HKUDAA, Faculty, and Hong Kong Society of Family Dentistry, allowed BDS students and alumni to witness the election of the new HKUDAA Council and to socialise over lunch, sponsored by GSK. In addition, alumnus **Dr Raymond KM Lee** (BDS 1987), Specialist in Family Dentistry and President of Hong Kong Society of Family Dentistry, presented a career talk titled “When Things Go Wrong”. ■

## New President, new Council

Congratulations go to the newly elected HKUDAA Council! At the 2012 HKUDAA Annual General Meeting on 5 August 2012, Dr Michael SF Mui handed over the presidential reins to **Dr Dominic KL Ho** (pictured, left and right). The following office bearers of the 2012-13 HKUDAA Council were also announced:

<b>President</b>	Dr Dominic KL Ho (BDS 2005)
<b>Vice-President</b>	Dr Dustin TS Wai (BDS 2008)
<b>Honorary Secretary</b>	Dr Dominique HC Wong (BDS 2011)
<b>Honorary Treasurer</b>	Dr Adrian K Hon (BDS 2008)
<b>Publication Secretary</b>	Dr Rico WH Chu (BDS 2007)
<b>Social Secretary</b>	Dr Meier TC Tai (BDS 2009)
<b>Immediate Past President</b>	Dr Michael SF Mui (BDS 2003)
<b>Council Members:</b>	Dr Siu-fai Leung (BDS 1986), Dr Haston WM Liu (BDS 1986), Dr Franklin TT She (BDS 1998), Dr Wilson Lee (BDS 2001), Dr Edwin TC Wong (BDS 2002)



In his inaugural message on the HKUDAA website <<http://facdent.hku.hk/hkudaa/>>, Dr Ho thanked Dr Mui and said he hopes both alum-student and alum-alum links continue to strengthen.

Please visit the webpage <<http://facdent.hku.hk/hkudaa/president2012.html>> for the full HKUDAA President’s Message.



## Join our social network!

The HKUDAA has a Facebook Group, at: <<http://www.facebook.com/groups/6227459914/>>. Please also e-mail your alumni news to <[dentke@hku.hk](mailto:dentke@hku.hk)>.





## Guide to dry mouth

- ◆ What is dry mouth?
- ◆ What causes dry mouth?
- ◆ How can you relieve dry mouth?

### What is dry mouth?

Our mouths produce up to 1.5 litres (3 pints) of **saliva** a day. Consisting mostly of water, saliva cleanses the mouth and keeps it moist, which aids in tasting, chewing, swallowing, and speaking. Saliva contains antibacterial substances, minerals, and chemicals that neutralise acid, which all help protect teeth. Saliva also contains digestive enzymes and many other components.

Dry mouth, or **xerostomia**, occurs when the salivary glands do not produce enough saliva, or saliva becomes very thick. A dry mouth may feel uncomfortable and lead to soreness, a burning sensation, a dry or sore throat, hoarseness, or a rough or dry tongue. People with long-term dry mouth may feel thirsty and are prone to numerous oral problems; some examples are shown in the **Box**.

### What causes dry mouth?

Dry mouth can develop when people get nervous, upset, stressed, or anxious, or when they breathe through the mouth, especially during sleep. The feeling of dry mouth can also be a side effect of medical treatments or caused by an underlying health condition—for example:

- Salivary gland disease, nerve damage, dehydration, hormonal disorders, hormonal changes such as during pregnancy or menopause
- Diabetes, Sjögren's syndrome, Parkinson's disease, Alzheimer's disease, stroke, human immunodeficiency virus (HIV) infection, acquired immunodeficiency syndrome (AIDS)
- Radiation treatment (radiotherapy) or drug treatment (chemotherapy) for cancer of the head or neck
- Many drugs, including some used to treat allergies, colds, depression, anxiety, high blood pressure, diarrhoea, pain, motion sickness, muscle tension, and Parkinson's disease
- Smoking or chewing tobacco

### How can you relieve dry mouth?

**Visit your doctor or dentist** (1) if you have a persistent dry mouth, so underlying causes can be investigated; or (2) if you experience dry mouth after taking a certain drug, since an alternative drug or dosage may be available. For some people, there is no cure for dry mouth. Symptoms can be managed with saliva substitutes (eg, sprays, gels, lozenges, or rinses of artificial saliva) or, if you are still producing saliva, by stimulating saliva flow (eg, by chewing sugar-free gum or sucking sugarless sweets/candy); a saliva-stimulating drug can also be prescribed. Other tips are as follows:

- Frequently sip water or sugarless drinks, especially when eating food
- Avoid salty or spicy foods, since these irritate the mouth
- Suck on ice cubes; use alcohol-free mouthrinse
- Use a room humidifier; breathe through the nose rather than mouth; use lip balm to protect lips
- Limit intake of caffeine (eg, tea, coffee, some soft drinks) and alcohol, and avoid tobacco use, since these can dry out the mouth
- Protect teeth by avoiding fizzy drinks and sugary, sticky, or acidic food

Because dry mouth increases the risk of tooth and gum problems, it is important to **maintain oral hygiene** by brushing teeth with a fluoride toothpaste for at least 2 minutes twice a day and using floss or an interdental cleaner once a day. Make sure to get **regular dental check-ups** to detect and treat any oral problems early.

Sources: American Dental Association, <[www.ada.org](http://www.ada.org)>; Mayo Clinic, USA, <[www.mayoclinic.com](http://www.mayoclinic.com)>; US National Institutes of Health, <[www.nidcr.nih.gov](http://www.nidcr.nih.gov)>.

Written by Trevor Lane, DPhil; edited by Li-wu Zheng, DDS, MD. This Patient Page is for general informational use and is not a substitute for diagnosis; for specific oral health advice, please consult a dentist.

### Dry mouth problems

- ◆ Mouth sores; cracked lips and lip sores
- ◆ Oral inflammation and infection, especially yeast infection
- ◆ Increased amount of tooth plaque
- ◆ Tooth decay and cavities
- ◆ Gum disease
- ◆ Difficulty in chewing, swallowing, and speaking
- ◆ A bad taste or bad breath
- ◆ An altered sense of taste
- ◆ Dentures, which depend on a thin layer of saliva to stay in place, may become loose and cause soreness

**Answer**

## Surgical quiz

**Answer**

By **Dr Philip KM Lee** (BDS 1986, MDS[OMFS] 2000),  
Specialist in Oral and Maxillofacial Surgery

**A 21-year-old woman presented with a 3-cm firm and mobile swelling around her left ear lobe (Fig 1).**

She said she could not remember when the swelling originally started, but it had slowly increased in size so she previously had it excised in mainland China, but it returned within a few months. Apart from discomfort from the surgical scar, the patient had no other symptoms from the swelling.



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1. What is your diagnosis?
2. What investigations are necessary to confirm the diagnosis?
3. What is the treatment of choice?

## Patient quiz



Use the information on the **Patient Page** (page 17) to find words that are connected with dry mouth. See below for tips.

X A V I L A S P I L  
E S A E S I D M U G  
R I N S E I T E C I  
O P T H I R S T Y E  
S E Q U T R I F A P  
T A T K I I O L R L  
O T B S V T M O P A  
M I T L A A E W S Q  
I N F E C T I O N U  
A G E G N E Z O L E

## Clinical practice quiz

**Answer**



**Old or new?**—Which of the following remedies are effective in managing oral yeast infection in medically compromised patients?

- |                       |                          |
|-----------------------|--------------------------|
| 1. Lemon juice        | 10. Povidone iodine      |
| 2. Lemon grass        | 11. Triclosan            |
| 3. Honey              | 12. Benzylamine          |
| 4. Linseed oil        | 13. Gentian violet       |
| 5. Tea tree oil       | 14. Lawsone methyl ester |
| 6. Sodium bicarbonate | 15. Pentamidine          |
| 7. Sodium fluoride    | 16. Betaine              |
| 8. Xylitol            | 17. Saliva substitute    |
| 9. Chlorhexidine      |                          |

**Hint:** Evidence on the effectiveness of these and other methods was recently appraised in a systematic review by clinicians at the HKU Faculty of Dentistry and Tung Wah Hospital, in: **Lam OL, Bandara HM, Samaranyake LP, McGrath C, Li LS. Mycoses 2012;55:123-42.**

## Write expressions

**Answer**

**APJOM style?**—Your supervisor asks you to write up your research on dry mouth and submit it to the *Asia-Pacific Journal of Oral Medicine*, saying that APJOM uses AMA style. How can you convert your notes into the manuscript's *Introduction* section?

- (1) We did a random phone poll, as not much is known in HK on dry mouth prevalence, severity, causes, effects, coping, dental care received
- (2) Dry mouth has numerous causes, eg, anxiety, systemic disease, drug side effect, head/neck radiotherapy
- (3) Dry mouth can ↓ oral health, ↓ quality of life
- (4) Dry mouth = xerostomia = perceived or actual ↓ in saliva production or flow
- (5) Many cases incurable → relieve symptoms, visits to dentist

Reference: AMA Manual of Style. 10th ed. New York: Oxford University Press, 2007.



**Check your answers to this issue's quizzes on the online Knowledge Exchange Hub of the Faculty's website at: <a href="http://facdent.hku.hk/engagement/ke">http://facdent.hku.hk/engagement/ke</a>.**

### Tips for Patient quiz

Cavities, Eating, Flow, Gels, Gum  
disease, Ice, Infection, Irritate,  
lips, Lozenges, Moist, Plaque,  
Rinse, Saliva, Sip, Sore, Spray,  
Taste, Thirsty, Xerostomia

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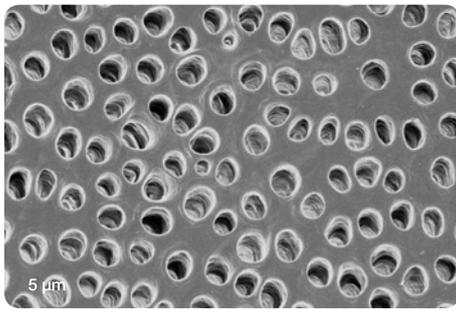
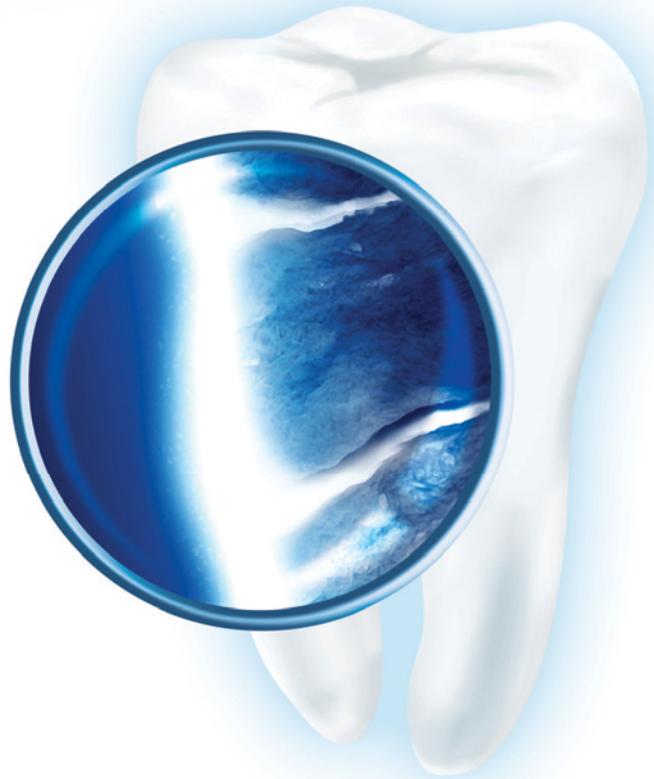
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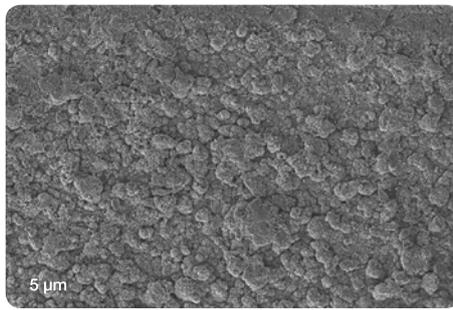
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### Building a reparative layer

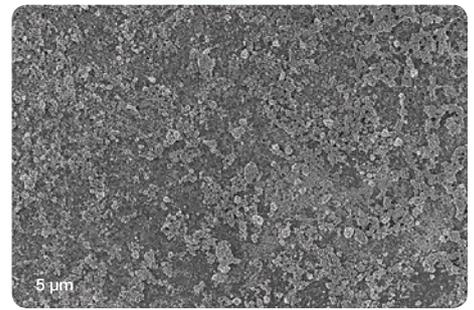
From as quickly as the first use,<sup>5</sup> *in vitro* studies have shown a hydroxyapatite-like layer forming over exposed dentine and within the dentine tubules<sup>2,5-8</sup> that is 50% harder than dentine.<sup>9</sup>



Pre-brushing



Post-brushing



Post-acidic challenge

*In vitro* SEM images of the tooth surface pre-brushing, of a reparative layer formed after twice-daily brushing for 4 days and of a reparative layer post a 5-minute acidic challenge.<sup>10</sup>

### Building an integrated and resilient layer

The hydroxyapatite-like layer formed binds firmly to the collagen in the patients' dentine<sup>8,11</sup> and helps protect your patients from the chemical and physical oral challenges they encounter in their everyday lives.<sup>6,9,10,12</sup>

*In vitro* studies have shown that the robust layer builds up over 5 days<sup>10</sup> and, with twice-daily brushing, provides patients with continual protection from dentine hypersensitivity.<sup>13-15</sup>



Specialist in Dentine Hypersensitivity Management



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# Sensitive Pro-Relief™

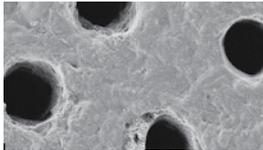
## TREATMENT PROGRAM



Finally, instant\* sensitivity relief patients can take home.

### A breakthrough: Pro-Argin™ Technology

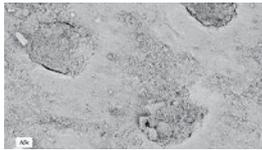
BEFORE<sup>1</sup>



In Vitro SEM photograph of untreated dentin surface.

The tubules that lead to sensitivity are open

AFTER<sup>1</sup>



In Vitro SEM photograph of dentin surface after application.

The tubules are plugged for instant, lasting relief

With Pro-Argin™ Technology, you can finally provide instant\* and lasting relief from dentin hypersensitivity<sup>4</sup> using the Colgate® Sensitive Pro-Relief™ Treatment Program:

- In-office desensitizing paste
- At-home everyday toothpaste

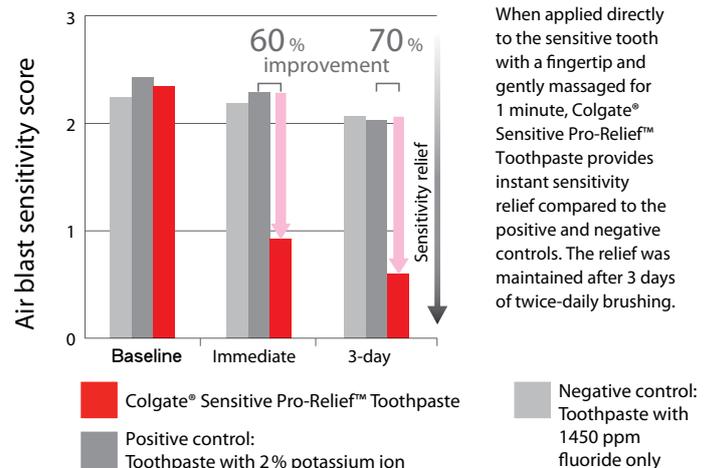
Pro-Argin™ Technology works through a natural process of dentin tubule occlusion that attracts arginine and calcium carbonate to the dentin surface to form a protective seal that provides instant relief.<sup>2</sup>

\*Instant relief is achieved with direct application of toothpaste massaged on sensitive tooth for 1 minute.

Scientific works cited: 1. Petroul et al. *J Clin Dent.* 2009;20(Spec Iss):23-31. 2. Cummins D et al. *J Clin Dent.* 2009;20(Spec Iss):1-9. 3. Nathoo S et al. *J Clin Dent.* 2009;20(Spec Iss):123-130. 4. Schiff T et al. *Am J Dent.* 2009;22 (Spec Iss A):8A-15A.

### The results are revolutionary

Instant relief achieved with direct application of toothpaste massaged on sensitive tooth for one minute and continued relief with subsequent twice-daily brushing<sup>3</sup>



Visit [www.colgateprofessional.com](http://www.colgateprofessional.com) to learn more about how instant relief from dentin hypersensitivity can impact your practice.