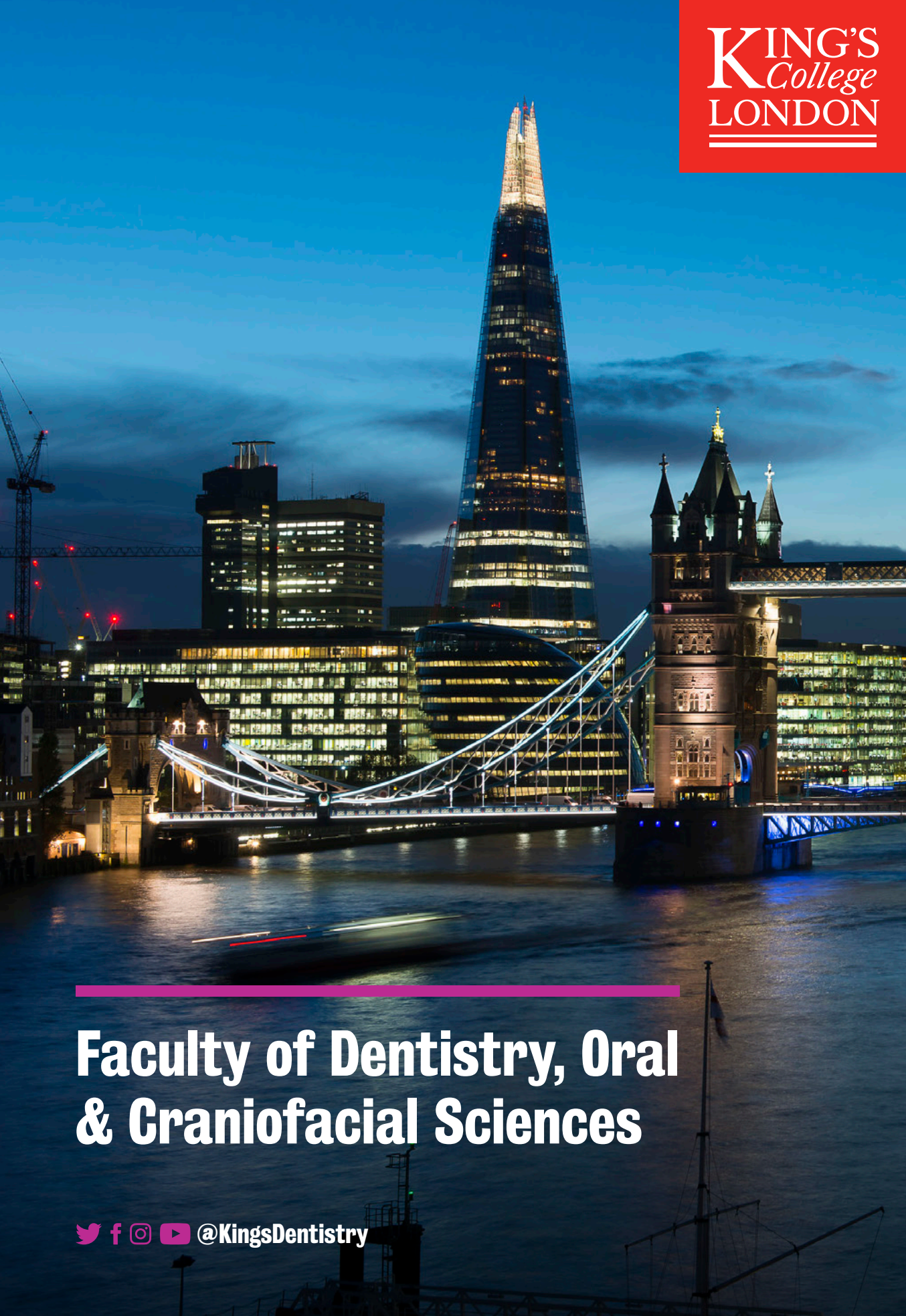


KING'S College LONDON

Faculty of Dentistry, Oral & Craniofacial Sciences

@KingsDentistry

Contents

Introduction

The Faculty of Dentistry, Oral & Craniofacial Sciences is one of nine faculties within King's College London. King's has the largest dental school in the United Kingdom and is consistently ranked one of the top ten universities in the world for dentistry.*

A Russell Group university committed to the best research, and teaching and learning experiences for students, King's joins with Guy's and St Thomas', King's College Hospital, and South London and Maudsley NHS Foundation Trusts to form King's Health Partners (KHP). KHP is one of eight Academic Health Science Centres in England, designated by National Institute for Health Research (NIHR), and NHS England & NHS Improvement (NHSE&I). KHP's aim is to create and maintain a centre where world-class research, education and clinical practice are brought together for the benefit of patients.

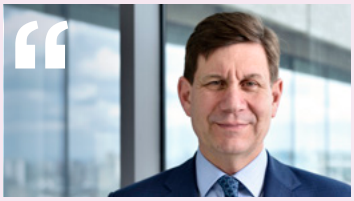
In the 2021 Government-led Research Excellence Framework (REF), the faculty collaborated with other health professionals across King's and together we were rated first in the UK for the quality, power and impact of our research.**

Our NHS partnerships bring strength, breadth and depth across clinical disciplines and enable us to deliver excellence in education, training and research with an enviable range of postgraduate qualifications and a rich undergraduate experience.

History

The Faculty's origins date back over 200 years when our parent institutions were known for treating people most in need as well as providing training for dentists, surgeons and researchers across several prestigious hospitals. By 1998, with a series of mergers over time, The Royal Dental Hospital, the United Medical and Dental Schools of Guy's and St Thomas' and King's College School of Medicine & Dentistry had combined to establish the Faculty as a single institute, developing as a world-renowned centre for excellence in research, teaching and clinical care.

* *QS World University Rankings by subject 2018-2022.*
** *REF 2021 within Unit of Assessment 3 (UoA3) which covers research in Allied Health Professions, Dentistry, Nursing and Pharmacy.*



We're part of a multi-faculty university and our dental school has a long and illustrious history. We have a fantastic environment for research, creating global impact within and outside academia. We're proud to be a very supportive and friendly place to work and study. .

Professor Michael Escudier
Executive Dean

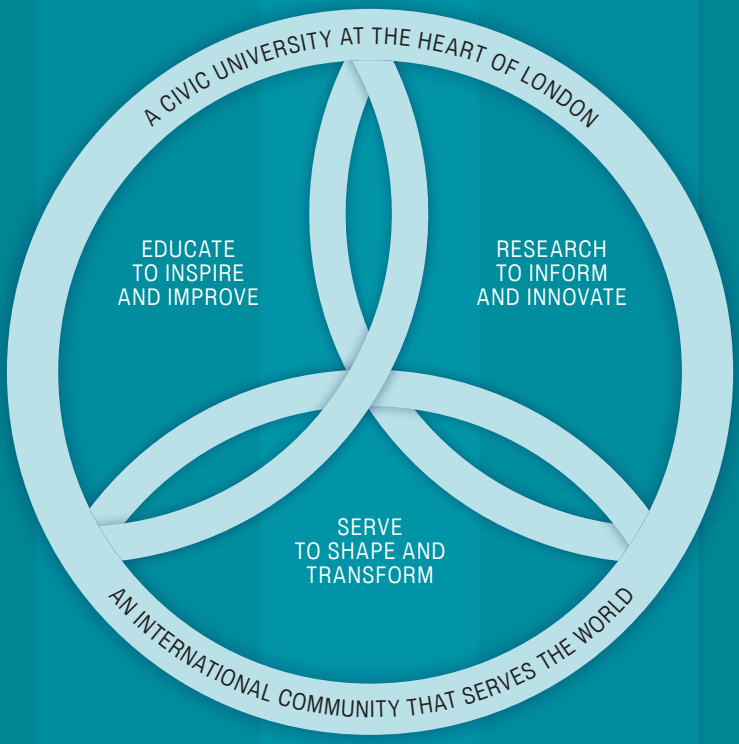
Read more
kcl.ac.uk/dentistry
kingshealthpartners.org

KING'S HEALTH PARTNERS

King's Strategic Vision 2029

King's Vision 2029 sets out our ambition to make the world a better place. It builds upon our history of making a significant contribution to society and takes us to our 200th anniversary in 2029.

Five strategic priorities will deliver this vision.



1

Educate to inspire and improve

A recognised community of learners in which students and staff across collaborate and connect to change the world.

2

Research to inform and innovate

Home to the most able and innovative researchers delivering valuable insight and ground-breaking discovery in state of the art infrastructure.

3

Serve to shape and transform

Known as the university that makes a significant and innovative contribution to society and to business, beyond education and research.

4

A civic university at the heart of London

Regarded throughout the world as London's leading civic university.

5

An international community that serves the world

Making a significant difference on the world stage.

Read more

kcl.ac.uk/about/strategy

Equality, diversity and inclusion

Building on King's Strategic Vision, the faculty is committed to creating a collaborative, diverse and inclusive environment which enhances opportunities for members of our community of all backgrounds and personal circumstances.

These values are embedded in our faculty priorities and in the culture of support, respect, inclusion and wellbeing that we work hard to create for staff and students. We have held a national Athena Swan Silver award since 2014. The national Athena Swan charter recognises the commitment of institutions that promote and advance the careers of women in science, technology, engineering, mathematics and medicine (STEMM) in academia.

Equality and inclusion are at the heart of the work that we do in the Faculty of Dentistry, Oral & Craniofacial Sciences, and we are working to embed this in our practices. Alongside our focus on the workforce and our students, we also apply this to the care we provide to our patients within the National Health Service, and the local community that we serve.

Dr Sasha Scambler
Academic Lead for Equality, Diversity & Inclusion.

Athena SWAN Silver Award

Education and training

Training over one thousand students, our specialised and skilled staff are developing the future generations of dentistry professionals. Together with our partner hospitals, we provide the highest standard of education for all stages of a career in dentistry.

Winner of 'Technological or Digital Innovation of the Year' at the 2021 Times Higher Education (THE) Awards, King's was recognised for innovatively using simulation and the latest technologies to continue providing world-class dental education and training when the pandemic hit.

Our innovations are now informing practice at other dental training institutions and hospital Trusts.

Undergraduate

Our Dentistry BDS and our Dental Therapy & Hygiene BSc combine solid foundations of research-led education, and clinical experience at our dental hospitals and community outreach campuses, to provide our students with the knowledge and skills to succeed in their careers and contribute to society.

Students engage in international activity and learn about the delivery of dental care outside the university during elective studies. They can choose to visit a dental practice, learn about their chosen specialty in more depth or work on a research project. Some travel abroad to engage with other universities, including our academic partners, or work with charities helping to improve oral health worldwide, learning on how dentistry is delivered in different academic and cultural environments.

Clinical digital learning is integrated across all our facilities with advanced 'phantom-head" simulators and haptic technology that simulates physical touch, to enable digital clinical workflow and practice of Covid-secure dental surgery.

These innovations enable the continual provision of essential oral care and future-proof the training of our emerging clinicians.

Our students benefit from innovative curricula which enables us to educate the dental team of the future and improve global oral health.

Professor Kim Piper
Dean for Education

Postgraduate taught

As a global centre of excellence for Dentistry, Oral & Craniofacial Sciences, our evidence-informed teaching and learning, contemporary healthcare environments and robust research methodology lie at the heart of our postgraduate programmes.

Whether it's to become expert in the field, improve clinical skills and knowledge, or pursue specific research interests, King's enables students to advance through our wide portfolio of full- and part-time programmes.

Our taught postgraduate courses include on-campus master's and diploma courses, specialist training and a suite of blended learning master's programmes, designed for working dentists.

The blended learning courses combine online teaching and learning with intensive face-to-face training blocks held in the London Dental Education Centre (LonDEC), our postgraduate dental education and training centre, and in partner centres in Dubai and Pune.

In conjunction with our partner Hospital Trusts and Public Health England, we provide specialty training across UK dental specialties in prosthodontics, endodontics, periodontics, orthodontics, paediatric dentistry, special care dentistry and dental public health. Training in the specialties of oral and maxillofacial surgery, oral pathology, oral microbiology and dental radiology is provided through our partner Hospital Trusts. This includes training clinical academic specialists who will become leaders in research, education and specialist care.

Students and clinicians work across our different campuses in partnership with Guy's & St Thomas' Hospitals, King's College Hospital and our outreach centres at West Norwood and the University of Portsmouth Dental Academy. Each setting provides the opportunity to connect with different patient groups and contexts.

Read more

kcl.ac.uk/dentistry/undergraduate
kcl.ac.uk/dentistry/postgraduate

Our undergraduate and postgraduate programmes

Undergraduate	
Dentistry BDS	5 years
Dentistry Graduate Professional Entry Programme BDS	4 years (biological science graduates)
Dentistry Programme for Medical Graduates BDS	3 years (medical graduates)
Enhanced Support Dentistry Programme BDS	5 years (UK only)
Dental Therapy & Hygiene BSc	3 years (UK only)
Postgraduate on-campus specialty training	
Endodontology MClinDent	3 or 4 years full-time
Orthodontics MSc	3 years full-time
Paediatric Dentistry MSc	2 years full-time
Periodontology MClinDent	3 or 4 years full-time
Prosthodontics MClinDent	3 or 4 years full-time
Postgraduate on-campus	
Conscious Sedation for Dentistry PGDip	1 year full-time
Dental Public Health MSc	1 year full-time
Maxillofacial & Craniofacial Technology MSc	2 years full-time
Microbiome in Health & Disease MSc	1 year full-time
Operative Dentistry PGDip	2 years part-time (UK only)
Regenerative Dentistry MSc	1 year full-time
Tissue Engineering & Innovation Technology MRes	1 year full-time
Postgraduate blended learning	
Advanced Minimum Intervention Dentistry MSc	3 years online and face-to-face blocks London
Aesthetic Dentistry MSc	3 years online and face-to-face blocks London
Dental Cone Beam CT Radiological Interpretation PGCert	1 year online & face-to-face block London
Endodontics MSc	3 years online and face-to-face blocks London
Fixed & Removable Prosthodontics MClinDent	4 years online and face-to-face blocks London or Dubai
Maxillofacial Prosthetic Rehabilitation MSc	3 years online and face-to-face blocks Pune, India
Postgraduate research	
Dental & Health Sciences Research MPhil/PhD	4 years full-time, 6 years part- time

Postgraduate research

MPhil and PhD options at King's offer world-class opportunities for postgraduate research carried out within our specialist research centres, providing opportunities to collaborate with experts in their field.

We have an extremely diverse and global population of students embedded within our research centres engaging in discovery, clinical and translational research, funded by research councils, charities and international agencies, using cutting edge technology in genetics, imaging, tissue engineering, microbiome, patient-centred research and clinical trials.

Their research is strengthened by collaboration between centres at King's, and at national and international levels, including projects with industrial partners.

Communication across King's Health Schools is extremely active and students have the opportunity to gain additional experience through internships and engagement with graduate teaching. Postgraduate research students experience a proven support structure through courses and thesis committees that ensure academic progress and are reassured by the Faculty's reputation for high on-time submission and success rates, enabling a rich graduate student outcome.

Read more

kcl.ac.uk/dentistry/postgraduate/pgr-courses

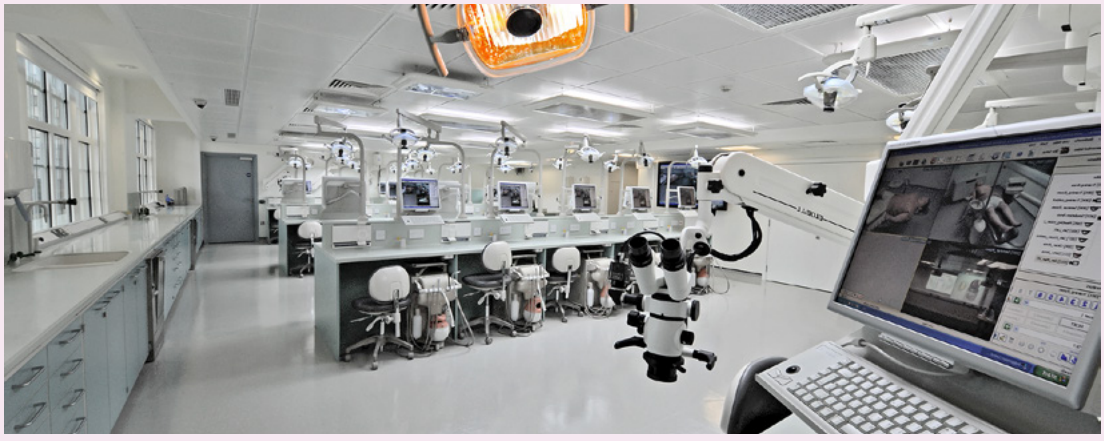
Continuing Professional Development (CPD) and short courses

King's London Dental Education Centre (LonDEC) is our state-of-the-art dental education and training centre dedicated to driving clinical standards and improving clinical leadership via unrivalled opportunities for continuous personal and professional development for the entire dental team.

We run post-qualification courses ranging from half-day refresher courses for core CPD to masterclasses for clinicians wishing to improve their hands-on skills.

Our DentAlliance collaboration with the University of North Carolina at Chapel Hill Adams School of Dentistry, the National University of Singapore Faculty of Dentistry and Melbourne Dental School brings together world-leading expertise to enhance professional practice in dentistry.

Our joint CPD programmes deliver global insights into contemporary trends in clinical dentistry and future perspectives, with engaging content, practical case studies, hands-on training, and clinical insights from a range of experts.



We are continuously striving to transform education and enhance professional practice in dentistry across the world through initiatives such as DentAlliance, our multi university enterprise.

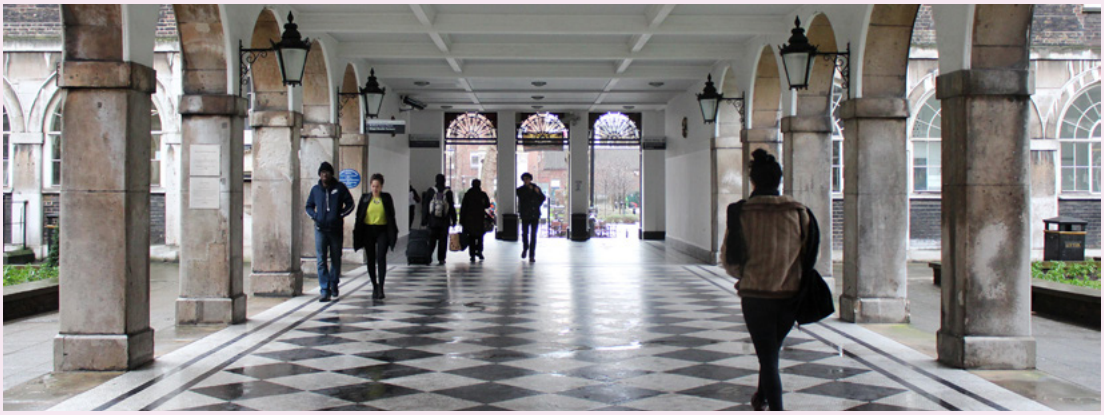
Bill Sharpling
Associate Dean (CPD) and Director of LonDEC

Read more
londec.co.uk

Campuses

Our students have unique and valuable opportunities to work, learn and serve in their local communities within London's hospitals and clinics.

They study in iconic and highly respected institutions: Guy's Hospital, St Thomas' Hospital and King's College Hospital, and also work at outreach clinics including West Norwood Health & Leisure Centre and Portsmouth Dental Academy, to enable their diverse education as a future rounded dental practitioner.



Guy's Campus

West Norwood Health & Leisure Centre

Portsmouth Dental Academy

King's College Hospital

St Thomas' Hospital

Read more

www.kcl.ac.uk/visit

Research centres

We explore far-reaching areas of Dentistry, Oral & Craniofacial Sciences and bring our findings to students through postgraduate programmes, and to patients through clinical trials and real-world solutions, innovating with impact to shape the future of health and patient care. Our principal investigator and PhD student body comprises talented academics and clinicians from over 50 countries. Excellent facilities, cutting edge technology and international collaborations underpin the work in each of our three scientific research Centres.

Rated first in the UK for the quality, power and impact of our research in REF 2021, our work makes a difference to the world both within and outside academia.

Centre for Craniofacial & Regenerative Biology

Our team of more than 100 researchers is driven by a diverse range of interests – from tissue engineering to techniques that have the potential to restore hearing loss.

Understanding how structures in the face develop not only sheds light on the mechanisms underlying birth defects, but also provides key information about how to regenerate tissue in the adult or recreate it by bioengineering.

Working together, we take our research beyond the lab with clinical trials, screenings to identify abnormalities earlier, and information for parents of children with birth defects.

Through sharing our discoveries with students, we show them how we are moving the field forward and how they themselves can make new discoveries as researchers.

As the next generation of clinicians, they will be in the position to apply new scientific approaches into practice and use our treatments to cure disease.

Centre for Host-Microbiome Interactions

Millions of microorganisms live in and on our bodies forming microbiomes on different surfaces. We study our relationship with these bacteria and fungi in health or in oral and systemic diseases such as periodontitis, candidiasis, oral cancer and Alzheimer's disease.

Our researchers have come together from disciplines including microbiology, immunology, data science, epidemiology and dental public health. They examine the mechanisms of diseases caused by specific microorganisms or linked with an altered microbiome composition and the burden of disease in human populations.

Our research can have far-reaching impact, identifying new ways to treat a range of diseases and uncover preventative measures that keep us and our microbiomes healthy.

Centre for Oral, Clinical & Translational Sciences

Our strength in prosthodontics and endodontics research feeds into our postgraduate programmes.

We have a team of psychologists who add an extra dimension to our research. They work directly with patients and clinicians to explore ways to cope with dentophobia, communicate about oral cancer, and analyse orofacial pain.

What sets us apart is close working relationships between scientists and clinicians. Many of our staff are leaders in their field and carry out research that hit headlines globally. In 2018, our paper on consumption of acidic food and tooth erosion was the most viewed article in the British Dental Journal.

Our Oral Clinical Research Unit (OCRU) collaborates with industry on trials. One challenge we're tackling is facial reconstruction – our researchers are using the latest technology, including 3D printers, to boost their expertise and develop treatments.

The faculty's research spans discovery, translational and clinical research, providing insight from bench to bedside and back again. We strive for excellent research in a supportive environment that fosters collaboration and new ideas.

Professor Abigail Tucker
Dean for Research

Read more

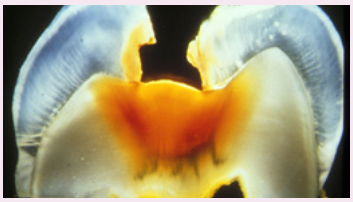
kcl.ac.uk/dentistry/research/centre-for-craniofacial-regenerative-biology
kcl.ac.uk/dentistry/research/centre-for-host-microbiome-interactions
kcl.ac.uk/dentistry/research/centre-for-oral-clinical-translational-sciences

Centre for Oral, Clinical & Translational Sciences

In our diverse centre, clinicians and scientists work together on caries, tooth wear and erosion, endodontics, facial reconstruction, oral pathology, oral surgery, psychology, and laboratory-based sciences using tissue engineering and dental materials.

This research translates into patient care and treatments as well as providing the backbone of discipline-based teaching. We have world-renowned leaders in clinical specialities who lead research teams and deliver research with impact.

Our success can be measured on clinical teaching and also on grants, with 50 per cent of our Centre team being awarded clinically relevant grants and by having two impact cases submitted for the UK Research Excellence Framework in 2021.



Case study

Dental caries

Dental caries is the most prevalent global non-communicable disease affecting humans in the modern era. Research in our Cariology & Operative Dentistry group focuses on developing the patient-focused, team-delivered clinical minimum intervention oral healthcare delivery framework by investigating carious lesion:

1. aetiology, detection & diagnosis (using fluorescence, Raman, optical and radiological imaging and microbiological biofilm modelling);
2. prevention/control of disease (analysing molecular signalling in dysbiotic plaque biofilms, and enamel remineralisation biochemistries;
3. minimally invasive operative management / restorations (developing selective caries removal operative technologies such as non-AGP chemo-mechanical gels, air-abrasion, and adhesive bioactive materials / interfaces).

We conduct clinical trials on the efficacy and effectiveness of such new technologies, including novel patient psychology / behaviour modification strategies, helping to develop clinical implementation guidelines to benefit patient care nationally and globally.

Professor Avijit Banerjee
Professor of Cariology & Operative Dentistry

Case study

Erosive tooth wear

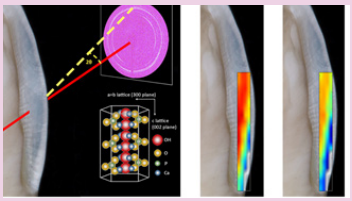
Erosive tooth wear happens when acids from the diet and stomach combine with tooth grinding and over-zealous brushing to wear away the teeth. It affects one in three people globally and is often an indicator that some aspect of the diet needs to change or that there is an underlying medical condition.

Our group aims to detect, measure and prevent tooth wear. We work globally with dentists and policy makers to start recording tooth wear and we develop tools to quantify tooth wear progression using intraoral scanners enabling dentists and researchers to diagnose it sooner.

We collaborate with metrologists and the industry to understand the early processes of tooth wear and what we can do to prevent it. Our ability to measure wear on natural enamel surfaces at a micron level is world-leading.

Professor David Bartlett
Head of the Centre for Oral, Clinical & Translational Science and Head of Prosthodontics

Dr Rupert Austin
Senior Clinical Lecturer and Honorary Consultant in Prosthodontics



Case study

Bio-materials, interfaces and interactions

Our bio-materials, interfaces and interactions activities span the entire translational pathway from foundational physics through to clinical research.

Current focus areas include applying advanced imaging and modelling approaches to synthetic and natural biomaterials to understand structure function relationships and their modification in health and disease. We also have projects on understanding materials determinants of peri-implant tissue health.

We are also developing bio-instructive and/or bio-responsive materials and device solutions to common clinical problems such as tooth restoration, bone anchorage and bone regeneration and advancing predictive pre-clinical assessment protocols.

Professor Owen Addison
Professor of Oral Rehabilitation

The long-term aims of our centre involve continuing the drive for patient-related science, improving our translational impact and ultimately improving patient lives.

Professor David Bartlett
Head of the Centre for Oral, Clinical & Translational Sciences

Read more

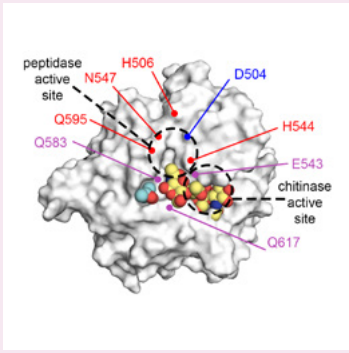
kcl.ac.uk/dentistry/research/centre-for-oral-clinical-translational-sciences

Centre for Host–Microbiome Interactions

Researchers in the Centre for Host-Microbiome Interactions (CHMI) study our relationship with microorganisms in their oral and systemic environments in health and in oral and systemic diseases such as periodontitis, candidiasis, oral cancer and Alzheimer's disease.

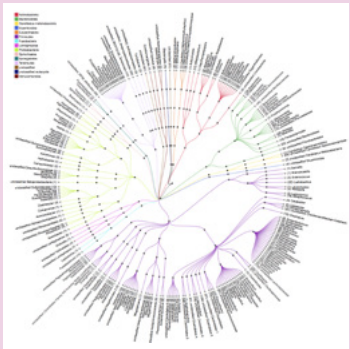
Our researchers work in different disciplines including microbiology, immunology, data science and epidemiology. Working together, we examine the mechanisms of diseases linked with microorganisms and the burden of disease in human populations.

Our research can have far-reaching impact, identifying potential new ways in which to treat a range of diseases and uncover preventative measures that keep us and our microbiomes healthy. This extends through to looking at global oral health and health systems, particularly for vulnerable groups.



Molecular model of bacterial chitinase

Periodontal disease



Gut microbiome 'tree'

Case study

How a bacterial chitinase can promote infection

A broad range of organisms produce chitinase enzymes to digest chitin, the second most abundant carbohydrate on earth. Mammals do not produce chitin but chitinases are used by dangerous bacteria that cause severe respiratory, gastrointestinal and urinary diseases.

The Garnett Lab has identified a new enzyme mechanism in the pathogen *Legionella pneumophila* where a secreted chitinase enzyme ChiA also degrades mammalian mucin-like proteins.

Mucins are major components of the mucous that lines the surface of the respiratory, digestive, and urogenital tracts and acts as a first line of defence during infection. They have shown that ChiA facilitates *L. pneumophila* penetration of the lung mucosa and promotes evasion of the host immune system. This is the first understanding of how a bacterial chitinase can promote infection.

Dr James Garnett
Senior Lecturer in Structural Bacteriology

Case study

Periodontal disease

The periodontology unit, within CHMI, is involved in research about gum (periodontal) disease, which together with caries is the leading cause of tooth loss in humans. We work mainly on three areas:

- understanding what combination of genetic and microbial factors cause periodontal disease,
- understanding associations between periodontal disease and systemic conditions like diabetes, cardiovascular disease, and cognitive decline
- finding the most minimally invasive treatment to stop the progression of periodontitis, preserve teeth and try to reconstruct gingival tissues and bone.

Our research is conducted with a combination of clinical trials, laboratory research and systematic reviews of the literature, supported by involvement with patients and public.

Professor Luigi Nibali
Professor of Periodontology

Dr David Moyes
Senior Lecturer in Host-Microbiome Interactions

Professor Mark Ide
Professor of Periodontology

Case study

Human Gut Microbiome Atlas

Interest in a better in-depth understanding of composition of the human gut microbiome, and how it differs across populations, diseases, geography and over time, has been driven by the increasing body of evidence for its involvement in disease pathophysiology.

In collaboration with SciLifeLab (Sweden) and Metagenopolis (France), we have developed the Human Gut Microbiome Atlas using sampling of public healthy and diseased cohorts of individuals in 19 different countries, across five continents, thus identifying microbial composition and functional changes.

The atlas allows comparisons of taxonomic and functional microbial profiles and gene richness across different regions and diseases. The atlas will be updated regularly and expanded by including additional public oral and gut microbiome samples.

Dr Saeed Shoaie
Senior Lecturer in Systems & Synthetic Biology

In the CHMI we have microbiologists, immunologists, and data scientists working closely with clinicians, allowing us to uniquely investigate how we interact with our microbiomes in health and disease.

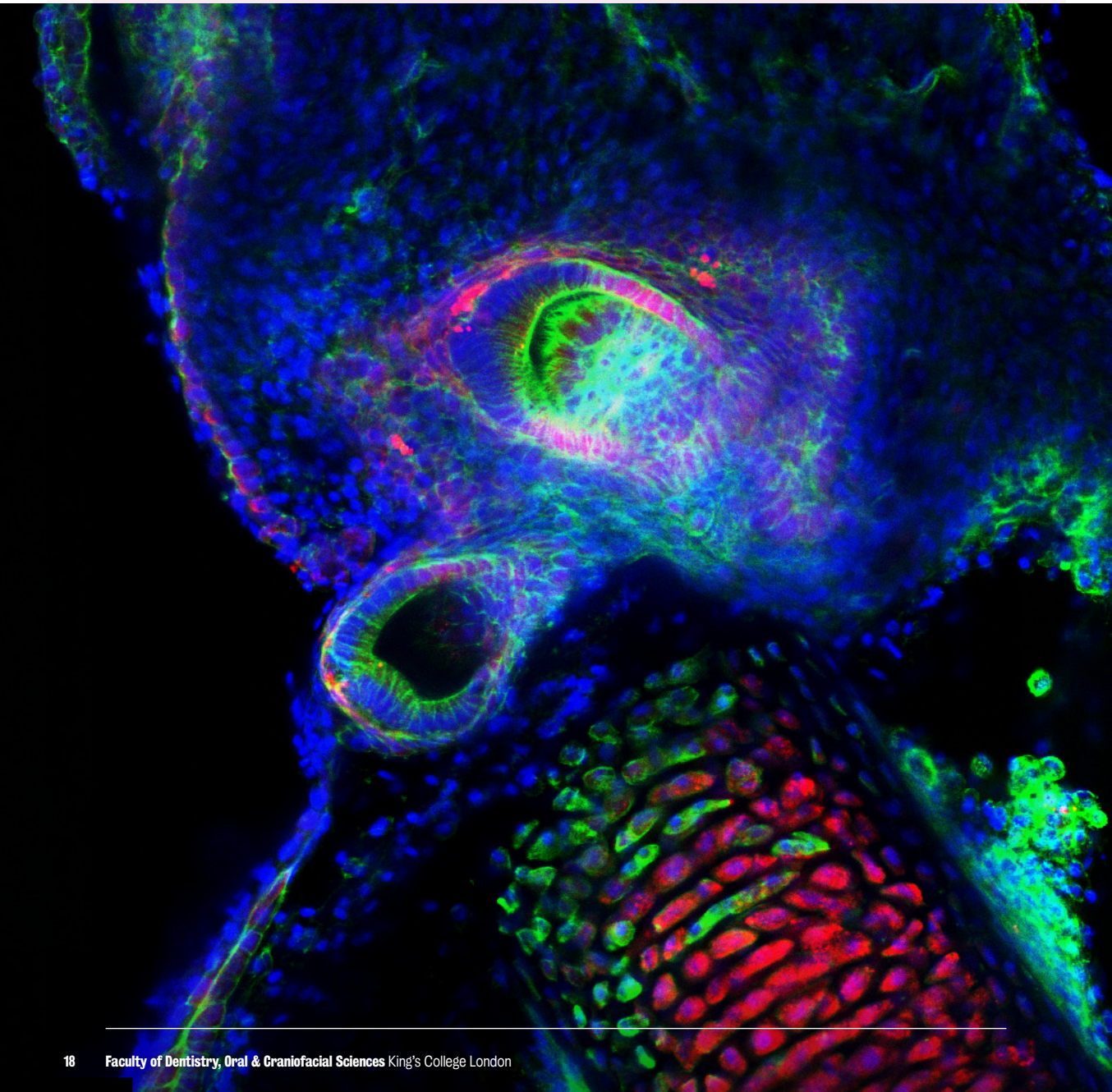
Professor Gordon Proctor
Head of the Centre for Host-Microbiome Interactions

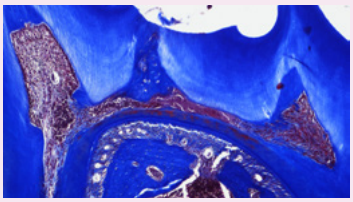
Read more

kcl.ac.uk/dentistry/research/centre-for-host-microbiome-interactions

Centre for Craniofacial & Regenerative Biology

The Centre investigates a full spectrum of the biology of craniofacial development and regeneration, from the use of stem cells and morphogens to reconstruct teeth and bones to the interactions of cells and gene mutations that cause craniofacial abnormalities. Investigators in the Centre develop and apply advanced materials for tissue engineering and cutting-edge imaging techniques.





Case study

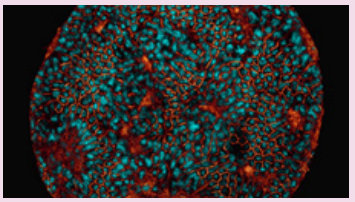
ReDent: A biological therapy for natural tooth repair

The formation of reparative dentine following deep caries removal and pulp exposure is a natural, stem cell mediated process that helps protect the pulp. We have developed a small molecule-based approach, ReDent, that over activates the pulp stem cells via the Wnt/-catenin signalling pathway and results in complete regeneration of all lost dentine.

ReDent comprises a specific formulation of a novel, water soluble drug combined with a biodegradable delivery vehicle at microdose concentrations, that is placed directly into the tooth cavity. No conventional materials such as calcium hydroxide, MTA etc are required. ReDent is currently undergoing a limited toxicology testing profile before first in human clinical trials are begun.

Professor Paul Sharpe
Professor of Craniofacial Biology

Image: Mouse tooth with ReDent-promoted repair.



Case study

ILC1 and inflammatory bowel disease (IBD)

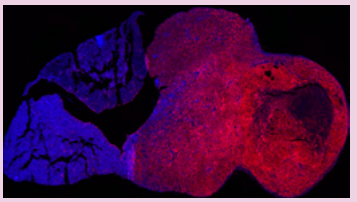
Rare immune cells called ILC1 accumulate in the tissues of patients with chronic inflammatory diseases; however, the role they play is not well understood. By co-culturing intestinal organoids with ILC1, we found that instead of driving inflammation, ILC1 instead promote intestinal remodelling. This has implications for treating patients who suffer from inflammatory bowel disease (IBD) as it explains how dysregulated ILC1 could contribute to co-morbidities like cancer and fibrosis.

Our novel synthetic hydrogels allowed us to unravel how the intestine responds to cues from ILC1, as they were designed using sophisticated computational models that allowed us to form soft materials to support the organoids that were uniform enough to allow for reproducible measurements of the fibrosis-like changes driven by ILC1.

Dr Eileen Gentleman
Reader in Bioengineering

Dr Joana Neves
Lecturer in Mucosal Immunology

Image: Mouse colonic organoid stained epithelial cell marker EpCAM image.



Case study

Stem cells: balancing regeneration versus tumour formation

Tissue specific stem cells can paradoxically contribute both to tissue regeneration as well as become the cell-of-origin of many human cancers. Understanding molecular mechanism driving these alternative fates is an important biological question with clinical implications.

We have shown that LATS[1]/YAP[2]/TAZ[3] signalling, a readily druggable pathway, regulates activity of pituitary gland stem cells. Using genetic approaches in mouse, including loss- and gain-of-function studies, we reveal that YAP/TAZ sustain stem cell identity and promote physiological organ homeostasis.

However, when the fine-tuning of pathway levels is disrupted, stem cells become tumourigenic. We are using these findings to pave the way for new treatments against tumours and other diseases affecting this gland.

[1] LATS (Large tumour suppressor)
[2] YAP (Yes-associated protein)
[3] TAZ (WW domain-containing transcription regulator protein 1 WWTR1)

Dr Cynthia Andoniadou
Reader in Stem Cell Biology

Image: A mouse pituitary gland with perturbed Hippo signalling pathway, which leads to accumulation of proteins YAP and TAZ, normally expressed by pituitary stem cells. This results in the formation of aggressive tumours derived from the stem cells. YAP, shown in red, marks the tumour.

A solid understanding of genetics and developmental biology is vital in our field. To build the skills of future generations of clinicians, we're making sure our research has a strong impact on our teaching. Our discoveries lead to new tools and techniques, and dentists need to be clued up on the latest technologies to be able to keep their patients informed.

Professor Andrea Streit
Head of the Centre for Craniofacial & Regenerative Biology

Read more

kcl.ac.uk/dentistry/research/centre-for-craniofacial-regenerative-biology

Centre for Dental Education

Our curriculum is developed and taught alongside our internationally renowned researchers. We have an academic education pathway which recognises the importance of research in education and its role in developing curricula. Science is embedded all the way through the curriculum, and students are taught by leading research academics.

As well as learning in the classroom and clinics, our students can engage with the local community and see patients at our outreach centres. We have developed an innovative Clinical Humanities and Wellbeing programme which is a first in dentistry. Our students also have opportunities to engage with vulnerable groups in the community as part of our service to society.

The Faculty of Dentistry, Oral & Craniofacial Sciences is collaborating with other disciplines to conduct research on learning with the use of advanced technologies. We have simulation and virtual learning systems which currently involve phantom-head with computer aided tools, haptic dental workstations and robotic devices, and include the development of 2D and 3D digital images for educational use.

Digital education

As part of curriculum development, and accelerated in response to the pandemic's disruption of dental education, the Faculty gained £3m of university funding to provide simulation integrated throughout the curricula.

Undergraduate and postgraduate students at all levels are utilising high fidelity haptics and lower fidelity phantom heads, both on the open-plan clinics and in a more traditional lab setting, fully integrated with patient care.

Students can use new custom-made 3D printed carious teeth and new teeth for endodontic therapy within the phantom heads. The new haptic technology integrates fully within a digital workflow environment so more complex patient cases can be scanned into the haptic environment allowing students to plan and practice in the simulated world before carrying out the treatment on their patients.

Clinical Humanities

The Clinical Humanities programme is a world first for health professions and runs throughout all years of the curriculum, adopting the city as its classroom.

Integrating humanities lenses with global oral health perspectives and including field trips to London's museums and galleries provides space to support development of advocacy, critical consciousness and cultural humility. It also nurtures global change agents and supports student wellbeing whilst leveraging London's unique cultural status.

This programme prepares the next generation to become reflective practitioners with the cultural humility and understanding of socio-cultural health determinants needed for the complexity of contemporary healthcare.

Service to Society

Students have 30 hours within the curriculum each year to involve with volunteering in local, national or international opportunities. Every student is given guidance and time to support their choice of activity.

The King's Smile Society is an innovative student-led society established to promote oral health within our community working with key agencies, including local consultants in Dental Public Health and oral health promotion teams. The society provides dental students with opportunities to participate in oral health workshops within the community as part of our service to society. Engaging in population health initiatives complements their clinical education. Supported by public health staff, their initiatives include:

- Contributions to school programmes and food banks
- Outreach to vulnerable groups such as homeless people
- Developing resources for children and their parents.

Our aim is to drive creation and innovation in dental education which can be utilised sustainably across the globe. We are nurturing the next generation of oral health team members who are prepared and able to deliver the complexity of contemporary health care that the world needs.

Professor Kim Piper
Dean for Education, Head of Centre for Dental Education

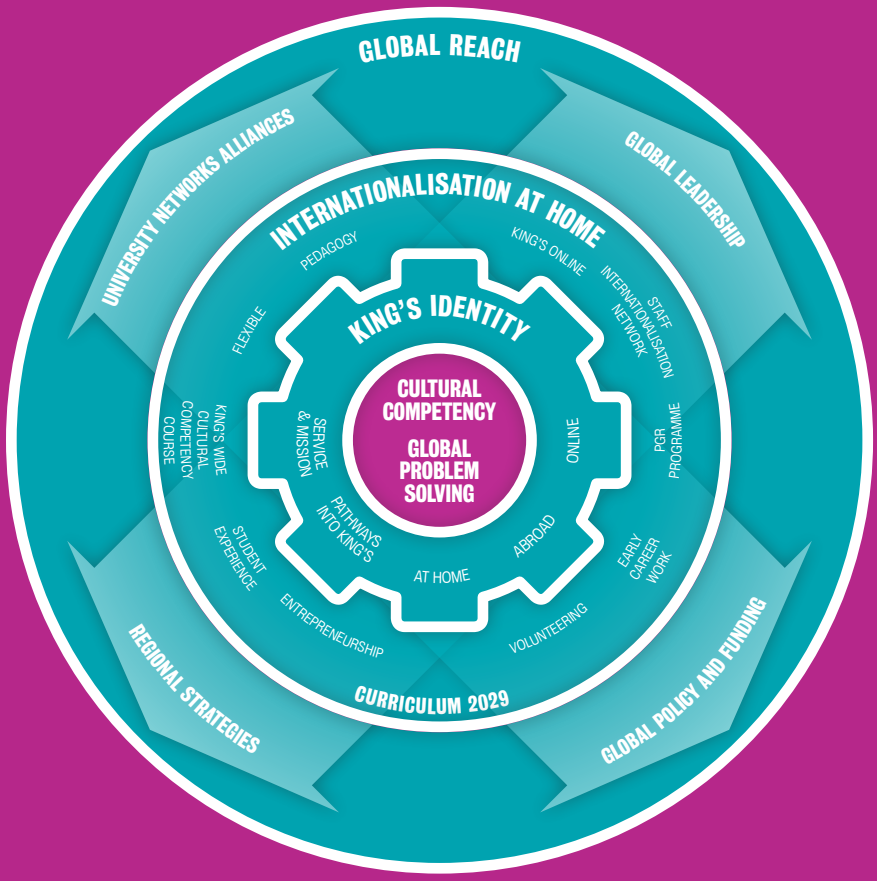
Read more
kcl.ac.uk/dentistry/centre-for-dental-education

International

Committed to internationalisation, we are the 13th most international university in the world and fifth in the UK in the Times Higher Education's (THE) World's Most International Universities 2021.

We have global reach through a range of partnerships, initiatives, staff, and students. We are committed to being a community of King's students and staff who are culturally competent with sustainable processes and structures that develop people with the capacity to serve the world.

Global engagement is a core pillar of King's Internationalisation strategy; it is King's ambition to engage and work collaboratively in every region of the world, through the development of equitable partnerships with like-minded institutions, membership in university networks, and engagement with key regional and national stakeholders.



We envision a community of King's People –students and staff –who are **culturally competent** and able to view the world through the lens of others

Students and staff acquire cultural competency **at home**, **abroad** and **online**

Students and staff develop a **global problem-solving mindset** and contribute to problem solving at home and abroad

King's People project the qualities of a mission orientedcommunity by modelling the core **leadership** profiles which indicate our potential to be world changing

DENTALLIANCE

Strategy

At the heart of our 2029 vision for internationalisation are two core values: cultural competency and having a global problem-solving mindset.

We define cultural competency as the ability to see the world through the lens of others – in all their diversity. This includes people from different nations and regions, socio-economic backgrounds, races, genders, ages, religions and abilities.

We enable these values through initiatives such as:

The Principal's Global Leadership Award (PGLA), a programme that encourages students to engage with some of the most pressing world issues and explore what it means to be a global leader.

The Associate of King's College London (AKC) programme which seeks to foster an understanding of different beliefs and cultures that can be taken into wider society. Unique to King's, the course is open to students, staff and alumni.

Partnerships

Long-term partnerships with over 35 world-leading institutions enrich our work. Students and post-doctoral researchers benefit from exchanges and visiting speakers, while key research collaborations help us to expand and enhance impact.

DentAlliance, launched in October 2020, is a global strategic partnership between National University of Singapore, University of Melbourne, University of North Carolina and King's College London. We are committed to working collaboratively to inspire and train tomorrow's professional leaders and practitioners to transform education delivery, address major research challenges in oral, dental and craniofacial health sciences, with a view to benefitting patient care and population health.

Peking University School of Stomatology is one of our many valued global partners with strong research activity across King's health schools. Our public health colleagues have collaborated to explore oral health patterns and trends across both countries.

Initiatives

A university community able to view the world through the lens of others is radically important to address challenges in science, education and healthcare. Our internationalised curricula and participation in global initiatives provide a range of opportunities to think and act broadly. Our initiatives include:

Working with Sierra Leone's government and local agencies to support the process of building sustainable health care, King's conducted the first national oral health survey of schoolchildren to identify level of need, inform workforce discussions and health policy, and support the development of a country-specific dental therapy programme.

In partnership with Harvard School of Dental Medicine, supported by Henry Schein and Colgate, we have been nurturing global talent through our Senior Dental Leaders programme since 2006.

Our students benefit from overseas electives, exchange programmes and volunteer projects, exploring different cultures and approaches to dentistry and scientific research.

Given the burden of oral disease globally, we must work in collaboration to shape research-informed policy and action to promote oral health, address inequalities in oral health and develop new models of dental care. This will be important to support the most vulnerable people in our societies, who have the greatest burden of disease. As a leading academic organisation, educating the next generation of dental professionals, we are well placed to contribute.

Professor Jenny Gallagher, MBE
Dean for International Affairs, Global Envoy for King's College London

Read more
kcl.ac.uk/dentistry/our-connections/international

Industry and commercialisation

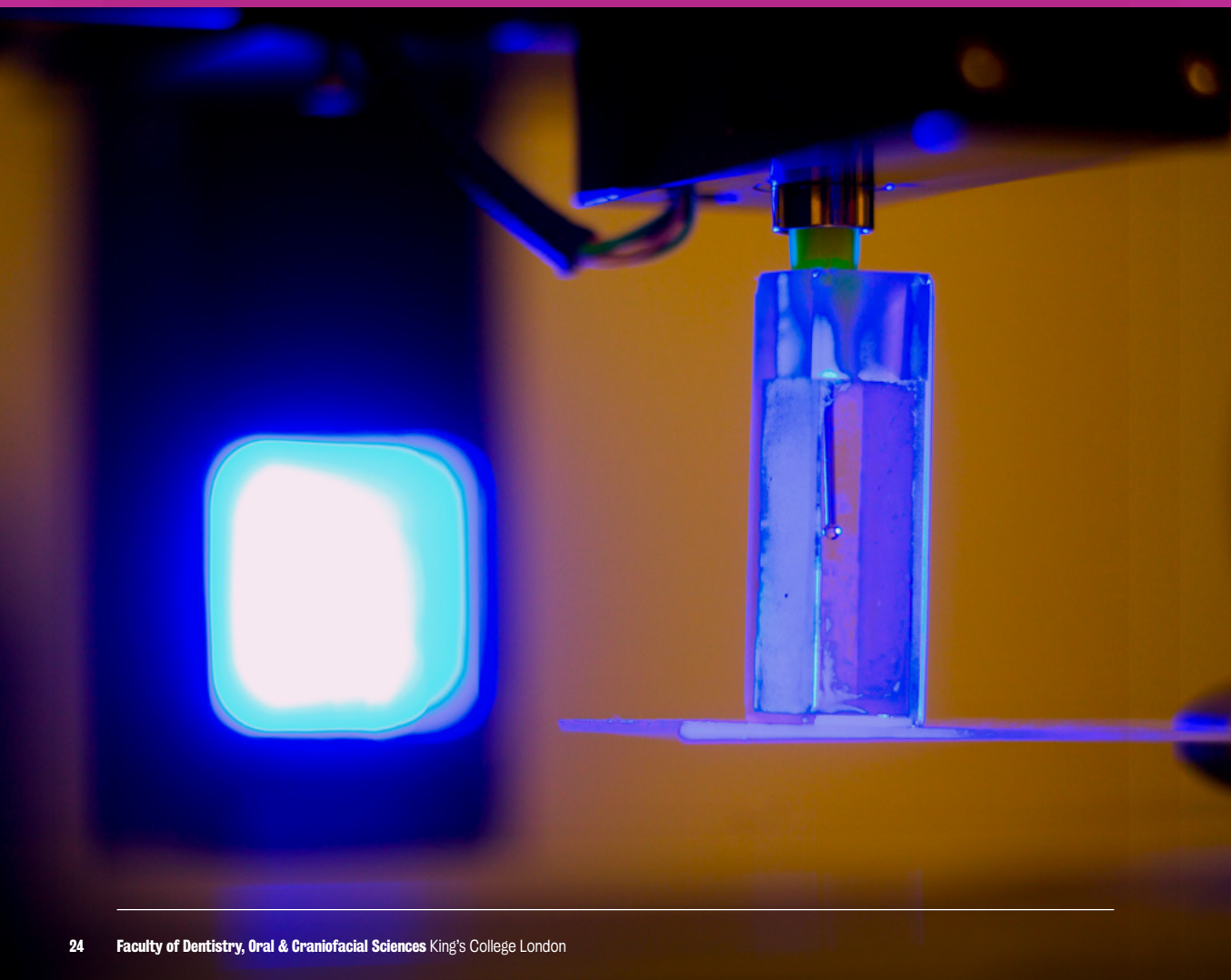
Working in partnership with industry is integral to our contemporary research. From in-house technical scientists to collaborations with multinationals and our very own academic spin-outs, our close working relationships ensure research projects have the maximum chance of clinical translation.

We have more than doubled our industry funding for collaborative research projects in the last few years. Our partnership with Unilever is reinforced with the launch of the King's and Unilever Bioscience Innovation Hub, bringing Unilever researchers and King's academics together in a shared space to focus on research in personal care, human biology and microbiology.

Our entrepreneurial staff are also active in patenting and licensing their inventions, or even forming spin-outs, with university and investors' support.

Past examples include 'Reminova', a company providing technology for painless tooth repair, and more recently 'NirVisio', a joint venture with Durham University, promoting a novel imaging system in the place of conventional x-rays.

The Faculty benefits from access to experienced professional services for industry research partnerships and Intellectual Property & Licensing, giving confidence to potential partners to engage and co-create ground-breaking collaborative projects.



Bespoke education, training and consultancy options

In addition to our comprehensive education and training opportunities within the university, we design and carry out collaborative education and training projects with organisations globally. We have the expertise and capability to work with organisations and countries seeking support to tackle organisational, national and global challenges.

We can offer bespoke training and education solutions in a variety of formats across specialities of dentistry approved by the General Dental Council. We have experience in delivering staff development (Continuing Professional Development), curriculum development, educational and research consultancy, leadership training and governance and support, all leading to the establishment of practices tailored to your requirements.

Sample delivery model

	In country	In UK
Continuing Professional Development (CPD)	• In-country delivery of CPD modules across all specialities of dentistry and dental leadership topics • Train the trainer • Review and redesign of in-country CPD modules	• A range of CPD course are held at our training centre in London: Infection Control and Decontamination, Modern Endodontics, Minor Oral Surgery, Aesthetic and Restorative Dentistry
Academic Credit Bearing	• Undergraduate and Postgraduate programme development	• Undergraduate Dentistry BDS and Dental Therapy and Hygiene BSc • Master's programmes • PhD programmes
Consultancy	• Strategic review • Academic Institution Consultancy • Curriculum review • Education Research • Classroom observations • Business case development • Capacity development/organisational strengthening • Strengthening Public Health Systems	• Strategic review • Academic Institution Consultancy • Curriculum review • Education Research • Business case development • Capacity development/organisational strengthening • Strengthening Public Health Systems
Governance	• Project/operational management • Monitoring and assurance: annual reviews, steering committees, quality assurance	

Our people

To discuss opportunities please contact

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