MEDICINE, DENTISTRY & BIOMEDICAL SCIENCES

In postgraduate education, we offer opportunities to study alongside other doctors, dentists and healthcare professionals across a range of themes in the Plymouth University Peninsula Schools of Medicine and Dentistry (PU PSMD).

Our programmes equip you with expertise to augment your professional careers. They have been tailor-made for busy clinicians, and the assignments have been developed so that projects important to the workplace may be taken forward within the programmes. In addition, the dissertation is designed not only as a research thesis but also with alternatives such as quality improvement projects and areas of focus within the clinical environment.

RESEARCH
From advancing technology to direct impact on patient care, PU PSMD research partnerships are improving healthcare in the South West and beyond. The partnership approach we take with our students is mirrored by our relationships with research collaborators within the University, in local healthcare organisations, patient groups and commercial organisations.

For more information on our research opportunities please see page 264.

PROFESSIONAL DEVELOPMENT
Our programmes are designed with busy healthcare professionals in mind, and we aim to offer flexible and accessible CPD opportunities to support regional, national and international healthcare priorities across the South West Peninsula and beyond.

We offer innovative approaches to the accrual of academic credit, offering a number of pathways to suit individual and professional requirements.

Our suite of CPD opportunities may take the form of short courses, masterclasses, conferences and events using ‘blended’ learning across traditional face-to-face and distance learning approaches.

Plymouth is the leading centre in Europe for pioneering research into low-grade brain tumours.

INADEQUATE DENTAL CARE PROVISION IN THE SOUTH WEST WAS RECOGNISED AS A ‘HEALTH INEQUALITY’ IN 2009. SINCE THEN, PLYMOUTH UNIVERSITY HAS ESTABLISHED CLINICS THAT TREAT MORE THAN 16,000 LOCAL NHS PATIENTS FOR FREE.
With constant developments across all disciplines, biomedical science is a fast-paced, ever-evolving field. Looking for a programme that will help you deepen your theoretical knowledge, hone your clinical skills and broaden your professional experience? We give you a suite of award pathways that allow you to explore different research areas, develop your specialisms and focus your study into a practical clinical research project.

**Programme overview**
You’ll take five modules: three core modules, one diagnostic research applications module, plus one discipline-specific module to determine your final award. You’ll design and execute a research project, supported by your project advisor. Other core modules include Molecular biology (genomics, transcriptomics and proteomics) and Project design and development, where you’ll also critically review scientific literature. Options for the diagnostic research applications include Bioinformatics, Contemporary applications of cell biology, and Contemporary science of infection and immunity. Focusing on the discipline that interests you the most for your final award, you can choose from a range of modules including: Clinical immunology, Clinical microbiology, Haematology and transfusion, Medical genomics and personalised medicine, Molecular and cellular pathology, and Clinical biochemistry.

**Further programme information**

**Core modules**
- Molecular biology: genomics, transcriptomics and proteomics
- Project design and development
- Research project

**Key features**
- Benefit from academic lecturers and tutors actively researching and developing new techniques in modern biomedical science.
- A strong international reputation in translational research, with significant financial investment in laboratory infrastructure.
- Regularly updated facilities serving post-genomics and proteomics, cell biology and imaging.
- Enrich your learning with teaching, expertise and insight from our NHS partners, plus staff from the University’s School of Biomedical and Healthcare Sciences.
- Explore modern practice, emerging techniques and the impact of new technologies on research methods.
- Focus your specific interests under the guidance of your personal project advisor.
- Gain skills needed to study at masters level with specialist modules on research techniques and project development.
- Follow a path of study resulting in an MSc Biomedical Science award in cellular pathology, clinical biochemistry, haematology and transfusion, immunology, medical genomics and personalised medicine, or medical microbiology.

**Entry requirements**
- A minimum of a 2:2 honours degree, or equivalent UK university or institute of higher education qualification in a relevant subject with a significant biomedical, biological or biochemical content related to the specialist subject(s) to be studied.
- Equivalent qualifications and experience considered.
- International students: IELTS score of 7 or equivalent.

**Career opportunities**
Career possibilities for our graduates include healthcare science, clinical and laboratory research, government science, pharmaceutical companies, teaching, and areas relating to scientific media.

**Duration**
1 year full time
2 years part time

**Fees**
For details about fees please refer to page 32

**Location**
Plymouth

**Start date**
September

**BIOMEDICAL SCIENCE PATHWAYS MSc**

**Specialist awards**
- Biomedical Science (Cellular Pathology)
- Biomedical Science (Clinical Biochemistry)
- Biomedical Science (Haematology and Transfusion)
- Biomedical Science (Immunology)
- Biomedical Science (Medical Genomics and Personalised Medicine)
- Biomedical Science (Medical Microbiology)

Students wishing to graduate with a specific named pathway undertake a project aligned to their specialism.

**Current research**

**Cellular Pathology**
- Bone development and remodelling; cell signalling mechanisms that mediate monocytic lineage divergence
- Ultrastructure and function of respiratory tract cilia in critically ill patients

**Clinical Biochemistry**
- The mitochondrial dysfunction in the pathogenesis of metabolic syndrome that increases the risk of developing type 2 diabetes and cardiovascular disease
- Biochemistry and biochemical pharmacology with particular interest in signalling pathways that involve pyridine nucleotides

**Haematology and Transfusion**
- Molecular diagnostics in transfusion and non-invasive prenatal diagnosis. Expertise in red cell membrane biology and blood group antigen expression, and post-genomics technologies
- Aspects of stem cell transplantation with a current focus on chemotherapeutic damage to the marrow microenvironment/mesenchymal stem cells
- Signalling pathways in haematological malignancy and solid tumour metastasis to bone. Manipulation of signalling pathways will generate novel agents to target cancer pathogenesis
- Application of mass spectrometry-based proteomics in biomedical research with a particular interest in malaria and cancer

**Immunity**
- Immunomodulatory role of probiotics. Disease states under investigation include oral pathologies (chronic periodontitis, oral squamous cell carcinoma) and gastrointestinal tract pathologies (Crohn’s disease, ulcerative colitis)
- Pathogenic mechanisms of bacterial infections and the host’s innate immune responses to such organisms
- Application of CMV-based vectors to the prophylactic and therapeutic treatment of multiple infectious diseases and cancer

**Medical Genomics**
- Genetic factors involved in the major psychotic and mood disorders, for example bipolar disorder
- Characterisation of molecular pathways underlying disease progression to develop novel biology-driven therapeutic and diagnostic approaches to porcelained treatment of bladder cancer

**Medical Microbiology**
- Endogenous retroviruses as immunotherapy targets in cancer and HIV
- Molecular basis of bacterial pathogenicity; recombinant DNA technology
- Novel antimicrobial agents; characterising the virulence mechanisms of pathogenic bacteria; developing molecular assays for rapid detection of bacteria
**ResM**

Plymouth University Peninsula Schools of Medicine and Dentistry offer opportunities to undertake research skills training leading to the qualification of a Research Masters (ResM) degree.

**Programme overview**

The ResM is a research degree at masters level which incorporates taught elements and an extended research phase, including a research project and dissertation.

Students taking this award complete a minimum of 40 credits of taught modules up to 120 credits maximum. Taught credits typically include a Research methods module, appropriate to discipline, and then further credits directly applicable to the subject area or methodological skills to be acquired.

You are assigned a Director of Studies and an additional supervisor. Examination is by thesis and viva voce examination.

The programme consists of a combination of taught modules and personal supervision intended to support you in developing and conducting your extended research project.

Credits are determined by the supervisor and candidate depending on previous experience and the requirements of the proposed research project element.

**Further programme information**

Modules may be chosen from a variety of existing taught masters programmes and can span disciplines and faculties as appropriate.

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**Key features**

- Personalised expert supervision.
- Ideally suited to students wishing to undertake a research degree but who have limited previous research experience.

**Entry requirements**

- Normally a 2:1 honours degree from a UK university or equivalent.
- International students: IELTS score of 7 or equivalent.

**Career opportunities**

Career possibilities for our graduates include healthcare science, clinical and laboratory research, government science, pharmaceutical companies, teaching, and areas relating to scientific media.

**Duration**

1–2 years full time
2–3 years part time

**Location**

Plymouth

**Start date**

September

**Fees**

For details about fees please refer to page 32

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**CLINICAL EDUCATION**

**MClinEd/PgDip/PgCert**

Are you a doctor, dentist, nurse or other healthcare professional wishing to develop your role as a teacher, trainer, or clinical or educational supervisor? This masters programme will enable you to develop your practice as an education practitioner and scholar, improve your confidence in teaching, and tap into a network of education-focused professionals.

Supported by face-to-face study days and online learning materials, this step-on, step-off programme will allow you to progress from certificate through to dissertation stage. Throughout the programme, including the assignments, you will be guided in applying educational principles to your own professional role, and encouraged to reflect on your current and future educational development.

**Programme overview**

**Year 1**

You’ll complete two modules: Clinical education practice: theory, evidence and application, and Current issues in clinical education. In this certificate stage of the programme, you will explore education in theory and in practice, honing your teaching skills. You will also engage in debates about learning in a variety of clinical contexts.

**Year 2**

You’ll be offered a range of optional modules enabling you to focus on topics that interest you – from simulation and assessment, to educational leadership, global health and human factors.

**Final year**

Under supervision, you’ll complete a dissertation, showcasing your ability to design, conduct and write up a project with an educational perspective.

**Entry requirements**

- Normally a recognised first degree or equivalent will be required. Relevant work experience may be accepted.
- International students should check requirements for IELTS, and for PTE Academic; please visit our website.

**Career opportunities**

This programme will provide you with the necessary knowledge and skills for multiple roles within the clinical educational environment, and is accredited by the Higher Education Academy (HEA). The HEA offers professional recognition opportunities for those who teach and support learning across the HE sector, which are increasingly transferable between UK universities and medical schools.

**Duration**

3 years part time (full-time options available)

**Location**

Plymouth

**Start date**

September and January

**Fees**

For details about fees please refer to page 32

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A bespoke training pathway tailored to the individual needs of each candidate.
GLOBAL AND REMOTE HEALTHCARE
MSc/PgDip/PgCert

Are you interested in global and remote healthcare, and in expedition and exploration medicine? Do you work in healthcare practice in an isolated or remote environment? This masters programme will empower you to confidently meet the challenges of working in these environments. Explore the interactions between global and human factors that influence healthcare and the use of remote information sources such as the use of telemedicine, as well as the challenges of expedition planning.

Programme overview
Year 1
You’ll have the opportunity to develop a comprehensive understanding of global health and remote medicine and of the distinct environmental, sociological, physical and psychological factors associated with working as a remote and global health practitioner.

Year 2
You’ll have the opportunity to undertake a global or remote healthcare placement and to critically examine and reflect upon the multi-factorial aspects associated with global and remote healthcare delivery from both a personal and strategic perspective.

Final year
You will plan, research and complete the dissertation projects.

Further programme information
Core modules
Year 1
• Global health
• Remote practitioner
Year 2
• Global and remote placement medicine
• Project design if continuing to dissertation (or alternative suitable module from our postgraduate suite of programmes)

Final year
• Dissertation

Key features
• Rise to the challenge and become a trained clinician ready to meet the unique tests and emergencies that arise in diverse global and remote environments.
• Equip yourself with the advanced skills necessary to critically analyse and combine a range of information to make safe and effective decisions in complex, unpredictable, global and health situations.
• Engage with a programme originally developed for the international medical polar community (British Antarctic Survey Medical Unit – BASMU), with increasing interest in recent years from the military and expedition/exploration medicine, as well as from the voluntary and humanitarian sectors.
• Benefit from a blended learning delivery.
• Develop your knowledge of remote information sources such as telemedicine.
• Learn through action – develop your knowledge and skills with an emphasis on work- and practice-based dissertation projects.
• Take advantage of a collaborative educational partnership between local NHS services, higher education, clinical services, and experts including the military.

Entry requirements
• A recognised first degree or equivalent.
• Experience acquired through work or other means may also be considered, in line with QAA guidance.

Career opportunities
This part-time postgraduate programme, originally designed for the international medical polar community in conjunction with the British Antarctic Medical Survey Unit (BASMU), will empower you to confidently meet the challenges of expedition planning.

Duration
3 years part time for the MSc (includes mandatory placement)

Location
Plymouth

Start date
March

After gaining my medical degree I completed my foundation medical training years in North Wales. I wanted to take some time out before specialty training to pursue my interest in remote medicine, while completing my mountain leader qualification and travelling as an expedition doctor. I remember looking at the Plymouth programme initially because I was interested in finding out more about the different options within the field of expedition medicine. The global health element made it even more inviting, as was the part-time option to be flexible and do some of the learning and assignments remotely.

On completion of the programme I will have gained some significant learning experiences within this field, both research-based and practically, and worked with a variety of leaders within this area of medicine. The links that the University have with the British Antarctic Survey mean that some of my colleagues on the programme will be undertaking medical jobs at remote stations for prolonged periods of time, so it has been fascinating to hear from them about some of their experiences. I particularly enjoyed learning about some of the issues surrounding climate change and the concept of locally global healthcare during the global health module, and practising casualty evacuations outside next to our lecture room!

Plymouth has been a great and friendly city to get to know, especially when commuting by bike! Both the medical facilities and teaching are excellent and have close links with exciting projects worldwide, including the Masanga link hospital in Sierra Leone. In addition, I have enjoyed getting to know the surrounding area, with beautiful Dartmoor on the doorstep, and plenty of great sporting facilities to try.

Joanna Byers
MSc Global and Remote Healthcare student

Fees
For details about fees please refer to page 32

Enhance your learning with our established links to the British Antarctic Survey Medical Unit and the Diving Diseases Research Centre.
An interprofessional and highly flexible programme which you can study at your own pace, taking breaks between modules according to the demands of your professional and personal life.
Are you a life sciences graduate wanting the opportunity to train for a new healthcare role? As a Physician Associate you’ll work in the NHS under the supervision of doctors and alongside other healthcare professionals, delivering care to patients. Our programme will equip you to pursue a career in the NHS that’ll be both rewarding and challenging.

Programme overview
The first six months will be spent in the University establishing the foundations of clinical medicine and developing your clinical, diagnostic and communication skills while spending time in community placements seeing patients. Following this initial phase, while continuing your placements in general practice and the community, you’ll commence clinical placements one day per week in Derriford Hospital.

In your second year, you’ll be based predominantly in the clinical setting with specialty blocks in mental health, general surgery, general practice, obstetrics and gynaecology, paediatrics, emergency medicine and general adult medicine (both hospital and community based).

Further programme information

Core modules
• Clinical, diagnostic and communication skills 1 and 2
• Evidence-based practice and research methods
• Foundations in clinical medicine 1 and 2
• Personal and professional development 1 and 2

Key features
• Sharpen your skills on this intensive programme, which takes an inquiry-based learning approach.
• Benefits from early patient contact from the first weeks, continuing and increasing throughout the programme, ensuring that your personal, practical and professional development is patient-centred.
• Access highly developed teaching resources.
• Spend some time learning with medical students and other healthcare professions.
• To obtain the masters qualification you will complete a dissertation project in addition to completing the other modules on the programme.

Entry requirements
• A 2:1 degree in a life science, biomedical science, or healthcare subject; or current healthcare professionals educated to honours degree level (2:1 or above).
• Experience of working in a clinical setting for a minimum of 12 months is desirable.
• Chemistry A level is desirable.

Career opportunities
Plymouth University Peninsula Schools of Medicine and Dentistry secured sponsored places for all students on the Physician Associate Studies programme in January 2015 and 2016, through our NHS partners. This innovative partnership between the University and NHS trusts in Devon and Somerset funds places in return for a two-year employment contract on graduation.

Duration
2 years full time (with integrated placements)

Location
Plymouth

Start date
January

For details about fees please refer to page 32

Advance your understanding with fully integrated clinical skills development and clinical placements throughout the programme.

Innovation is a key feature of our offering because we recognise that leaders with new thinking and the influence to drive new ideas forward are the backbone of a modernised NHS.
RESEARCH MASTERS IN MEDICINE OR DENTISTRY
ResM

Plymouth University Peninsula Schools of Medicine and Dentistry offer opportunities to undertake research skills training leading to the qualification of a Research Masters (ResM) degree.

The programme consists of a combination of taught modules and personal supervision intended to support you in developing and conducting your extended research project.

Credits are determined by you and your supervisor depending on previous experience and the requirements of the proposed research project element.

Programme overview
The ResM is a research degree at masters level which incorporates taught elements and an extended research phase, including a research project and dissertation.

It is suited to a wide range of people with an interest in developing their research skills within healthcare settings, including:
- early and mid-career health professionals
- NIHR Integrated Academic Trainees
- students who are not yet ready to commence a PhD without further skills acquisition
- other students wishing to gain research skills at masters level.

You will complete a minimum of 40 credits of taught modules up to 120 credits maximum. Taught credits typically include a research methods module, appropriate to discipline, and then further credits directly applicable to the subject area or methodological skills to be acquired.

You are assigned a Director of Studies and an additional supervisor. Examination is by thesis and viva voce.

Key features
- A bespoke training pathway tailored to the individual needs of each candidate.
- Personalised expert supervision.

Entry requirements
- Normally a 2:1 honours degree from a UK university or equivalent.
- International students: IELTS score of 7 or equivalent.

Career opportunities
The ResM may be used as preparation for a higher research degree or as part of an integrated training programme.

Duration
1–2 years full time
2–3 years part time

Fees
For details about fees please refer to page 32

Location
Plymouth

Start date
September

RESEARCH MASTERS IN MEDICINE OR DENTISTRY
ResM

Plymouth University Peninsula Schools of Medicine and Dentistry offer opportunities to undertake research skills training leading to the qualification of a Research Masters (ResM) degree.

The programme consists of a combination of taught modules and personal supervision intended to support you in developing and conducting your extended research project.

Credits are determined by you and your supervisor depending on previous experience and the requirements of the proposed research project element.

Programme overview
The ResM is a research degree at masters level which incorporates taught elements and an extended research phase, including a research project and dissertation.

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- Personalised expert supervision.

Entry requirements
- Normally a 2:1 honours degree from a UK university or equivalent.
- International students: IELTS score of 7 or equivalent.

Career opportunities
The ResM may be used as preparation for a higher research degree or as part of an integrated training programme.

Duration
1–2 years full time
2–3 years part time

Fees
For details about fees please refer to page 32

Location
Plymouth

Start date
September

RESTORATIVE DENTISTRY
MSc/PgDip/PgCert

Develop and deliver high-quality dentistry with our Restorative Dentistry programme. Led by a team of consultants and complemented by respected visiting specialist clinicians and teachers, this programme is structured to allow you to continue your current working commitments while studying for this postgraduate degree at an appropriate pace. Each clinical module includes hands-on consultant time to ensure you’ll have the understanding and confidence to carry out taught restorative techniques.

Programme overview
Year 1 – Learn the foundations of restorative dentistry, which includes diagnosis and treatment planning, occlusal management, non-surgical periodontology and current concepts in endodontics. You’ll learn about restoring teeth and tissues, and study fixed prostodontic operative techniques, the restoration of endodontically treated teeth, removable prosthetics, and complete dentures.

Year 2 – Successfully complete the modules from your first year and go on to study advanced restorative dentistry. Focus on aesthetics and conservative aesthetic techniques and treatment planning for missing teeth, including a live implant surgical demonstration – moving up to advanced endodontics, adjunctive periodontal surgery, guided bone regeneration and soft tissue surgery, restorative practice, and more.

Final year – Successfully complete 120 credits and choose to produce a dissertation to complete the masters in your third and final year. Demonstrate your ability to design, conduct, evaluate and write up a project on a topic that is relevant to restorative dentistry.

Key features
- Choose your own learning journey – complete 60 credits and receive a postgraduate certificate in Restorative Dentistry. 120 credits will give you a postgraduate diploma, and the maximum 180 credits will reward you with a full masters degree in Restorative Dentistry. The cost of each module is £5,000.
- Balance existing work commitments with flexible study opportunities. Each module consists of 300 total learning hours.
- Benefit from hands-on consultant time for each clinical module – put your knowledge into practice and gain experience and confidence.
- High-quality teaching – learn from an experienced team of consultants in restorative dentistry and from respected visiting specialist clinicians and teachers.
- Grow in confidence and experience with the programme – learn and understand the foundations of restorative dentistry and restoring teeth and tissues in year one, and develop your knowledge and skills with advanced restorative dentistry in year two.

Entry requirements
- You should be in practice in the UK while undertaking the programme, and hold full General Dental Council (GDC) registration as a dental practitioner.
- Full professional indemnity and normally at least two years’ clinical experience.

Career opportunities
This MSc programme allows dentists to increase their clinical skills, knowledge and ability while enhancing professional satisfaction. It will assist practitioners preparing portfolios for the FFGDP. Subject to regulatory agreement, it may assist the development of dentists with enhanced skills (DES) in the future.

Duration
3 years part time

Fees
For details about fees please refer to page 32

Location
Plymouth

Start date
January, April or September

* admissions@plymouth.ac.uk  (+44 (0)1752 585858  www.plymouth.ac.uk/courses

Medicine, Dentistry & Biomedical Sciences

 robber
Are you interested in simulation and human factors to enhance clinical training and improve patient safety? The Simulation and Patient Safety programme will enable you to apply innovative educational methods and improvement theories to your workplace. This is accomplished through in-depth exploration of the fields of simulation-enhanced learning, patient safety theory, ergonomics and human factors. As you progress through the programme, you will have the opportunity to undertake project design and planning, before proceeding to your dissertation research or quality improvement project.

Programme overview
You’ll explore a range of simulation-based learning methods that can improve patient safety and quality of care through enhanced learning. Advance your knowledge, understanding and skills in patient safety and the application of these to your own workplace. You’ll be introduced to the role of human factors and develop a critical understanding of the current state of patient safety within healthcare, and examine strategies to improve it. You’ll be provided with the knowledge and skills associated with the project design, development and knowledge transfer process. You’ll also explore the physical and psychological links between organisations, employees and their work environment and how the concept of human factors influences the way we work. The use of simulation for training and assessment of human factors will be integral to the module.

Further programme information
Core modules
Year 1
- Patient safety and quality improvement
- Simulation and enhanced learning
Year 2
- Human factors in healthcare
- Project design, development and knowledge transfer (MSc only)
Final year
- Dissertation

Key features
- This programme responds to recent national reports that have emphasised the need for widened access to simulation training and the recognition of personnel- and system-level human factors in improving patient safety.
- Develop an understanding of the factors involved in quality improvement strategies and their evaluation using outcomes related to patient safety.
- Undertake a critical study of education and expert practice, change management and innovation.
- Advance your knowledge, understanding and skills in patient safety and quality improvement, with the opportunity to apply these skills in the clinical environment.
- Take advantage of our experienced teaching staff drawn from experts in the Plymouth and Torbay NHS trusts and the University, as well as from the higher education sector in the south-west region and beyond.
- Benefit from flexible learning – there are a number of continuing professional development opportunities where a single module or specific days within a module may be taken independently.
- Graduate with the skills required to implement simulation effectively into educational programmes, and develop and evaluate evidence-based patient safety strategies in organisations.

Entry requirements
- A recognised first degree or equivalent.
- Relevant work experience may be considered in line with QAA guidance.
- International students: if your first language is not English you will be required to provide evidence of competence in English language. To check your requirements for IELTS and PTE Academic, please visit our website.

Career opportunities
Designed for healthcare practitioners and educators who aim to be leaders in patient safety and simulation training, graduates will attain the skills required to implement simulation effectively into educational programmes, and develop and evaluate evidence-based patient safety and quality improvement strategies in healthcare organisations.

Duration
3 years part time

Location
Plymouth

Fees
For details about fees please refer to page 32

Start date
September