Welcome

Despite the fact that the temperature outside has not yet warmed, I am pleased to tell you that there is lots of 'hot stuff' coming from the Dental Institute.

The Department of Craniofacial Development and Stem Cell Biology has been exceptionally busy. Dr Albert Basson from the Department has just been awarded an MRC grant of £830,000 to work with collaborators to better understand cerebellar development and what goes wrong to create autism. Dr Abigail Tucker added a seminal paper published in Science relating to development of the ear and an 'evolutionary glitch' that explains the cause of common childhood ear infections. And Professor Paul Sharpe's group has demonstrated the ability to regenerate an entire tooth from epithelial and mesenchymal cells. Not surprisingly, exciting science of this type spawns enthusiasm for student research which resulted in the British Society of Periodontology Frank Ashley Undergraduate Prize being awarded to one of our fourth year dental students, the national BDA/Dentsply Adjudicator's Award being won by another fourth year student, and was celebrated in our 15th annual postgraduate research day.

The quality of our educational curriculum prompted a delegation from four Japanese dental schools to visit, exploring what we’re doing that might serve as a catalyst for changes in their systems. Dental Alumni Weekend was the biggest ever! Pictures below will give you a glimpse of the fun – and the delight in the awardees who have added great value to our Institute. Through the support of the alumni, many students are able to explore different parts of the world through externships and they bring back not only new insights but great photographs some of which that are now part of a global lessons photography competition are available below. And there is still more included here, and there are more and more things happening all the time!

Dianne Rekow
Dean of the Dental Institute

Latest Developments

Biological tooth replacement - a step closer

New research describes an advance in efforts to develop a method to replace missing teeth with new bioengineered teeth generated from a person’s own gum cells.
New research describes an advance in efforts to develop a method to replace missing teeth with new bioengineered teeth generated from a person’s own gum cells.

The research is led by Professor Paul Sharpe, Head of the Department of Craniofacial Development and Stem Cell Biology, and was funded by the National Institute for Health Research (NIHR) Biomedical Research Centre at Guy’s and St Thomas’ NHS Foundation Trust and King’s College London, UK.

Current implant-based methods of whole tooth replacement fail to reproduce a natural root structure and as a consequence of the friction from eating and other jaw movement, loss of jaw bone can occur around the implant.

In this new work, the researchers isolated adult human gum (gingival) tissue from patients at the Dental Institute, grew more of it in the lab, and then combined it with the cells of mice that form teeth (mesenchyme cells). By transplanting this combination of cells into mice the researchers were able to grow hybrid human/mouse teeth containing dentine and enamel, as well as viable roots.

Professor Sharpe said: ‘The next major challenge is to identify a way to culture adult human mesenchymal cells to be tooth-inducing, as at the moment we can only make embryonic mesenchymal cells do this.’

To read more on this story, please visit the [King’s news webpages](http://kingsdental.newsweaver.co.uk/newsletter/wnrvykueq96?a=6&p=34224795&t=19831855).

**MRC grant for investigations into autism**

The MRC has awarded a grant of £830,000 to Dr Albert Basson and his colleagues to investigate the role of chromatin remodeling factors in cerebellar development and autism.

The MRC has awarded a grant of £830,000 to Dr Albert Basson, Craniofacial Development and Stem Cell Biology at the Dental Institute, Dr Cathy Fernandes, Institute of Psychiatry, and Dr Richard Wingate, MRC Centre for Developmental Neurobiology, to investigate the role of chromatin remodeling factors in cerebellar development and autism.

Dr Basson said: ‘I am really excited about this project, as it is taking us into a completely new, but I think very important direction. The project started with a collaboration with Professor Pete Scambler, Institute of Child Health, UCL, where we were trying to test the hypothesis that a key developmental pathway, the FGF pathway, might be deregulated in mouse models for CHARGE syndrome. CHARGE is a complex syndrome characterised with a range of craniofacial, cardiovascular and brain defects. Patients also show evidence of behaviours typical of the autistic spectrum.

‘Our work in mouse models of this syndrome in collaboration with the Scambler group, has led to the identification of critical roles for the gene mutated in CHARGE syndrome, CHD7, in the development of the cerebellum. In addition to indirect links with the FGF pathway, we now have good evidence that links CHD7 to a key pathway associated with cerebellar hypoplasia and autism.’
The aim of this project will be to investigate the epigenetic mechanisms whereby CHD7 control gene expression in the developing nervous system, test whether isolated cerebellar defects in mice are associated with behavioural deficits and to investigate the role of a related gene CHD8, which is also strongly associated with autism in the human population.

Opportunities for interactions between different groups have been key in establishing the collaborations that form the basis of this project, Dr Basson explained. Both he and Dr Fernandes started collaborating as a direct result of the KCL Mouse Genetics Club that was active between 2008 and 2010 and organized by Albert Basson.

Funding provided by the Dental Institute and Dental Circle has allowed Albert Basson to establish close links with the Reinberg group during a short sabbatical, which is set to continue in the form of a collaboration to study the epigenetic mechanisms underlying brain development and autism risk.

**‘Evolutionary glitch’ behind ear infections**

*Researchers at King’s College London Dental Institute have uncovered how the human ear is formed, giving clues as to why children are susceptible to infections such as glue ear.*

Researchers at King’s College London Dental Institute have uncovered how the human ear is formed, giving clues as to why children are susceptible to infections such as glue ear.

The work was funded by the Medical Research Council and published today in the journal *Science*.

It is estimated that one in five children around the age of two will be affected by glue ear, a build-up of fluid in the middle ear chamber. This part of the ear contains three tiny bones that carry sound vibrations from the eardrum to the inner ear. When fluid builds up in the chamber, this prevents the three bones from moving freely so they cannot pass sound vibrations to the inner ear, causing temporary hearing loss. Until now, little was known about why some children appear much more prone than others to developing chronic ear problems, with repeated bouts of glue ear.

Carrying out studies in mice, scientists have discovered the cells that line the middle ear cavity originate from two different tissue types – ‘endoderm’ and ‘neural crest’ cells. The part of the lining that originates from the endoderm is covered in a lawn of cilia (hairs) that help to clear debris from the ear, but the lining derived from neural crest cells do not have cilia. This makes that part of the middle ear less efficient at cleaning itself, leaving it susceptible to infection.

Interestingly, the process of the middle ear transforming into an air-filled space during development appears to be different in birds and reptiles, which have just one little ear bone. Mammals may have evolved this new mechanism for creating an air-filled space to house the additional bones. This indicates that the process of two distinct cell types to create the lining of the middle ear cavity may be linked to the evolution of the three tiny sound-conducting bones.

Dr Abigail Tucker from the Department of Craniofacial Development at King’s College London’s Dental Institute, said: “Our study has uncovered a new mechanism for how the middle ear develops, identifying a possible reason for why it is prone to infection. The process of neural crest cells making up part of the middle ear appears fundamentally flawed as these cells are not capable of clearing the ear effectively. While this process may have evolved in order to create space in the ear for the three little bones essential for hearing, the same process has left mammals prone to infection – it’s an evolutionary glitch.

“These findings are contrary to everything we thought we knew about the development of the ear – in all the textbooks it describes that the lining of the middle ear is made of endodermal cells and formed from an extension of another part of the middle ear – the Eustachian tube. The textbooks will need to be re-written!”

**Another exciting Postgraduate Research Day**
The Dental Institute’s 15th Annual Postgraduate Research Day was held on Wednesday 13 March on Floor 18, Guy’s Campus.

The Dental Institute’s 15th Annual Postgraduate Research Day was held on Wednesday 13 March on Floor 18, Guy’s Campus.

All second and third year postgraduate research (PGR) students presented their work to fellow students and staff. It was a friendly day featuring new and exciting research within the Dental Institute. The quality of the presentations was very high and the sessions were kept to time by the excellent chairs who were all PGR students.

The students judged to have given the best talk in each session were presented with a certificate and a book voucher by the Director of Research, Professor Tim Watson, and the Dean of the Dental Institute, Professor Dianne Rekow. Congratulations to the prize winners:

**Session 1 - Oral Environment I**
- Winner: Wan Chien Cheng
- Runner up: Shirley Tang

**Session 2 - Craniofacial Anomalies: Development & Disease I**
- Winner: Jennifer Fuchs
- Runner up: Alison May

**Session 3 - Dental Education, Practice and Policy**
- Winner: Jorge Tricio
- Runner up: Fiorella B Colonio Salazar

**Session 4 - Oral Environment II**
- Winner: Sarah Ali
- Runner up: Jessica Bullenkamp

**Session 5 - Materials and Imaging**
- Winner: Danya Hashem
- Runner up: Hussam Milly

**Session 6 - Craniofacial Anomalies: Development & Disease II**
- Winner: Sana Zakaria
- Runner up: Monica Tambalo

The day ended with a well-deserved party organised by second year student Miten Mistry and the PGR Student Committee.

**Dental Alumni Awards 2013 winners**

Professor Michael Gleeson has won the Alumnus of the Year Award and Mr Eric Whaites has been awarded the Distinguished Service Award.

The prestigious Dental Alumni Awards – hosted by the King’s College London Dental Alumni Association – were announced at the annual Dental Dinner on Friday 1 March by the President of the Alumni Association Mr Clive Debenham. Professor Michael Gleeson won the Alumnus of the Year Award and Mr Eric Whaites was awarded the Distinguished Service Award.

The Alumnus of the Year is awarded to a person who qualified at one of the constituent Schools and who has achieved national and international distinction in any walk of life and brought credit to the profession, directly or indirectly, with particular emphasis on the last three years.
Professor Michael Gleeson is a Consultant Otorhinolaryngologist and Skull Base Surgeon. He received the Alumnus of the Year Award for his outstanding contributions to skull base and parotid surgery.

Professor Gleeson studied both dentistry and medicine at Guy's Hospital and later returned to Guy's for Otolaryngology registrar training. He was appointed Consultant Surgeon at Guy's Hospital and Senior Lecturer at the United Medical and Dental Schools (UMDS) of Guy's and St Thomas' Hospitals.

There followed appointments as Hunterian Professor at the Royal College of Surgeons in 1994, Professor of Otolaryngology and Skull Base Surgery at King's College and in 2002 the Chair in Skull Base Surgery within the Institute of Neurology at the University College, London. Professor Gleeson is currently President of the World Federation of Skull Base societies and organised the World Congress in Brighton 2012.

In a career spanning three decades Professor Gleeson has been afforded many national and international honours including Honorary Fellowship of the Royal Australasian College of Surgeons and Honorary Fellowship in Dental Surgery of the Royal College of Surgeons of England. His publications include eight books, over 100 peer reviewed papers, contributed over 60 chapters and more than 200 presentations over the world.

In addition to his busy professional life, Professor Gleeson was Captain of the Boat Club whilst a dental student at Guy's. His crew was in the Guinness Book of records for non-stop rowing from Oxford to London in 1974. This interest has continued as President of Guy's, then UMDS now King's Boat Club.

Professor Gleeson said: ‘I had no prior knowledge of my nomination and as the citation was read it took a few moments to realise that it could only refer to me. It was akin to hearing my obituary and eulogy all in one, probably the last time anyone will say such nice things about me while my ears continue to hear and my brain listens. Better still, I was with my friends at the Annual Dental Dinner. Guy’s Hospital Dental School gave me an incredible education, subsequently funded me through medicine and continued to provide pastoral care and support throughout my entire professional career.

‘I have been awarded a number of honorary fellowships and medals around the world for my skull base and parotid surgery; I cherish my special relationship with the members of King’s College London Boat Club as their President; but this award and recognition by King’s College London Dental Institute is and will always be the very best and most meaningful. Words fail to express my pride and humility knowing that my name will stand beside those of my heroes on the Dental Institute honours board in perpetuity.’

The Distinguished Service Award is intended to honour a long-serving member of staff who has made a significant contribution to the Dental Institute or one of its constituent Schools. Nominations for the awards were sought from all dental alumni including current staff and the Alumni Executive made the award from the list of nominations.

Eric Whaites was selected for his enormous contribution for over 30 years in developing the Department of Dental and Maxillofacial Imaging within Guy's Hospital, his teaching of dental radiology at undergraduate and postgraduate level within the Dental Institute, his contribution to the specialty of Dental and Maxillofacial Radiology both nationally and internationally and his contribution as Clinical Director in recent years.

Eric qualified from Guy's Hospital Dental School with BDS (Hons) in 1978. Following a couple of years in general dental practice, he returned to Guy's in 1981 and the following year obtained his FDS from the Royal College of Surgeons of Edinburgh, in 1984 he obtained his MSc in Dental Radiology from the University of London and in 1990 obtained his Diploma in Dental Radiology (DDR) from the Royal College of Radiologists. He was awarded his Fellowship (FRCR) without examination by the Royal College of Radiologists in 2002 and the following year was awarded FDS ad eundem by the Royal College of Surgeons of England. He is a former President of the British Society of Dental and Maxillofacial Radiology.
(BSDMFR) and former President of the European Academy of Dental and Maxillofacial Radiology (EADMFR). He is author of several textbooks and is also a nationally and internationally renowned speaker.

He has headed up the Department of Dental and Maxillofacial Imaging as Senior Lecturer/Honorary Consultant since 1990 and in addition is currently Deputy Director of Education (Student Welfare) (since 2009) at the Dental Institute and Clinical Director of Dental Services (since 2010) at Guy's and St Thomas' NHS Foundation Trust.

Commenting on the award Mr Whaites said ‘I am extremely proud and honoured to have received this award having devoted almost my entire professional career to the Dental Institute. Having been selected by the alumni and my staff colleagues makes the award even more special - thank you all. I am particularly delighted to receive the award this year as it coincides with our 35th reunion and I am therefore able to share the occasion with so many of my old friends. I am particularly pleased to be able to share the stage this evening with Professor Gleeson – a friend and colleague for so many years. I look forward to continue contributing to the Dental Institute for many years to come!’

In pictures: Dental Alumni Weekend

In pictures: Dental Alumni Weekend

This year's event included the ever popular black tie dinner, reunions and professional development workshops. View the pictures.

Student wins BDA/DENTSPLY award

Intercalated BSc and BDS4 student Srishti Datta has won the prestigious Adjudicator's Award at the national competition of the BDA/DENTSPLY Student Clinician Awards.

Intercalated BSc and BDS4 student Srishti Datta has won the prestigious Adjudicator's Award at the national competition of the BDA/DENTSPLY Student Clinician Awards held at the BDA (British Dental Association) headquarters in London on 21 March.

The award is given to the student who gave the best overall verbal presentation of their research work from the 14 dental schools represented at the event. This is measured on clarity of expression and presentation and overall passion and enthusiasm for their work.

Srishti presented her research 'Identification of downstream targets of Barx1, a gene expressed during embryonic development of molar teeth and salivary glands' to three distinguished adjudicators, the Chair Professor Nairn Wilson (past Dean of the Dental Institute), Professor Bill Saunders (University of Dundee) and Dr Susan Hooper (University of Bristol).

Srishti undertook her project under the supervision of Dr Isabelle Miletich as part of an intercalated BSc in Craniofacial Science in the Department of Craniofacial Development at the Dental Institute.

Commenting on her achievement, Srishti said: ‘It was an honour not only to represent the Dental Institute, but also to present my research in front of an adjudicating panel comprising of such renowned clinicians.

‘Winning the Adjudicator’s Award for the best overall verbal presentation is a privilege. Good communication skills are regarded universally as one of the ideal qualities of dentists. Therefore, being acknowledged for my clarity of presentation and expression is extremely gratifying (and reassuring!).

‘This competition has highlighted the need for continual scientific research for the provision of optimal patient care in the future. This, along with the remarkable support from organisations such as the BDA...
and DENTSPLY towards research, has inspired me to remain involved with my project and possibly pursue a career in academia.’

Srishti displayed her poster presentation in front of a panel of judges and was selected the winner at the Dental Institute’s annual Teacher Education Day on 4 January.

**Frank Ashley Undergraduate Prize winner**

*Fourth year dental student Kevin WanXin Luan has won the competitive Frank Ashley Undergraduate Prize for 2013 from the British Society of Periodontology.*

Fourth year dental student Kevin WanXin Luan has won the competitive Frank Ashley Undergraduate Prize for 2013 from the British Society of Periodontology (BSP) for his project ‘Obesity and Periodontitis: A Dental Elective Study Across the Pond – Postgraduate education comparisons in the USA and the UK.’

The prize is awarded annually to encourage dental undergraduates to carry out a project that has a clear educational benefit in periodontology. The project must go above and beyond the normal course content of the undergraduate curriculum.

Kevin is undertaking his elective at Columbia University’s College of Dental Medicine, USA, this summer where he will conduct his research work. He said: ‘It is a great honour and privilege to be awarded this prize. I am grateful to the members of faculty and staff who supported my application. Receiving this award is a fantastic opportunity and I look forward to spending some time exploring NYC and Columbia University’.

Kevin’s success will be announced and the prize will be presented at the Society’s Annual General Meeting to be held in London on 24-25 October 2013. As part of the prize Kevin has been awarded Student Membership of the BSP for the remainder of his undergraduate career.

**Conference held for senior oral health leaders**

*The Dental Institute recently held its seventh annual Senior Dental Leaders Programme at Harvard University’s School of Dental Medicine in Boston, USA.*

King’s College London Dental Institute recently held its seventh annual Senior Dental Leaders Programme at Harvard University’s School of Dental Medicine in Boston, USA. The programme is designed to equip senior oral health leaders with the strategic leadership and management skills they need to promote a cavity free world.

The intensive six-day conference seeks to create an international network of leaders to foster collaboration, knowledge exchange and mutual support in solving the complex oral health challenges in their countries and to improve the state of oral health at the local, state, and federal levels.

Participants, including senior dental policy makers and national Chief Dental Officers, leaders of non-governmental organizations (NGOs), and senior academic leaders, engaged in facilitated networking, coalition building, leadership skills building, and a review of oral health policy during the programme. At the Gala Dinner, Professor Dianne Rekow, the Dean of the Dental Institute, reflected on women in dentistry and leadership issues.

First conceptualized by Professor Raman Bedi, DDS in 2007 at King’s College London, the Senior Dental Leaders Programme is run in partnership with the Global Child Dental Fund at King’s and Harvard School of Dental Medicine, and is sponsored by Henry Schein Inc and Colgate-Palmolive.
Professor Bedi, who is Head of King’s Centre for International Child Oral Health at the Dental Institute and Chairman of the Global Child Dental Fund, commented: ‘There has been a lot of interest in global oral health and this is welcomed. However, although many things need to be undertaken to improve the oral health around the world, the first step must be to develop our senior dental leaders. This programme, a collaboration between King’s and Harvard, has now had 100 delegates over the past seven years and continues to grow from strength to strength.’

Further links with Japan

On 28 February, the Dental Institute hosted another delegation of representatives from Japan.

A number of academics and administrators from the Tohoku University, Niigata University and Hiroshima University visited the Dental Institute to discuss curricular issues and administrative issues related to a large school and the challenges of combining curricula from a number of schools. These three dental schools in Japan will be joining together to develop a combined curriculum, a process in which they have no experience in Japan.

The day started with a formal meeting with the Dean of the Dental Institute, Professor Dianne Rekow and then a number of informal meetings took place throughout the day with all involved with education at undergraduate and postgraduate levels. The representatives also had a tour of the University lead by Dr Richard Foxton who acts as the liaison with all Japanese visitors, both staff and students, having spent considerable time in Japan in particular carrying out his PhD research.

The value of Professor Rekow having a high profile role within the International Association for Dental Research and the very high profile of King’s College London Dental Institute internationally, means that King’s is often the first port of call in Europe for many overseas visitors, in particular those from Asia and Japan. The international influence of the Dental Institute allows students and staff many opportunities for travel, learning and collaborative research. This is supported by the amazing funding opportunities provided by alumni and benefactors, for which the Dental Institute is truly grateful (and would happily receive even more!!).

Teacher officiates at first season of Hockey India League

Howard Pollard, a King’s clinical teacher based at the University of Portsmouth Dental Academy, reports on his recent trip to India as Assistant Tournament Director for the inaugural Hockey India League.

Howard Pollard is a King’s clinical teacher based at the University of Portsmouth Dental Academy. Other than his work in dentistry, Howard has a keen interest in hockey as a Tournament Director and regularly officiates at hockey matches. Here he reports on his recent trip to India as Assistant Tournament Director for the inaugural Hockey India League.

"Well there I was. Heathrow Terminal 5 on Thursday 10 January and my feet hadn't touched the ground since after Christmas.

Email, 21 December – ‘Are you available to go to India as Assistant Tournament Director for the inaugural Hockey India League? It’s only for a month!!!’ A rapid exchange of emails with Dr David Radford who very kindly agreed to cover for me and by 28 December I had been approved, a rapid trip to the doctors for jabs and off skiing on 29 December, up to London 7 January to apply for visa, passport returned on Wednesday and Terminal 5 here I come.

So what was it all about you might ask? I was one of three overseas officials asked to help to set up the
So what was it all about you might ask? I was one of three overseas officials asked to help set up the world’s first professional hockey league. Similar to cricket’s IPL – five franchises, 120 players of which 50 were from overseas. A Who’s Who of the best players in the world, all 50 were at the last Olympics. 34 games played in five venues – Delhi, Mumbai, Jalandar, Lucknow and Ranchi. Crowds in excess of 10,000 and televised worldwide to millions – LIVE. So no pressure to get it right!

As it was I spent the first six days in Delhi sorting out the venue there and then went ‘on the road’. 24 days and 11 internal flights later I am at Terminal 3 Delhi International waiting to come home.

So what did I see you might ask? Well, the inside of a lot of airports and aircraft! I stayed at some wonderful (and not so wonderful) hotels. Experienced the side of India tourists don’t see. Yes, the poverty, but also the overwhelming friendliness especially of those less fortunate. And to be in a country developing so fast it is difficult to keep up with.

And what of the hockey? The reason for the league was to try to expose Indian players below international level to high class play. In recent years India has been falling down the world lists and this was seen as a way (as it did in cricket) of rapidly stopping that demise. Fortunately, there are sponsors in the sub continent who are willing to support such events and pay for the players and officials to attend. Initially, the standard was average, since the teams had not had much chance to play together. This rapidly changed and the games became ‘international’ standard, with the semis and final good enough to grace the Olympic stage. And it worked! Four Indian players came ‘off the radar’ and were immediately promoted into the national team.

All in all a very enjoyable month where I made new friends, tasted some wonderful food and joined in first hand my hobby. My thanks to all my colleagues at the University of Portsmouth Dental Academy for covering for me and allowing me to experience this wonderful event."

New undergraduate video
Watch our new video. Staff and students from the Dental Institute discuss the numerous benefits of studying dentistry at King’s College London.

Comic Relief Bake Off
On Thursday 14 March, the Great British Bake Off in aid of Comic Relief was held in the Function Room on Guy’s Campus.

On Thursday 14 March, the Great British Bake Off in aid of Comic Relief was held in the Function Room on Guy’s Campus.

The event was a great success with £300 being raised, which will be donated on behalf of the Dental Institute.

The Bake Off received donations from 22 students and staff. As you can see by the pictures below, there was a good turn out with everyone enjoying lots of homemade cakes.

A big thank you to all who helped support the event.

Global Lessons photography competition
To celebrate Global Lessons week the Dental Institute held its first photo competition.

http://kingsdental.newsweaver.co.uk/newsletter/wrvykueq96?aa=6&p=34224795&t=19831855
The 2013 annual photography competition ‘Global Lessons’ exhibition was held on 26 February, showcasing over 70 photographs from medical and dental students in the Gordon Museum, Guy’s Campus.

Students travel all over the globe on their final year elective from Peru to Kathmandu. Many King’s students chose to travel to low and middle income countries where health systems are often underdeveloped and under-resourced. Their images document students’ personal stories of the people and healthcare professionals they meet, often in challenging circumstances. There are two categories in the photography competition: ‘My Clinical Experience’ and ‘Culture and community’.

View the entries.

UPCOMING EVENTS

Dental Society Lecture Series

This academic year, Dental Society has been running a fantastic series of lectures branded as ‘Beyond BDS’ to reflect a wide range of subject matters, which go above and beyond the undergraduate curriculum.

This academic year, the Dental Society has been running a fantastic series of lectures branded as ‘Beyond BDS’ to reflect a wide range of subject matters, which go above and beyond the undergraduate curriculum.

The last lecture not to be missed is:

Tuesday 28 May: Suzie Moore ‘Keeping you in the picture – how to take better clinical photos’.

All undergraduate and postgraduate students, DCPs and staff members are welcome. A new scheme for this year is that everyone attending will get a certificate of attendance, and for our DCPs and staff members, an hour of verifiable CPD will be awarded for each lecture.

The lecture starts at 5.15pm and is being held in New Hunts House Lecture Theatre. After the lecture, the Dental Society will host a reception on Floor 18 where you can meet the speaker and chat more informally. For more information, please contact Suzie Moore.