

medical and
human sciences
dentistry





the facts



- Pioneering teaching informed by the latest research
- Rated top in the UK for research quality and teaching and learning in dentistry
- £650 million investment in university facilities for research and study
- New postgraduate dental education centre
- 4 million books in one of the UK's best resourced university libraries
- Close relationship with NHS ensures that clinical teaching is among the best in the world
- University Careers Service voted the best in the UK
- Access to patients with varying and challenging treatment needs
- An exciting and diverse environment in one of the best student cities in the world



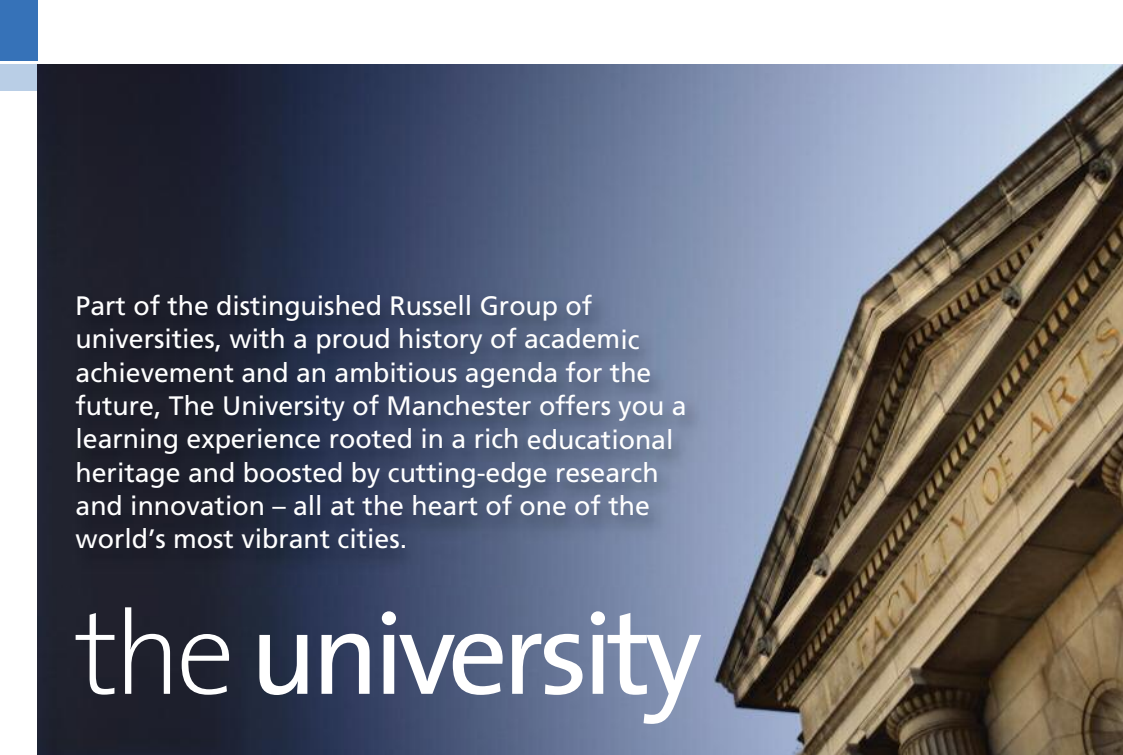


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The University of Manchester's Dental School was rated the best in the UK for research in the latest Research Assessment Exercise (2008).



Part of the distinguished Russell Group of universities, with a proud history of academic achievement and an ambitious agenda for the future, The University of Manchester offers you a learning experience rooted in a rich educational heritage and boosted by cutting-edge research and innovation – all at the heart of one of the world’s most vibrant cities.

the university

Our tradition of success stretches back over 180 years. The birth of the computer, the splitting of the atom, the founding principles of modern economics – these and many more world-altering innovations have their roots at our University.

Today, our research is internationally renowned across diverse disciplines and we actively assist our staff and students in turning many research and entrepreneurial ideas into commercial business ventures.

The Russell Group represents the 20 leading UK universities that are committed to maintaining the very best research, an outstanding teaching and learning experience, and unrivalled links with business and the public sector.

Our mission at Manchester – backed by an ongoing investment of more than £650 million in facilities, staff and buildings – is to become one of the world’s top 25 universities and the preferred destination for the best tutors, researchers and students.

Research, discovery and innovation

The 2008 Research Assessment Exercise placed us third in the UK in terms of “research power” and assessed virtually all of our research as reaching

international or national standards of excellence. We research in a wider range of areas than any other UK university, and are continuing to increase our number of first-rate professorships, improve our strong links to industry and public services, and invest in world-class facilities.

Whether studying for a taught or research postgraduate degree, you’ll be directly involved with groundbreaking research, encouraged to adopt innovative approaches under the tutelage of distinguished international scholars, and to discover interdisciplinary ways of working that open up exciting new areas of discovery.

Turning knowledge into enterprise

Your postgraduate work could contribute towards business and economic development outside academia. Manchester has an impressive track record of turning ideas into commercial reality, attracting world-class academics by providing a dynamic, first-class support system for them to participate and succeed in commercialisation projects. More than 100 ‘spin-out’ companies have been created in recent years based on our research.



Career opportunities

As a Manchester graduate, you will be in good company. No less than 23 Nobel Prize winners have worked or studied here, and our alumni have an impressive track record of becoming leaders in their fields: from philosopher Wittgenstein, to women's rights campaigner Christabel Pankhurst, and from Sir Terry Leahy, Chief Executive of Tesco, to George Richards, President of Trinidad and Tobago.

More than 4,000 recruiters each year from countries around the globe target our graduates. Consistently voted the best in the UK by employers, our Careers Service offers diverse practical, innovative services – many exclusively for postgraduates – to make you more employable.

Cosmopolitan campus

One of the UK's largest and best-resourced academic libraries, premier IT services and extensive student support services are all on our campus, along with impressive sports facilities, restaurants, bars, cafés and a shopping centre. Campus-based cultural attractions include The Manchester Museum, Whitworth Art Gallery and Contact Theatre, while the University's Jodrell Bank Observatory lies further afield in Macclesfield.

Europe's largest Students' Union provides excellent support services, hundreds of active student societies and four live venues, including the famous Academy, attracting the best big name and upcoming bands.

Join The University of Manchester...

... and you will become part of one of Britain's most forward-thinking universities, which builds on its success year on year – and invites you to do the same.



dentistry at manchester

Welcome to the School of Dentistry, part of the Faculty of Medical and Human Sciences at The University of Manchester. On behalf of the whole School of Dentistry, I would like to welcome you to our new brochure and, I hope, to joining us on one of our exciting programmes.

The University of Manchester has a reputable history extending back to 1824 and today has more than 26,000 undergraduates and 9,000 postgraduates, supported by more than 11,000 staff. Situated within the heart of one of the UK's most exciting and vibrant cities, the University offers excellent opportunities for your academic and personal growth.

Our School has recently been rated number one in the UK for research quality and also holds top position for teaching and learning, as determined by the annual student satisfaction survey. With more than 100 postgraduate students studying on taught and research courses with us, you will be joining an invigorating research and clinical environment.



We are at the forefront of educational development, offering one-year and three-year clinical MSc courses in the major dental specialties, with many of our three-year courses conferring eligibility to challenge Royal College specialty examinations. For those who wish to combine clinical work with a robust and internationally recognised doctorate, we offer a four-year clinical PhD. 2009 also saw the introduction of our first course delivered entirely online – the MSc in Dental Public Health. This course may also be taken on an MRes (Master of Research) route.

We are also pleased to announce that we have a brand new course in Periodontology hosted in our new postgraduate dental education centre. Details are in this brochure. Another new venture for us is a two-year online course in Restorative and Aesthetic Dentistry. Delivered in partnership with Smile-On, this course is ideally suited to those who want to learn flexibly and hone their skills while working in practice.

I invite you to look through our courses and programmes to identify those that meet your clinical and research needs. Working with our excellent and internationally recognised postgraduate team, we will help you reach your career aspirations within a supportive and collegiate environment that we believe is unique to Manchester.

Our postgraduate team is always ready to answer any questions you may have, so please do get in touch.

I look forward to welcoming you to Manchester and the School of Dentistry in the very near future.

Iain Pretty
BDS (Hons), MSc, MPH, PhD, MFDSRCS (Ed)
Director of Graduate Education and Research



The School of Dentistry

The School of Dentistry is one of the largest providers of postgraduate dental education in the UK. Offering programmes over one, two, three and four years, as well as a range of shorter diploma and certificate courses, combined with the opportunity to study many of our courses part-time, there is something for everyone. Recent developments include the possibility to study for a masters degree (or master of research) in Dental Public Health entirely online, especially suitable for busy practitioners.

Fully integrated within the Faculty of Medical and Human Sciences, the School has access to the wide range of resources that you can expect from a world-class medical education centre. The close relationship we enjoy with our National Health Service colleagues ensures that our clinical teaching is among the best in the world and allows access to patients with varying and challenging treatment needs.

The School provides a stimulating research and learning environment, which draws on the University's proud history of innovative graduate study and pioneering scientific research. Our programmes offer opportunities for both clinicians and scientists and we are pleased to be able to combine these strengths in our new four-year clinical PhD. The School is also proud to host the world renowned Cochrane Oral Health Group, as well as the World Health Organisation Collaborating Centre for the Treatment of Cranio-Facial Anomalies.

We offer core research methods training, as well as a thriving seminar programme, and all students have access to the excellent training opportunities made available by the Faculty training teams.



Postgraduate Dental Education Centre

New for 2010 is The University of Manchester's Postgraduate Dental Education Centre. This is a brand-new, 14-chair, state-of-the-art education facility developed in partnership with NHS Manchester.

The centre offers our postgraduate students access to a diverse patient pool and all the latest materials and equipment. The development represents our focus on providing our postgraduates with high calibre education in exemplary settings and is a major investment in dental education unrivalled in the UK.

Our graduates secure leadership positions in clinical and academic institutions worldwide and many will continue with further academic study here at Manchester.

CPD

Due to the modular nature of our approach to teaching, we are able to offer numerous units from some degree-based programmes for Continuing Professional Development (CPD). CPD is offered as hands-on courses, academic seminars and online distance-learning opportunities. Visit our website for more details and how to book.

We hope that you will enjoy reading about our programmes and find something that interests you. Should you require further information, our website has the latest information on new programmes, fees and contact details:

www.manchester.ac.uk/dentistry

research programmes

About our research

Our School has an international reputation for the outstanding research that is undertaken, which covers areas from stem cell research and genetics, to clinical trials and systematic reviews. It was rated the top dental research school by the 2008 Research Assessment Exercise (RAE), with 75% of the research activity judged to be “internationally excellent” (45%) or “world-leading” (30%). The School also secured the highest student satisfaction rating in the country.

These are major achievements and demonstrate our commitment to both teaching and learning and world-class research.

You can read more about the RAE and the results at: www.rae.ac.uk

Research structure and themes

A research structure with the mission of “understanding the scientific basis of craniofacial and oral health” has been adopted by our School. Led by the Director for Research, Professor Mike Dixon, this structure is divided into two research themes:

- **Basic Sciences**

Basic Sciences aims to improve craniofacial health by adding to the understanding of the mechanisms underlying health and disease, and by developing improved dental materials.

Within Basic Sciences, three main groups operate: craniofacial genetics, dental materials and stem cell research.

- **Health Sciences**

Researchers working in the Health Sciences theme aim to help enhance dental health by contributing to knowledge of evidence-based health provision.

Health Sciences includes health services research, systematic reviews, caries and diagnostic research, oral radiology and imaging, oral implants and oral surgery (including the control of pain and anxiety).

Each of the groups above have vigorous and exciting research strategies that include excellent opportunities for postgraduate research students.

Postgraduate research (PGR) students

The School’s PGR students are part of an exciting and supportive research environment. They come from both clinical and non-clinical backgrounds and work together as a friendly and collaborative community. For details of all the research activity, with contact details for individual supervisors, click on ‘Graduate Study’ from the following web page: www.manchester.ac.uk/dentistry

Our School offers funded studentships that are nationally advertised and detailed on our website.

You can apply for any of our programmes online at: www.manchester.ac.uk

PhD programmes

We offer two routes to doctorate degrees at the School of Dentistry: a traditional three-year programme and a new, innovative four-year programme. Studies can be either in clinical or non-clinical disciplines (see our website for details).

Three-year PhD

This traditional pathway to a doctorate degree in the School combines a small taught component (the Research Methods and Biostatistics course units) with an intensive period of research under the supervision of one of our academic staff. Research topics may be suggested by you or your supervisor and will fall into one of the research categories above.

Four-year clinical PhD

This programme allows you to combine clinical experience in any one of a number of dental specialties with vigorous research training.

We are currently the only UK university to offer a formal four-year PhD and it represents an exciting development in our postgraduate portfolio. Currently offered in the clinical disciplines of Endodontics, Fixed and Removable Prosthodontics, Oral and Maxillofacial Surgery and Orthodontics, you can combine research with clinical experience during the entire tenure of your time in Manchester. You will select a research project and supervisor in the normal manner and then indicate that you wish to undertake the four-year programme. A clinical supervisor will also be assigned to you appropriate to your chosen clinical specialty.

We recommend that your research programme be allied to the clinical discipline, but it is possible to combine non-clinical research within the programme of activity. You will spend approximately three sessions per week on clinically related activities. At the end of each year, assessment of clinical case reports will be undertaken. Throughout the programme you will be expected to demonstrate an increasing diversity of clinical skills.

This programme is suitable for inexperienced as well as more accomplished clinicians, as a full skills audit will be carried out at the time of registration. The School of Dentistry boasts internationally recognised clinical consultants in all the offered disciplines and world-class clinical facilities.



MPhil programmes

The Master of Philosophy programme at the School of Dentistry is undertaken full-time over 12 months, or part-time over 24 months.

The programme includes our popular Research Methods and Biostatistics course units, as well as a substantial research component resulting in the submission of a thesis. Projects may be in clinical or non-clinical areas and a full list of the MPhil degrees available can be found on our website. You are strongly supported by your supervisor(s) and administrator throughout your course and, if successful, are offered the opportunity to convert to one of our PhD tracks at the end of your programme.

MPhil degrees from Manchester are recognised internationally and are appropriate for those who want experience in research without committing to a PhD. Individuals in community services, industry and clinical disciplines have all undertaken MPhil degrees at the School.

Contact the admissions team for more information on MPhil degrees (see contact details at the back of this brochure).

research profiles

Adhesive Biomaterials and Biomechanics group / Biomaterials Science



**Professor
David Watts**

**Dr Nikolaos
Silikas**

Professor Watts is the recent recipient of a Humboldt Research Award. He and Dr Nick Silikas lead research on adhesive biomaterials and biomechanics. This area covers many biomaterials for operative dentistry, prosthodontics, endodontics, orthodontics, and oral surgery, plus research on orthopaedic bone cements. Special interests include photo-polymerization phenomena, adhesion, visco-elastic behaviour, surface analysis, X-ray microtomography and a wide range of composite biomaterial behaviour.

The Biomaterials Science laboratories are well equipped with modern instrumentation for research in this field. They are at the centre of our large University campus with access to many other special instruments and expertise in, for example, photon science, chemistry, cell biology and materials science.

Multiple techniques are used, such as experimental and computational biomechanics and imaging or spectroscopic probes of their underlying micro/nano-scale structure and time-dependent properties. This allows an enhanced mechanistic understanding of reasons for their clinical success or failure.

The group has a major commitment to postgraduate education and research, with a steady-state population of 12 or more candidates for MPhil and PhD degrees working in its laboratories.

Since 1998, Dental Materials – Journal for Oral and Craniofacial Biomaterials Sciences [Elsevier] has been edited within this group.

Active collaborations exist with research departments of the worldwide dental and orthopaedic biomaterials industry and with overseas academic colleagues, particularly in Germany, Austria, Italy, Greece, Brazil, Japan and North America.

Here in Manchester, many clinical colleagues have research interests in oral biomaterials. Hence, laboratory studies and clinical practice are mutually related, especially for clinical PhD students.

The Colgate Palmolive Dental Health Unit



Professor Roger Ellwood **Dr Iain A. Pretty**

Dr Christian Zakian
Dr Andrew Taylor

The Dental Health Unit (DHU) represents a unique relationship between industry and academia and, over its 40-year history, has accomplished major scientific advances in dental public health, epidemiology and diagnostic sciences. The unit has a rich history of hosting PhD students, many of whom are now professors in the UK and around the world.

Working in collaboration with investigators in Thailand, China, Brazil, the United States and across the world, the DHU undertakes a wide range of research, from clinical randomised controlled trials, through to early development *in vitro* laboratory-based studies. The unit has an extensive caries diagnostic programme, currently centred around fluorescence methods, OCT and other imaging modalities. It also has an extensive caries epidemiology and public health programme.



Recent research has included:

- Development of a novel system for the detection and quantification of dental fluorosis
- Major epidemiological study of water fluoridation in the UK
- Diagnostic tool development for assessment of dental plaque and gingival inflammation
- Thermal imaging of dental caries
- Near-infra-red imaging of dental caries
- Use of advanced technologies for the assessment of dental erosion

The research undertaken in the unit is diverse and represents a basis for translation from laboratory to dental chair.

research profiles

Dental Public Health and Primary Care Research



Professor Martin Tickle **Professor Keith Milsom**

- Dr Iain Pretty**
- Dr Vishal Aggarwal**
- Dr Paul Brocklehurst**
- Mr Mike McGrady**
- Ms Clare Jones**
- Ms Emma Hall-Scullin**

Research in this area seeks to improve the evidence base for public health, service delivery and clinical interventions to inform dental policy and ultimately improve patient and population health. Prominent roles in the NHS in the North West provide advice on the design and management of public health programmes and dental services. The academic and NHS roles are symbiotic: the NHS helps to identify research priorities and support the delivery of high quality applied research in the service, while the research shapes the commissioning decisions within the NHS.

This research has had an international impact on policy and practice. For example, work on school dental screening changed policy in the UK and other countries, by showing that this intervention is ineffective at improving population oral health. Work on whether or not carious primary teeth should be restored has sparked an international debate on this issue.

This year, the team has successfully completed a:

- Large trial of fluoride varnish as a public health intervention in preventing dental caries in school children
- Large trial that demonstrated that single-visit scale and polish has no health benefits for regularly attending patients with healthy mouths
- Health services research project that demonstrated how contractual incentives influence the behaviour of dentists

All of these studies will inform policy and clinical practice.

Work in progress includes a £1.7 million trial of caries prevention in general dental practice, new diagnostic approaches to caries assessment in population surveys and general dental practice, dose response studies for fluorosis and caries, developing new measures to assess need for specialist care, a new research programme investigating workforce planning and use of skillmix, a longitudinal cohort study examining the determinants of caries in school children, and a programme examining the epidemiology of oro-facial pain and testing complex interventions to alleviate symptoms.

Oral and Maxillofacial Surgery



**Professor
Paul Coulthard**

Professor Paul Coulthard's health services research offers best evidence for improving surgical practice, particularly in the areas of postoperative pain and oral implantology, but also in some other areas.

Clinical pain studies developed from systematic reviews have investigated intraoperative local analgesia and postoperative systemic analgesic strategies. These studies are crucial in providing the evidence for changing clinical practice and improving the pain management for patients after surgery. Professor Coulthard has been principal investigator for many clinical trials, several investigating the efficacy and safety of novel analgesics. He is particularly interested in how to translate best research evidence into everyday clinical practice and how to overcome the barriers that can prevent this.

He is also part of a team that has written a comprehensive series of Oral Implant Cochrane Systematic Reviews, which provides a reliable summary of the global scientific evidence for best practice and the foundation for future implant research. These reviews are continually being restructured and updated.



A recent international multi-centre clinical trial demonstrated equivalent healing with a novel octylcyanoacrylate tissue adhesive, compared to traditional alternatives such as sutures for the skin closure of long surgical incisions. With adhesives, there is no risk of needlestick injury and there are no sutures to remove for the patient.

Recently, Professor Coulthard created a tool for assessing a patient's need for conscious sedation when undergoing dental treatment. This novel Indicator of Sedation Need (IOSN) tool ranks and combines information on patient anxiety, medical history and the complexity of clinical treatment. It can be used to support clinician decision-making and also to plan and deliver sedation services.

research profiles

Orthodontics and Management / Care of Cleft Lip and Palate



**Professor
Kevin O'Brien**

Professor O'Brien carries out research into clinical problems in orthodontics and cleft lip and palate care, using randomised clinical trials methodology. His work has been widely published and has helped to change clinical practice.

His main research interests have been the evaluation of the short- and long-term effects of early treatment of Class II malocclusion. This work was a multi-centre randomised trial funded by the Medical Research Council of the UK for 10 years. He is also involved in trials evaluating the effectiveness of temporary anchorage supplementation and new functional appliances.

He is the co-investigator in several Cochrane systematic reviews in the treatment of Class II malocclusion, the use of temporary anchorage devices and methods of distal movement. He is also Deputy Director of the Healing Foundation UK centre for clinical cleft research. This initiative is funded by the Healing Foundation for ten years and aims to carry out extensive clinical research into the care of children with cleft lip and palate, and other craniofacial anomalies.

Professor William Shaw and Dr Gunvor Semb

Historically, the evidence base for the care of children with cleft lip and palate and related craniofacial anomalies has been weak, with insufficient multisite and multidisciplinary partnership.

The research of Professor Shaw and Dr Semb builds upon a series of collaborative projects over the last 25 years, including the Eurocleft and Eurocran programmes, funded by the European Union. They have progressed from cohort studies to randomised trials, three of which (the Scandcleft Trials) are following up primary surgical outcomes in 450 children with unilateral clefts.

They recently embarked upon a new trial funded by the National Institutes of Health (USA). This will recruit infants with cleft palate to a study of the timing of primary surgery across 22 teams in the UK, Scandinavia and Brazil.

From early 2011, the two have been commissioned by the Healing Foundation and The University of Manchester, along with colleagues from a range of disciplines, and in partnership with the Craniofacial Society of Great Britain and Ireland and users, to establish a UK national research centre. This will adopt a patient-centred approach to improving protocols for cleft care and support.

They continue to serve as a WHO Collaborating Centre with the mission of supporting collaborative research in both the developing and developed world.

Oral Radiology group



Professor Keith Horner **Dr Vivian Rushton**

Oral Radiology and Imaging aims to develop and promote evidence-based imaging in dentistry through research. This clinical research unit, with a base within the University Dental Hospital, uses digital imaging, Cone Beam CT and Picture Archiving and Communication System. The group collaborates with others in the School of Dentistry, the Faculty and wider University, and has strong links with several comparable research groups in European dental institutions, the latter currently supported by European Commission Framework funding. Access to complex imaging facilities (MR, CT, bone densitometry) is available within the Central Manchester and Manchester Children's University Hospitals NHS Trust and the School of Medicine, while there are valuable collaborations with North Western Medical Physics at The Christie Hospital and Imaging Science and Biomedical Engineering in the Faculty.



The group has a track record of developing evidence-based guidelines for dental radiology through systematic review. This includes the European Guidelines on Radiation Protection in Dental Radiology, developed after winning a competitive contract with the European Commission and high-impact research on Cone Beam CT through the SEDENTEXCT project. Following a major theme of "bone quality", the group has an established programme of research work in osteoporosis diagnosis and bone quality assessment.

The group is led by Professor Keith Horner, the UK's only holder of a Chair in Dental and Maxillofacial Radiology. Dr Vivian Rushton is Senior Lecturer in Dental and Maxillofacial Radiology. The other key member of the group is Professor Hugh Devlin.

research profiles

Basic Sciences

Craniofacial Genetics



Professor Michael J Dixon
Dr Jill Dixon

Craniofacial anomalies are among the most common and distressing congenital malformations affecting humans. Research in our laboratory aims to understand the normal developmental mechanisms underlying craniofacial morphogenesis and how these are disturbed in a variety of birth defects.

Group research has identified genetic mutations underlying craniofacial malformations, including Treacher Collins syndrome, Van der Woude syndrome, amelogenesis imperfecta, and dentine dysplasia. These findings have contributed to quality-of-life improvements as they have impacted directly on clinical management of affected families by providing the basis for genetic counselling internationally.

Research has also provided unique insights into the pathogenesis of the above disorders. For example, it has established that the protein encoded by the Treacher Collins syndrome locus plays a central role in ribosomal DNA transcription and is a unique regulator of ribosome biogenesis, a deficiency of which results in neuroepithelial cell death and disruption of neural crest cell formation. The group has also demonstrated the potential therapeutic utility of this research by preventing Treacher Collins syndrome through P53 inhibition in mice.

Similarly, the group has built on the discovery that interferon regulatory factor 6 (IRF6) is the Van der Woude syndrome locus by demonstrating that this major cause of cleft lip and palate results from abnormalities in ectodermal development and establishing that IRF6 plays a key role in oral periderm formation, appropriate development of which prevents cleft palate.

Recently, the group used an animal model to demonstrate that a mutation in the amelogenin gene, analogous to those found in humans, underlies amelogenesis imperfecta in mice. Enamel mineral density analysis and microdissection of the developing enamel revealed severe defects of enamel biomineralisation. Histological, immunofluorescence and electron microscopy studies demonstrated loss of ameloblast phenotype and increased ameloblast apoptosis resulting from endoplasmic reticulum stress.

Stem Cell Biology



Dr Christopher Ward

This group studies embryonic stem (ES) cell pluripotency, with particular focus on the role of adhesion molecules and their relation to molecular mechanisms of development and tumorigenesis. Investigations have shown that the cell surface protein E-cadherin inhibits plasma membrane localisation of the pro-migratory 5T4 oncofoetal antigen in ES cells.

The group has also demonstrated that ES cell differentiation is associated with an epithelial-mesenchymal transition (EMT) event that exhibits striking similarities to tumour cell metastasis. It has further shown that loss of N-cadherin or 5T4 in ES cells results in decreased motility of the cells during EMT. Recently, it discovered that E-cadherin functions in mouse (m)ES cells to regulate LIF/BMP-dependent self-renewal. Abrogation of E-cadherin in mES cells results in maintenance of pluripotency via Activin/Nodal, while self-renewal is enhanced via Fgf2 signalling. Therefore, E-cadherin functions to maintain both epithelial integrity and pluripotent signalling pathways in ES cells.



In addition, the group is researching new methods for the culture and differentiation of ES cells in bioreactors. The rationale for these studies is that a current bottle-neck to the clinical applications of these cells remains the limited cell numbers achieved using conventional culture techniques. It has been demonstrated that mES cells cultured in shake flasks over 15 days maintain pluripotency and can differentiate to the three germ layers.

research profiles

Craniofacial Development



Dr Nicoletta Bobola

The cranial neural crest is a transient, migratory cell population of the vertebrate embryo. It originates from the neural tube and migrates to distant sites in the embryo, where it differentiates into many cell types and contributes to the tissues of the head and the neck and also to the heart circulation.

Defects in the migration and differentiation of the cranial neural crest are at the origin of genetic diseases characterised by craniofacial and heart malformations. Differentiation of the cranial neural crest is regulated by Hox genes. Hox genes, a highly conserved subgroup of the homeobox superfamily, are key regulator of embryonic development in all animals with bilateral symmetry. Their products are transcription factors that activate and repress downstream genes. Although the scientific community has been aware of Hox genes and their importance in development for decades, study of these 39 genes and protein products is still in its infancy.

Dr Bobola's group is focused on understanding how Hox genes, and in particular Hoxa2, control the differentiation of the cranial neural crest and, more in general, how they direct morphogenesis in the vertebrate embryo. They have found that Hoxa2 acts by changing the competence of the cranial neural crest to respond to skeletogenic signals. Investigation on the molecular mechanisms underlying the activity of Hoxa2 has discovered that Hoxa2 controls the IGF system and directly represses the homeoprotein Six2. These studies have also proven capable of offering insight into the mechanisms controlled by Hox genes in the broader context of vertebrate development.

Oral Cancer



Professor Nalin Thakker

Globally, cancer of the oral cavity and oropharynx accounts for more than 350,000 new cases and more than 250,000 deaths per annum. In the UK, despite its lower profile, oral cancer is a more common disease than either cervical cancer or melanoma, and has a much poorer outcome than either of these cancers. Furthermore, the incidence in some regions in the UK and in EU countries appears to be increasing, particularly in a younger age group. The disease and treatment are both associated with high morbidity, and the survival rates are very low for late stage tumours. An understanding of the molecular pathology of this cancer is essential for identifying molecular correlates of prognosis and response to therapy, and also for identifying novel therapeutic targets.

Professor Thakker's programme of work is directed at identifying genes and pathways altered in this cancer. Previously, the group has demonstrated that inactivation of CDKN2A and FHIT are some of the most common and earliest genetic events in oral cancer. More recently, it performed high-density SNP array analyses of oral cancer and pre-cancer cell lines. The study identified all of the commonly known altered genetic changes (eg deletions of CDKN2A, TP53, FHIT, amplifications of CCND1) in oral carcinogenesis, which confirmed the validity of the method; in addition, they identified numerous changes in regions involving genes not previously reported to be altered in this process or other cancers.



The group has also identified the differences in the genomic changes between cancers and pre-cancers, which potentially represent the key genetic events involved in progression to malignancy. These include a higher frequency of alterations in cancer compared to pre-cancers involving known genes (eg FHIT and CDKN2A) and previously unreported genes, but also, importantly, some alterations that are present in cancers but not in precancers.

Current focus is on characterising the novel genes implicated in the oral cancer at a molecular and functional level. In addition, the group is investigating whether these findings have a clinical relevance, by studying whether changes in expression of these genes, and the proteins they code for, correlate with clinical parameters such as tumour grade, clinical stage, response to therapy and survival.

taught courses

Why take our taught courses?

Benefits for you	PGCert/ PGDip	One-year MSc	Three-year MSc
World-class clinical facilities	•	•	•
Input of leading academic and NHS consultants and specialists	•	•	•
Innovative, modular curriculum	•	•	•
Rigorous academic training	•	•	•
Top-class research facilities	•	•	•
World-class e-learning portal and student communication centre	•	•	•
Visit international sites and conferences [†]	•	•	•
Clinical exposure to new techniques and equipment	•	•	•
Award of a degree from The University of Manchester		•	•
Access to the UK's top dental researchers [‡]		•	•
Follow an innovative clinical training programme			•
Attend attachments at the Royal College of Surgeons ^{††}			•
Have the opportunity to attend research conferences to present results			•
Follow a training programme approved by the Royal College of Surgeons			•
Gain eligibility to sit MRD, MOrth, MOralSurg ^{††}			•
Integrate a thorough clinical training with extended research opportunities			•
Undertake advanced and complex treatment modalities requiring an extended treatment period			•
Take programmes that can be mapped to US specialty courses			•

[†] Subject to course availability and supervisory arrangements

[‡] Dissertations supervised by researchers

^{††} Depending on course (eg OMFS students attend Applied Basic Surgical Sciences Course)

^{††} As appropriate to course

Our courses

We offer the following taught courses:

- **Master of Science in Dental Specialties (MSc)**
One-year full-time/two years part-time
- **Master of Science in Clinical Dentistry (MSc[Clin])**
Three years full-time, to include additional clinical training
- **Master of Science in Restorative and Aesthetic Dentistry**
Two years part-time, delivered mainly online
- **Master of Dental Public Health (MDPH)**
12 months full-time, or part-time options delivered online
- **Master of Research (MRes) in Public Health**
12 months full-time, or part-time options delivered online
- **PG Diploma**
Nine months full-time/18 months part-time
- **PG Certificate**
12 months part-time



taught courses

MSc in Dental Specialties (MSc)

This is a one-year (full-time), or two-year (part-time), course offered in the following clinical specialties:

- Control of Pain and Anxiety (Conscious Sedation) (part-time only)
- Endodontics (full-time only)
- Fixed and Removable Prosthodontics
- Oral and Maxillofacial Surgery
- Implantology (part-time only)

Structure

This is a four-unit (180 credits) course consisting of:

- Research Methods (15 credits)
- Biostatistics (15 credits)
- Specialist Clinical Component (90 credits)
- Research (dissertation) (60 credits)

MSc in Clinical Dentistry (MSc[Clin])

This three-year full-time masters course integrated with clinical training is offered in the following clinical specialties:

- Endodontics
- Fixed and Removable Prosthodontics
- Oral and Maxillofacial Surgery
- Orthodontics
- Periodontology

Structure

This is a four component (180 credits) course consisting of:

- Research Methods (15 credits)
- Biostatistics (15 credits)
- Specialist Clinical Component (90 credits)
- Dissertation (60 credits)

PG diploma

This is a nine-month (full-time) or 18-month (part-time) course offered in the following clinical specialties:

- Endodontics (part-time only)
- Implantology (part-time only)
- Oral and Maxillofacial Surgery

Structure

This is a three-component (120 credits) course consisting of:

- Research Methods (15 credits)
- Biostatistics (15 credits)
- Specialist Clinical Component (90 credits)

PG certificate

This is a 12-month part-time course offered in the following clinical specialty:

- Implantology

Structure

This is a one-component (90 credits) course consisting of:

- Specialist Clinical Component (90 credits)

Entry requirements

- You are required to hold a primary dental degree from a recognised institution; however, applicants for MDPH may be considered on an individual basis for admission with qualifications other than a primary dental degree
- Evidence of citizenship of an EU country will be required for those claiming home student status
- You need two years recent post-graduation experience in general professional practice (NB For Oral and Maxillofacial Surgery applicants, this is preferred, but not required)
- Implantology applicants must have full registration with the UK General Dental Council and be working in a UK dental practice where patients for the programme of study may be sourced

English language requirements

International students are required to have acceptable levels of English literacy, as demonstrated by any of the following:

- IELTS test: 6.5 (with no less than 6.0 in the written component)
- TOEFL test: 577 (paper-based)
- TOEFL test: 233 (computer-based)
- TOEFL test: 90 (internet-based)
- Pearson Test 59-65

In the case of MSc (Clin) three-year courses only, it may be possible to offer a 10-week pre-sessional course for exceptional applicants with IELTS 6 or equivalent. Such requests are considered on an individual basis by the course director. Candidates with IELTS 6 or equivalent need to be aware that the admissions policy is 6.5 IELTS as a minimum and therefore only in exceptional circumstances would such requests be considered.



Core components of taught courses

Research Methods (15 Credits)

(MSc, MSc [Clin] and PGDip only)

The aim of this online course unit is to produce students who are competent in issues related to the design, execution and interpretation of clinical and clinically related research. The latter may include medical education, public health and basic-science areas, such as genetics, microbiology, or biomaterials, and provide you with critical appraisal skills so that, on a life-long basis, you will be able to apply these skills to assess any research evidence that comes before you.

Biostatistics (15 credits)

(MSc, MSc [Clin] and PGDip only)

This online course aims to produce students who are competent in the data collection, simple analysis and interpretation of clinical or clinically related research projects. The latter may include basic-science projects in areas such as genetics, microbiology, or biomaterials.

Research component (dissertation) (60 credits)

(MSc and MSc [Clin] students only)

Each student must undertake a research project and a review of the relevant literature and methodology – and present the results in the form of a dissertation.

taught courses

Specialist clinical component options (90 credits)

Endodontics



Course director: Dr Joanne Cunliffe
BChD, DPDS, FDS RCS (Eng), MRD (Edin).

The endodontic courses give you a unique opportunity to work within a stimulating university academic environment of international standing and in world-class, state-of-the-art clinical facilities.

Before you treat your own patients, there is a pre-clinical component in which a variety of simulated exercises will be set, which you must successfully complete.

There is a consultant-led team and you are supervised either by consultants or specialists. We currently adopt a team approach to patient care in which students work in pairs. On average, there will be four clinical sessions a week. You will be expected to manage and treat a variety of patients, most of whom will have advanced endodontic problems, although case selection and load will be determined by your individual competence. At the end of each session, you will discuss your work with the tutor, giving you opportunity for reflection.

The evidence-based approach to the academic component of the course comprises a highly integrated schedule of seminars. You are expected to prepare in advance by reading papers and other appropriate literature and to actively contribute to these sessions, which serve as a forum for interaction, debate and discussion. Seminars are led by a wide range of experts from other departments within the University, from other universities and from clinical specialists. The mode of presentation is highly varied and depends on the seminar leader.

We keenly encourage active participation in specialist society meetings, such as the British Endodontic Society. This gives you the unique opportunity to hear speakers of international repute and to interact with leading academics and clinicians in the field of endodontics.

We foster an open and friendly team approach. Students are well supported, whatever their needs, and in this way benefit from and enjoy their education.

For three-year MSc students, who work independently, the range of endodontic treatment encompasses more advanced cases and may be an integral part of a more comprehensive restorative treatment plan, where you work with consultants and specialists in other disciplines. Presentation of research findings and clinical work is actively encouraged, and this may take the form of either presentation of papers and posters at meetings, or publications in peer refereed journals. Three-year students also attend advanced courses and specialist society meetings, such as the European Society for Endodontology.

Find out more

Please direct all Endodontics course enquiries to:

Margaret Stockberger, Course Administrator
margaret.stockberger@manchester.ac.uk
tel +44 (0)161 275 6660

Fixed and Removable Prosthodontics



Course director: Dr Julian Satterthwaite
BDS, MSc, PhD, FDS MFDS RCS (Eng) FDS (Rest Dent)

Prosthodontics is the dental specialty pertaining to the diagnosis, treatment planning, rehabilitation and maintenance of the oral function, comfort, appearance and health of patients with clinical conditions associated with missing or deficient teeth, and/or maxillofacial tissues using biocompatible substitutes.

The Fixed and Removable Prosthodontics MSc course allows dentists to gain clinical experience in a contemporary facility led by experienced consultants and specialists.

Typically, there are four or five clinical sessions a week, during which you will gain experience of patients attending consultation clinics for specialist opinion and treatment planning, and will manage and treat a variety of patients. You will be expected to encounter and provide a range of procedures, including complex removable prostheses, implant supported prostheses, integrated fixed and removable prosthodontics and some experience of fixed prosthodontics, although the case mix will be determined by your individual competence.

In addition to clinical exposure, you will be instructed in the relevant aspects of prosthodontics to gain insight in these areas. The course covers clinical and technical skills, contemporary prosthodontic techniques, scientific understanding of fixed and removable prosthodontics, diagnosis and treatment planning, and reflective prosthodontic practice.



A programme of interactive seminars provides the basis for the taught component. The seminars require advance reading and preparation, so that an informed discussion and debate of each topic can take place.

The one-year full-time MSc course is designed for dental practitioners with a minimum of two years recent experience in general professional training (or equivalent) who wish to further their experience and knowledge in fixed and removable prosthodontics. Part-time graduate students attend for five sessions per week in each of the two years, of which two or three are clinical sessions.

The three-year course provides additional specialist level clinical training in prosthodontics with further experience in the broader area of restorative dentistry and also additional technical experience.

Find out more

Please direct all Fixed and Removable Prosthodontics course enquiries to:

Shena Reynolds, Course Administrator
shena.reynolds@manchester.ac.uk
tel +44 (0)161 275 6808

taught courses

Implantology

Course director: To be announced

The University of Manchester has an internationally renowned reputation for excellence in the field of dental implantology and offers a comprehensive range of course units. These aim to provide dental practitioners with the requisite knowledge and skills to undertake implant surgery and prosthodontic reconstruction with predictable long-term success.

Dr Nigel Saynor, who completed this course, commented: "hard work, challenging, an excellent format encompassing academic, research methods and clinical skills to empower clinicians to practise implant dentistry at the highest level."

The courses are ideal for dentists with a range of experience, from those new to the discipline, to those with considerable implant exposure. You should have a desire to expand your skills, knowledge and clinical repertoire within the scientific evidence base. You must complete a minimum of five cases within your own practice and so must be registered with the General Dental Council and be practising within the UK for the duration of the course.

Learning is via observation, seminars and hands-on experience; contributions are made by the clinical specialties of Oral and Maxillofacial Surgery and Restorative Dentistry. The course is supported by a number of specialists and experienced general practitioners and regular observation sessions are organised. Mentoring is available for students carrying out treatment in their own practices and each year you will visit a European centre of implantology. Assessment is via written examination, essay, two case presentations and viva voce.

The certificate, diploma and masters courses run in succession. The certificate offers a foundation in implantology; the diploma builds on this, offering a diverse range of contemporary experiences and techniques. A research dissertation is required for completion of the masters course (some have been published in international peer-reviewed publications).

Certificate syllabus

Basic sciences
Informed consent and documentation
Asepsis and sterilisation
Anaesthesia and pain control
Medical conditions in relation to implant surgery
Basic surgical techniques
Basic restorative techniques
Removable prostheses
Imaging for implant dentistry
Management of complications
Monitoring and maintenance
Peri-implantitis



Diploma syllabus

Comprehensive treatment planning and diagnosis
Advanced surgical techniques
Advanced restorative techniques
Fixed implant prostheses
Occlusal aspects of implant dentistry
Immediate placement
Immediate loading
Bone augmentation
Guided bone regeneration
Soft-tissue techniques
Sinus floor manipulation
Sinus elevation and augmentation
Research methods and statistics

Find out more

Please direct all Implantology course enquiries to:

Karen Rogers, Course Administrator
karen.rogers@manchester.ac.uk
tel +44 (0)161 306 0220

taught courses

Orthodontics



Course director: Dr Stephen Chadwick
BDS, MSc, MA, MOrth RCS Eng, FDS (Orth) RCS (Edin)

Orthodontics is an exciting and rewarding area of study. Within the specialty, we have scientific research of international standing with multi-centre randomised clinical trials. Our use of problem-based learning uses the latest research on adult teaching and learning to aim to provide an excellent environment for personal development during your orthodontic education.

The course will equip you with unique clinical skills to provide the best quality of care for children who have malocclusions that will benefit from orthodontic intervention.

The clinical training course unit involves attendance at clinics in the University Dental Hospital of Manchester and affiliated hospital Trusts.

Postgraduate Orthodontics students are currently placed in clinics stretching from Lancaster (north of Manchester) to Stoke-on-Trent (south of Manchester), including Blackburn, Burnley, Bury, Chester, Stockport and Wythenshawe. The distance from Manchester to the various District General Hospitals ranges between 58 miles to Lancaster, to eight miles to Wythenshawe in south Manchester (one-way). You will be reimbursed for travel expenses.

Attendance at the clinics, both in Manchester and in the District General Hospitals, is mandatory. The number of days you will attend clinics varies; currently, the average for students attending clinics in the University Dental Hospital of Manchester is two days per week, with clinics at the District General Hospitals varying between one and four days per week, on a week-on-week rota basis.

During your time in clinic, you will provide treatment to a carefully selected group of patients under direct supervision of consultant orthodontists.

Clinical training in assessment, diagnosis and treatment of a comprehensive range of typical malocclusion, including management of a personal caseload of patients, is supported by lectures and seminars. There are approximately five or six clinical sessions per week.

This course is recognised by the UK Royal Colleges as meeting the requirements of the Membership in Orthodontics Examination. You are advised to contact the Royal Colleges directly to ensure that your experience prior to commencing the course will be valid for entry to this examination.



Please note that these training courses do not have UK National Training Numbers (NTNs); therefore, unless you concurrently hold a substantive NHS Specialist Registrar contract, on completion you will not be eligible for a Certificate of Completion of Specialist Training (CCST) and therefore not be eligible for direct entry to the UK Specialist List in Orthodontics.

Find out more

Please direct all Orthodontics course enquiries to:

Rosette Parr, Course Administrator
rose-marie.parr@manchester.ac.uk
tel +44 (0)161 275 6620

taught courses

Oral and Maxillofacial Surgery



Course director: Professor Paul Coulthard
BDS, PhD, MDS, MFGDP (UK),
FDS RCS Eng FDS (OS) RCS

This specialty is concerned with the diagnosis and management of diseases, injuries and defects affecting the mouth, jaws, face and neck. All courses are based on the specialty of oral surgery, but within the wider context of maxillofacial surgery.

The PGDip and one-year full-time (two-year part-time) MSc courses are designed for dental practitioners who wish to further their knowledge of surgery and are a useful foundation for specialist training in this field. The three-year course provides specialist oral surgery clinical training.

You will undertake minor oral surgery under supervision, carried out under local anaesthesia, conscious sedation and general anaesthesia. You will also attend theatre to assist and observe major surgery and will attend consultation clinics, trauma clinics, ward rounds and carry out ward duties.

The clinical component consists of the following course units:

- Surgical Basic Sciences (basic surgical science, preoperative and postoperative care)

and

Patient Care (assessing patients, medical aspects of patient care and control of pain and anxiety)

- Dental Tissues (infections and inflammation of the teeth and jaws, removal of teeth and surgical implantology)
- Bone: Disease and Injury (diseases of bone and the maxillary sinus, oral and maxillofacial injuries)

- Soft Tissues (cysts, mucosal disease, premalignancy and malignancy)
- Salivary Tissue, Pain and TMJ (salivary gland disease, facial pain and disorders of the temporomandibular joint)
- Reflective oral surgery practice

You will attend weekly interactive seminars led by school senior staff and some invited guest speakers. Some of these have actor patients present to allow you to rehearse your clinical skills. Three-year course students also attend external teaching events, such as residential blocks for basic science applied to surgery at the Royal College of Surgeons of England.

Assessment is by essay and multiple choice questions throughout the courses and related to the taught units. You maintain a clinical surgical logbook and undertake a clinical competency test. There is also an oral examination.

The oral and maxillofacial surgery clinical services are provided at the Dental Hospital, Manchester Royal Infirmary and Royal Children's Hospital. These are all hospitals of Central Manchester University Hospitals Foundation NHS Trust, on the University campus.

The range of surgery undertaken by the department includes dentoalveolar, implant, orthognathic, trauma, oncology, reconstructive, salivary gland and TMJ.

Find out more

Please direct all Oral and Maxillofacial Surgery course enquiries to:

Priya Hannan, Course Administrator
priya.hannan@manchester.ac.uk
tel +44 (0)161 306 0239

Periodontology

Course director: Dr Julian Satterthwaite
BDS, MSc, PhD, FDS MFDS RCS (Eng) FDS (Rest Dent)

Periodontics is concerned with the diagnosis, treatment and prevention of diseases and disorders of the gums and other structures around the teeth. This three-year course aims to produce graduates equipped with the academic knowledge and clinical skills required for specialist level clinical practice in Periodontology.

The course is composed of 20 15-credit course units, including two units designed to produce students who are competent in the design, data collection, simple analysis and interpretation of clinical and clinically related research projects. The latter may include basic-science projects in areas such as genetics, microbiology or biomaterials.

The content of the course units has been carefully designed to reflect the increase in academic and clinical competencies needed for you to progress to specialist level: these are illustrated by the inclusion of advanced surgical treatments and implant techniques, with their complex and highly specialised features, in the course units required for the three-year MSc (Clin) award.

You will benefit from the ability to undertake extensive treatment plans and follow integrated courses of care over the three-year period. Progress will be monitored using clinical logbooks and regular clinical competency assessments. Patient case reports outlined within your log book will provide formative assessment of your clinical competencies during the course.



A varied blend of training methods aims to promote a stimulating and dynamic teaching environment. The subject areas are covered by a balance of formal teaching (seminars and lectures), clinical experience and additional self-directed learning. You are encouraged to reflect upon your clinical work, skills and key concepts introduced within seminars. Inherent within the course is the expectation that students will acquire the skills to enable them to work independently and effectively in an interdisciplinary clinical environment.

The course is creatively incorporating the clinical expertise of 'high-street specialists' in the field of periodontology to support the clinical components of the course units, as well as more 'traditional' clinical academics. Moreover, teaming with NHS Manchester and the innovative development of a state-of-the-art Postgraduate Dental Education Centre (PGDEC) to house the course will make the course unique in its primary care delivery and teaching system – ensuring graduates have real-life experience of high-street speciality practice.

Find out more

Please direct all Periodontology course enquiries to:

Shena Reynolds, Course Administrator
shena.reynolds@manchester.ac.uk
tel ++44 (0)161 275 6808

The School of Dentistry is proud to announce two new modular degrees delivered entirely online.

taught courses

Master of Dental Public Health (delivered online)



Course director: Dr Rebecca Craven, PhD, MPH,BDS,FDS(RCPS), FDS(DPH), FFPH, DDPH, RCS

The MDPH is an interactive distance-learning course that is fully integrated within the highly successful MPH course offered by the Faculty of Medical and Human Sciences. We attract a rich variety of students from across the World.

You will take a total of eight units and a dissertation. Two of the units will be devoted to Dental Public Health, one in each semester, and the remaining six units will be taken from the MPH programme, including required and optional units. Units include management, epidemiology, evidence-based care and qualitative research methods. A full list of units can be found on the School website under taught postgraduate courses.

The dissertation unit may take a number of different forms and will be supervised by an academic member of the Dental Public Health team within the School. Each of the dental public health units also has a substantial input from NHS consultants and is relevant to both home and overseas students. The course is approved by the Royal College of Surgeons of England, conferring eligibility to sit the Diploma in Dental Public Health examinations (DDPHRCS).

Most of our students are part-time, and study for two to five years. MDPH may also be studied full-time in one year, but this means you will not be able to combine this with other work. Other options are PGDip (eight units) or PGCert (four units). The units may also be taken as stand-alone Continuing Professional Development (CPD) credits, which will be of particular interest to commissioners, dental leads, NHS managers and general dental practitioners who wish to become more informed concerning the role of dental public health within the new NHS paradigm. No prior knowledge of dentistry is assumed.

A course brochure for the MDPH and each of the CPD opportunities is also available to download online: www.manchester.ac.uk/dentistry.mdph

Master of Research (MRes) (delivered online)

This course is designed for individuals with an interest in Dental Public Health, but who require a more research-focused degree.

You will take a total of six units of coursework, including the two dental public health units, and will have a more extensive dissertation project, supervised by a member of academic staff. The units available to study under this course and the types of work that can be undertaken for the dissertation can be found on the School of Dentistry website.

Find out more

Please direct all Dental Public Health course enquiries to:

Linda Norman, Course Administrator
linda.norman@manchester.ac.uk
tel +44(0) 161 275 6640

MSc in Restorative and Aesthetic Dentistry



Dr David Watts



Dr Fiona Clarke



Dr Wolfgang Richter

Course director: Professor David Watts, BSc, DSc, PhD, F.InstP, FRSC, FADM

Co-course director: Dr Fiona Clarke, BDS, MSc, PhD (Healthcare Learning Co (Smile-on) Ltd)

Co-course director: Dr Wolfgang Richter (Healthcare Learning Co (Smile-on) Ltd)

The University of Manchester's School of Dentistry now offers a masters degree course in Restorative and Aesthetic Dentistry. This is in collaboration with Smile-on Ltd, the UK's leading provider of interactive teaching and online courses for healthcare professionals.

The attraction of this course is that it is mainly web-based, so you can participate from wherever in the world you are living without too much disruption to your work and home life. You can study at your own pace, completing a masters degree part-time over two years. The course units are interactive between tutors and students and full support is given throughout.

The first unit addresses 'Foundations of 21st Century Practice', thus establishing the scientific basis for the detailed clinical topics that follow.

The learning materials have been designed by our experienced staff, with contributions from leading international academics. The course offers more than just a modern learning experience. You will be able to communicate with a diverse, multi-ethnic global community of peers, with whom you will also share residential get-togethers to complete the mandatory hands-on portion of the syllabus.



Just as with our resident students, you are granted online access to the John Rylands University Library, with its many thousands of electronic journals, archives and electronic books. Most course reading is available and downloadable to your own computer by this means.

The Healthcare Learning Co (Smile-on) Ltd team is ready to answer any questions you may have, so please do get in touch and we hope to welcome you to our online student community here in Manchester.

Find out more

Please direct all Restorative and Aesthetic Dentistry course enquiries to:

Nola Lenane, Course Administrator
info@smile-on.com
 tel +44 (0)20 7400 8989
 fax +44 (0)20 7400 8988
www.smile-on.com/msc

fees

Fees noted below are for the academic session 2011/2012. The most up-to-date fees information can be found on our website.

Taught course fees per annum

Dental Public Health

Course type	Home/Overseas	Mode of attendance	Tuition fees (£) 2011/2012
MSc	Home	Full-time (1 year)	4,470
	Overseas	Full-time (1 year)	8,930
	Home	Part-time (2-5 years)	£497 per course unit
	Overseas	Part-time (2-5 years)	£992 per course unit
PG diploma	Home	Full-time	£3,976
	Overseas	Full-time	£7,936
	Home	Part-time	£497 per course unit
	Overseas	Part-time	£992 per course unit
PG certificate	Home	Full-time	£1,988
	Overseas	Full-time	£3,968
	Home	Part-time	£497 per course unit
	Overseas	Part-time	£992 per course unit

Endodontics

Course type	Home/Overseas	Mode of attendance	Tuition fees (£) 2011/2012
MSc (Clin)		Full-time	£54,000
MSc	Home	Full-time	£14,900
	Overseas	Full-time	£35,600
PG diploma	Home	Part-time	£4,900
	Overseas	Part-time	£12,300



Fixed and Removable Prosthodontics

Course type	Home/Overseas	Mode of attendance	Tuition fees (£) 2011/2012
MSc (Clin)		Full-time	£54,000
MSc	Home	Full-time	£14,900
	Overseas	Full-time	£35,600
MSc	Home	Part-time	£7,450
	Overseas	Part-time	£17,800

Implantology

Course type	Home/Overseas	Mode of attendance	Tuition fees (£) 2011/2012
MSc	Home	Part-time	£11,700
	Overseas	Part-time	£17,870
PG diploma	Home	Part-time	£8,930
	Overseas	Part-time	£14,700
PG certificate	Home	Part-time	£13,400
	Overseas	Part-time	£21,300

fees

Oral and Maxillofacial Surgery

Course type	Home/Overseas	Mode of attendance	Tuition fees (£) 2011/2012
MSc (Clin)		Full-time	£54,000
MSc	Home	Full-time	£14,900
	Home	Part-time	£7,450
	Overseas	Full-time	£35,600
	Overseas	Part-time	£17,800
PG diploma	Home	Full-time	£9,800
	Home	Part-time	£4,900
	Overseas	Full-time	£24,600
	Overseas	Part-time	£12,300

Orthodontics

Course type	Home/Overseas	Mode of attendance	Tuition fees (£) 2011/2012
MSc (Clin)		Full-time	£54,000

Restorative and Aesthetic Dentistry

Course type	Fees information
MSc	See www.smile-on.com/msc



Research programme fees

All subjects

Course type	Home/Overseas	Mode of attendance	Tuition fees (£) 2011/2012
PhD/MPhil	Home	Full-time	See website
	Home	Part-time	See website
PhD/MPhil (clinical)	Overseas	Full-time	£35,600
	Overseas	Part-time	£17,800
PhD/MPhil (non-clinical)	Overseas	Full-time	£24,100
	Overseas	Part-time	£12,050
PhD (Clin) 4 years	Home	Full-time	See website
	Overseas	Full-time	£35,600

Our University website holds a wealth of information on the many varied aspects of postgraduate student life. Below are some of the most popular topics – use the web links for full details...



facilities and support

As you'd expect from a world-class institution, The University of Manchester provides a wide range of comprehensive support services and facilities dedicated to your needs. Here is a brief outline – use the web links to find out more.

Accommodation

With more than 9,200 rooms, The University of Manchester has more university-owned accommodation than virtually any other university in the country, almost all of which is within two miles of campus. A number of residences are reserved exclusively for postgraduates; in others, graduate students are roomed together.

tel +44 (0)161 275 2888

fax +44 (0)161 275 3213

www.manchester.ac.uk/accommodation

In addition to the University's halls of residence, Manchester has a sizeable stock of private accommodation for rent. Further details can be obtained from the University's only approved housing bureau, Manchester Student Homes.

tel +44 (0)161 275 7680

fax +44 (0)161 275 7684

manchesterstudenthomes@manchester.ac.uk

www.manchesterstudenthomes.com

Careers Service

Our award-winning Careers Service offers postgraduates specialist advice and services, including one-to-one guidance appointments (over a quarter of all our appointments are with postgraduates); talks, workshops and employer-led events; training and development opportunities; dedicated websites; and a highly rated careers blog aimed at postgrads.

We are also one of the most targeted universities by graduate recruiters in the UK and our postgraduates benefit from meeting a wide range of employers on campus.

We will help you to discover career options with a postgraduate degree, when to apply for jobs or further study, and how best to promote your experience.

www.manchester.ac.uk/careers

<http://manchesterpgcareers.wordpress.com>

Childcare

There are two nurseries close to campus for children aged six months to five years.

tel +44 (0)161 272 7121 (Dryden Street Nursery)

tel +44 (0)161 200 4979 (Echoes Nursery)

www.manchester.ac.uk/studentnet/crucial-guide/university-life/student-parents

City of Manchester

One of the great benefits of being a postgraduate student at Manchester is that all the joys of Britain's number one student city are right on your doorstep. You'll be spoilt for choice for art, culture, food, drink, music, history, nightlife, sport, festivals, shopping and much more – with the quiet countryside of two beautiful national parks also within easy reach when you want to get away from it all. Find out more about our city:

www.manchester.ac.uk/aboutus/manchester

Cultural facilities

Some of the city's finest cultural venues are right here on the University campus.



Manchester Museum

www.manchester.ac.uk/museum

Whitworth Art Gallery

www.manchester.ac.uk/whitworth

Contact Theatre

www.contact-theatre.org

Jodrell Bank Observatory and Visitor Centre

www.manchester.ac.uk/jodrellbank

Disability Support Office (DSO)

If you have additional needs arising from a medical condition, a physical or sensory disability, or a specific learning difficulty, you are strongly encouraged to contact the University's Disability Support Office to discuss your needs, any arrangements that may be necessary and the extent to which appropriate support is available.

tel +44 (0)161 275 7512

fax +44 (0)161 275 7018

minicom +44 (0)161 275 2794

dso@manchester.ac.uk

www.manchester.ac.uk/dso

International postgraduates

We welcome a community of 7,900 students, from more than 150 countries, into postgraduate study at the University every year. A range of facilities and services are available to make your application and move to Manchester go smoothly, including an in-depth arrival guide, a free airport collection service and an orientation programme.

www.manchester.ac.uk/international

IT facilities

When you become a postgraduate student at Manchester, you will have an IT account that lets you access the University's main computing services. These include:

- Personal email account
- Free internet access from your room in University-managed halls of residence
- More than 3,200 computers on campus
- More than 630 WiFi access points on campus
- An online learning environment, accessible from your mobile, with course materials and interactive learning activities
- Full IT support via our IT Service Desk: online, over the phone, or face-to-face

www.manchester.ac.uk/its

Library and information services

The John Rylands University Library is widely recognised as one of the world's great research libraries. The breadth and depth of its electronic and traditional resources makes it one of the best-resourced academic libraries in the UK. If you live some distance from campus, you'll be able to access its databases, e-journals and e-books from home. Many of its services, such as document supply, are also available online via the student portal. The Library offers specialist training in research information skills and has dedicated staff to assist you in your studies.

www.manchester.ac.uk/library



Maps

Get to grips with your future home and take a closer look at our campus, the city and University accommodation by viewing our maps:

www.manchester.ac.uk/visitors/travel/maps

Prospectus

Our 2011 postgraduate prospectus offers a comprehensive overview of The University of Manchester. You can view a copy online:

www.manchester.ac.uk/postgraduate/prospectus

Religious support

There are two chaplaincy centres for the major Christian churches. St Peter's House provides chaplains for the Anglican, Baptist, Methodist and United Reformed Churches, while the Roman Catholic Chaplaincy is at Avila House. Hillel House provides facilities for Jewish worship. There are prayer facilities on campus for Muslim students and student societies for many religions.

Sport

We have an active Athletic Union, a diverse 'Campus Sport' programme and a huge variety of health, fitness and wellbeing classes, as well as volunteering and scholarship opportunities.

www.manchester.ac.uk/sport

Student support

Whatever the issue – financial, academic, personal, or administrative – we have experienced and sympathetic

people, support groups and advice centres to help you. Find out about counselling, academic advice and various other student support services online:

www.manchester.ac.uk/studentnet/crucial-guide

Students' Union

The University of Manchester Students' Union (UMSU) is the largest Students' Union in Europe, offering everything from student representation to live bands. UMSU has some of the largest and most active student societies in the country and complements the University's overall provision of support and welfare services.

www.umsu.manchester.ac.uk

Video library

Watch and listen to our students and staff introducing various aspects of student life and The University of Manchester with our selection of online videos:

www.manchester.ac.uk/aboutus/video

How to apply

Our preferred method of application for all postgraduate programmes is via our online application form:

www.manchester.ac.uk/pgapplication

If you are unable to apply online and require a printed application form, contact the Postgraduate Admissions Office:

tel +44 (0)161 275 4740

pg-admissions@manchester.ac.uk

(remember to include your postal address)



contact details



Admissions enquiries

pg-dentistry@manchester.ac.uk
tel +44 (0)161 306 0239
fax +44 (0)161 306 1565

Specialty course enquiries

These should be directed to the course administrators, as indicated in each course section within this leaflet.

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This brochure is prepared well in advance of the academic year to which it relates. Consequently, details of courses may vary with staff changes. The University therefore reserves the right to make such alterations to courses as are found to be necessary. If the University makes an offer of a place, it is essential that you are aware of the current terms on which the offer is based. If you are in any doubt, please feel free to ask for confirmation of the precise position for the year in question, before you accept the offer.

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